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Research Dialogue

Comparison selection: An approach to the study of consumer judgment and choice

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Abstract

We introduce an alternative perspective on the study of consumer judgment and decision making, which is based on the notion that judgment and choice problems consist of comparisons that decision makers might select. Our new perspective proposes that if we can predict the likelihood that particular comparisons will become focal in a judgment or choice task, we will be able to gain a better understanding of and anticipate the resulting effect. Building on related literatures, we propose that comparison selection is driven by the task's latitude of acceptance (LOA) and comparison fluency (i.e., the overall ease of making that comparison). The task's LOA curve represents the range and concentration of potentially acceptable comparisons, whereas comparison fluency refers to the salience and ease of making the comparison. We illustrate our approach using previously studied problems (e.g., choice, variety seeking, the "jacket and calculator" problem, and contingent valuation) as well as new empirical tests.

Keywords: Decision making; Judgment and choice; Preferences; Comparisons

Introduction

Consumer decision making research and decision research more generally have investigated numerous influences on judgments and decisions, such as context, affect, primes, heuristics, and regret. For example, prior research suggests that the entrance of a particularly weak conservative candidate to a race can enhance the popularity of a stronger conservative candidate compared to a liberal candidate (e.g., Huber, Payne, & Puto, 1982). Another study found that American voters are more likely to support school funding initiatives if their polling location happens to be in a school (Berger, Meredith, & Wheeler, 2008). Similarly, thousands of other studies have provided insights into various influences on judgments and decisions, moderators of such influences, and the underlying mechanisms. In other words, prior decision research has typically focused on particular judgment and choice effects and informed us about how, when, and why they occur.

Although we will undoubtedly continue to study individual effects and theories that underlie them, there are certain advantages to a research approach that could potentially teach us about many seemingly different effects by identifying shared, generic aspects of the manner in which consumers respond to various judgment and choice problems. Such an approach, which is task centered (e.g., Newell & Simon, 1972), does not focus on the ultimate effects (e.g., preference for asymmetrically dominating options); instead, this approach seeks to understand the factors that cause people to select or focus on certain salient problem aspects or comparisons embedded in the problem while paying less attention to others (see, e.g., Higgins, 1996; Sherman, Mackie, & Driscoll, 1990). The highlighted comparisons, in turn, often largely determine the modal responses and resulting "effects."

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Consider, for example, the well known jacket and calculator problem (Kahneman & Tversky, 1984):

> "Imagine that you are about to purchase a jacket for $125 and a calculator for $15. The calculator salesman informs you that the calculator you wish to buy is now on sale for $10 at the other branch of the store located 20 minutes drive away. Would you make a trip to the other store?"

In this version of the problem, in contrast to the version in which the $5 discount applies to the $125 jacket, a relatively high percentage of respondents indicated that they would drive to the other store. This finding was used to illustrate the concept of mental accounting (e.g., Thaler, 1985).

However, instead of comparing the percentage of respondents who would drive to the other store in each version of the problem, one may examine the decision process that generated the effect. Specifically, why do consumers/respondents focus on the percentage discount (i.e., comparing the discount relative to the total price) instead of simply assessing whether saving $5 is worth the 20-minute drive to the other store? The values of both $5 and 20 minutes should be familiar to consumers and easy to evaluate, yet they are evidently more inclined to focus on the percentage discount. Stated differently, consumers in this situation have at least two candidate comparisons: (a) assessing the percentage savings or (b) assessing whether $5 is worth the 20-minute drive. Evidently, consumers/respondents tend to focus on the former.

Similarly, numerous other decisions that consumers and other decision makers face contain two or more potentially relevant comparisons, with the "effect" that these problems demonstrate (e.g., through between-subject variations) reflecting the embedded comparison they select or neglect. Thus, for example, we can interpret effects produced in between-subject tests based on the different comparisons that are selected in each version. This view of judgment and choice might provide new insights if we could identify general principles that govern the selection of comparisons across a wide range of judgment and choice dilemmas. Furthermore, such an approach has the potential to raise different research questions that can provide new insights regarding judgment and decision making (JDM). Thus, in the current paper, we introduce this alternative approach to the study of decision making, which revolves around the selection of comparisons and effect of problem variations on the focal comparisons.

For example, the jacket and calculator problem can be revised by informing respondents that each item is on sale for $5 off of the regular price in two different stores (with equal drive time from the main store to either one and from each other). Under that scenario, will consumers still focus on the percentage discount, or will they shift their focus to the seemingly more relevant question of whether $5 is worth a 20-minute drive? And if the prediction that it is the latter turns out to be correct, can we learn from that finding about similar influences of problem features on comparison selection and resulting decisions?

To answer these and similar questions, we explore the drivers of comparison selection and introduce a tentative framework that attempts to capture the top–down and bottom–up influences on comparison selection. The scope of the proposed approach is broad, and we are not yet in a position to offer a tight, comprehensive theory. However, we hope that our discussion and illustrations will lead to further research and to the development of analytical frameworks.

We begin with an examination of three known JDM problems that involve (at least) two potential focal comparisons. In each case, we identify the candidate comparisons and examine the factors that cause consumers to select one and neglect the other. We also show the manner in which the focal comparisons determine the ultimate effect that has been highlighted in previous research. Next, we outline a tentative framework for analyzing the roles of the problem's "latitude of acceptance" and of comparison fluency in determining comparison selection.

Comparison selection in variety seeking, compromise, and valuation problems

As indicated, the proposed view of judgment and choice seeks common principles that can account for comparison selection in decision making. First, however, we illustrate the proposed approach by analyzing problems that have been used to demonstrate the tendency to seek variety when making multiple choices simultaneously, the compromise effect, and scope insensitivity in the context of contingent valuations.

Variety seeking when making simultaneous choices

Consider the following illustration, which has been used to study the effect of task frame on variety seeking (Simonson, 1990; see also Read & Loewenstein, 1995). A group of consumers is asked three questions concerning a set of snacks: (a) which of the following snacks would you like to eat now: Snickers bar, Oreo cookies, peanuts, or Crackers & Cheese? (b) which of these snacks would you like to eat next week? And (c) what about the following week? When answering these questions, a consumer (or a study participant) might consider two comparisons: (a) the comparison among (and preferences for) the four snacks and (b) the comparison among the three choices made over the three weeks.

The relative weights or impact of these two comparisons are likely to influence the choices the consumer makes. That is, the choices made for each week (in the simultaneous condition) are likely to depend on the degree to which the consumer focuses strictly on the preference among options or on both the preference among options and the meta-preference for the pattern of choices (e.g., Drolet, 2002). Consumers who place a greater weight on the former are more likely to select the same preferred option for all three weeks, whereas an emphasis on the latter tends to lead to the selection of different options for the three weeks, because it brings to mind the virtues of choosing variety and is easier to apply when decisions are made simultaneously.

