Examining Inference Processes Underlying Knowledge Complexity Effects on Attitude-Behavior Consistency

THESIS

Presented in Partial Fulfillment of the Requirements for the Degree Master of Arts in the Graduate School of The Ohio State University

By

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The Ohio State University
2013

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Abstract

The present research had two main goals. First, the research examined whether deliberation at the time of behavior changes the effect of knowledge complexity on attitude-behavior consistency. Second, the research examined the hypothesized inference processes underlying knowledge complexity effects on attitude-intention consistency for higher-deliberation behavior (Fabrigar, Petty, Smith, & Crites, 2006). These studies used a department store paradigm, in which participants formed attitudes toward two fictional department stores, varying in favorability toward each store (within-subjects) and the complexity of knowledge presented to create the attitudes (between-subjects). Participants indicated which store they would choose when making a purchase involving a product for which they had not received information in the store descriptions. The experiments all also manipulated (between-subjects) participants’ ability to deliberate about their report of their behavioral intentions. A pilot study, as well as a series of four other studies, failed to find an effect of deliberation at the time of intention on the (enhancing) effect of knowledge complexity on attitude-intention consistency. These results suggested that knowledge complexity could have effects under both relatively low- and high-deliberation settings. Previous researchers had hypothesized that knowledge complexity would be associated with inferences that the attitude was more
useful or applicable to the purchase decision, and that these inferences would mediate complexity effects under higher deliberation (Fabrigar et al., 2006). I suspected that such inferences would be responsible for knowledge complexity effects under high-deliberation settings but not under lower-deliberation settings. Although Experiment 1A provided evidence consistent with these effects, further analyses were inconsistent across three follow-up studies. Knowledge complexity was associated with higher rated inference of applicability in most, but not all experiments, and higher inferences of applicability, in turn, were significantly associated with higher attitude-intention consistency in Experiments 1A and 1B (but not Experiments 2A and 2B). The effect of deliberation in inference effects was unclear. Though Experiment 1A suggested inference had a greater effect under higher deliberation (in which it significantly mediated knowledge complexity effects), later experiments were less supportive. Future research is needed to clarify the role of inference assessments and deliberation at the time of behavior in determining the effects of knowledge complexity as well as other moderators of attitude-behavior consistency. More broadly, the present research suggests that there may be multiple roles for attitudes in influencing behavior (cf. Fabrigar, MacDonald, & Wegener, 2005).
Acknowledgments

First of all, I would like to thank my advisor, Duane Wegener, for his thoughtful help and insight in every stage of this endeavor. I would also like to thank graduate students and faculty at Ohio State for their advice and support along the way, and to thank my family and my partner, Anneke, for supporting me in whichever ways they could – whether through helpful suggestions or an encouraging word or a hug.
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Introduction

Attitudes have long been a key area of research within social psychology, and the study of attitudes and persuasion has produced some of the most groundbreaking social psychological research ever performed. Why is this the case? Why do attitudes matter? Examinations of the functional value of attitudes indicate that attitudes have many purposes. For example, we may express our core values through the attitudes we possess and that we proclaim (Katz, 1960). Perhaps the most important reason that attitudes matter, however, is that they are presumed to impact behavior: what people like determines what people do. However, people often do not seem to act in accordance with their attitudes and beliefs: dieters indulge, environmentalists throw recyclables into the trash, and New Year’s resolutions go unheeded year after year. In a 1969 paper, Alan W. Wicker famously reviewed a collection of studies examining attitude-behavior consistency – or lack thereof – and stated, “Taken as a whole, these studies suggest that it is considerably more likely that attitudes will be unrelated or only slightly related to overt behaviors than that attitudes will be closely related to actions” (p. 65).

There have been many responses to Wicker and others’ questioning of the utility of attitudes. Perhaps the most dominant response to this crisis, however, was the adoption of an attitude strength viewpoint. This perspective emphasizes that attitudes vary in their strength: the extent to which the attitudes predict behavior, resist persuasion
attempts, and endure over time (Krosnick & Petty, 1995; see Petty & Krosnick, 1995). Rather than asking “Do attitudes predict behavior?”, this viewpoint asks “When do attitudes guide behavior?” or “What kinds of attitudes are most predictive of behavior?” Properties of attitudes determine their strength: for example, attitudes that are held with greater certainty, are fairly one-sided rather than ambivalent, and are more accessible (more quickly activated when presented with the attitude object) are especially likely to predict one’s attitude-relevant behaviors (e.g., Conner et al., 2002; Fazio, Chen, McDonel, & Sherman, 1982; Fazio & Zanna, 1978).

The Elaboration Likelihood Model (ELM; Petty & Cacioppo, 1986) postulates that cognitive elaboration is a key determinant of attitude strength: attitudes that have been formed or changed via a thoughtful process will tend to be stronger than those formed under lower elaboration. From this perspective, then, what is crucial in determining attitude strength is the amount of elaboration underlying the attitude change process, rather than the persuasion variable (e.g., source expertise) per se. The ELM’s multiple roles postulate (Petty & Cacioppo, 1986; Petty & Wegener, 1998) suggests that a given persuasion variable may serve different roles depending on the level of cognitive elaboration in which the message recipient is engaging. For example, the physical attractiveness of the source of a message may act as a peripheral cue when one is not elaborating deeply, but may act as an argument under higher elaboration (e.g., the physical attractiveness of an endorser may be a valid argument if the product being advertised is a beauty product; Petty & Cacioppo, 1984). Whether persuasion by a physically attractive endorser leads to durable and influential attitudes, therefore, depends
in part on whether attractiveness acted as a cue or an argument (i.e., whether source attractiveness has an impact via relatively low- or high-elaboration mechanisms).

**Mechanisms Underlying Attitude-Behavior Relations**

Within the attitude-behavior consistency literature, the Motivation and Opportunity as Determinants (MODE) model (Fazio, 1990) emphasizes the importance of motivation and ability to think carefully at the time of behavior in determining how, and to what extent, one’s attitudes will guide behaviors. For relatively spontaneous behaviors, attitudes may bias perceptions (of a person, sports team, etc.) in an attitude-congruent manner. Accessible attitudes are more likely to come to mind and thus are especially likely to bias perception, and relevant behavior, in such a manner (e.g., Fazio & Towles-Schwen, 1999). When motivation or opportunity to deliberate is low, people may make decisions based on their overall attitudes even if this is not the most logical choice – for example, if one’s attitudes are racist or if one’s attitude is inconsistent with knowledge that is more relevant to the decision in question and would have encouraged making a different choice (e.g., Sanbonmatsu & Fazio, 1990). This does not mean, however, that one’s attitudes cannot guide behavior in higher deliberation settings. Fazio and Towles-Schwen (1999) give the example of an accessible attitude biasing the retrieval of information from memory: if a person is motivated and able to consult this recalled information when making a decision, but is unmotivated or unable to discover that it is a biased sample, then one’s attitude may exert a powerful impact even under higher deliberation conditions. However, this example seems to suggest that, if a person
were sufficiently motivated and able to consider the qualities of the information, s/he would correct for the (biasing) impact of the attitude on the recall.

