

Apples, Oranges and Erasers:  
The Effect of Considering Similar versus Dissimilar Alternatives on Purchase Decisions

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## ABSTRACT

When deciding whether to buy an item, consumers sometimes think about other ways they could spend their money. Past research has explored how increasing the salience of outside options (i.e., alternatives not immediately available in the choice set) influences purchase decisions, but whether the type of alternative considered systematically affects buying behavior remains an open question. Ten studies find that relative to considering alternatives that are similar to the target, considering dissimilar alternatives leads to a greater decrease in purchase intent for the target. When consumers consider a dissimilar alternative, a competing non-focal goal is activated, which decreases the perceived importance of the focal goal served by the target option. Consistent with this proposed mechanism, the relative importance of the focal goal versus the non-focal goal mediates the effect of alternative type on purchase intent, and the effect attenuates when the focal goal is shielded from activation of competing goals. We conclude with a discussion of the theoretical and practical implications of our findings.

*Keywords:* opportunity costs, outside options, similarity, comparisons, goals, behavioral decision theory

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Imagine a consumer who is thinking about buying a \$25 shirt to wear to work. Before deciding whether to buy the shirt, she might contemplate alternative goods and services that she could buy for \$25. Does her likelihood of purchasing the \$25 shirt depend on whether she considers similar alternatives that serve the same goal as the shirt (e.g., a different style shirt or other work clothes) or dissimilar alternatives that serve different goals (e.g., a pair of movie tickets or wireless speakers)? Extensive research has explored how the comparisons that consumers make affect their preferences (Dhar and Sherman 1996; Kahneman and Miller 1986; Simonson et al. 2013), but the majority of this work has focused on comparisons among alternatives that are part of the immediate choice set. Many real world choices are also influenced by comparisons to outside alternatives, such as those brought to mind by the consumer or prompted by marketing activities. Recent research suggests that when consumers consider other ways to spend their money they are less likely to buy a target option (Frederick et al. 2009), but researchers have not yet explored whether and how the *type* of alternatives considered affects preference for the target option, nor the psychological mechanisms underlying these effects.

A fundamental dimension on which the alternatives considered may vary is how similar or dissimilar they are to the target option (Dhar, Nowlis, and Sherman 1999; Medin, Goldstone, and Gentner 1993; Mussweiler 2003). In the current research, we explore whether the similarity of the outside options to the target affects the decision to buy the target. We use a goal theoretic approach to develop the prediction that in many situations, people will be less likely to purchase a target option after considering dissimilar alternatives than after considering similar alternatives.

A consumer's decision to buy a particular product depends in part on the importance she attaches to the goal that the product serves (hereafter referred to as the focal goal; Van Osselaer

and Janiszewski 2012). We propose that considering dissimilar alternatives decreases the perceived importance of the focal goal more than considering similar alternatives. This occurs because considering dissimilar alternatives is more likely to activate additional consumption goals (non-focal goals) than considering similar alternatives (Van Osselaer and Janiszewski 2012). Considering dissimilar alternatives thus leads to relatively lower perceived importance of the focal goal (Kruglanski, Pierro, and Sheveland 2011) and in turn, a lower likelihood of buying the target option. Consistent with our proposed mechanism, we show that the rated importance of the focal goal mediates the relationship between the similarity of the alternative to the target and purchase intent of the target option. Moreover, we show that considering a dissimilar alternative increases the importance of a non-focal goal associated with the alternative and that the difference in importance between the focal and non-focal goal also mediates the effect of alternative type on purchase intent. Finally, we demonstrate that shielding the focal goal (Shah, Friedman, and Kruglanski 2002) prior to considering alternatives attenuates our effect.

The current research contributes to three streams of literature. First, these findings extend our understanding of opportunity cost consideration. Contrary to the view that thinking about any attractive outside option should decrease purchase intent to the same extent (Frederick et al. 2009), our goal theoretic approach shows that the magnitude of this decrease may depend on the type of alternative considered. Second, we integrate the literature on multiple goals into behavioral decision theory to better understand the psychological processes by which considering opportunity costs influences choice. While most choice research is agnostic to goal activation and instead focuses on context and comparisons, we show how considering different types of alternatives can influence the importance of focal and non-focal goals, which in turn affects purchase decisions. Third, we contribute to the research on pre-decision option generation. While most research on the early stage of decision making examines the strategies

that people use to generate options (Keller and Ho 1988) or the number of options people tend to generate under different conditions (Thomas et al. 2008), little work explores the downstream implications on choice. We integrate the two choice stages to explore how generating different types of options subsequently affects purchase intent. Finally, for managers, this research suggests that one possible tactic that might minimize the negative impact of comparisons to outside options—such as nearby shelf items, links provided on webpages or comparative products in advertising communications—is to provide alternatives that are consistent with the goal served by the target option.

## **CONCEPTUAL BACKGROUND**

Research in decision making has increasingly focused on the effect of comparisons on consumer choice (Simonson et al. 2013). Extensive work has explored how aspects of the choice task can bring to mind different comparisons, which may result in different decisions. For example, Dhar and Simonson (1992) find that changing which option is the focus of a comparison (e.g., comparing fruit salad to chocolate cake versus comparing chocolate cake to fruit salad) affects which attributes receive the most attention, and ultimately, which option is chosen. While most research has focused on comparisons among options that are part of the immediate choice set, other work has shown that comparisons to options outside of the choice set affect decision making as well. Comparisons to options outside the choice set have mainly been explored in the context of reference prices, where the price of an option in the environment establishes a standard of comparison against which the price of a target option is evaluated (Adaval and Monroe 2002; Nunes and Boatwright 2004), or in the context of phantom alternatives that are not actually attainable, for example due to stock-outs or budget constraints

(Fitzsimons 2000; Pratkanis and Farquhar 1992). Relatively little work has examined how comparisons to outside options that are similarly priced and easily attainable may affect purchase of the target, such as when outside options are brought to mind by consumers or suggested by marketers on a website as alternative ways to spend the money.

While researchers disagree on the extent to which consumers spontaneously bring to mind such alternatives when making a purchase decision (Frederick et al. 2009; Spiller 2011), they generally agree that consumers are less likely to buy an attractive target option after considering other ways to spend their money (Frederick et al. 2009; Kardes et al. 2002; Posavac et al. 2004). For example, Frederick and co-authors (2009) asked participants if they wanted to buy their favorite DVD at a discounted price of \$14.99. Increasing the salience of outside options by phrasing the “don’t buy” option as “keep the \$14.99 for other purchases” significantly decreased the percentage of people who purchased the DVD. However, past research has not examined if the type of alternative considered matters nor the psychological processes by which considering outside alternatives affects the purchase decision. Accordingly, we explore how purchase decisions are influenced by comparisons to options outside of the choice set that are equivalent in price but vary with respect to how similar they are to the target option.

When making purchase decisions, consumers often make comparisons to alternatives that are similar or dissimilar to the target (Dhar et al. 1999; Medin et al. 1993; Mussweiler 2003). While the similarity and substitutability of alternatives have not been directly studied in the context of opportunity cost consideration, recent work has explored the role of similarity in other contexts, including unavailable options in a display set (Karmarkar 2017) and replacement choices, where the consumer’s top choice is unavailable (e.g., sold out) or the consumer is trying to avoid it (e.g., an unhealthy snack for a dieter; Arens and Hamilton 2016). Research on replacement choices has found that when the top choices are not available, consumers tend to opt

for replacements that are similar (rather than dissimilar) to their preferred option (Huh, Vosgerau, and Morewedge 2016). However, in such cases, consumers already have a commitment which anchors subsequent judgments, and the target option is by definition more preferred than the replacement options. Past work has not yet looked at how choice may be affected by considering similar versus dissimilar outside options that are equivalently attractive to the target and where no prior commitment has been established.

To investigate these questions, we explore situations where consumers, before deciding whether or not to buy a target option, consider spending their money on items that are either similar or dissimilar to the target option. Participants in our studies are shown a target option that is available for purchase (such as a \$25 button-down shirt) and are asked to consider either similar alternatives on which to spend the same amount of money (such as on other shirts or other work clothes) or dissimilar alternatives (such as on dinner or movie tickets). In these contexts, when consumers consider similar versus dissimilar alternatives, they do so in relation to a focal goal (Barsalou 1991; Ratneshwar, Pechmann, and Shocker 1996) that is associated with the target option (Shah and Kruglanski 2003). Similar alternatives are therefore likely to serve the same focal goal that was activated by the target option (e.g., other shirts or work clothes also fulfill the goal of dressing for work), whereas dissimilar alternatives are likely to serve a different goal than that associated with the target option (e.g., dinner or movie tickets satisfy other goals besides dressing for work; Ratneshwar et al. 2001).

Our main proposition is that people generally will be less likely to purchase a target option after considering dissimilar alternatives than after considering similar alternatives. This occurs because considering a dissimilar alternative activates an additional non-focal goal, which decreases the perceived importance of the focal goal. Although not directly examined, several related findings in the literature on goal systems theory support our hypothesis. When evaluating

the target option, a corresponding consumption goal is activated, hereafter referred to as the focal goal (Fischbach and Ferguson 2007; Shah and Kruglanski 2003). When goals are activated, they become more accessible in memory, they are viewed as more important, and their associated means are evaluated more positively (Van Osselaer and Janiszewski 2012). Since consumers have multiple goals (Fishbach and Dhar 2007), the importance of any single goal depends on the extent to which other goals are also active at the same time.