The degree to which the comparison among the options vs. the comparison among the choices is highlighted depends on both the task and ease of making each comparison. Comparing the options chosen for the three periods is easier in the simultaneous

case (compared to the case in which choices are made sequentially, one in each period). In addition, given that the simultaneous choice condition calls for making three choices at the same time, comparing the three is likely to be seen as called for by the task, whereas the sequential task calls for making one choice at a time. The degree to which the task suggests a choice strategy across the three selections may depend upon the time frame and other factors. For example, when respondents were asked to simultaneously *predict* their choices for three periods, as opposed to making three irreversible decisions, they were less likely to select different items (Simonson, 1990). This finding could be interpreted (in this case, post hoc) as indicating that the prediction of future preferences shifts the consumer's attention away from the comparison of choices toward the comparison of item preferences and the stability of those preferences.

The compromise effect

The compromise effect (Simonson, 1989) occurs if the choice share of one option, *b*, relative to another existing option, *a*, is enhanced when a third (nondominated) option, *c*, that is adjacent to *b*, is added to the set. For example, suppose an individual is choosing between wine A that costs $9 per glass and has a quality rating of 87 and wine B that costs $12 per glass and has a rating of 91. The likelihood of ordering wine B is likely to be greater when the wine menu also includes wine C at $15 per glass with a rating of 93; the addition of wine C makes wine B a compromise between options A and C. The compromise effect illustrates a broader class of context effects on choice (e.g., Huber et al., 1982), whereby decision makers focus on the relations among options in the externally presented set, referred to as the "local context" (e.g., Simonson & Tversky, 1992), while paying relatively less attention to other options that are not externally presented (the global context). Such effects represent violations of the fundamental assumption that decision makers tend to choose the option with the highest value, referred to as value maximization (Huber et al., 1982; Tversky & Simonson, 1993).

The compromise effect and other such set context effects reflect a tendency to focus too narrowly on the local (external) set of options one observes, while giving insufficient weight to unobserved options (e.g., those stored in memory). In other words, decision makers are attracted to the comparison of options in front of them (i.e., the "local set") while neglecting comparisons of these options to other options (Kahneman, 2011; Simonson & Tversky, 1992).

Several related factors can account for the overweighing of comparisons within the local set. First, externally observed options and related comparisons are more salient and attention-getting than comparisons with unobserved options that are stored in memory. Relatedly, comparing the attributes of externally presented options is usually easier (more fluent) than making comparisons between an external option and an option stored in memory. Third, the mere fact that there are clear differences among the presented options could trigger a response akin to conversational norms, whereby decision makers implicitly assume that their task is related to those salient differences. Thus, decision makers, and particularly study participants, might believe that they are expected to focus on those options presented in the context of the task, while paying less attention to "less relevant" alternatives.

The resulting tendency to focus narrowly on the local set of externally presented options does not by itself account for the compromise effect, but it greatly enhances the susceptibility to such an effect. Specifically, if we were to make the extreme assumption that decision makers perceive the local set as the entire universe of options in the category under consideration, then a tendency to prefer the middle option in the set appears rather straightforward. That is, both disadvantage (or loss) aversion (Simonson & Tversky, 1992; Tversky & Kahneman, 1991) and a belief that the decision maker's tastes are not extreme relative to the preferences of other consumers and the marketplace offerings (e.g., Wernerfelt, 1995) can account for the compromise effect. Similarly, contrasting tradeoffs within the local context in order to identify the best deal (Huber et al., 1982; Simonson & Tversky, 1992) appears like a reasonable strategy if the externally presented set is the focal consideration. Accordingly, the compromise and other context effects can be largely explained in terms of the emphasis on local vs. global comparisons. That is, if the consumer largely ignores options and attribute values that are not locally observed, the (local) set configuration will often determine preferences, whereas absolute, global attribute values (e.g., of previously encountered options in the category) will have little impact on perceptions and preferences.

Scope insensitivity in contingent valuations

Desvousges et al. (1993) asked separate groups of respondents how much they would be willing to pay in order to save 2000; 20,000; or 200,000 migrating birds from drowning in oil ponds. The average responses were $80, $78, and $88. Similar scope insensitivity has been demonstrated in a wide range of problems and domains (see, e.g., Hsee & Rottenstreich, 2004).

Unlike the variety seeking and compromise problems, the presented stimuli and task in the birds problem (tested between subjects) do not suggest any specific comparison and thus require absolute judgments (e.g., the value of saving X birds), as opposed to merely comparing locally presented values. Accordingly, the birds problem does not offer a choice between two within-problem comparisons. Instead, the question of interest is which of the potential comparisons of problem elements will be compared to an external, stored reference point? One candidate is the indicated number of birds, such as comparing the value of saving 2000 birds to some other reference number of birds. The other candidate comparison is to compare the value of saving birds, regardless of the exact number, to other causes. Answering this question involves retrieval of a more generic value based on the attitude toward birds relative to other causes (Kahneman, Ritov, & Schkade, 1999); the latter is likely to be insensitive to the number of birds at issue.

Again, one can assess the features of each candidate comparison and the implications of assigning different weights to the two options. In this case, a focus on the number of birds implies greater scope sensitivity than an emphasis on the generic value of saving birds. These weights will depend on various factors. For example, experts in the area of saving birds from drowning in oil ponds are

more likely to consider the number of birds than laypersons who have never before encountered that question. Furthermore, certain task cues may inform decision makers about the relevant comparison. For example, respondents who were first asked about their willingness-to-pay (WTP) to save fish and elephants may be even more scope insensitive when answering a question about their WTP to save X birds.

As these examples illustrate, JDM problems can be represented in terms of their component comparisons that are potentially relevant to the given task. To the extent that external stimuli present potentially relevant comparisons among options, these salient comparisons tend to receive the most attention; however, as illustrated by the drowning birds example, in the absence of external comparisons, decision makers resort to comparisons to internal reference points. The above examples also suggest that within-option comparisons are less likely to be selected, perhaps because they do not resolve the problem and/or are less fluent (as discussed below). Finally, the comparisons embedded in the above problems have certain features that pertain to their task relevance and the effort involved, which largely determine the likelihood that they will be selected when addressing the problem. We next examine the drivers of comparison selection more systematically.

Top–down (voluntary) and bottom–up (involuntary) drivers of comparison selection: a framework

The basic drivers of comparison selection are similar in certain respects to other psychological processes, such as attention, categorization, and memory. In particular, following similar distinctions made in the attention literature (e.g., Egeth & Yantis, 1997; Kahneman, 1973), we can distinguish between voluntary or top–down determinants and involuntary or bottom–up determinants of comparison selection. In this section we outline our view of the manner in which voluntary/top–down and involuntary/bottom–up factors interact to determine the impact of comparisons one might rely on when performing a JDM task.