Research using the MODE model has shed light on why accessible attitudes may be especially predictive of behavior, emphasizing the importance of automatic attitude activation as well as more deliberative processes that will sometimes diminish the impact of the attitude. However, strength-related properties of attitudes other than accessibility (e.g., attitude certainty, ambivalence) have received less theoretical attention of this type. For example, although attitudes held with greater certainty or less ambivalence tend to be more predictive of behavior, the mechanisms responsible for these findings are less clear. Recently, however, Fabrigar and colleagues (Fabrigar, MacDonald, & Wegener, 2005, Fabrigar, Wegener, & MacDonald, 2010) have begun to examine possible reasons why these attitude properties lead to stronger attitude-behavior relations. These researchers use a “multiple roles” perspective (cf. Petty & Cacioppo, 1986), emphasizing that there are multiple mechanisms by which attitudes influence behavior, and the mechanism by which one’s attitude influences behavior may depend on the amount of deliberation occurring at the time of the behavior. These multiple roles parallel the roles for persuasion variables in the ELM (Petty & Cacioppo, 1986) and incorporate a number of elements present in the MODE perspective as well.

Multiple Roles for Attitudes

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1 The authors distinguish between prediction processes, which determine whether an attitude (e.g., scale rating) predicts a relevant behavior, and influence mechanisms, which determine whether an attitude that one holds (measured or otherwise) exerts an impact on one’s behavior. The present research focuses on the latter.
What are these multiple roles for attitudes? When little deliberation is taking place at the time of behavior, one’s attitude may serve as a direct cue in guiding behavior: when making a low-thought decision, such as whether to purchase a chocolate bar while in a check-out line, one’s positive feelings toward that treat may serve as a direct cue, leading to that person purchasing the snack. These positive feelings, however, may have resulted from a celebrity endorsement that is unrelated to the deliciousness of the chocolate bar – in such a case, one’s attitude may not constitute a logical or thoughtful argument in favor of the purchase, but the attitude nonetheless is influential.

The second low-deliberation mechanism describes one’s attitude acting as an indirect cue: one’s attitude may bias perception of the target in an attitude-congruent manner (cf. the MODE model, Fazio, 1990). For example, positive attitudes toward oneself are associated with perceiving oneself as being more physically attractive than one truly is (Epley & Whitchurch, 2008), and spider phobia is associated with perceiving spiders as larger than they really are (Vasey et al., 2012). One could imagine various low-deliberation behaviors and decisions (e.g., whether to take a photo of oneself, or whether to run away from a spider) being influenced by this indirect cue effect of one’s attitudes.

The first of the two high deliberation mechanisms involves one’s attitude serving as a direct argument for or against a behavior. For example, even if one is motivated and able to think carefully about whether or not to go to a party, one’s attitude toward the host may be seen as a valid reason to attend that party – or to stay home (cf. Fabrigar et al., 2005, Fabrigar et al., 2010). Attitudes may also influence behaviors under high deliberation conditions by biasing processing of information relevant to the merit of the
behavior in question. Classic research on biased assimilation (Lord, Ross, & Lepper, 1979), for example, has demonstrated that peoples’ attitudes may bias one’s interpretation of scientific evidence in an attitude-congruent manner (e.g., in a manner that favors or opposes the death penalty), and further research demonstrated that accessible attitudes are especially likely to bias processing in this paradigm (Houston & Fazio, 1989). More generally, because attitudes need to be activated in order to serve as cues, arguments, and so forth, attitude accessibility may be an important determinant of whether attitudes influence behaviors, independent of deliberation (Fabrigar et al., 2005).

From this multiple roles perspective, moderators of attitude-behavior consistency may exert their effects by affecting the likelihood that one’s attitudes will serve in one or more of the aforementioned roles. As noted above, accessibility is important because an attitude needs to “come to mind” in order for it to exert its effects. Attitude certainty (or less ambivalence) may increase attitude-behavior consistency by increasing one’s likelihood of viewing the attitude as a valid argument or by reducing one’s likelihood of viewing the attitude as a bias that must be ignored (Fabrigar et al., 2005). These validity mechanisms are metacognitive, and thus would be most likely to occur when one is motivated and able to deliberate at the time of the behavior.

The Impact of Issue-Relevant Knowledge

Issue-relevant knowledge, like accessibility and certainty, is associated with higher attitude-behavior consistency (e.g., Davidson, Yantis, Norwood, & Montano, 1985). The mechanism(s) underlying its effects, however, are unclear. Davidson and colleagues suggest that attitudes based on more issue-relevant knowledge might be
especially stable. That is, if one has much information underlying an attitude, the addition of new information is proposed to be less influential than if there were less information previously underlying that attitude. In a sense, the effect of new information is seen as being diluted by the presence of existing attitude-relevant knowledge; the greater the amount of knowledge, the weaker the effect of new knowledge. Davidson and colleagues propose, therefore, that a stability mechanism may underlie the effect of knowledge quantity on attitude-behavior consistency. However, other potential processes have also been suggested as underlying knowledge effects.

Some have suggested that attitudes based on greater knowledge may also be more accessible or held with greater certainty (Davidson et al., 1985; Fabrigar, Petty, Smith, & Crites, 2006). If knowledge effects are due to other attitude properties such as certainty, then knowledge per se does not directly moderate attitude-behavior consistency (Fabrigar et al., 2006). However, recent research suggests mechanisms by which knowledge per se (i.e., not certainty or accessibility due to knowledge) may increase the influence of attitudes on behavior. Fabrigar and colleagues (2006) have proposed an inference process that may underlie issue-relevant knowledge effects on attitude-behavior consistency. These authors propose that the influence of knowledge may depend on specific properties of knowledge that are conceptually distinct from mere amount of knowledge but often associated with amount of knowledge. These properties may impact whether people make the inference that attitude-relevant knowledge is applicable to a behavioral choice. For example, when deciding on a behavior, people may take into account the behavioral relevance of knowledge underlying an attitude. Attitudes may be
especially predictive of a behavior if the knowledge underlying the attitude is considered to be relevant to the behavior in question (cf. Sanbonmatsu & Fazio, 1990).