We propose that if the outside alternatives consumers consider before making a purchase decision activate competing non-focal goals, consumers will subsequently be less likely to purchase the target option. When consumers consider dissimilar alternatives, competing goals are more likely to be activated than when consumers consider similar alternatives. Activating competing goals draws resources away from the focal goal and decreases its importance (Kruglanski et al. 2002; Van Osselaer and Janiszewski 2012). Since purchase intent depends in part on the importance of the focal goal, purchase intent for the target option decreases as a result. In contrast, considering similar alternatives is less likely to draw resources from the focal goal, as similar alternatives are likely to fulfill either the same goal as the target or a closely related goal. Since goals are stored in memory as an interconnected network with related goals connected by facilitative links, activating related goals would not draw resources from the focal goal to the same extent as activating unrelated goals that are connected by inhibitory links (Kruglanski et al. 2002), and therefore, considering similar alternatives will tend to have less of an effect on purchase intent. Although considering additional means to the focal goal (when considering similar alternatives) may weaken the association of each means to the goal, greater importance is still placed on the focal goal relative to when additional goals have been activated (when considering dissimilar alternatives; Kruglanski et al. 2002; Van Osselaer and Janiszewski 2012; Zhang, Fishbach, and Kruglanski 2007). As a result, we expect that people will be more



likely to purchase the target option after considering similar alternatives than after considering dissimilar alternatives.

In summary, when faced with the opportunity to buy a target option, such as the button-down shirt for work in the example above, consumers who consider a similar alternative (e.g., a sweater) will view the focal goal (e.g., looking professional) as more important than consumers who consider a dissimilar alternative (e.g., wireless speakers). This occurs because considering a dissimilar alternative is likely to activate a competing goal (e.g., listening to music), which decreases the importance of the focal goal, and in turn decreases purchase intent of the target button-down shirt, relative to considering similar alternatives.

Therefore, we predict that people generally will be less likely to buy a target option after considering dissimilar alternatives than after considering similar alternatives.

**H1:** The effect of considering alternatives on purchase intent for the target option is moderated by the similarity of the alternatives that are considered to the target option. Consumers will generally be less likely to purchase a target option after considering dissimilar alternatives than after considering similar alternatives.

Further, we predict that consumers will view the focal goal associated with the target option as less important after considering dissimilar alternatives than after considering similar alternatives, because considering dissimilar alternatives is more likely to activate competing goals associated with different means. This difference in focal goal importance should explain the decrease in purchase intent.

**H2a:** The focal goal associated with the target option will be seen as less important for consumers who consider a dissimilar alternative compared to consumers who consider a similar alternative. This difference in perceived importance of the focal goal will mediate the relationship between the similarity of alternatives considered and purchase intent for the target option.

According to our theory, considering dissimilar alternatives decreases the importance of the focal goal because considering dissimilar alternatives activates competing non-focal goals. Therefore, we also predict that consumers who consider dissimilar alternatives will rate the importance of a non-focal goal associated with a dissimilar alternative higher than consumers who consider similar alternatives.

**H2b:** A non-focal goal associated with an alternative will be seen as more important by consumers who consider a dissimilar alternative compared to consumers who consider a similar alternative.

Consistent with our goal theoretic account, we propose a boundary to our effect: if considering dissimilar alternatives does not activate a competing goal, the difference in purchase intent relative to when similar alternatives are considered will attenuate. One reason that considering a dissimilar alternative may not decrease the importance of the focal goal is if the focal goal is shielded from activation of competing goals. Shah, Friedman and Kruglanski (2002) find that a key determinant of whether individuals will shield a focal goal from activation of competing goals is their degree of commitment to the focal goal. Accordingly, we posit that if commitment to the focal goal is heightened prior to considering alternatives, the focal goal is

more likely to be shielded from activation of the non-focal competing goals associated with the alternatives. As a result, both the difference in rated importance of the focal goal between the similar and dissimilar conditions, as well as the downstream effect on purchase likelihood of the target option, will attenuate.

**H3:** When commitment to the focal goal is heightened, considering dissimilar alternatives will no longer decrease the importance of the focal goal or purchase intent of the target option relative to considering similar alternatives, thus attenuating the effect of alternative type on purchase intent.

Next we present ten studies to test these hypotheses. Studies 1A-F test H1 and demonstrate that the purchase intent for a target option is lower after people consider dissimilar alternatives than after they consider similar alternatives, for both real and hypothetical choices, and for both hedonic and utilitarian target options. We provide evidence that alternative accounts based on preference uncertainty, varied attractiveness of alternatives considered or choice conflict are unlikely to explain our pattern of results. Study 2 provides direct evidence for the underlying mechanism by showing that importance of the focal goal mediates this difference. Moreover, study 2 explores a real world situation in which the consideration of alternatives is prompted by the marketing context. Study 3 offers additional support of our proposed process by showing that perceived importance of a non-focal goal increases after people consider dissimilar alternatives, and that a mere distraction is not sufficient to decrease purchase intent of the target. In study 4, we present all participants with the same target option and the same alternative item, and we only vary between conditions whether the goal fulfilled by the alternative is similar versus dissimilar to the focal goal in order to isolate goal importance as a key driver of our

effect. Finally, study 5 explores a boundary condition in which increasing the commitment to the focal goal prior to considering alternatives attenuates the difference between the similar and dissimilar conditions in perceived importance of the focal goal, as well as the downstream effect on purchase likelihood of the target option. We conclude with a discussion of the theoretical and managerial implications and suggestions for further research.

Across the package of studies, we vary the nature of the alternatives considered: in some studies the consumers generate the alternatives; in others the marketers provide different alternatives; and in one study the alternative is the same, and only the goal associated with the alternative is varied. Our pattern of results holds in all cases, providing converging evidence for the proposed process—that the goals activated by the alternatives influence purchase intent—and making many accounts based on differences of the alternatives generated or presented unlikely.

## **STUDY 1A**

Study 1A tests H1, that the purchase intent of the target option will be lower after considering dissimilar alternatives than after considering similar alternatives. Participants were shown a target option and were then asked to list alternative ways of spending the same amount of money, before rating how likely they were to purchase the target. Across conditions, we varied the type of alternatives participants were prompted consider: no alternatives (control), similar alternatives (similar), dissimilar alternatives (dissimilar) or any alternatives (unspecified). We predicted that, in line with Frederick et al. (2009) and Spiller (2011), purchase intent would decrease when participants were asked to consider other alternatives, relative to control. More importantly, as stated in H1, we hypothesized that considering dissimilar alternatives would lead to lower purchase intent than considering similar alternatives.

We included the unspecified condition in order to explore if people spontaneously tend to consider similar or dissimilar alternatives when the type is not specified. We had no formal predictions about purchase intent for the unspecified condition.

### *Method*

Three hundred seventy-one participants (48% male, ages 18-74, median age 31) from a U.S.-based online pool completed the survey. The experiment used a four cell between-subjects design, where the type of alternatives considered prior to indicating purchase intent was the manipulated factor (control vs. similar vs. dissimilar vs. unspecified). All participants read about two scenarios, each with a different target option: a button-down work shirt for \$25 and a color printer for \$100. The items appeared on different pages of the survey and the order was counterbalanced. For example, the printer scenario read: “Imagine that you have \$100 and are considering the following option which costs \$100: a new color printer,” followed by a picture and short description of the printer.

After reading about the target option, respondents listed three alternative items they could purchase for the cost of the target item. Participants in the similar condition responded to the prompt, “Briefly, please write down 3 things similar to the printer (shirt) you could do with this specific amount of \$100 (\$25) instead of spending it on the printer (shirt).” In the dissimilar condition, participants saw the same instructions, except “similar” was changed to “NOT similar.” Instructions in the unspecified condition did not specify similarity, and instead asked participants to “Briefly, please write down 3 things you could do with this specific amount of \$100 (\$25) instead of spending it on the printer (shirt).” Participants in the control condition did not consider alternative uses. On the next page, all participants indicated their purchase intent of

the target item (i.e., the printer or the shirt) on a nine-point scale, anchored 1 = “Definitely would not buy,” to 9 = “Definitely would buy.” Next they completed the same procedure for the second scenario. Participants were assigned to the same alternative condition (control, similar, dissimilar, or unspecified) for both scenarios.

As a manipulation check, participants were then asked, “How similar are the three items you listed ([items they listed were displayed]) to the printer (shirt) in meeting your shopping goal?” and indicated their responses on an unnumbered 100-point sliding scale from 0 = “very dissimilar” to 100 = “very similar.” Participants completed demographic questions, provided any final comments they had, were given their completion code, and thanked for their participation. Sample sizes for this and all remaining studies in the manuscript were decided in advance.

### *Results and Discussion*

*Manipulation Check.* Participants rated the alternatives as more similar to the target item in the similar condition than in the dissimilar condition (printer:  $M_{SIMILAR} = 57.8$  vs.  $M_{DISSIMILAR} = 17.6$ ; shirt:  $M_{SIMILAR} = 67.6$  vs.  $M_{DISSIMILAR} = 18.8$ ).