We begin with illustrations of JDM problems in which the top–down, prescribed task overrides bottom–up features of the stimuli and available information. Next, we examine the role of bottom–up features and illustrate cases where these features largely determine comparison selection. We then outline a preliminary framework that integrates the influence of both types of problem characteristics on focal comparisons.

Task-driven comparison selection

JDM tasks often define the potentially pertinent comparisons, though there is great variability in what might be called the task's "latitude of acceptance" (LOA; see Hovland, Harvey, & Sherif, 1957) or its LOA curve — the range and concentration of task-acceptable comparisons. Although, as discussed below, the precise shape of the LOA curve varies across problems, the basic notion that decision makers seek relevant, acceptable responses given the available inputs builds on a great deal of prior research. In particular, the need to justify to oneself and to others (e.g., Kunda, 1990; Shafir, Osherson, & Smith, 1993; Simonson, 1989; Slovic, 1975; Tetlock, 1985), the goal of finding at least a satisficing solution (e.g., Simon, 1957), and the motive to be accurate (e.g., Kruglanski & Freund, 1983) all suggest that the set of potential comparisons in response to a JDM problem has certain constraints.

The notion of task LOA is consistent with prior work in the area of selective attention. Folk, Remington, and Johnston (1992) examined the interaction between goal-driven and stimulus-driven attentional capture. They proposed that any perceptual act involves a particular "attentional control setting" that is part of the explicit or implicit set of perceptual goals of the observer at that moment. These goals might reflect the instructions provided by the experimenter (e.g., "search for the red dots") or the person's plan of action (e.g., how to search for one's car or keys). Thus, the visual features that are of current interest control the allocation of attention.

Similarly, Wolfe (1994) proposed the Guided Search Model, in which attention is directed to objects serially in order of priority. Priorities are determined by two factors: (a) top–down activation, i.e., how closely an object matches the current intentional set, and (b) bottom–up activation, i.e., how much an object differs from neighboring objects. Thus, for example, (a) if one is searching for red vertical objects, then items that have both characteristics are most responsive to the task and will receive the most attention, and (b) a red object surrounded by green objects will receive more attention than a red object that is surrounded by other red objects.

Similarly, in the JDM domain, candidate comparisons are associated with different priorities, which reflect their perceived task relevance or responsiveness. Although we cannot easily identify clear rules that define the comparisons that fall within the task LOA, in many cases, the set of acceptable comparisons is limited and straightforward. When asked to choose between a small and medium size coffee at a coffee shop, the range of acceptable comparisons includes primarily one comparison (assuming the decision to drink coffee has been made). One exception is an involuntary, perceptual comparison involving an option that is less task relevant, such as noticing that the medium coffee is almost as expensive as the large size coffee (an option that is not being considered).

Other tasks allow for more than one task relevant comparison. For example, if a choice set contains three or more viable options, the number of candidate comparisons correspondingly increases. And when a shopping list is flexible or constructed largely on the fly (e.g., in a flea market or a farmers' market), acceptable comparisons are likely to include both item specific valuations and a comparison of the overall basket to one's budget.

Different versions of JDM problems in both between- and within-subject designs often define the acceptable and even expected comparisons. In the sequential choice task of the variety seeking problem, the decision calls for a comparison of the available options; by contrast, the simultaneous choice task makes salient both the comparison among options and the comparison among the selected items. Similarly, in a choice between options, the salient comparison is simply that — comparing the two options on important attributes. By contrast, when choosing from a set with three (nondominated) options, both the attribute value

comparisons and the relevant positions of options in the set (e.g., one option is a compromise and another is an extreme option) may become salient. And in the original version of the drowning birds problem discussed above, the candidate comparisons include (a) a contrast between the value associated with saving birds and other worthy causes, and (b) a contrast between the value associated with saving the given number of birds and other bird numbers. Now suppose decision makers are given a within-subject version of the birds problem in which they are asked consecutively to indicate their willingness to pay to save 20 birds and 20,000 birds. In that case, the set of acceptable comparisons includes both the comparison of the provided numbers as well as a comparison of saving birds with other spending/savings priorities.

Because the task, if it is clear and narrowly defined, typically identifies a particular goal, it can override bottom–up factors that affect the ease with which certain comparisons can be made. One such illustration pertains to the variety selection problem discussed earlier. Read and Loewenstein (1995) tested if the greater variety selected in the simultaneous choice task discussed above is due to differences in the available information between the two tasks. Specifically, they tested the effect of reminding respondents in the sequential choice task of the items they selected in earlier periods. The results indicated that the tendency to select limited variety was not significantly influenced by such information. Evidently, in the sequential choice condition, the separate selection task causes respondents to make each decision separately based on their item preferences (which tend not to change from one period to the next). By contrast, when making simultaneous selections, the task calls for considering the relation among the choices for the three periods, which enhances the weight of the generic preference for variety. The distinction between simultaneous choices and sequential choices with a salient reminder of previous choices is consistent with the proposition that the task is more influential than available information.

The conclusion that focal comparisons are sometimes driven more by the given task than by ease of comparison is further illustrated by work pertaining to the difference between choices and (individual option) ratings (e.g., Nowlis & Simonson, 1997). Consider, for example, a set of two options that are presented either side-by-side or on separate pages of a questionnaire; in each mode of presentation, some respondents are asked to choose between the two options and others rate each option individually. Work on evaluability (e.g., Hsee, 1996) demonstrated systematic preference reversals when two options are presented either jointly or separately. However, in the present example, the two options are presented either side-by-side or on separate pages in both the choice and ratings groups, which allows us to contrast the effect of the task with the effect of the (joint vs. separate) presentation mode.

The findings reported by Nowlis and Simonson (1997) showed that the differences in elicited preferences between choices and ratings persisted (although they were a bit smaller) even when options were displayed side-by-side. In both presentation modes, easy to compare attributes (e.g., prices) had a greater impact (compared to harder to accurately compare attributes such as brand names) in choice than in ratings. This finding further illustrates the impact of the perceived task, though ease of comparison (or its "fluency," as discussed below) also affects the selected comparisons.