In order to take behavioral relevance into account, it seems likely that individuals would have to be able to deliberate at the time of behavior. Fabrigar and colleagues also demonstrate that complexity of the knowledge underlying an attitude, defined as “the number of distinct dimensions of knowledge underlying an attitude” (Fabrigar et al., 2006, p. 558 footnote), is associated with greater attitude-behavior consistency. Even if no one dimension of knowledge is directly relevant to the behavior in question, people may see the knowledge as being more applicable to the behavior in question than if the knowledge had been less complex.

Fabrigar et al. (2006) found evidence for the enhancing effect of behavioral relevance and knowledge complexity on attitude-behavior relations in a department store paradigm (cf. Sanbonmatsu & Fazio, 1990). Participants read descriptions of two fictional department stores, Smith’s and Brown’s. One store was described in more favorable terms (e.g., higher-quality products or cheaper prices) than the other in order to ensure variance in attitudes across the stores. In order to assess attitude-behavior consistency, Fabrigar et al. measured participants’ attitudes toward the stores as well as individuals’ store choice when imagining shopping for a given product. In order to address the behavioral relevance mechanism, these researchers provided participants with information about each department store’s camera or sporting goods department and assessed which store participants would choose when shopping for a relevant product (e.g., camera if the provided information described the camera department) or an
irrelevant product (e.g., sporting goods if the provided information described the camera department). Behavioral relevance of the information was varied between participants. Fabrigar and colleagues also varied the level of deliberation at the time of the behavior choice by having half of the participants perform a distractor task (a letter-counting task presented using headphones) in order to reduce deliberativeness among these individuals at the time of store choice. When information underlying the attitude was relevant to the behavior in question (e.g., camera information and a camera purchase), attitude-behavior consistency was higher than when the information was lower in behavioral relevance (e.g., sporting goods information and a camera purchase). Furthermore, this enhancing effect of relevance was greatest when individuals were not distracted at the time of the store choice, which supported the idea that the effects of behavioral relevance require deliberation at the time of the behavior.

In order to test the effects of knowledge complexity, Fabrigar and colleagues presented participants in a different study with department store descriptions that either contained information about the camera department at each store (low complexity) or the camera, gardening, and sporting goods departments (high complexity), while keeping the mere amount of knowledge (number of pieces of information) equal. When the behavioral choice was not directly relevant to the information provided (e.g., choosing a store to make a jewelry purchase), participants in the higher complexity condition demonstrated higher attitude-behavior consistency than did participants in the lower complexity condition. This effect was found even though pretesting indicated that cameras tend to be seen as more relevant to jewelry than gardening supplies or sporting
goods. Thus, the complex condition’s superior attitude-intention relationship was not due
to greater direct behavioral relevance of the other two departments to the choice of store
for a jewelry purchase.

These results are consistent with Sanbonmatsu and Fazio’s (1990) discovery that
attitudes were used most when people were unable or unmotivated to think about the
specific knowledge underlying the attitude. In these previous experiments, the
information underlying the attitude that was most relevant to the behavior was
inconsistent with the overall attitude, and higher levels of deliberation were associated
with individuals relying less on their overall attitude when making a choice. From an
inference perspective, it makes sense that higher levels of deliberation would have been
required to enable participants to judge their attitudes as inapplicable to the behavior.

As can be seen, then, initial findings indicate that behavioral relevance and
knowledge complexity may increase attitude-behavior consistency. The behavioral
relevance effects appear to be deliberative in nature. Likewise, the complexity effect, if it
involves inferences of applicability (i.e., whether one’s attitude is seen as worthy of being
extrapolated to behavioral choices not directly related to the information underlying the
attitude), might also require that a person be able to deliberate at the time of the decision.
However, the effect of deliberation on complexity processes has not been tested. Also
missing in the literature is a mediation analysis indicating that perceptions of applicability
(of the attitude to behavior) underlie the effect of complexity on attitude-behavior
consistency, at least when people are able to deliberate at the time of behavior. The
present research, therefore, examined these aspects of attitude complexity and attitude-
behavior consistency. I hypothesized that, when people engage in high-deliberation behavior, complexity would increase attitude-behavior consistency via the proposed inference mechanism. I examined whether complexity might also increase attitude-behavior consistency when people engage in less deliberation at the time of behavior. As a whole, this research was aimed at shedding light on the general processes by which attitudes influence behavior. Although the present studies focused on the particular strength-related variable of knowledge complexity, the proposed inference process might underlie the effects of many other moderators of attitude-behavior relations.
Pilot Study: Examining the Potential Influence of Deliberation on Complexity Effects on Attitude-Behavior Consistency

In a pilot study, I aimed to test whether the knowledge complexity effects found by Fabrigar and colleagues (2006) would be influenced by the amount of deliberation in which people could engage while deciding upon a behavioral intention. To that end, I presented participants with descriptions of two department stores, assessed attitudes and attitude properties, and then had participants select one of the stores for a hypothetical jewelry purchase, with roughly half of participants performing the store choice task while distracted with a vowel counting task.

Method

Participants and Design

Participants (N = 176) were students (minimum age = 18 years) enrolled in an introductory psychology class at The Ohio State University. These participants completed the study on desktop computers in a psychology laboratory and were given 0.5 course credits for their participation in a 30-minute study.

The design was 2 (Attitude Manipulation: Brown’s more favorable or Smith’s more favorable) X 2 (Knowledge Complexity: one department or three departments) X 2 (Deliberation Manipulation: lower deliberation or higher deliberation during the intention
measure), with attitude, knowledge complexity and deliberation manipulated between participants.