*Purchase Intent.* H1 predicts that considering dissimilar alternatives will decrease purchase intent more than considering similar alternatives. To test our prediction, we conducted an ANOVA with a series of planned contrasts, with purchase intent as the dependent measure and type of alternative considered (control, similar, dissimilar, unspecified) as the manipulated factor. We first examined if considering alternatives at all decreased purchase intent relative to control by aggregating responses from the three alternative conditions (similar, dissimilar,

unspecified<sup>1</sup>). In line with prior research on opportunity cost neglect (Frederick et al. 2009), we find that participants were significantly less likely to purchase the target option after considering alternatives than in the control condition (printer:  $M_{CONTROL} = 5.85$ ,  $SD = 1.98$  vs.  $M_{ALTERNATIVES} = 4.10$ ,  $SD = 2.27$   $t(367) = 7.06$ ,  $p = <.001$ ; shirt:  $M_{CONTROL} = 6.17$ ,  $SD = 2.19$  vs.  $M_{ALTERNATIVES} = 4.23$ ,  $SD = 2.28$   $t(367) = 7.65$ ,  $p < .001$ ). Next, to test H1, we compared purchase intent measures of participants in the dissimilar condition to participants in the similar condition. As predicted, participants who considered dissimilar alternatives reported significantly lower purchase intent for the target option than people who considered similar alternatives (printer:  $M_{DISSIMILAR} = 3.71$  vs.  $M_{SIMILAR} = 4.50$ ; shirt:  $M_{DISSIMILAR} = 3.83$  vs.  $M_{SIMILAR} = 4.85$ ).

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*Coding the alternatives listed.* Our theory posits that considering dissimilar alternatives reduces purchase intent for the target option. However, it is possible that generating similar alternatives instead increases purchase intent for the target option, either because participants in the similar condition generated complements to the target that would boost the appeal of the target option because the target plus the alternatives are seen to form a set, or because they generated inferior options, which could have boosted the appeal of the target due to asymmetric

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<sup>1</sup> Although we do not focus our analysis on the unspecified condition, those results allow us to explore one potential explanation for our observed pattern of results—that consumers spontaneously consider similar outside options even in the control condition. If consumers tend to spontaneously consider similar outside options even when they are not prompted to do so, but do not spontaneously consider dissimilar alternatives, we might expect that purchase intent for consumers prompted to consider similar (versus dissimilar) alternatives would be less affected because the similar alternatives were already taken into account to some degree and the dissimilar alternatives were not. However, because participants in the unspecified condition considered alternatives that are dissimilar to the target, this alternative explanation is unlikely to be true.

dominance (Simonson 1989). Both of these accounts might imply that purchase intent in the similar condition would be higher than in the control condition, which we do not observe. Further, because we asked participants to list ways they could spend their money, we do not see a reason why they would generate inferior options.

Nevertheless, we investigated these questions empirically. Two research assistants independently coded the alternatives generated (for the printer<sup>2</sup>) as substitutes (e.g., other printers), complements (e.g., ink, toner, paper, software, or computer parts that would help with printing), and clearly inferior options to the target. Because each participant listed three alternatives, it was possible that participants could generate both a complement and an inferior option, for example, so the indicators were non-exclusive. Please refer to the supplemental materials for the full results.

First, we conducted a linear regression with purchase likelihood as the dependent measure, and a binary variable indicating whether the participant generated alternatives coded as a complement (0 = no, 1 = yes) and dummy variables to control for condition as the inputs. Results indicated that generating an alternative coded as a complement did not affect the likelihood of purchasing the printer ( $b = -.08$ ,  $SE = .40$ ,  $p = .846$ ). Furthermore, if we examine only the effect of alternatives coded as complements among participants in the similar condition, we find that those who generated a complement were directionally *less* likely to purchase the printer ( $M_{COMPLEMENT} = 4.33$ ,  $SD = 2.23$  vs.  $M_{NO\ COMPLEMENT} = 4.87$ ,  $SD = 2.42$ ), which provides further evidence against complementarity between the target and the alternatives generated increasing purchase likelihood for those in the similar condition. Second, very few participants

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<sup>2</sup> Independent coders also categorized alternatives listed in the shirt scenario. However, because any article of clothing could be a complement to the shirt, the vast majority of participants in the similar condition listed alternatives that were coded as complements, so we were not able to disentangle the effect of similarity from complementarity in that scenario. Consistent with the printer scenario, very few participants listed a dominated alternative in the shirt scenario.



(3%) generated alternatives that were coded as clearly inferior, which suggests that asymmetric dominance is an unlikely explanation. Finally, and most importantly, in future studies, participants are provided with specific alternatives rather than generating alternatives themselves, which casts further doubt on these alternative explanations.

Study 1A provides initial support for our hypothesis that considering dissimilar alternatives decreases purchase intent more than considering similar alternatives. The coding analysis provides evidence against the effect being driven by the complementarity of items generated by participants in the similar condition or by asymmetric dominance. Instead, we propose that the difference in purchase intent results from consumers viewing the focal goal associated with the target option as less important after considering dissimilar alternatives than after considering similar alternatives.

## **STUDY 1B**

In the next study, we test H1 in a consequential purchase situation. When consumers decide about actual purchases using real money, they may be more likely to spontaneously consider alternatives, and additional prompting to do so may have less of an effect.

### *Method*

Two hundred one participants (37% male, 1% did not list gender, ages 18-62, median age = 21) at the University of Pennsylvania participated in an in-person computer survey session consisting of surveys from four researchers in exchange for a \$10 show-up fee. Our portion of

the survey used a two cell (alternative type: similar vs. dissimilar) between-subjects designs. Participants were randomized separately for each portion of the survey session.

In the middle of the survey session, participants read that they would receive an additional \$5 that they could use to buy the item on the following page. Next they saw a picture and description of a Moleskine notebook on sale for \$3. Beneath the description of the notebook, participants responded to the prompt: “Before deciding whether or not to buy the notebook, please briefly list three ways [similar / NOT similar] to the notebook you could spend this specific amount of \$3 instead of spending it on the notebook.” On the next page they indicated whether they wanted to buy the notebook or not. Participants then answered a manipulation check and demographic questions, and proceeded with the rest of the survey session. At the end of the session, they received either \$15 or \$12 plus the notebook based on their choice.

### *Results and Discussion*

*Manipulation Check.* Participants in the similar condition rated the alternatives they generated as more similar to the notebook than participants in the dissimilar condition ( $M_{SIMILAR} = 45.5$ ,  $SD = 32.8$  vs.  $M_{DISSIMILAR} = 12.3$ ,  $SD = 22.4$ ,  $t(194) = 8.07$ ,  $p < .001$ ).

*Purchase Intent.* As predicted, fewer participants chose to buy the Moleskine in the dissimilar condition than in the similar condition (15.9% vs. 28.3%,  $\chi^2(1) = 4.32$ ,  $p = .038$ ).

The studies so far support our hypothesis that considering dissimilar alternatives reduces purchase intent for a target option more than considering similar alternatives for both real and hypothetical choices. We have proposed that this pattern is driven by differential goal activation. Considering dissimilar alternatives is more likely to activate competing goals than considering

similar alternatives. This in turn decreases the importance of the goal associated with the target option (the focal goal), and leads to lower purchase intent of the target option. However, there are several plausible alternative accounts that could explain the pattern of results we observe. In the following section we report a series of studies that attempt to rule out many of the competing explanations of our effect.

### STUDIES 1C – 1F

In studies 1C – 1F we adapt the experimental design from study 1A to provide evidence inconsistent with possible limitations and alternative explanations for the data. Below we provide a brief summary of the design and results. Please refer to table 2 for the means, standard deviations and planned contrasts for each study and to the web appendix for more details of the experimental designs.

*Study 1C.* In studies 1A and 1B, the stimuli used—a printer, a work shirt and a Moleskine notebook—were relatively functional, utilitarian items. Because there are potential differences in how consumers might evaluate the purchase of hedonic and utilitarian goods (Dhar and Wertenbroch 2000), study 1C replicated our pattern of data using hedonic goods as the target options. The target options were an hour-long massage for \$100 and a pair of movie tickets for \$25, which were both rated as primarily hedonic. The previous pattern replicated, with participants in the dissimilar condition reporting lower purchase intent for the target option than participants in the similar condition (massage:  $M_{DISSIMILAR} = 3.50$  vs.  $M_{SIMILAR} = 4.40$ ; movie tickets:  $M_{DISSIMILAR} = 4.65$  vs.  $M_{SIMILAR} = 5.27$ ), suggesting the effect is not limited to utilitarian stimuli.

*Study 1D.* One potential explanation for the observed pattern of results that does not rely on the goal theoretic account is that considering dissimilar alternatives makes people less certain about their preferences. Because dissimilar alternatives are potentially harder to compare than similar alternatives (Johnson 1984), consumers who consider dissimilar alternatives might be less certain about their preference for the target option compared to the alternatives, which could make them less likely to buy the target. To address this alternate explanation, we replicated study 1A with the addition of two questions designed to measure preference certainty: “How certain do you feel about your decision of whether to purchase the shirt (printer)?” (1 = “very uncertain,” 9 = “very certain”) and “If you were to decide whether or not to purchase the shirt (printer) again, how likely would you be to make the same decision?” (1 = “very unlikely,” 9 = “very likely”),  $\alpha = .72$ . Once again, our main purchase intent findings replicated. The analysis further revealed that considering dissimilar alternatives actually made participants marginally *more* certain about their preferences across the two stimuli than considering similar alternatives (printer:  $M_{DISSIMILAR} = 7.59$  vs.  $M_{SIMILAR} = 7.05$ ; shirt:  $M_{DISSIMILAR} = 7.32$  vs.  $M_{SIMILAR} = 7.13$ ), which makes a preference certainty explanation unlikely.

*Study 1E.* Another alternative account for the data relates to the potential difference in the attractiveness of the alternatives that are considered. According to this account, respondents who consider similar alternatives might generate less attractive outside options (because they are more constrained to a category) than those in the dissimilar condition, which make the target option look more appealing in comparison. To test this, study 1E used a 2 (similarity of alternatives: similar vs. dissimilar) x 2 (attractiveness of alternatives: attractive vs. less attractive) design, where the target options were a massage for \$60 and a work shirt for \$25. Our prompt

read: “Briefly, please write down three (attractive / less attractive) ways (similar / NOT similar) to the shirt (massage) you might spend this specific amount of \$25 (\$60) *instead of* spending it on the shirt (massage).”