Another illustration of a task-driven comparison selection (relative to the effect of comparison difficulty) is provided by research regarding intransitive preferences under incomplete information (Kivetz & Simonson, 2000). Briefly, in a within-subject test, study participants were shown three options, which were described in terms of three attributes, with one of the three having missing values. Respondents sequentially chose between each pair of options, and the pattern of three choices (A vs. B, B vs. C, and C vs. A) exhibited intransitivity for a significant portion of the respondents (i.e., A was preferred over B, B over C, and C over A). Although the tendency to overweigh common attributes reflects the impact of comparison fluency, this within-participant intransitivity offers another illustration of a situation where the assigned task exerts great influence on the selected comparison and resulting effect.

Finally, in the context of the compromise effect, the evidence regarding the relative effect of the task and the available information is mixed. On the one hand, Kelman, Rottenstreich, and Tversky (1996; "case 1," pp. 290-2) found that merely presenting a third, easy to compare to option, which cannot be selected, does not affect choices. Conversely, Simonson (1989) found that adding a third unavailable option can produce a compromise-like effect, which suggests that the easy comparison to the salient but unavailable third option is considered.

In these examples, problem solvers focused on the largely prescribed comparison despite exposure to information that made other, less task-relevant comparisons easy to perform. That is, decision makers effectively chose to disregard potentially pertinent information presented to them because it was less responsive to the assigned task. This evidence, of course, does not mean that bottom–up factors that facilitate comparisons are not important. As discussed below, considering that the task LOA typically allows for different comparisons, bottom–up factors often play a key role in determining the selected comparison.

Importantly, the impact of the task LOA on comparison selection is often a zero sum process. Specifically, one dominant comparison that is far more responsive to the task and is thus much closer to the LOA center than other comparisons can mean that only that comparison will be performed and all other comparisons are ignored (as shown subsequently in the context of a revised jacket and backpack problem). But if there is no one dominant comparison, it might be more meaningful to examine factors that influence the relative weights of problem embedded comparisons.

Fluency effects on comparison selection

In dual system, dual process models (e.g., Kahneman, 2011), System 1 is described as associative, intuitive, automatic, effortless, affective, and the default. The slow, more calculated, effortful System 2 is activated if System 1 cannot solve the problem at hand or the solution produced by System 1 needs to be modified or corrected. Certain tasks, including choice, may trigger System 2 by default, which represents one fundamental difference between judgment and choice.

This Systems view emphasizes the notion that decision makers tend to substitute easy for more difficult judgments. Similarly, in the present context, one would expect decision makers to gravitate to easier comparisons; however, we propose that any selected comparison also must fall within the task LOA. Still, although bottom–up problem features do not play a similar function as System 1 processes in the dual system approach, the fact that less effortful processes tend to be the default also implies that easier bottom–up comparisons that fall within the task LOA are more likely to be selected.

Before we elaborate on the interplay between the task LOA and bottom–up comparison features, we need to examine more closely the bottom–up role that the features of comparisons play, which we label comparison fluency. By comparison fluency we mean the overall ease of making that comparison; we argue that greater ease will lead to greater likelihood of using that comparison (for a comprehensive discussion of different types of fluency, see Alter & Oppenheimer, 2009; Schwarz, 2004). Factors that enhance the probability that a given comparison will be performed include whether it is immediately available in the problem as presented (i.e., no transformations or calculations are required), it is alignable (e.g., in the same units), it is perceptually salient, it generates immediate, affective responses, and it has other comparison facilitating features. Thus, for example, even if we ignore task relevance (e.g., in choice), within option comparisons (across attributes) are likely to be less fluent than across option (same attribute) comparisons. The preference for fluent comparisons that can be easily performed as is without transformation is consistent with Slovic's (1972, p. 9) "concreteness principle": "Concreteness represents the general notion that a judge or decision maker tends to use only the information that is explicitly displayed in the stimulus object and will use it only in the form in which it is displayed. Information that has to be stored in memory, inferred from the explicit display, or transformed tends to be discounted or ignored."

Thus, comparisons that rate high on fluency are more likely to be considered early in the process, as long as they fall within the task LOA. Assuming that a comparison is being considered, then a judgment must be made as to whether that comparison is sufficient for a decision (i.e., it offers a sufficient reason or justification). If not, then another comparison that has favorable bottom–up features is likely to be considered. The first fluent comparison considered that yields what is perceived as a sufficient justification would then be used to perform the task.

One example of the impact of comparison fluency is provided by Slovic and McPhillamy's (1974) observation that decision makers tend to underweigh attributes on which one of the options has a missing value relative to attributes on which the options can be compared without the need to make any inferences. Similarly, Bettman and Kakkar (1977) showed that consumers' information acquisition is strongly influenced by the information presentation format. Specifically, they showed that whether consumers process information by brand or by attribute depends on the manner in which information is presented. Subsequent research has shown various ways in which information presentation format affects information acquisition and the weights of attributes (e.g., Payne, Bettman, & Johnson, 1993). For example, in a classic demonstration, Russo (1977) showed that unit price information in a supermarket was much more likely to be utilized in making a purchase when unit price comparisons were made easier by displaying a list ordered by unit price rather than relying solely on unit price tags for individual items.

Finally, when the presented problem does not offer any candidate comparison, retrieval fluency can still determine the selected comparison. For example, when choosing a single snack at lunch time, a consumer might consider the sweet snack she had for breakfast; when selecting a cellphone, a consumer is likely to retrieve the weaknesses of the previously owned cellphone; and in the drowning birds problem, the provided information does not contain any external comparisons — all we have is the drowning birds cause and a number. Thus, the decision maker needs to construct a comparison between an external input and retrieved inputs that could offer a reason for a decision. But comparison fluency still plays a key role — the question is how easily the decision maker can compare one of the given inputs (birds or the provided number) to a stored value. Saving birds can be compared to another cause, whereas the number might be compared to some other number. A comparison of causes or ways to spend money is likely to be much easier to perform than a comparison of the given number to some highly subjective value of an arbitrarily selected number. In addition to the superior fluency of the comparison of causes, conversational norms may also favor this comparison. That is, a respondent may perceive the problem as asking about the relative importance of saving birds from drowning.

In conclusion, not surprisingly, comparisons that are easy to perform are more likely to be selected and relied upon. However, a comparison must also be task responsive and offer a defensible justification. Accordingly, as outlined next, a framework of comparison selection must incorporate the roles of both the task and the comparison features.

A preliminary integrated comparison selection framework

So far we have discussed JDM problems where either the task LOA or comparison fluency looms larger and drives comparison selection. In this section, we outline and illustrate more generally some of the factors that underlie the interplay between task LOA and fluency in determining comparison selection. In particular, we examine the impact of the shape of the task LOA curve, discussed next, on the relative influence of the task and comparison fluency.

The shape of the LOA curve depends on a variety of factors, such as the degree to which a task explicitly promotes a particular comparison, the mention of or exposure to salient reference points, prior experience with or response habit in similar problems, the decision makers' motivation, their ability, and conversational norms. Below we provide a few illustrations of different shapes of LOA curves and their implications for comparison selection. We also examine the possibility that the shape of the task LOA changes during the decision process.