Procedure

Store descriptions. After consenting to participate, participants were provided with descriptions of two fictional department stores, Smith’s Department Store and Brown’s Department Store. The department store descriptions were taken from Fabrigar et al. (2006, see also Sanbonmatsu & Fazio, 1990), with only minor changes. These store descriptions began with a paragraph describing the department store, followed by a paragraph(s) describing specific department(s). Knowledge complexity was manipulated between participants by presenting either one paragraph describing that store’s camera department (simple condition) or three paragraphs describing the camera, sporting goods, and gardening departments (complex condition). To avoid confounding complexity with amount of knowledge, the store descriptions included six pieces of information in both complexity conditions – either six facts about the camera department (simple condition) or two pieces of information about each of the three departments (complex condition). All department store information was presented on one screen in the computer program. Attitudes toward each store were manipulated by describing either Brown’s or Smith’s in more favorable terms. Each description was evaluatively consistent: the more positive store description contained six pieces of information that were each consistently more positive (e.g., lower prices, more experienced employees) than were the six pieces of information provided in the negative (i.e., less positive) store description (see Appendix A, Section A1, for the store descriptions). Knowledge complexity and which store
(Smith’s or Brown’s) was described more favorably (i.e., the attitude manipulation) was varied between participants. In this pilot study, the more favorably described department store was always presented before the less favorably described store.²

**Attitude ratings and attitude properties.** In the next stage, participants completed attitude ratings and measures of attitude properties for each department store, beginning with the department store whose description had been presented first in the previous stage. The attitude measures contained positive or negative terms (dislike, good, undesirable, bad, like, positive, negative, desirable; cf. Crites, Fabrigar, & Petty, 1994) and participants indicated their level of agreement or disagreement with each term, as a descriptor of a given department store, on a seven-point scale (1: not at all – 7: definitely). I computed attitude ratings for each department store by calculating the mean of the eight 7-point attitude items for each store, with negatively worded items (e.g., dislike) reverse scored. In order to create a differential attitude index indicating one’s preference for Brown’s compared with Smith’s Department Store, I subtracted the mean attitude rating for Smith’s from the mean attitude rating for Brown’s Department Store (cf. Fabrigar et al., 2006). As in Fabrigar and colleagues’ research, this index served as the primary “attitude” predictor variable in analyses.

Upon completing the attitude ratings for a given store, participants completed measures of perceived knowledge (“How much do you think you know about Brown's [Smith’s] Department Store?” 1: very little – 7: a great deal), certainty (“How certain do

² Experiments 1B and beyond had order counterbalanced with the favorability of the descriptions rather than confounding order with favorability.
you feel about your evaluation of Brown's [Smith’s] Department Store?” 1: not at all certain – 7: completely certain) and ambivalence (“When considering Brown's [Smith’s] Department Store, to what extent are your reactions completely positive or negative versus completely mixed?” 1: completely one-sided – 7: completely mixed) for that store. Because the level of knowledge complexity was always the same for both presented stores, before performing analyses using these potentially associated properties of the resulting attitudes, I added the two knowledge, certainty, or ambivalence responses (one per store, e.g., Brown’s attitude certainty added to Smith’s attitude certainty) to create an overall index of the level of perceived knowledge, certainty, or ambivalence associated with the attitudes toward the stores.

**Intention measures and deliberation manipulation.** In the following stage, participants completed behavioral intention measures while wearing headphones. This measure constituted the behavioral dependent variable. The deliberation manipulation occurred during this stage. While performing this task, participants in the lower deliberation condition were presented with a string of letters via the headphones, and were instructed to keep track of the number of vowels presented. These participants were also asked to answer the measures quickly. Their specific instructions were as follows.

*In everyday life, it is common for people to make quick decisions while being engaged in another unrelated activity, such as trying to decide which video to rent while discussing an upcoming exam with a friend. The following task is designed to examine how people make fast decisions while engaging in more than one task.* You will be asked to make several
evaluations of factual items while hearing a string of letters on a set of headphones. We would like you to keep track of the number of times a VOWEL was stated in the string of letters as you make the judgments.

For example, if the letters you heard over the headphones were: A, G, F, D, A, you should have counted 2 vowels during the sequence. After finishing the set of questions, you will be asked to recall how many vowels you heard, in total, in the strings of letters. Please respond quickly when answering the questions, making sure that you answer each question before the strings of letters finish playing.

Please put on the headphones now and click on the "continue" button to begin.

Participants in the higher deliberation condition, on the other hand, were instructed to respond to the intention measures carefully, and were told to wear headphones in order that they might avoid distraction. Their specific instructions were as follows.

In everyday life, it is common for people to make thoughtful decisions, such as trying to carefully decide which video to rent. The following task is designed to examine how people make thoughtful decisions while engaged in only one task at a time. You will be asked to make several evaluations of factual items. Please respond carefully when answering the questions.
To avoid distraction, please put on the headphones before answering these questions and click continue when you are ready to begin.

All participants answered two filler measures assessing which of a pair of stores they would choose to go to in order to purchase new jewelry (e.g., 1: I would definitely shop for jewelry at Target – 7: I would definitely shop for jewelry at Macy's), followed by the two intention measures of interest, which assessed which of the two department stores, Smith’s or Brown’s, they would choose if they were deciding where to purchase new jewelry (e.g., 1: I would definitely shop for jewelry at Smith's Department Store – 7: I would definitely shop for jewelry at Brown's Department Store). Participants in the lower deliberation condition were then asked to indicate the number of vowels that they had counted.

Following the store choice measures, participants completed items from a different experiment. Lastly, participants were presented with a debriefing page on the computer and were thanked for their participation.

Results

Prior to performing multiple regression analyses, I centered all independent variables. When analyzing the data, I included all manipulated variables unless the model included a measured variable (e.g., the differential attitude index) instead of a manipulated variable (e.g., attitude manipulation). In this pilot study, the manipulated variables were: Attitude Manipulation (Brown’s described more favorably or Smith’s described more favorably), Knowledge Complexity (lower complexity: one department
or higher complexity: three departments), and Deliberation Manipulation (lower deliberation or higher deliberation during the intention measure).

**Differential Attitude Index**

The department store whose department(s) descriptions were more favorable was generally viewed as superior to the other department store. A multiple regression analysis with the differential attitude index as the criterion variable indicated that this index was more positive when Brown’s was described more favorably ($M = 1.00, SD = 1.45$) than when the Brown’s was described less favorably ($M = -1.31, SD = 1.46$), $B = 2.30$, $t(168) = 10.58$, $p < .001$.