If a contrast-based attractiveness account were driving our observed pattern of results, we would expect a significant main effect of the attractiveness generation condition, such that people in the less attractive generation condition indicate higher purchase intent of the target than those in the attractive generation condition. Instead, we only find a main effect of similarity (massage:  $F(1, 355) = 12.59, p < .001$ ; shirt:  $F(1, 355) = 12.62, p < .001$ ). Neither the main effect of attractiveness (massage:  $F(1, 355) = 0.01, p = .913$ ; shirt:  $F(1, 570) = 1.27, p = .260$ ) nor the interaction were significant (massage:  $F(1, 355) = 0.77, p = .381$ ; shirt:  $F(1, 355) = 2.00, p = .158$ ), which runs counter to a contrast-based attractiveness account.

*Study 1F:* Finally, we sought to test whether considering dissimilar alternatives increases choice conflict relative to considering similar alternatives, which could in turn decrease purchase intent. A choice conflict explanation would be inconsistent with the results of study 1E, as participants in the less attractive conditions are unlikely to have experienced choice conflict because the alternatives considered were instructed to be less attractive than the target option. Nevertheless, we replicated the two “attractive” condition cells of study 1E with the addition of a follow-up question: “How conflicted did you feel when deciding whether to buy the massage (shirt)?” with a 9-point scale anchored 1 = “not at all conflicted” and 9 = “very conflicted.” There was no difference between the dissimilar and similar conditions on ratings of choice conflict for either stimulus (massage:  $M_{DISSIMILAR} = 3.37$  vs.  $M_{SIMILAR} = 3.42$ ; shirt:  $M_{DISSIMILAR} =$

3.17 vs.  $M_{SIMILAR} = 3.13$ ), which indicates that a choice conflict explanation of our results is unlikely.

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Together studies 1C – 1F cast doubt on many of the possible explanations for the pattern of results observed in study 1A, in which participants generated the similar and dissimilar alternatives. In the remaining studies, we provide the alternatives, further casting doubt on explanations related to the process of generating alternatives. Studies 2-5 also focus on providing evidence in support of our proposed account: relative to considering similar alternatives, considering dissimilar alternatives decreases purchase intent of the target option because considering dissimilar alternatives activates a competing goal, which decreases the importance of the focal goal.

## STUDY 2

The findings so far demonstrate that consumers' intent to purchase a target option is lower after considering dissimilar alternatives than it is after considering similar alternatives. Study 2 tests our proposed mechanism, that the pattern of results is driven by a difference in importance of the focal goal. Additionally, study 2 explores if it is necessary that consumers generate the alternatives for themselves, or if the same pattern of results holds when alternatives are provided by a marketer. Marketing activities, such as the arrangement of shelves in a physical store or the presence of links to other products on an online shopping page, may also

drive whether consumers consider similar or dissimilar outside options. We demonstrate the managerial relevance of our findings by adapting the stimuli from a well-known online retailer that currently suggests alternatives on its webpage.

### *Method*

Five hundred ten participants (42% male, ages 19-78, median age = 32) from a U.S.-based online pool completed the survey. The study used a two cell between-subjects design, with similar versus dissimilar alternative type as the manipulated factor. Participants read a scenario in which they were shopping online and came across wireless speakers for \$25. An image that resembled a popular online shopping website was displayed, presenting a picture, description and price of wireless speakers (see figure 1 for an image of the study materials). Below the speakers was a section titled, “Customers Who Bought This Item Also Bought,” with two more products displayed, including a picture, short description and price—all close to \$25—for each product. The type of alternatives displayed was the manipulated factor: participants in the similar condition saw a pair of headphones and another set of speakers, and participants in the dissimilar condition saw two button-down shirts. For this and subsequent studies, we chose alternatives that were pretested such that the dissimilar alternative was equally or less attractive than the similar alternative, which is conservative to our effect ( $M_{SHIRTS} = 4.72$ ,  $SD = 2.64$  vs.  $M_{AVERAGE: HEADPHONES + SPEAKERS} = 4.98$ ,  $SD = 2.28$ ,  $t(87) = 0.87$ ,  $p = .387$ ). Importantly, the alternatives were simply presented on the same screen; no attention was explicitly drawn to them, and participants were not asked to elaborate. Participants then indicated how likely they would be to buy the target wireless speakers on a scale from 1 = “definitely would not buy” to 9 = “definitely would buy.”

On the next page, participants read a short description of how products may be used to meet goals and were asked what goal purchasing the speakers would fulfill for them. They typed their responses in an open-ended text box. On the following page, they were shown the goal that they had specified, and they rated how important that goal was to them at that moment, on a 9-point scale anchored 1 = “not at all important” to 9 = “very important.” Finally, participants answered manipulation checks and demographic information.

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 Insert figure 1 about here  
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### *Results and Discussion*

*Manipulation Check.* Participants in the similar condition rated the alternatives as more similar to the speakers than participants in the dissimilar condition ( $M_{SIMILAR} = 49.9$ ,  $SD = 23.8$  vs.  $M_{DISSIMILAR} = 11.1$ ,  $SD = 20.2$ ,  $t(509) = 19.86$ ,  $p < .001$ ).

*Purchase Intent.* Consistent with our previous results, participants in the dissimilar condition reported lower purchase intent for the wireless speakers than participants in the similar condition ( $M_{DISSIMILAR} = 4.85$ ,  $SD = 2.10$  vs.  $M_{SIMILAR} = 5.44$ ,  $SD = 2.16$ ,  $t(509) = 3.12$ ,  $p = .002$ ).

*Focal Goal Importance.* Also as predicted, participants in the dissimilar condition indicated that the focal goal they identified was less important than participants in the similar condition ( $M_{DISSIMILAR} = 5.00$ ,  $SD = 2.78$  vs.  $M_{SIMILAR} = 5.53$ ,  $SD = 2.24$ ,  $t(509) = 2.19$ ,  $p = .029$ ).



*Mediation Analysis.* Next we tested H2a, that a difference in importance of the focal goal explains the effect of similarity of the alternative on purchase intent. We ran a bootstrapping analysis with 5,000 resamples (Preacher and Hayes 2008), with similar = 0 and dissimilar = 1. We find a significant indirect effect of goal importance in the relationship between alternative type and purchase intent ( $b = -.21$ ,  $SE = .09$ , 95% CI[-.40, -.04], see figure 2).

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 Insert figure 2 about here  
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*Goal Coding.* If participants in the two conditions initially reported different goals, that could drive the difference in reported goal importance. To examine this, three independent coders, blind to condition, categorized the responses into one of five mutually-exclusive buckets (determined based on an initial look at the responses): 1. Listening to music; 2. Entertainment, relaxation, fun or enjoyment; 3. Giving a gift; 4. Did not expressly state a goal (e.g., "this product does not fulfill a goal for me"); or 5. Other (e.g., convenience, attractive design, spending time with friends, etc.) Inter-coder agreement was high (84% agreement across the three coders,  $\alpha = .72$ , Hayes and Krippendorff 2007), and disagreements were resolved by majority rule. Participants in the similar and dissimilar conditions did not differ in the types of goals they reported (62% vs. 65% listed a music listening goal, 12% vs. 10% an entertainment goal, 0% vs. 1% a gift-giving goal, 9% vs. 10% that it does not fulfill a goal, and 17% vs. 13% other goal;  $\chi^2(4) = 2.3$ ,  $p = .689$ ). Therefore it is unlikely that the observed differences in goal

importance ratings result from different types of goals being reported by participants in the similar versus dissimilar conditions.

These results indicate that considering dissimilar alternatives decreases purchase intent of a target option more than considering similar alternatives, even when the alternatives are provided by an external source. This pattern is consistent with recent work by Karmarkar (2017), who demonstrated that the purchase intent of a target is lower when other options in a display are from a different (vs. the same) category than the target. However, Karmarkar suggested that her results were driven by the cohesiveness of the display and distraction caused by items from a different category. In contrast, we provide direct process evidence that our pattern of results is driven by a difference in goal importance.

### STUDY 3

Study 3 extends our investigation of the underlying process. Our theory posits that the difference in importance of the focal goal in the two conditions occurs because considering a dissimilar alternative (rather than a similar alternative) activates a competing *non-focal* goal, which draws resources away from the focal goal and leads to a greater decrease in purchase intent. Study 3 provides evidence for this theory by measuring the non-focal goal, and showing that the relative importance of the focal goal compared to the non-focal goal (i.e., the difference between the two importance measures) also mediates the effect of purchase intent of the target option. Second, a potential alternative account is that the dissimilar alternative is merely a distraction, but does not activate a competing goal. To investigate this possibility, we include a distraction condition, and demonstrate that a mere distraction does not lead to the same drop in purchase intent as considering a dissimilar alternative.

## *Method*

Nine hundred eighty-five people (51% male, ages 18-74, median age 32.5) from a U.S.-based online pool completed the survey. The study used a four cell between-subjects design, with alternative type as the manipulated factor: control (no alternative) vs. similar vs. dissimilar vs. distraction. Participants imagined they were shopping online and came across a cocktail set on sale for \$29, with a picture and short description of the set. On the following page, participants in the similar condition saw a picture of a Magic Bullet blender with the text, “Remember, for \$29, you could buy a Magic Bullet blender, which is great for making exotic cocktails and is a useful tool for a fun, partying life.” Participants in the dissimilar condition saw a picture of a work shirt with the text, “Remember, for \$29, you could buy a button-down shirt, which is great for making great impressions at work.” Participants in the distraction condition were shown a picture of puppies<sup>3</sup> with the text, “Take a look at the picture below.” The control condition did not see an alternative and instead went straight to the purchase likelihood scale, which was on the following page. Participants indicated how likely they would be to buy the cocktail set (with a picture of the set beneath the question to prevent confusion) on a scale anchored 1 = “definitely would not buy” and 9 = “definitely would buy.”