The shape of the LOA curve as a determinant of the relative weights of task and comparison fluency

As noted, the task LOA represents a range of comparisons that can potentially produce acceptable, justifiable answers. We

can portray a task's LOA as a curve with a shape that may theoretically range from a vertical line, where there is just one acceptable comparison, to a rectangular shape resembling a uniform probability distribution, which indicates that many comparisons are equally responsive. More often, the task LOA can be represented as a bell-shaped curve — it defines the set of potentially acceptable comparisons as well as the degree to which particular comparisons are responsive or justifiable given the task. Importantly, the width or concentration of the LOA curve determines the relative weight of the (top–down) task relative to comparison fluency.

A narrow distribution represents a task-driven problem with few potentially task relevant comparisons, which means that comparison fluency plays a relatively small role. By contrast, a wide, diffused distribution represents a fluency-driven problem, with the ease of comparison use exerting a large influence on the likelihood of focusing on particular comparisons. Even with wide distributions, comparisons that are closer to the center of the LOA are more likely to be selected. We next illustrate the influence of different task LOA shapes.

Problems with a narrow LOA

In a simple choice between options, any comparison that provides a reason for preference falls within the LOA. Comparisons on attributes that are perceived as more important are closer to the center of the LOA. In a multidimensional choice task such as the variety problem - sequential version, consumers need to make a choice for each period; accordingly, the comparison among available options that produces a choice is closest to the center of the task LOA. By contrast, merely saying "I want variety/the same over time" is close to the low density edge or even outside the task LOA. The simultaneous choice task expands the LOA to include comparisons of the global choice strategy (e.g., variety), adding another pertinent comparison.

For the purpose of the present analysis, problems with a very narrow task LOA are less interesting precisely because the focal comparison is so obvious given the task. Consider, for example, a preference matching task, such as "if a 32 oz bottle of Heinz ketchup costs $2, what is the highest price you would be willing to pay for a 32 oz Hunt's bottle of ketchup?" Although the consumer may rely on different reasons ("Heinz is my favorite") and perceptions (e.g., "Hunt's is better," "ketchup is ketchup"), the basic comparison involving a tradeoff between brand and price is largely predetermined by the presented options. In such cases, comparison fluency is likely to play a minor role.

However, even with such a narrowly defined task, comparison fluency can influence the manner in which the prescribed comparison is implemented. For example, in a forced choice between Heinz and Hunt's, the likelihood of focusing on price vs. quality depends on whether quality is represented by brand names alone or by brand names accompanied by more fluent, quantitative measures such as average quality rating (Nowlis & Simonson, 1997). Less explicit, yet salient task cues can also produce tasks with a narrow LOA. For example, a within-subject format of the birds problem, whereby respondents are simultaneously asked about WTP for different numbers of saved birds, is likely to call attention to the contrast of the two provided values (i.e., number of birds).

Problems with a flat LOA curve

In general, decision problems with multiple moving components are associated with a more flat LOA curve. As indicated, the more diffused the LOA curve is, the greater the impact of comparison fluency.

Consider, for example, the revised within-subject versions of the (modified) jacket and calculator (or, as tested here, jacket and backpack) problem presented in the Exhibit shown at the end of the article, each involving two other branches of the store. The two branches offer a different item on sale (the more expensive or the less expensive), and the dollar discount magnitude may also be different. In Version A, for instance, the more expensive item is offered for $20 off of the regular price in one branch whereas the less expensive item is offered for $15 off of the regular price at the other branch. In that case, the comparison of the absolute dollar discounts is the salient comparison producing a difference, because the driving time to the two branches is the same whereas the dollar saving is not. Moreover, this dollar difference rates high on fluency — the two prices can be readily assessed and require no conversion or manipulation, (e.g., computing the discount relative to the price).

A second possible variation of the problem (see Exhibit, Version B] contains multiple contrasts representing within-LOA, acceptable/justifiable comparisons. Here the absolute dollar saving is the same, which leaves two comparisons that might be considered, neither one of which is particularly central. One possible comparison is based on the total price of the item — consumers may have a preference between saving the same amount on the more expensive item or the less expensive item. Second, the fact that the branch selling the more expensive item on sale is in a slightly worse part of town is likely to elicit a comparison based on the store location. Both of these comparisons rate high on fluency and can be readily performed without further processing. Thus, in this case, the task LOA is rather flat (or diffused), and there is no one comparison that is associated with greater fluency than the others. As described below, we tested a less complex version of this variation of the jacket–calculator problem in which there is no mention of differences in store location.

The impact of comparison fluency as a function of the task LOA

The impact of comparison fluency increases when it is closer to the center of the present task's LOA. Consider again the contrast between the sequential and simultaneous versions of the variety seeking problem discussed above. As noted, providing reminders of earlier selections in the sequential choice task does not affect the current selection, even though the comparison among selections in this case is just as fluent as the comparison among choices in the simultaneous choice task (Read & Loewenstein, 1995).

However, there is a significant difference between the two situations. In the former case, the assigned task is to make just one selection, which makes the comparison among selections less central to the task. By contrast, in the simultaneous choice

version, the high fluency of the comparison among choices is central to the task, because the task calls for making three decisions at the same time. Thus, the role of fluency depends on its task relevance or, in our terminology, its proximity to the center of the task LOA.

Finally, it is important to note that comparison fluency is likely to be positively correlated with its perceived LOA location, with higher fluency comparisons seen as more task relevant. In other words, fluency can "move" a comparison closer to the LOA center, which can be interpreted as a form of a motivated comparison weighting that is akin in some respect to motivated reasoning (Kunda, 1990). For example, consider a choice problem where the two options are described on attributes that are easy to compare (e.g., same unit) and attributes that are harder to compare (e.g., different units), or option with some missing values (e.g., Slovic & McPhillamy, 1974). In such cases, high fluency (or ease) makes a comparison appear relatively closer to the LOA center.

Carry-over effects in comparison selection

Another aspect of the dynamic interplay between the task LOA and comparison fluency refers to the order in which comparisons are considered during problem solving. In general, we expect that when multiple comparisons are considered sequentially, the first comparison enhances the likelihood that the subsequent comparison will be of the same type.

For example, if the first comparison performed as part of a choice problem involves a conscious, deliberate comparison of attribute values to identify the best option, the next comparison is also likely to involve such a conscious comparison of attribute values. As a result, less conscious influences, such as perceptual or priming effects and even ease of comparison, are expected to play a smaller role once the first considered comparison creates a value-focused mindset. In the language of dual-process/systems models, we propose that an engagement of System 2, even if it does not yield a satisfactory answer, will lower reliance on System 1 for the remainder of the decision making process. We present an initial empirical test of this carry-over prediction below.