Although not intended, the pattern of results indicated that the knowledge complexity manipulation enhanced the difference in attitudes between the two stores, Knowledge Complexity X Attitude Manipulation interaction $B = 0.59$, $t(168) = 2.41$, $p = .02$. An examination of simple effects of the attitude manipulation on the differential attitude index, within each complexity condition, indicated that when knowledge complexity was lower, the attitude manipulation predicted the differential attitude index rating, $B = 1.78$, $t(85) = 6.75$, $p < .001$. When Brown’s was described more favorably, the differential attitude index was more positive ($M = 0.77, SD = 1.18$) than when Brown’s was described less favorably ($M = -1.02, SD = 1.28$). However, when knowledge complexity was higher, the attitude manipulation was even more predictive, $B = 2.83$, $t(83) = 8.16$, $p < .001$. Again, when Brown’s was described more favorably, the differential attitude index was more positive ($M = 1.22, SD = 1.66$) than when Brown’s was described less favorably ($M = -1.63, SD = 1.59$), but this difference was even greater
than it had been in the low complexity condition. This result could prove problematic because it indicates that the effect of knowledge complexity on attitude ratings parallels the expected effect of knowledge complexity on behavioral intentions. This pattern of results could lead to higher knowledge complexity being associated with greater differences on the store choice measure, not due to participants using these attitudes more (due to some property of knowledge complexity), but due to the attitudes being more discrepant (i.e., more positive toward the better store and more negative toward the worse store) in the more complex condition. In other words, one could observe a Knowledge Complexity X Manipulated Attitude interaction on behavioral intentions not because the resulting attitudes differentially impact intentions but because there is a Knowledge Complexity X Manipulated Attitude interaction on the Differential Attitude Index itself (with equal impact of the attitude index on intentions across complexity conditions).

Further analyses, therefore, used the differential attitude index rather than the attitude manipulation as a predictor of intentions, in order to examine whether the complexity manipulation influenced the impact of the attitudes on intentions. However, as a point of comparison, Appendix B, Table B2, presents results across studies using the attitude manipulation.

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3 This issue becomes less important when examining effects of deliberation on attitude-intention relations within each level of complexity. Even so, for the basic analyses, this approach also parallels the approach previously used by Fabrigar et al. (2006). As Fabrigar and colleagues (2006, p. 563) noted, attitude ratings may be preferable to attitude manipulations in these analyses. With regard to their data, they stated, “A second alternative approach to exploring attitude–behavior consistency in the present data is to use the assignment to the positivity of information condition as a proxy variable for the differential attitude index. That is, one could treat the magnitude of the mean difference in behavior scores for the Smith’s more positive versus Brown’s more positive conditions as an index of attitude–behavior consistency... Once again, this approach seems less optimal than the differential attitude index approach. Simple categorical representation of the differences in attitudes fails to take into account that participants varied somewhat in their reactions to the information. The differential attitude index captures such variations in reactions, whereas collapsing differential attitudes into a dichotomous representation loses this potentially valuable information (see MacCallum, Zhang, Preacher, & Rucker, 2002). Not surprisingly, use of the categorical index produces similar patterns, but some effects were weaker...”
manipulation as the independent variable instead of the differential attitude index. In the following analyses, I will use the term “Attitude” to refer to the differential attitude index.

**Attitude Properties: Certainty, Ambivalence, Perceived Knowledge, Absolute Extremity**

Complexity did not significantly affect measures of certainty, $B = 0.69, t(168) = 1.69, p = .09$, ambivalence, $B = -0.33, t(168) = -0.94, p = .35$, perceived knowledge, $B = 0.27, t(168) = 0.74, p = .46$, or absolute attitude extremity (i.e., distance from 4, the attitude scale midpoint for each attitude measure), $B = 2.09, t(168) = 1.29, p = .20$.

**Complexity and Attitude-Intention Consistency**

The differential attitude index predicted behavioral intentions, $B = 0.98, t(168) = 8.02, p < .001$. As hypothesized, there was a significant Attitude X Knowledge Complexity interaction, $B = 0.59, t(168) = 2.41, p = .02$. Follow-up analyses indicated that when information was less complex, the differential attitude index was predictive of intention, $B = 0.69, t(85) = 3.49, p = .001$, but when information was more complex, attitudes were even more predictive of intention, $B = 1.28, t(83) = 8.99, p < .001$. The Attitude X Knowledge Complexity interaction was not moderated by deliberation; $B = -0.18, t(168) = -0.37, p = .71$. These results are summarized (along with parallel analyses of later studies) in Appendix B, Table B1.

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4 There were ancillary effects that were not of theoretical interest. The Deliberation X Knowledge Complexity interaction predicted ambivalence, $B = -1.43, t(168) = -2.02, p = .05$. Both the Attitude Manipulation and the Deliberation X Attitude Manipulation interaction predicted perceived knowledge, $B = -0.78, t(168) = -2.09, p = .038$ and $B = -1.50, t(168) = -2.03, p = .04$, respectively. The Attitude Manipulation also significantly predicted absolute attitude extremity, $B = -3.62, t(168) = -2.23, p = .03$. 
Pilot Study Discussion

The results of the pilot study suggest that the enhancing effect of knowledge complexity on attitude-behavior consistency does not require that individuals are able to deliberate at the time of the behavior. In follow-up experiments, I hypothesized that individuals’ inferences about attitude applicability would mediate the effects of complexity, at least when individuals were able to deliberate at the time of the behavior.
Experiments 1A and 1B: Initial Tests of the Mediating role of Inference in Complexity Effects

I performed two initial tests of the hypothesized inference process. I will refer to them as Experiments 1A and 1B. In most respects related to the primary hypotheses, the two experiments were parallel to each other. In the method and procedure sections, I will note the differences in the methods used between the two studies.

Method

Participants and Design

Experiment 1A. About half of the participants in Experiment 1A ($n = 115$) were students (minimum age = 18 years) enrolled in an introductory psychology class at The Ohio State University. These participants completed the study on desktop computers in a psychology laboratory and were given course credit for their participation. The remaining participants ($n = 112$) were recruited at a campus library and completed the study on laptops. As a token of appreciation, these participants were offered a piece of candy upon completion of the study. For convenience, the former sample will be referred to as “laboratory participants” and the latter group will be referred to as “laptop participants” when such distinctions are needed.

The design of Experiment 1A was 2 (Attitude Manipulation: Brown’s more favorable or Smith’s more favorable) X 2 (Knowledge Complexity: one department or
three departments) X 2 (Deliberation Manipulation: lower deliberation or higher deliberation during the intention measure) X 2 (Location: laboratory or library), with knowledge complexity, attitudes, deliberation, and location serving as between-participant factors.

*Experiment 1B.* Participants in Experiment 1B (N = 250) were all students enrolled in an introductory psychology class at The Ohio State University. These participants completed the study on desktop computers in a psychology laboratory and were given course credit for their participation.

The design of Experiment 1B was 2 (Attitude Manipulation: Brown’s more favorable or Smith’s more favorable) X 2 (Knowledge Complexity: one department or three departments) X 2 (Deliberation Manipulation: lower deliberation or higher deliberation during the intention measure) X 2 (Order: Brown’s described first or Smith’s described first), with knowledge complexity, attitudes, deliberation, and order manipulated between participants.