On the following page, all participants indicated the importance of the focal goal. Specifically, the question read, “How important is the goal of living a fun life, throwing the best parties in town, to you right now?” on a scale anchored 1 = “Not at all important” and 9 = “Very important.” Next all participants indicated how important they found the non-focal goal, which

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<sup>3</sup> In a pre-test, the picture of the puppies was rated as more distracting for somebody shopping for a cocktail set ( $M = 5.0$ ,  $SD = 1.9$ ) than either the similar ( $M = 3.7$ ,  $SD = 1.7$ ,  $p < .001$ ) or dissimilar ( $M = 3.4$ ,  $SD = 1.9$ ,  $p = .001$ ) alternatives.

read, “How important is the goal of dressing well, to make a good impression at work, to you right now?” on the same 9-point scale. Finally they answered demographic questions.

### *Results and Discussion*

*Manipulation check (Pre-test).* A pre-test confirmed that the similar alternative (the blender) was rated as more similar to the cocktail set than the dissimilar alternative (the work shirt;  $M_{SIMILAR} = 48.7$ ,  $SD = 29.2$  vs.  $M_{DISSIMILAR} = 16.1$ ,  $SD = 22.5$ ,  $t(97) = 6.25$ ,  $p < .001$ ).

*Purchase Intent.* First we found a significant effect of alternative type on intent to purchase the cocktail set ( $F(3, 982) = 6.68$ ,  $p < .001$ ). Next we conducted a series of planned contrasts in which we compared each condition to the dissimilar condition. Please refer to table 3 for all individual means and statistics of the planned contrasts. Consistent with our previous results, participants were less likely to purchase the cocktail set after considering a dissimilar alternative ( $M = 3.99$ ) than after considering a similar alternative ( $M = 4.37$ ), a distraction ( $M = 4.96$ ), or no alternative (control,  $M = 4.77$ ). The difference in purchase intent between the dissimilar and distraction conditions casts doubt on the explanation that the effect of considering dissimilar alternatives is driven by mere distraction.

*Focal and Non-Focal Goal Importance.* The primary purpose of study 3 was to examine the effect of alternative type (similar vs. dissimilar) on goal activation, both of the focal goal and of the competing non-focal goal. We expected that considering a dissimilar alternative would activate a competing non-focal goal, which, based on goal-systems theory, would decrease the importance of the focal goal. Replicating the pattern in study 2, participants rated the focal goal

as less important in the dissimilar condition than in the similar condition ( $M_{DISSIMILAR} = 5.00$ ,  $SD = 2.78$  vs.  $M_{SIMILAR} = 5.53$ ,  $SD = 2.24$ ,  $t(509) = 2.19$ ,  $p = .029$ ), which again mediated the effect of alternative type on purchase intent ( $b = -.23$ ,  $SE = .12$ , 95% CI[-.47, -.01]). Consistent with our theory and H2b, the non-focal goal was rated as more important in the dissimilar condition than in the similar condition ( $M_{DISSIMILAR} = 6.19$  vs.  $M_{SIMILAR} = 5.74$ ,  $t(982) = 2.36$ ,  $p = .019$ ).

Study 3 further allows us to test a more precise mediator, the relative importance of the focal goal and the non-focal goal. We first created a single measure of relative goal importance by subtracting ratings of the non-focal goal from ratings of the focal goal (see table 3 for goal importance means and differences by condition). Next we conducted a bootstrap mediation analysis, with alternative type (similar = 0, dissimilar = 1) as the independent variable, purchase intent as the dependent variable, and the relative goal importance measure as the mediator (Preacher and Hayes 2008). As expected, the relative difference in goal importance between the focal and non-focal goals mediated the effect of alternative type on purchase intent ( $b = -.21$ ,  $SE = .06$ , 95% CI[-.36, -.11]). Considering a dissimilar alternative rather than a similar alternative increases the relative importance of the non-focal goal ( $b = -.85$ ,  $SE = .22$ ,  $p < .001$ ) which in turn lowers purchase intent ( $b = .25$ ,  $SE = .04$ ,  $p < .001$ ). The remaining direct effect is decreased to non-significance ( $b = -.19$ ,  $SE = .20$ ,  $p = .342$ ).

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Insert table 3 about here

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These results provide converging evidence for our theoretical account. First, compared to considering a similar alternative, considering a dissimilar alternative increased the relative

importance of the non-focal goal compared to the focal goal, which explains the decrease in purchase intent for the target option after considering dissimilar alternatives. Study 3 further indicates that considering a distracting alternative not associated with a purchase goal is not sufficient to diminish either the purchase intent of the target or the relative goal importance, which casts doubt on a distraction-based explanation for our findings. Together these findings support the notion that considering a dissimilar alternative activates a competing non-focal goal, which in turn decreases purchase intent of the target option.

An additional characteristic of goal activation is that it persists after a time delay (Bargh et al. 2001; Laran and Janiszewski 2009). Therefore, if our effects are being driven by differential goal activation, we would expect them to emerge even after a delay. To test this, we replicated the similar and dissimilar conditions of study 3 with the addition of a short filler task (ostensibly related to a different study) between consideration of the alternatives and measuring purchase intent, in which participants completed neutral anagrams for five minutes. After the short delay, we observed the same pattern as in our previous studies: participants who considered dissimilar alternatives were less likely to purchase the cocktail set than participants who considered similar alternatives ( $M_{SIMILAR} = 4.73$ ,  $SD = 2.56$  vs  $M_{DISSIMILAR} = 4.22$ ,  $SD = 2.63$ ,  $F(1, 400)$ ,  $p = .046$ ). These results further support the role of goal activation in explaining our effect.

In the studies so far, participants in the similar and dissimilar condition considered different ways of spending their money before deciding whether to buy the target option. Although we rule out many potential confounds in studies 1C-1F, and although in studies 2 and 3 we provide pretested alternatives, the alternatives we provided could have varied on an unexpected dimension. To control for any possible non-goal-related differences, in the next study all participants evaluate the same target option and the same alternative. We experimentally

manipulate between conditions whether the alternative meets a goal that is similar versus dissimilar to the target option.

#### **STUDY 4**

We have proposed that the focal goal is perceived as less important after considering dissimilar alternatives than after considering similar alternatives, which drives a decrease in purchase intent. In study 4 we directly test this proposal by presenting participants with a cocktail set as the target and holding constant the alternative that they consider—a blender. We only varied the goal that the alternative is intended to meet: a goal that is either similar (making cocktails, helping with a fun lifestyle) or dissimilar (making smoothies, helping with a healthy lifestyle) to that of the target (Khan and Dhar 2010; Savary, Goldsmith, and Dhar 2015a).

#### *Method*

Two hundred two people (57% male, ages 19-74, median age 31) from a U.S.-based online pool completed the survey. The study used a two cell between-subjects design with a similar versus dissimilar goal fulfilled by the alternative as the manipulated factor. Participants read a scenario in which they were shopping online and came across the same cocktail set as in study 3. As in study 3, participants in the similar condition were shown a picture of a blender alongside a cocktail with the text, “Remember, for \$29, you could buy a Magic Bullet blender which is great for making exotic cocktails and is a useful tool for a fun, partying life.” Participants in the dissimilar condition were shown the same Magic Bullet blender, but instead it was pictured alongside fruit, with the text, “Remember, for \$29, you could buy a Magic Bullet

blender which is great for making healthy smoothies and is a useful tool for a healthy, active life.” On the next page they indicated how likely they would be to buy the cocktail set (with a picture of the set beneath the question to prevent confusion), on a scale anchored 1 = “definitely would not buy” and 9 = “definitely would buy.”

Next participants specified a goal that the cocktail set would fulfill for them (as in study 2) and rated how important that goal was to them at that moment. Then participants answered two questions about their preference for the Magic Bullet blender: how likely they were to buy it and how attractive they found it. Finally, participants answered manipulation checks and demographic information.

### *Results and Discussion*

*Manipulation Check.* Participants in the similar condition rated the blender as more similar to the cocktail set than participants in the dissimilar condition ( $M_{SIMILAR} = 40.5$ ,  $SD = 29.9$  vs.  $M_{DISSIMILAR} = 26.1$ ,  $SD = 25.8$ ,  $t(202) = 3.67$ ,  $p < .001$ ).

*Purchase Intent.* Consistent with our previous results, participants in the dissimilar condition reported lower purchase intent for the cocktail set than participants in the similar condition ( $M_{DISSIMILAR} = 3.62$ ,  $SD = 2.40$  vs.  $M_{SIMILAR} = 4.36$ ,  $SD = 2.48$ ,  $t(202) = 2.16$ ,  $p = .032$ ).

*Focal Goal Importance.* As predicted, participants in the dissimilar condition indicated that the focal goal they identified was less important than participants in the similar condition ( $M_{DISSIMILAR} = 3.60$ ,  $SD = 2.53$  vs.  $M_{SIMILAR} = 4.36$ ,  $SD = 2.76$ ,  $t(202) = 1.99$ ,  $p = .042$ ).