Research program and empirical illustrations

If it were easy to review any given JDM problem and determine how the candidate comparisons stack up on the task LOA and fluency dimensions and how the two interact, we would be able to (roughly) predict comparison selection likelihood and the resulting effects. In problems characterized by a narrow LOA and clear fluency differences across comparisons, this can be achieved; however, predicting responses in such clear-cut problems can often be done without focusing on comparison selection. That is, the comparison-focused approach is most likely to offer new insights in problems in which the shape of the LOA curve is more bell-shaped or flat. At this point we cannot offer a formal, structured series of steps and criteria that will tell us in each case which comparison will be selected first, and in case that comparison does not resolve the problem, the order in which other comparisons will be considered. However, even if the analysis is qualitative at this point, we believe that the comparison selection perspective can be employed and provide new insights and raise new research questions.

A test of a revised jacket and backpack problem

The revised jacket and backpack problem variations discussed above provide an illustration of the manner in which the comparison selection approach might be implemented. Identifying the comparisons that fall under the LOA curve in this and other cases is straightforward, because the set of values that might produce meaningful and task relevant comparisons is limited. As discussed above, determining the comparison selected first requires us to consider both the proximity of the comparison to the center of the task LOA, or in other words, the ease of justifying a response based on that comparison, and the fluency or ease of performing the comparison. In the study described next, we use a within-subject variation of the jacket and backpack problem to illustrate how comparison selection might be used to analyze and predict decisions.

Method

One hundred and eighty-six undergraduate students participated in the study in exchange for course credit (two participants, who did not complete the task, were excluded). They were told to imagine that they were about to purchase a jacket for $240 and a backpack for $35. They were randomly assigned to one of three conditions. In the Old Version 1, they were told that the backpack they wished to buy was on sale for $20 at Branch B of the store, located a 25-minute drive away. Their options included buying both items at the store they were in or driving to the other branch to buy the backpack for $20 instead of $35.

In the Old Version 2, respondents were told that the jacket they wished to buy was on sale for $225 at Branch B of the store, located a 25-minute drive away. Next, they indicated if they would buy the backpack at the branch they were currently at and drive to Branch B to buy the jacket for $225 instead of $240.

In the New Version, respondents were told that the jacket they wished to buy was on sale for $225 at Branch B of the store, located a 25-minute drive away, and that the backpack they wished to buy was on sale for $20 at Branch C of the store, also located a 25-minute drive away. The drive from Branch B to Branch C also took 25 minutes. Participants in that group then selected one of the following options:

- Buy the jacket at the Branch they were currently at and drive to Branch C to buy the backpack for $20 instead of $35.
- Buy the backpack at the Branch they were currently at and drive to Branch B to buy the jacket for $225 instead of $240.
- Drive to Branch B to buy the jacket for $225 instead of $240 and then drive to Branch C to buy the backpack for $20 instead of $35.
- Buy the jacket and the backpack at the Branch they were currently at and not drive to Branch B or Branch C to buy the items on sale.

Results

We ran logistic regressions with the independent variable coded 1 when the more expensive item was on sale, 0 otherwise. Comparing the two Old Versions, as expected (Kahneman & Tversky, 1984), results showed that participants were more likely to drive to the other store when the less (vs. more) expensive item was on sale; M = 43% vs. 25%; B = −.801; $p < .05$. In the New Version, 6% of participants would drive to the other store to buy the less expensive item on sale, as compared to 25% who would drive to buy the more expensive item on sale (B = 1.614, $p < .01$); 30% indicated that they would drive to buy both items on sale, and 29% would not drive to either branch.

It thus appears that, once the comparison of the discount to the regular price became irrelevant (i.e., outside the task LOA) because the within-subjects test made the identical absolute dollar discount transparent (and thus the percentage savings a moot comparison), respondents resorted to another, less central comparison. Specifically, while relative comparisons are often salient and easy to perform, they are unlikely to be used when their irrelevance and inconsistency with absolute values is transparent. Thus, given that the percentage discount was no longer a viable comparison and could not be relied upon as a reason for choice, respondents switched to a less central but fluent and potentially task relevant comparison between the prices of the two items. Stated differently, as the task LOA becomes more flat because a previously central comparison becomes irrelevant, the fluency of the remaining comparisons becomes more important. Evidently, in this case, consumers thought it was more justifiable to drive to obtain a discount on the more painful/costly item. It is also noteworthy that the modal response was to not drive at all. This finding suggests that offering more options to save may actually diminish the tendency to drive, perhaps because many respondents do not find a compelling comparison that allows them to differentiate between the options (see also Dhar, 1997; Tversky & Shafir, 1992).

We subsequently reran two revised versions of the within (two sale branches) versions, such that each item was either the more expensive or the less expensive; we also increased the distance between the two sale branches to 50 minutes and the sample size. We used an online panel of consumers for this study, with 117 per cell. In both variations of the within task, the results were similar. In both cases, about 11% would drive to save on the less expensive item, compared to about 23% who would drive to save on the more expensive item (B = .827, $p < .05$). About 36% would not drive to either store and 21% would drive to both.

The steps we followed in this case involved identifying the candidate comparisons and assessing the degree to which (a) they fall close to the center of the task LOA, and (b) they rate high in terms of fluency. A similar approach might be followed with other multi-comparison problems such as the well-known theater ticket problem (Kahneman & Tversky, 1984) that was used to illustrate mental accounting. That problem consists of two versions; in one case, the respondent decides whether to purchase another ticket for a play assuming the first purchased ticket was lost; in the other version, the respondent decides whether to purchase the ticket assuming a bill with the same monetary value as the cost of the ticket was lost. Similar to the revised backpack and jacket problem, one can revise the original problem such that various within-subject comparisons are added. Some of the possible problem revisions include the following:

- The person is planning to watch plays for which the tickets have already been purchased. The two plays differ in certain respects.
- The prices of tickets for the two plays are different (or not).
- Although the person intended to attend both plays and expects to like both of them, one ticket has been purchased and the other was going to be purchased.
- The timing of the two plays is different.

In each revised version of the problem, the assumption is that the wallet with the ticket/cash was lost, and the question is whether to purchase a ticket for each play. In this case, the return (or enjoyment) per dollar is likely to be at the center of the task LOA. However, assuming the two plays are both expected to be about equally enjoyable, the fluency of the various available comparisons is likely to loom large. For example, given the ease of price comparison, any difference in the prices of the two plays can be readily relied upon to explain a decision (e.g., "Too bad, but at least I'll see the less expensive play").