*Procedure*

*Store descriptions.* Participants completed the study on computers, either desktop computers in a laboratory or laptop computers in a campus library (for 112 participants in Experiment 1A). After consenting to participate, participants were provided descriptions of two fictional department stores, as described in the pilot study.\(^5\) As in the pilot study, for Experiment 1B, the three department descriptions

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\(^5\) For Experiment 1A, minor changes from the pilot study included grouping the three store descriptions (in the complex condition) into one paragraph rather than presenting them as separate paragraphs. However, due to experimenter error, some participants in the complex condition received the department store information as three separate paragraphs as well. For Experiment 1B, the three department descriptions
the stores varied in complexity (between participants) and in favorability. In Experiment 1A, as in the pilot study, the better store was always described first. In Experiment 1B, I also manipulated order of presentation (Brown’s or Smith’s presented first), independently of the attitude manipulation. Appendix A, Section A1 presents sample store descriptions.

**Attitude ratings and attitude properties.** As in the pilot study, in the next stage, participants completed attitude ratings for each store. Whereas laboratory participants (whether in Experiment 1A or 1B) completed eight items for each department store, laptop participants completed two. All participants completed measures of perceived knowledge, certainty, and ambivalence as in the pilot study.⁶

**Intention measures and deliberation manipulation.** Before the next stage, laboratory participants in Experiment 1A completed filler material (items from a different study), whereas laptop participants in 1A, and all participants in 1B, immediately proceeded to the next stage. In the following stage, participants completed behavioral

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⁶ In Experiment 1B and beyond, the certainty measure was re-worded to “How certain do you feel about your ratings of Brown's Department Store?” rather than using the potentially less clear term of “evaluation”.

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intention measures as in the pilot study, with participants in the low deliberation condition simultaneously performing a vowel counting task.

*Inference measures.* The following stage aimed to assess the inference mechanism proposed by Fabrigar and colleagues (2006). Before completing inference measures, participants were asked two filler questions (which store, among a list of real-life stores such as Macy’s and Wal-Mart, they considered to be most similar to Smith’s, and which they considered to be most similar to Brown’s). These fillers were followed by the inference measures: Laboratory participants in 1A and all participants in 1B answered six items, scored 1 to 7 (1 = *Not at all [relevant, useful, etc.]*, 7 = *Very [relevant, useful, etc.]*) assessing how useful the department store information or their overall impression of the stores was to their choice of where they would purchase jewelry. Laptop participants in 1A completed four of these items. These items are below in the order they were presented to laboratory participants, with asterisks beside the subset of inference items that laptop participants completed.

*1) Earlier, you read information about each department store (Smith's and Brown's). How relevant do you think this information was to your decision regarding where to purchase jewelry (either Smith's or Brown's)?

*2) How useful was the information about each department store (Smith's and Brown's) in terms of telling you how good or bad the jewelry department is likely to be in each store?

*3) How relevant was your overall impression of each store (Smith's and Brown's) to your choice of store for a jewelry purchase?
4) Given what you know about each store, how confident would you be in making judgments about how good its jewelry department is?

5) To what extent would the information you received about each department store be useful in deciding where to shop for products that were NOT mentioned in the store descriptions?

*6) To what extent was the information informative about the general qualities of the store?

Following the inference measures, laboratory participants completed items from a different experiment. Lastly, all participants were presented with a debriefing page on the computer and were thanked for their participation. Laboratory (and 1B) participants completed the study in approximately 20 minutes, and laptop participants completed the study in around 5 minutes.

Results

As noted in the Procedure section, laptop participants in Experiment 1A completed a subset of the items that were presented to the laboratory participants. Therefore, only measures completed by both sets of participants (e.g., two attitude scales, four inference measures) were used in the analyses of Experiment 1A. Although I had intended to present participants in the lower deliberation condition with a vowel counting task via headphones during the intention measures, the computers were muted for some of the laptop participants in the low deliberation condition ($n = 8$). These participants’ data were therefore omitted from analyses that involved the distraction manipulation.
For Experiment 1A data, I computed attitude ratings for each department store by adding the scores on the two 7-point attitude measures that had been presented to both laptop and lab participants, *good* and *dislike* (reverse scored). These two items were significantly correlated (*r* = .23, *p* < .001 for Brown’s, *r* = .28, *p* < .001 for Smith’s), though reliability was low (α = .36 for Brown’s and .42 for Smith’s).7 For Experiment 1B, these attitude measures included eight items that were reliable (α = .91 for Brown’s and .89 for Smith’s). As in the pilot study, I created a differential attitude index by subtracting the mean attitude rating for Smith’s from the mean attitude rating for Brown’s Department Store.

*Differential Attitude Index*

The department store whose department(s) descriptions were more favorable was generally viewed as superior to the other department store. In Experiment 1A, a linear regression with criterion of the differential attitude index indicated that this index was more positive when Brown’s was described more favorably (*M* = 0.63, *SD* = 1.58) than when Brown’s was described less favorably (*M* = -0.58, *SD* = 1.57), *B* = 1.23, *t*(203) = 5.90, *p* < .001. Likewise, in Experiment 1B, this index was more positive when Brown’s was described more favorably (*M* = 0.91, *SD* = 1.18) rather than less favorably (*M* = -0.91, *SD* = 1.25), *B* = 1.83, *t*(234) = 12.03, *p* < .001. As in the pilot study, there was a significant Knowledge Complexity X Attitude Manipulation interaction in Experiment 1A, *B* = 1.33, *t*(203) = 3.17, *p* = .002. Again, knowledge complexity enhanced the effect.

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7 An examination of all eight attitude items (among laboratory participants), however, indicated good reliability (Brown’s: α = .92, Smith’s: α = .91).
of the attitude manipulation on resultant attitude ratings. In lower complexity conditions, the attitude manipulation marginally predicted scores on the differential attitude index, $B = 0.56, t(99) = 1.93, p = .06$, such that the differential attitude index was somewhat more positive when Brown’s was described favorably ($M = 0.28, SD = 1.59$) than when Brown’s was described less favorably ($M = -0.27, SD = 1.44$). In higher complexity conditions however, the attitude manipulation significantly predicted scores on the differential attitude index, $B = 1.88, t(104) = 6.22, p < .001$, such that the differential attitude index was more positive when Brown’s was described favorably ($M = 0.99, SD = 1.49$) than when Brown’s was described less favorably ($M = -0.85, SD = 1.63$). In Experiment 1B, however, the Knowledge Complexity X Attitude Manipulation interaction was non-significant, $B = 0.37, t(234) = 1.21, p = .23$. As in the pilot study (and as in Fabrigar et al., 2006), the current analyses focus on the attitude measure when assessing attitude-store choice relationships. Appendix B, Table B2 contains results using the attitude manipulation.