Again we found a significant indirect effect of focal goal importance in the relationship between alternative type and purchase intent of the target option ( $b = -.40$ ,  $SE = .19$ , 95% CI[-.80, -.02]). Considering an alternative which fulfills a dissimilar rather than a similar goal decreases the importance of the focal goal ( $b = -.76$ ,  $SE = .37$ ,  $p = .042$ ), which in turn decreases purchase intent ( $b = .52$ ,  $SE = .05$ ,  $p < .001$ ). The remaining direct effect decreases to non-significance ( $b = -.35$ ,  $SE = .29$ ,  $p = .216$ ).

*Preference for the outside alternative (the blender).* Finally, we compared the attractiveness and likelihood of purchase ratings for the outside alternative—the blender—to ensure that our manipulation did not significantly influence preference for the alternative, which could have in turn affected the decision to purchase the target option. Rated attractiveness and likelihood of purchase were highly correlated, so we averaged them to form one preference measure ( $\alpha = .84$ ). Participants did not differ in their preference for the blender ( $M_{SIMILAR} = 5.81$ ,  $SD = 2.15$  vs.  $M_{DISSIMILAR} = 6.00$ ,  $SD = 2.15$ ,  $t(202) = 0.61$ ,  $p = .543$ ), which makes it unlikely that participants in the dissimilar condition were less likely to buy the target option because they found the alternative more appealing.

Study 4 provides further evidence in support of a goal theoretic explanation for our findings. By varying only the goal that the alternative meets while holding the alternative itself constant, we are able to control for any unforeseen differences between conditions, and isolate the change in focal goal importance as the mechanism underlying our effect.

## STUDY 5

Study 5 explores a boundary to our effect: if considering dissimilar alternatives does not activate a competing goal and thus does not decrease the importance of the focal goal, we would expect an attenuation of the effect of alternative type on purchase intent. In particular, past research has found that in certain cases, individuals may engage in goal shielding, or cognitively inhibiting the activation of alternative goals that compete for attentional resources. One key antecedent of goal shielding is an individual's degree of commitment to the focal goal (Shah et al. 2002). On this basis, we predict that increasing the commitment to the focal goal should cause individuals to shield it from competing goals, and as a result, both the difference in rated importance of the focal goal between the similar and dissimilar conditions, as well as the downstream effect on purchase likelihood of the target option, should attenuate. Study 5 thus tests H3 with a two-factor design in which half of the participants responded to a prompt that increased commitment to the focal goal. All participants then viewed the target option, and listed similar versus dissimilar ways to spend their money. We predicted the prompt to increase focal goal commitment would lead people to shield the focal goal, which would inhibit activation of the competing non-focal goals associated with the alternatives generated.

### *Method*

Nine hundred one people (44% male, ages 18-81, median age 33) were recruited from a U.S.-based online pool. Ninety-seven participants did not finish the study, leaving 804 completed responses.<sup>4</sup> The study used a 2 (similarity of alternatives: similar vs. dissimilar) x 2 (goal

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<sup>4</sup> Because study 5 began with a free response question, we observed some attrition (10.8%), though still well below the 20% threshold, above which participant dropout becomes problematic due to selection (Zhou and Fishbach 2016). Importantly, dropouts were evenly distributed across the heightened commitment (55.7%) versus control conditions (44.3%,  $z = 1.12$ ,  $p = .262$ ). With our relatively low drop-out rate and the non-differential attrition, our results are unlikely to be compromised by selection.

shielding: present vs. control) between-subjects design. Participants in the goal shielding condition began the study by responding to the prompt: “Please briefly explain why it is important to dress presentably, especially in professional settings,” while participants in the control condition were asked: “Please briefly write about your routine before you go to bed each night.” In a pretest, participants who responded to the goal shielding prompt reported being more committed to the goal of “dressing well and looking presentable” compared those in the control condition, on a 7-point scale ranging from 1 = “not at all committed,” to 7= “very committed” ( $M_{GOAL\ SHIELDING} = 4.96$ ,  $SD = 1.53$  vs.  $M_{CONTROL} = 4.48$ ,  $SD = 1.42$ ,  $t(205) = 2.34$ ,  $p = .020$ ). They also rated the importance of the goal of “dressing professionally” to them right now as higher, on a 9-point scale ranging from 1 = “not at all important” to 9 = “very important” ( $M_{GOAL\ SHIELDING} = 5.67$ ,  $SD = 2.60$  vs.  $M_{CONTROL} = 4.68$ ,  $SD = 2.47$ ,  $t(205) = 2.82$ ,  $p = .005$ ).

The remainder of the procedure followed the design of the work shirt scenario from study 1A. All participants saw the button-down work shirt used in study 1A for \$25. At the bottom of the page displaying the target option, participants were asked: “Briefly, please write down three ways (similar / NOT similar) to the shirt you might spend this specific amount of \$25 instead of spending it on the shirt.” They next indicated their purchase intent for the target. On the following page, they answered, “How important is the goal of dressing professionally to you right now?” on a 9-point scale ranging from 1 = “not at all important” to 9 = “very important.” Finally, participants answered manipulation checks about the similarity of the alternatives to the target, and completed demographic information.

### *Results and Discussion*

*Manipulation Check.* Participants in the similar condition rated the alternatives they generated as more similar to the shirt than participants in the dissimilar condition ( $M_{SIMILAR} = 59.7$ ,  $SD = 28.3$  vs.  $M_{DISSIMILAR} = 26.5$ ,  $SD = 30.0$ ,  $F(1, 800) = 256.5$ ,  $p < .001$ ). There was no main effect of goal shielding condition ( $F(1, 800) = 0.10$ ,  $p = .750$ ).

*Purchase Intent.* As predicted, we found a significant interaction between alternative type and goal shielding condition on purchase intent of the target ( $F(1, 800) = 8.27$ ,  $p = .004$ ). In line with previous results, among participants in the control condition, those who generated dissimilar alternatives were less likely to purchase the shirt than those who generated similar alternatives ( $M_{DISSIMILAR} = 3.57$ ,  $SD = 2.16$  vs.  $M_{SIMILAR} = 4.16$ ,  $SD = 2.24$ ,  $t(802) = 2.63$ ,  $p = .009$ ). However, as predicted in H3, among participants in the goal shielding condition, those who generated dissimilar alternatives were just as likely to purchase the shirt as those who generated similar alternatives ( $M_{DISSIMILAR} = 4.83$ ,  $SD = 2.10$  vs.  $M_{SIMILAR} = 4.53$ ,  $SD = 2.38$ ,  $t(802) = 1.42$ ,  $p = .157$ ).

*Focal Goal Importance.* The pattern of means for importance of the focal goal followed a similar pattern, although the interaction was not significant ( $F(1,800) = 2.35$ ,  $p = .126$ ). In particular, among participants in the control condition, those who generated dissimilar alternatives rated the focal goal as less important than participants who generated similar alternatives ( $M_{DISSIMILAR} = 4.84$ ,  $SD = 2.60$  vs.  $M_{SIMILAR} = 5.35$ ,  $SD = 2.64$ ,  $t(802) = 1.99$ ,  $p = .046$ ). As in previous studies, this relationship mediates the effect on purchase intent ( $b = -.19$ ,  $SE = .10$ , 95% CI [-.39, -.01]). However, as our theory predicts, among participants in the goal shielding condition, alternative type did not affect goal importance ( $M_{DISSIMILAR} = 5.96$ ,  $SD = 2.54$  vs.  $M_{SIMILAR} = 5.93$ ,  $SD = 2.47$ ,  $t(802) = 0.14$ ,  $p = .888$ ). Since alternative type did not

affect goal importance or purchase intent for those in the goal shielding conditions, we neither expect nor observe an indirect effect ( $b = .01$ ,  $SE = .08$ , 95% CI [-.13, .19]).

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Insert figure 3 about here

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Study 5 thus identifies a theoretically-derived boundary condition which provides converging evidence for our goal-based account. In general, we propose that, compared to considering similar alternatives, considering dissimilar alternatives activates a competing non-focal goal that decreases purchase intent of the target option. However, if the focal goal is shielded from external influence, for example because consumers are especially committed to that goal, the difference in focal goal importance and purchase intent attenuates.

## GENERAL DISCUSSION

Consumers often consider other ways to spend their money before making purchase decisions. Previous research had explored if and when people consider outside options when making judgments or decisions, but it had not yet looked at how the particular alternatives considered may affect such judgments. We demonstrate that the type of alternatives that consumers consider does affect purchase decisions, and in particular, that the similarity of the alternative to the target option is an important factor. The results of ten studies indicate that considering dissimilar alternatives decreases purchase intent of a target option more than considering similar alternatives. We find that this pattern holds for both utilitarian (study 1A)

and hedonic (study 1C) target options, for incentive-compatible choices (study 1B), and when the outside alternatives are generated by the consumer (studies 1A-1F, 5) or provided by the marketer (studies 2-4). Our effect is not attributable to preference uncertainty (study 1D), contrast-effects driven by the attractiveness of alternatives (study 1E), choice difficulty (study 1F), or mere distraction (study 3).

Our data are instead consistent with a goal systems process. Specifically, the importance of the goal associated with the target option decreases more when considering dissimilar alternatives than similar alternatives, which in turn reduces purchase intent of the target option. In support of our proposed process, we show that perceived importance of the focal goal mediates the effect of alternative type on purchase intent (studies 2 - 5). Moreover, considering a dissimilar alternative increases the importance of a competing non-focal goal associated with the alternative; the difference in importance between the focal and non-focal goals also mediates the change in purchase intent (study 3).