Going beyond the drivers of comparison selection, future research could investigate dynamic aspects of comparison selection, such as the impact of an initial selection on subsequent selections. Earlier, we discussed the carry-over effect whereby an initial comparison, even if it leads to a dead end, can influence the type of comparisons attended to next. We tested such a situation by contrasting the impact of introducing a dominant option, which turns out to be unavailable, on susceptibility to the asymmetric dominance and compromise effects.

The effect of a dominant, unavailable option on asymmetric dominance and compromise

Prior research (e.g., Dhar & Simonson, 2003) has established that asymmetric dominance (Huber et al., 1982) is a perceptual effect, with relatively few decision makers explicitly mentioning asymmetric dominance as a reason for choice (Simonson, 1989), whereas compromise is a conscious, "cognitive" effect. For our analysis, the comparison between the (asymmetrically) dominating option and dominated option rates high on fluency — the two options are presented side-by-side, and the comparison is easy to make and requires no tradeoffs — the only difference is that one option is clearly better. Thus, despite being far from the center of the task LOA, high fluency affects the perception of the superior option. By contrast, a comparison of two options that requires a tradeoff of two valued attributes is near the task LOA center (i.e., it is called for in order to find the best among the viable options) but requires often difficult to compare dimensions and magnitudes.

In other words, the asymmetric dominance effect reflects the impact of a high fluency but nondiagnostic comparison

(e.g., Feldman & Lynch, 1988), whereas the decision task producing the compromise effect involves task-focused comparisons. Our hypothesis is that a task focused mindset created by an initial task relevant comparison of options, even if it does not solve the problem, will diminish the impact of a high fluency but task irrelevant comparison. In particular, we expect that the presence of a dominant option that offers superior value compared with all other alternatives will diminish the impact of an irrelevant asymmetric dominance relationship (i.e., decrease the asymmetric dominance effect), but not the compromise effect that is derived from a comparison of viable options.

Fig. 1 depicts the manner in which we tested this prediction. As can be seen, option D clearly dominates all other options, so any consumer who is seeking the best option will choose D based on its superior attribute values (i.e., identifying the option's dominating status is task-relevant). But what happens if it later turns out that option D is unavailable? We expect that, after identifying the best option given the task, consumers will maintain the task focus and be less likely to be influenced by the high fluency but task irrelevant asymmetric dominance comparison. Thus, after considering D, the asymmetric dominance effect should be weaker whereas the compromise effect should still be observed.

Method

Two hundred and eighty-one undergraduate students participated in the study in exchange for course credit and were told to imagine that they had been asked to assist a university in deciding to which applicant to offer early admission for their graduate program. Participants were further told that the candidates were similar on all dimensions except for their Quantitative and Verbal GRE test scores, both of which were equally predictive of future academic success.

In Old version 1, participants were then presented with two applicants. Applicant A's quantitative and verbal test scores were 750 and 640, and applicant B's were 700 and 690. In Old version 2, applicant B' with test scores of 700 and 680 was added to the set, such that now applicant B dominated applicant B'. Participants in both versions then marked which applicant they would admit.

In New version 1, participants were first presented with the same two applicants as in Old version 1, plus a third option, candidate D, with scores of 750 and 740. In New version 2, applicant B' with tests scores of 700 and 680 was added to the set, such that now applicant B dominated applicant B'. Before making their choice, participants were informed that applicant D had accepted admission to another university, so that this application had been withdrawn. Participants were then asked which of the remaining applicants (which were now the same as in the Old versions 1 and 2) they would choose.

Results

To test our prediction regarding the asymmetric dominance effect, we ran logistic regressions, with the independent variable coded 1 if the choice set included a dominated option, 0 otherwise. Comparing the two Old Versions, we replicated the basic asymmetric dominance effect. When dominated applicant B' was added to the set, choice share of applicant B increased from 43% to 70% (B = 1.089, $p < .01$). However, the asymmetric dominance effect was eliminated when the choice sets also included applicant D. Specifically, choice share of applicant B changed insignificantly from 54% to 48%.

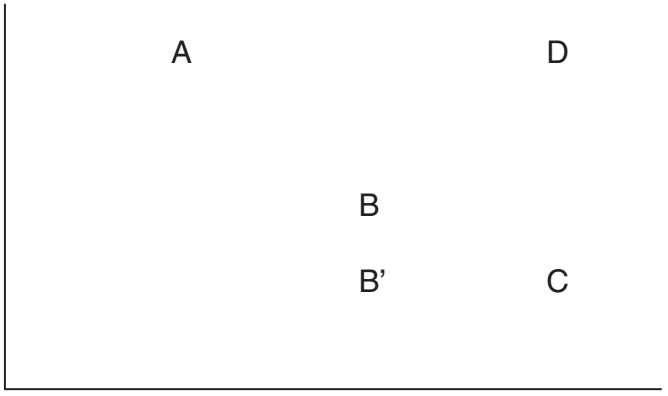

Fig. 1. Task order and comparison selection: the case of asymmetric dominance and compromise effects.

Next, as described above, we ran another study with 228 participants, such that applicant B was not dominating, but a compromise option (between A and C). We again ran logistic regressions, with the independent variable coded 1 if the choice set included a compromise option, 0 otherwise. Comparing the two Old Versions, we replicated the basic compromise effect. When applicant C was added to the set, choice share of applicant B (the compromise option) increased from 54% to 71% (B = 1.233, $p < .01$). As expected, we still obtained a compromise effect in the new versions that included applicant D. Specifically, choice share of applicant B increased from 53% to 76% (B = 1.238, $p < .01$) when it became the compromise option.

Discussion

Our objective in this paper was to introduce and illustrate the comparison selection approach to the study of judgment and choice. At this point, our analysis is largely qualitative and requires judgment. However, even in its current rudimentary form, we believe that the idea of thinking about judgment and decision making as a process of comparison selection can provide important insights and raise different types of questions for future research.

In particular, each comparison can be represented by its "Task LOA Score" and its "Fluency Score," which together determine its selection priority. The LOA Score reflects the (potential) efficacy or responsiveness of the comparison outcome as a reason or justification for the given task. A suitable scale could be developed to quantify comparisons' LOA score. For example, respondents might be asked to rate, in terms of ease of justification and likelihood of being criticized, a choice between two ketchups on the basis of a comparison of vitamin C content, and then, separately, on the basis of another attribute such as taste, color, or price.

The Fluency Score also plays an important role in comparison selection, as long as the comparison falls within the (often vague) task LOA. As discussed above, a comparison's fluency score is determined by the overall ease of making that comparison.