Knowledge Complexity, Inference, and Attitude Properties

The four inference items used in Experiment 1A analyses demonstrated good reliability ($\alpha = .80$), and inclusion of the remaining two items (since all six were presented to participants in Experiment 1B) was also associated with good reliability ($\alpha = .84$). Greater knowledge complexity was associated with higher inference ratings. In Experiment 1A, a linear regression indicated that mean inference ratings were higher in

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8 There were ancillary effects that were not of theoretical interest. The Location X Knowledge Complexity term predicted differential attitude index ratings in 1A, $B = 0.92, t(203) = 2.20, p = .03$, and the Attitude Manipulation X Order interaction predicted differential attitude index ratings in Experiment 1B, $B = 0.78, t(234) = 2.57, p = .01$.
the high knowledge complexity condition \((M = 3.81, SD = 1.30)\) than in the low knowledge complexity condition \((M = 3.27, SD = 1.41)\), \(B = 0.53, t(203) = 2.85, p = .005\). Likewise, in Experiment 1B, greater knowledge complexity was associated with higher inference ratings. A linear regression indicated that mean inference ratings were greater in the high knowledge complexity condition \((M = 3.85, SD = 1.14)\) than in the low knowledge complexity condition \((M = 3.30, SD = 1.32)\), \(B = 0.54, t(234) = 3.46, p = .001\).

In Experiment 1A, knowledge complexity was not significantly associated with measures of certainty, \(B = 0.29, t(203) = 0.85, p = .39\), ambivalence, \(B = -0.40, t(203) = -1.30, p = .20\), perceived knowledge, \(B = 0.30, t(203) = 0.93, p = .35\), or absolute extremity (distance from 4, the attitude scale midpoint), \(B = -0.12, t(203) = -0.33, p = .74\).\(^9\) In Experiment 1B, knowledge complexity was negatively associated with our measures of certainty, \(B = -0.57, t(234) = -2.03, p = .04\), and was not associated with ambivalence, \(B = 0.46, t(234) = 1.47, p = .14\), perceived knowledge, \(B = 0.25, t(234) = 0.08, p = .93\), or absolute extremity, \(B = -0.59, t(234) = -0.48, p = .63\).\(^10\)

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\(^9\) Though not of theoretical interest, in 1A, the Location term was associated with certainty ratings, \(B = 0.73, t(203) = 2.17, p = .03\), and with absolute attitude extremity, \(B = 1.18, t(203) = 3.25, p = .001\).

\(^10\) A number of ancillary effects in 1B were significant but not of theoretical interest. The Attitude Manipulation term predicted certainty, \(B = 0.77, t(234) = 2.73, p = .007\). The Attitude Manipulation X Knowledge Complexity X Order X Deliberation interaction was associated with ambivalence, \(B = 5.12, t(234) = 2.05, p = .04\). The Attitude Manipulation X Order X Deliberation interaction was associated with perceived knowledge, \(B = -2.48, t(234) = -2.02, p = .045\). The Attitude Manipulation predicted absolute attitude extremity, \(B = 2.49, t(234) = 2.03, p = .04\).
Knowledge Complexity and Attitude-Intention Consistency

The differential attitude index predicted behavioral intention in Experiment 1A, $B = 0.59$, $t(203) = 4.73$, $p < .001$, and 1B, $B = 1.22$, $t(234) = 9.84$, $p < .001$. Attitudes that were based upon more complex knowledge were more predictive of intention. A linear regression with the criterion variable of intention yielded a significant Knowledge Complexity X Attitude interaction term for both studies; in Experiment 1A, $B = 0.63$, $t(203) = 2.49$, $p = .01$, and in Experiment 1B, $B = 0.54$, $t(234) = 2.16$, $p = .03$. Follow-up analyses of this interaction indicated that, in Experiment 1A, when information was less complex, the differential attitude index was not significantly predictive of intention, $B = 0.27$, $t(99) = 1.59$, $p = .12$, but when information was more complex, attitudes were significantly predictive of intention, $B = 0.90$, $t(104) = 5.19$, $p < .001$. Similarly, in Experiment 1B, when information was less complex, the differential attitude index was predictive of intention, $B = 0.94$, $t(112) = 4.59$, $p < .001$, but when information was more complex, attitudes were even more strongly predictive of intention, $B = 1.48$, $t(122) = 9.95$, $p < .001$.

The abovementioned interaction was not further moderated by deliberation; in Experiment 1A, the Attitude X Knowledge Complexity X Deliberation interaction was non-significant, $B = 0.39$, $t(203) = 0.76$, $p = .45$, and in Experiment 1B, $B = 0.51$, $t(234) = 1.01$, $p = .31$. However, patterns suggested that knowledge complexity might have a greater effect under higher deliberation. In Experiment 1A, when level of deliberation was lower, the Knowledge Complexity X Attitude term was non-significant, $B = 0.43$, 11

11 Though not of theoretical interest, in 1B, the Attitude X Order interaction significantly predicted intention, $B = -0.53$, $t(243) = -2.16$, $p = .03$.  

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\( t(99) = 1.03, p = .31 \), but when level of deliberation was higher, this interaction was significant, \( B = 0.81, t(104) = 2.73, p = .01 \). Likewise, in Experiment 1B, under lower deliberation conditions, the Knowledge Complexity X Attitude term was non-significant, \( B = 0.28, t(114) = 0.78, p = .44 \), but under higher deliberation conditions, this interaction was significant, \( B = 0.79, t(120) = 2.28, p = .02 \). The regression analyses just described are presented in Appendix B Table B1, and equivalent analyses using the attitude manipulation are in Table B2.

**Inference Measures and Attitude-Intention Consistency**

Attitudes that were seen as more applicable to the decision of where to purchase jewelry (Smith’s or Brown’s) were more predictive of participants’ behavioral intentions. A linear regression with the criterion variable of intention yielded a significant Inference X Attitude interaction term in Experiment 1A, \( B = 0.22, t(203) = 2.42, p = .02 \), and in Experiment 1B, \( B = 0.22, t(234) = 2.57, p = .01 \). I probed these interactions, examining the predictive power of the differential attitude index at inference ratings one standard deviation above the mean, at the mean, and one standard deviation below the mean.