In further support of our goal activation account, we identify a theoretically-derived boundary to the effect of alternative type on purchase intent. Past research has found that as commitment to a goal increases, people are more likely to inhibit activation of competing goals. Accordingly, we demonstrate that when commitment to the focal goal is heightened prior to considering alternatives, the focal goal is shielded from activation of the non-focal competing goals associated with the alternatives. As a result, we find that the effect of alternative type attenuates for both focal goal importance and purchase intent of the target option.

*Implications, Limitations, and Directions for Future Research*

Our findings contribute most directly to two streams of literature: opportunity cost consideration and goal systems. Previous research broadly studied the impact of making outside options more salient during choice versus not (Frederick et al. 2009; Posavac et al. 2004). We move beyond salience as a mechanism to show how considering different types of alternatives activates different goals, and consequently influences the extent to which considering alternatives affects purchase decisions. Research on multiple goals has shown that the importance of a focal goal changes when other goals are brought to mind (Van Osselaer and Janiszewski 2012), which subsequently affects purchase intent. By linking the effect of considering outside options on purchase intent of the target option to goal activation, our article integrates the literature on goal systems with behavioral decision theory to provide a richer framework for understanding how considering outside options affects purchase decisions.

The current research also contributes to the literature on pre-decision choice processes. While most choice research examines the final stage where people choose among a set of options that have been provided, we explore an earlier stage in the decision process. Past research on the pre-decision stage of decision making has focused on the option generation process (Keller and Ho 1988; Thomas et al. 2008), and how pre-decisional distortion may affect the evaluation of attributes (Carlson and Pearo 2004; Russo, Medvec, and Meloy 1996), but little work has examined how the type of options generated in the pre-decision stage affects choice. We integrate the literature on the pre-decision stage and the choice literature to show how generating different types of options affects downstream purchase decisions. Future literature could explore how the similarity of alternatives and attribute information affects the extent of pre-decisional distortion. Additionally, in our studies, participants only evaluated their purchase likelihood of the target option, and did not explicitly have the option to choose one of the alternatives. If participants instead had a choice among the target option and the alternatives, it is possible that

considering similar alternatives would often decrease purchase likelihood of the target option in particular *more* than considering dissimilar alternatives.

Our finding that considering dissimilar alternatives decreases purchase likelihood more than considering similar alternatives runs counter to more conventional choice models, which assume that similar alternatives are more likely to reduce choice of a target option. For example, if a music lover is torn between a Debussy album and a Beethoven album, adding a second Beethoven album to the choice set would presumably decrease the likelihood of choosing the original Beethoven album to a greater extent than the Debussy album (Debreu 1960). In contrast, we identify a context in which a dissimilar alternative is more likely to reduce choice of a target option. In doing so we contribute to a growing literature which has found that considering alternatives that are more distant from the target option can reduce preference for the target more than considering alternatives that are closer, such as violations of betweenness inequality (Tversky and Simonson 1993), as well as more recent work on replacement options (Arens and Hamilton 2016; Huh et al. 2016) and display sets (Karmarkar 2017).

The limitations to the current studies present interesting avenues for further research. For example, in the current research, we found that considering dissimilar alternatives activated additional goals, but we did not explore the effects if the additional goals *conflict* with the focal goal, such that achieving one goal directly impedes achieving the other (e.g., a goal to indulge versus a goal to save). Prior research suggests that activating conflicting goals not only draws resources from the focal goal, but also may prompt different choice strategies (Savary et al. 2015b; Shah et al. 2002). Activating competing goals that conflict might amplify our observed effect, or it might result in goal shielding that attenuates the effect. Future research could thus examine differences in purchase intent when the dissimilar alternatives activate goals that conflict with the focal goal.



Future research could also explore whether considering similar versus dissimilar alternatives would lead to the same pattern of results for decisions that involve non-monetary resources, such as time. For example, consumers thinking about whether to spend time engaging in a certain activity (such as going to the gym) may first consider alternate ways of spending time (such as going for a run or doing work). Past research has found that people evaluate time and money differently (Okada and Hoch 2004), and in particular, they believe that they will have more free time in the future versus now than free money (Zauberman and Lynch 2005). So when making decisions for money, we find that consumers perceive the alternatives as competing for the same resource as the target option. However, in decisions for time, people might believe that they can accomplish both the target option and the alternatives, so the target option and the alternatives may not be perceived as competing for the same resource to the same extent. If that is the case, consumers may be more likely to choose the target option when considering dissimilar alternatives (because spending time doing two different things may seem appealing) than when considering similar alternatives (because doing two similar things might not seem as appealing), which is the opposite pattern that we find when spending monetary resources.

Another area for future exploration could be to examine whether the effect of considering similar versus dissimilar alternatives on purchase intent is moderated by individual differences, such as construal level. For example, the timing of the purchase decision (i.e., for the present versus the future) could activate different mental representations of the alternatives that are considered (Trope, Liberman, and Wakslak 2007; Zauberman and Lynch 2005), which might affect how different the goals seem from each other. Higher construal levels might cause the goals activated by the alternatives to seem more similar to each other than lower construal levels, which could cause our effect to attenuate in abstract construal and potentially to amplify in concrete construal.

Finally, in our research we specifically explored the effect of considering alternatives on purchase intent for a target option. However, we did not explore how other marketing outcomes might be affected by such considerations, such as total basket size, likelihood to shop across categories or likelihood of making any purchase on a shopping trip. When consumers have the opportunity and resources to purchase more than one item, considering dissimilar alternatives and activating additional goals could potentially increase the total amount purchased, since it is more likely that consumers will buy items that serve the newly activated goals. Additionally, an interesting area to explore is how goals activated by considering alternatives influence behavior (e.g., likelihood to purchase something else or visit other stores) when the target option is not immediately available (e.g., due to stock outs; Fitzsimons 2000). Future research could examine if consumers who had considered similar (vs. dissimilar) alternatives are more motivated to satisfy the focal goal in such cases.

The current research also suggests important considerations for marketers. While many of our studies prompted consumers to consider outside options before making purchase decisions, these considerations may be prompted by the marketing context, such as by links to other products on webpages, nearby items on store shelves, and advertisements in the environment. Although calling any attention to other products is shown to reduce purchase intent for a target option, carefully selecting which products to draw attention to can help minimize negative effects. If the marketer's goal is to sell a particular product, any alternatives present in the choice environment should serve the same goal as the target option.

### *Conclusion*

The current work provides initial evidence that the type of outside options that consumers consider before making a purchase decision affects their likelihood of buying a target option. Moreover, we document a novel mechanism of how considering outside options affects buying decisions. In particular, we show that considering alternatives that are dissimilar to the target activates additional goals, which decreases purchase intent of the target more than considering similar alternatives that serve the same goal.

### **Data Collection**

The first author collected data using subjects recruited from Amazon's Mechanical Turk for studies 1A, 1C-1F, 2, 4 and 5 between May 2014 and January 2018. The second author collected data using subjects recruited from Amazon's Mechanical Turk for study 3 in June 2017. Study 1B was collected at the Wharton Behavioral Lab in March 2016, where the first author instructed a lab manager and research assistants remotely. For all studies, the first author analyzed the data in consultation with the second and third authors.

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**Table 1: Purchase Intent Measures and Similarity Ratings from Study 1A**

	N	Purchase Intent <sup>a</sup>			Similarity <sup>b</sup>		
		Mean (SD)	<i>t</i> (367)	<i>p</i>	Mean (SD)	<i>t</i> (367)	<i>p</i>
<b>Printer</b>							
<i>Control</i>	106	5.85 (1.98)	6.70	< .001	--	--	--
<i>Similar</i>	94	4.50 (2.29)	2.41	.017	57.8 (24.1)	10.34	< .001
<i>Dissimilar</i>	83	3.71 (2.25)	--	--	17.6 (23.8)	--	--
<i>Unspecified</i>	88	4.03 (2.21)	0.97	.332	24.9 (29.1)	1.86	.064
<b>Work Shirt</b>							
<i>Control</i>	106	6.17 (2.19)	7.17	< .001	--	--	--
<i>Similar</i>	94	4.85 (2.21)	3.04	.003	67.6 (22.0)	12.56	< .001
<i>Dissimilar</i>	83	3.83 (2.20)	--	--	18.8 (24.5)	--	--
<i>Unspecified</i>	88	3.95 (2.30)	0.36	.718	31.1 (30.4)	3.10	.002

Note: Planned contrasts compare each condition with the dissimilar condition.

a. 9-point scale, where higher numbers indicate greater purchase intent

b. 100-point unnumbered sliding scale, where higher numbers indicate greater similarity