Factors that enhance the probability that a given comparison will be performed include whether it is immediately available in the problem as presented (i.e., no transformations or calculations are required), it is alignable (e.g., in the same units), it is perceptually salient, it generates immediate, affective responses, and it has other comparison facilitating features. A comparison's fluency score might, for example, be estimated using latency measures.

The roles of the task LOA and the fluency characteristics guided our analysis of the three illustrative problems we have used. In the variety seeking problem, we focused on the contrast between the sequential choice and simultaneous choice versions; in particular, in the simultaneous choice version, the comparison among the three choices is both more fluent and a more salient element of the task that triggers a meta-preference for (or against) choice variety. Similarly, a choice between options calls for comparisons between attribute values, with attributes on which both options have known values being more task relevant and more fluent (Slovic & McPhillamy, 1974). The addition of a third option diminishes the need to contrast absolute values (e.g., 2X vs. 4X zoom) and allows the consumer to make easier comparisons (e.g., choosing the middle zoom level) and defining the task in relative terms. Finally, in a within-subject version of the drowning birds problem where the respondent is asked to indicate WTP to order to save 20 birds and 20,000 birds, the contrast between the two given birds numbers is both salient and is likely to be called for by the task.

Our analysis has examined the interplay between the task LOA and fluency scores. First, the LOA and fluency scores are not independent. In particular, high fluency comparisons are more likely than low fluency comparisons to be perceived and treated as falling within the LOA. In other words, fluency can "move" a comparison closer to the LOA center, which might be seen as a form of a motivated comparison weighting that is akin in some respect to motivated reasoning (Kunda, 1990). In addition, the shape of the LOA curve influences the relative impact of fluency, which is most pronounced with relatively flat or bell-shaped curves (as opposed to a narrow, concentrated curve with one dominant comparison).

It is also important to note that comparison selection is a zero sum process, and one dominant comparison (e.g., in the revised jacket/backpack problem, a difference in the absolute dollar savings across the two branches) can overshadow all other comparisons. Even a less fluent comparison that can offer a compelling argument (e.g., a difference in the percentage savings across the two other branches) can dominate a more fluent comparison (e.g., a comparison of the prices of the jacket and backpack) that is farther from the LOA center.

Furthermore, we might expect that, in a choice between options, any intra-attribute comparison is potentially responsive and has a positive LOA score; however, comparisons on more important attributes have higher task LOA scores. Furthermore, within-option inter-attribute comparisons tend to have lower (choice task) LOA scores, because they are unlikely to support choosing one option over another (i.e., are less responsive to the task).

With further development, we believe that this alternative task-based perspective on judgment and choice can enhance our understanding of consumer decision making and allow us to make predictions across a wide range of JDM problems. That is, a focus on determinants of comparison selection, considering both the task LOA and comparison fluency, can provide a unifying framework for understanding and reinterpreting a wide range of problems that are topically distinct but may be driven by similar problem features. Furthermore, an examination of problems through the lenses of drivers of comparison selection can lead to new insights and predictions regarding the modal responses (i.e., resulting judgments and choices) in specific problems. To the extent that we can (a) identify the main candidate tasks/comparisons embedded in a problem (in a between-subjects test, contrasting the focal task/comparison in each version) and (b) rate each potential task based on the criteria identified above, we might be able to predict which comparison will likely receive greater weight and thus the resulting "effect." In many cases, the final phase — predicting the effect — will require a contrast of two (or more) tested versions (or conditions) of the problem.

Of course, much more work is needed in order to gain a deeper understanding of the forces that drive comparison selection and improve our ability to predict the effect of changes in problem features. We have only begun to conduct such empirical tests; these tests not only provide some general insights but, more importantly, also illustrate the types of tests that can be pursued in future research. In one case, we showed empirically that a within-subject variation of the jacket and backpack problem in which the same dollar savings can be obtained in two different stores tends to shift preferences in favor of saving on the more expensive item. A second empirical test examined the impact of first considering a contrast between a dominant option and all other options on susceptibility to the compromise and asymmetric dominance effects. The results indicated that the more perceptual asymmetric dominance effect was eliminated, whereas the more conscious, cognitive compromise effect was not affected.

Future research might further test and refine the task LOA and comparison fluency constructs. In addition, future research could examine situational factors and individual differences that moderate comparison selection, the perceived task LOA, and the relative salience of each. For example, one might investigate situational factors (e.g., mood, primes) that impact the perceived task, the salience of certain relative comparisons, and their implications for the ultimate decision. Similarly, individual differences such as level of expertise (Alba & Hutchinson, 1987), need for cognition (Cacioppo & Petty, 1982; Cacioppo, Petty, & Kao, 1984), and tendency to maximize/satisfice (Schwartz et al., 2002) could moderate comparison selection. Finally, when considering different comparisons within the task LOA, greater understanding of the factors influencing the degree to which various possible comparisons are viewed as sufficient reasons or justifications is critical.

Exhibit

Revised versions of the 'jacket-and-calculator' problem

Version A: Jacket & Backpack

Imagine that you are about to purchase a jacket for $145 and a backpack for $35. The store salesman informs you that the jacket you wish to buy is on sale for $125 at Branch B of the store, located a 20-minute drive away. He also informs you that the backpack is on sale for $20 at Branch C of the store, located a 20-minute drive away. The drive from Branch B and Branch C is 20 minutes.

What would you do?

1) Buy the jacket at the Branch you are currently at and drive to Branch C to buy the backpack for $20 instead of $35.
2) Buy the backpack at the Branch you are currently at and drive to Branch B to buy the jacket for $125 instead of $145.
3) Drive to Branch B to buy the jacket for $125 instead of $145 and then drive to Branch C to buy the backpack for $20 instead of $35.
4) Buy the jacket and the backpack at the Branch you are currently at and not drive to Branch B or Branch C to buy the items on sale.

Version B: Jacket & Backpack

Imagine that you are about to purchase a jacket for $145 and a backpack for $35. The store salesman informs you that the jacket you wish to buy is on sale for $125 at Branch B of the store, located a 20-minute drive away in a worse part of town. He also informs you that the backpack is on sale for $15 at Branch C of the store, located a 20-minute drive away in a better part of town. The drive from Branch B and Branch C is 20 minutes.

What would you do?

1) Buy the jacket at the Branch you are currently at and drive to Branch C in the better part of town to buy the backpack for $15 instead of $35.
2) Buy the backpack at the Branch you are currently at and drive to Branch B in the worse part of town to buy the jacket for $125 instead of $145.
3) Drive to Branch B in the worse part of town to buy the jacket for $125 instead of $145 and then drive to Branch C in the better part of town to buy the backpack for $15 instead of $35.
4) Buy the jacket and the backpack at the Branch you are currently at and not drive to Branch B or Branch C to buy the items on sale.

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