**Table 2: Purchase Intent Measures and Follow-Up Ratings from Studies 1C – 1F**

STUDY 1C	N	Purchase intent			Preference Certainty		
		Mean (SD)	<i>t</i> (383)	<i>p</i>	Mean (SD)	<i>t</i> (458)	<i>p</i>
<b>Massage</b>							
<i>Control</i>	97	5.69 (2.51)	6.47	< .001			
<i>Similar</i>	85	4.40 (2.60)	2.57	.011			
<i>Dissimilar</i>	100	3.50 (2.46)	--	--			
<i>Unspecified</i>	105	3.10 (1.94)	1.22	.223			
<b>Movie Tickets</b>							
<i>Control</i>	97	6.15 (2.27)	4.72	< .001			
<i>Similar</i>	85	5.27 (2.14)	1.88	.061			
<i>Dissimilar</i>	100	4.65 (2.23)	--	--			
<i>Unspecified</i>	105	4.34 (2.30)	0.98	.327			
STUDY 1D	N	Purchase intent			Preference Certainty		
		Mean (SD)	<i>t</i> (458)	<i>p</i>	Mean (SD)	<i>t</i> (458)	<i>p</i>
<b>Printer</b>							
<i>Control</i>	115	4.99 (2.13)	7.08	< .001	6.70 (2.07)	3.70	< .001
<i>Similar</i>	101	4.05 (2.21)	3.37	.001	7.05 (1.82)	2.12	.034
<i>Dissimilar</i>	127	3.13 (1.96)	--	--	7.59 (1.62)	--	--
<i>Unspecified</i>	119	3.39 (1.88)	0.97	.332	7.41 (1.83)	0.76	.448
<b>Work Shirt</b>							
<i>Control</i>	115	4.94 (2.35)	4.08	< .001	7.20 (1.66)	0.55	.582
<i>Similar</i>	101	4.31 (2.13)	1.80	.073	7.13 (1.80)	0.82	.413
<i>Dissimilar</i>	127	3.77 (2.20)	--	--	7.32 (1.81)	--	--
<i>Unspecified</i>	119	3.87 (2.20)	0.38	.706	7.13 (1.76)	0.84	.401
STUDY 1E	N	Purchase Intent: Attractive Conditions			Purchase Intent: Less Attractive Conditions		
		Mean (SD)	<i>t</i> (355)	<i>p</i>	Mean (SD)	<i>t</i> (355)	<i>p</i>
<b>Massage</b>							
<i>Similar</i>	167	4.72 (2.61)	3.12	.002	4.53 (2.47)	1.90	.059
<i>Dissimilar</i>	192	3.58 (2.36)	--	--	3.83 (2.36)	--	--
<b>Work Shirt</b>							
<i>Similar</i>	167	4.64 (2.23)	3.50	.001	4.58 (2.40)	1.52	.130
<i>Dissimilar</i>	192	3.47 (2.00)	--	--	4.07 (2.31)	--	--
STUDY 1F	N	Purchase Intent			Decision Conflict		
		Mean (SD)	<i>t</i> (201)	<i>p</i>	Mean (SD)	<i>t</i> (201)	<i>p</i>
<b>Massage</b>							
<i>Similar</i>	98	4.45 (2.50)	1.80	.073	3.42 (2.51)	0.15	.883
<i>Dissimilar</i>	105	3.84 (2.33)	--	--	3.37 (2.42)	--	--
<b>Work Shirt</b>							
<i>Similar</i>	98	4.47 (2.26)	2.31	.022	3.13 (2.37)	0.17	.907
<i>Dissimilar</i>	105	3.73 (2.29)	--	--	3.17 (2.36)	--	--

Note: Planned contrasts compare each condition with the dissimilar condition.

**Table 3: Purchase Intent and Goal Importance Measures from Study 3**


Condition	N	Purchase Intent			Goal Importance				
		Mean (SD)	<i>t</i> (982)	<i>p</i>	Fun: Mean (SD)	Dressing Well: Mean (SD)	Difference: Mean (SD)	<i>t</i> (df)	<i>p</i>
<i>Control</i>	288	4.77 (2.48)	3.84	< .001	3.82 (2.48)	5.78 (2.42)	-1.95 (2.87)	3.93 (583.6)	< .001
<i>Similar</i>	294	4.37 (2.39)	1.89	.059	3.73 (2.47)	5.74 (2.32)	-2.00 (2.54)	3.79 (581.9)	< .001
<i>Dissimilar</i>	299	3.99 (2.53)	--	--	3.35 (3.18)	6.19 (2.28)	-2.85 (2.89)	--	--
<i>Distraction</i>	105 <sup>5</sup>	4.96 (2.56)	3.47	.001	3.79 (2.48)	5.84 (2.51)	-2.05 (2.51)	2.69 (207.7)	.008

Note: Planned contrasts compare each condition with the dissimilar condition.

<sup>5</sup> Due to a programming error, the distribution of the sample across cells was unequal, with a lower count in the distraction condition. Levene tests indicate equal variance across conditions for the purchase intent ( $F(3, 981) = 0.49, p = .689$ ) and non-focal goal importance ( $F(3, 981) = 1.49, p = .216$ ), but unequal variance for the focal goal importance measure ( $F(3, 981) = 4.49, p = .004$ ) and the relative goal importance measure ( $F(3, 981) = 2.89, p = .034$ ). To correct for the inequality of variance, we used and report a Welch corrected analysis for two measures.

FIGURE 1: STUDY 2 STIMULI

**SIMILAR CONDITION**




**Wireless Bluetooth Portable Speaker With 360 Degree Sound**  
Price: ~~\$39.99~~ \$25.00  
In Stock.


**Product Description:**

- Amazing sound quality, wherever / whenever
- Ready to Play Bluetooth Portable Wireless Speaker with Rechargeable Battery
- Compact, powerful and easy to use
- Sleek innovative design
- Up to 8 hours uninterrupted battery life
- Compatible with iPhones, iPads, Android phones, Samsung Galaxies, Nexus HTC's, and all other Smart Phones, Tablets, Laptops and Computers

**Customers Who Bought This Item Also Bought**




**Sony MDRNC8/WM1 Noise Canceling Headphone, White**  
Price: \$25.16  
In Stock.



**Magicbox Portable Wireless Cuboid Stereo Bluetooth**  
Price: \$24.88  
In Stock.

**DISSIMILAR CONDITION**




**Wireless Bluetooth Portable Speaker With 360 Degree Sound**  
Price: ~~\$39.99~~ \$25.00  
In Stock.


**Product Description:**

- Amazing sound quality, wherever / whenever
- Ready to Play Bluetooth Portable Wireless Speaker with Rechargeable Battery
- Compact, powerful and easy to use
- Sleek innovative design
- Up to 8 hours uninterrupted battery life
- Compatible with iPhones, iPads, Android phones, Samsung Galaxies, Nexus HTC's, and all other Smart Phones, Tablets, Laptops and Computers

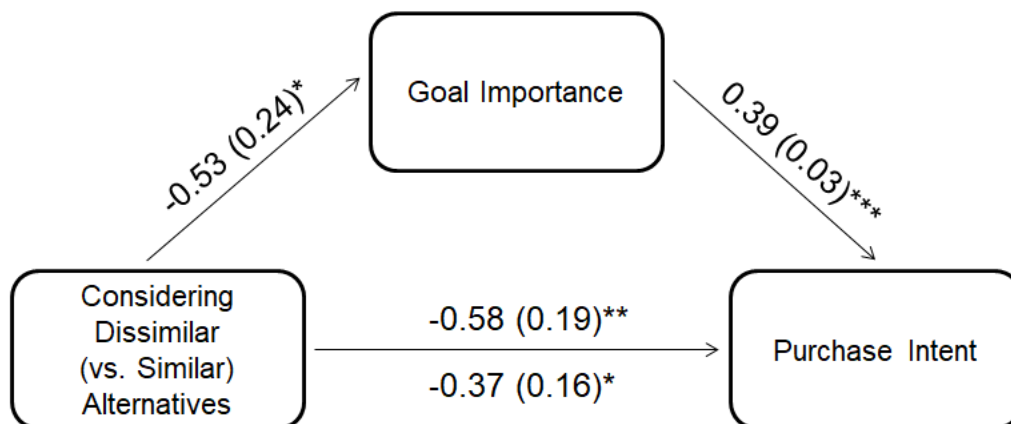
**Customers Who Bought This Item Also Bought**



**Long-Sleeved Men's Button Down Shirt – No Wrinkles, No Iron**  
Price: \$25.16  
In Stock.

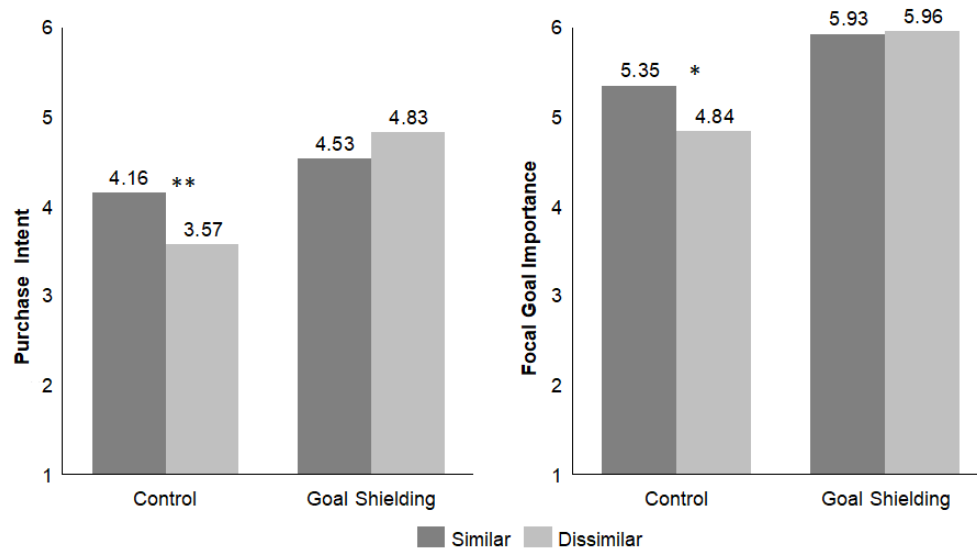


**Long-Sleeved Women's Work Shirt – Variety of colors**  
Price: \$24.88  
In Stock.

**FIGURE 2: GOAL IMPORTANCE MEDIATION ANALYSIS FROM STUDY 2**

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**FIGURE 3: PURCHASE INTENT AND FOCAL GOAL IMPORTANCE MEASURES  
FROM STUDY 5**



\* $p < .05$ ; \*\* $p < .01$



## Headings List

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