In Experiment 1A, when information was seen as highly applicable (inference ratings 1 SD above the mean), the differential attitude index was predictive of store choice, \( B = 0.98, t(203) = 5.11, p < .001 \). With inference ratings at the mean, this index was, again, predictive of store choice, \( B = 0.68, t(203) = 5.28, p < .001 \). However, when inference ratings were lower (1 SD below the mean), this index was less predictive of

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\(^{12}\)The Knowledge Complexity terms were omitted for these initial analyses involving inference ratings.  
\(^{13}\)Though not of theoretical interest, in Experiment 1A, Location was associated with behavioral intention, \( B = 0.81, t(203) = 1.99, p = .05 \), as was the Location X Inference term, \( B = 0.18, t(203) = 2.38, p = .02 \).
store choice, $B = 0.37, t(203) = 2.25, p = .03$. Similarly, in Experiment 1B, when information was seen as highly applicable (inference ratings 1 SD above the mean), the differential attitude index was predictive of intention, $B = 1.41, t(234) = 9.71, p < .001$. With inference ratings at the mean, the index was, again, predictive of intention, $B = 1.13, t(234) = 8.61, p < .001$. When inference ratings were lower (1 SD below the mean), this index was still significantly predictive of store choice, but less so, $B = 0.85, t(234) = 4.45, p < .001$.

In Experiment 1A, the linear regression just described also yielded a marginal Deliberation X Attitude X Inference term, $B = 0.30, t(203) = 1.65, p = .10$. Although this interaction was only marginally significant, it seems that Inference X Attitude most strongly predicted store choice when participants were able to deliberate. An examination of the Inference X Attitude interaction within each deliberation condition indicated that whereas under lower deliberation, the Inference X Attitude term did not predict store choice, $B = 0.07, t(99) = 0.43, p = .67$, under higher deliberation, this interaction significantly predicted store choice, $B = 0.37, t(104) = 3.47, p = .001$.

In Experiment 1B, on the other hand, the linear regression just described yielded a non-significant Deliberation X Attitude X Inference term in the opposite direction, $B = -0.21, t(234) = -1.26, p = .21$. An examination of the Inference X Attitude interaction within each deliberation condition in Experiment 1B indicated that under lower deliberation, the Inference X Attitude term predicted store choice, $B = 0.33, t(114) = 2.94, p = .004$, but under higher deliberation, this interaction did not significantly predict store choice, $B = 0.12, t(120) = 0.90, p = .37$. In other words, the pattern of results in
Experiment 1B (inference increased attitude-behavior consistency under lower deliberation) was a reversal, albeit a non-significant one, of the pattern in Experiment 1A, in which inference increased attitude-behavior consistency under higher deliberation.

**Bootstrapping Analyses**

In order to examine whether inference mediates the link between complexity and attitude-intention consistency, I performed bootstrapping analyses using the PROCESS macro (Hayes, in press), Model 4, a mediation model. Because I hypothesized that the inference process might depend on deliberation, I divided the data by deliberation before performing these analyses. See Figure 1 for the mediation model. The bootstrapping analyses are presented separately for Experiments 1A and 1B.

![Mediation model](image)

Figure 1. Mediational model.

**Experiment 1A.** Under higher deliberation \((n = 112)\), the Knowledge Complexity X Attitude term predicted the Inference X Attitude term, \(B = 4.22, t(101) = 4.12, p < .001\), and in a model excluding the Inference X Attitude term, the Knowledge Complexity X Attitude term predicted intention, \(B = 0.40, t(101) = 2.64, p = .01\). Under lower
deliberation, the Knowledge Complexity X Attitude term predicted the Inference X Attitude term, $B = 0.84$, $t(96) = 3.29$, $p = .001$, and in a model excluding the Inference X Attitude term, the Knowledge Complexity X Attitude term was not significantly predictive of intention, $B = 0.66$, $t(96) = 1.50$, $p = .14$.

A model that incorporated the Knowledge Complexity X Attitude term as well as the indirect effect through Inference X Attitude indicated that under higher deliberation, Inference X Attitude predicted intention, $B = 0.31$, $t(100) = 2.77$, $p = .007$, whereas the direct effect of Knowledge Complexity X attitude was no longer significant, $B = 0.47$, $t(100) = 1.47$, $p = .14$. The bootstrapping 95% confidence interval did not include zero, indicating significant mediation under higher deliberation, $B = 0.33$, 95% CI [0.05, 0.87]. Under lower deliberation, however, Inference X Attitude did not significantly predict intention, $B = -0.03$, $t(95) = -0.20$, $p = .84$, and the direct effect of Knowledge Complexity X Attitude on intention was not significant, $B = 0.66$, $t(95) = 1.50$, $p = .14$. The 95% confidence interval for this bootstrapping analysis included the zero point, indicating no significant mediation under lower deliberation, $B = -0.03$, 95% CI [-0.55, 0.39].

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14 Though not of theoretical interest, the Inference X Attitude term was also predicted by the Attitude term, $B = -0.44$, $t(96) = -3.42$, $p < .001$, the Knowledge Complexity term, $B = 1.03$, $t(96) = 2.64$, $p = .01$, the Location X Attitude term, $B = 0.74$, $t(96) = 2.78$, $p = .01$, the Location X Attitude X Inference term, $B = 0.63$, $t(96) = 3.24$, $p = .002$, and the Location X Attitude X Knowledge Complexity term, $B = -1.30$, $t(96) = -2.47$, $p = .02$.

15 Though not of theoretical interest, intention was predicted by attitude, $B = 0.51$, $t(96) = 2.44$, $p = .02$, location (marginal), $B = 1.26$, $t(96) = 1.95$, $p = .055$, and by the Location X Inference term, $B = 0.36$, $t(96) = 2.96$, $p = .004$.

16 Though not of theoretical interest, intention was predicted by attitude, $B = 0.25$, $t(95) = 2.23$, $p = .03$, location (marginal), $B = 1.25$, $t(95) = 1.95$, $p = .057$, and by the Location X Inference term, $B = 0.36$, $t(95) = 2.90$, $p = .005$. 34
Experiment 1B. As noted earlier, the pattern of results of Experiment 1B indicated that if inference was mediating knowledge complexity effects in these data, it was doing so under lower deliberation.

Under higher deliberation \((n = 128)\), the Knowledge Complexity X Attitude term marginally predicted the Inference X Attitude term, \(B = 0.45, t(117) = 1.76, p = .08\)\(^{17}\) and in a model excluding the Inference X Attitude term, the Knowledge Complexity X Attitude term predicted intention, \(B = 0.82, t(117) = 2.33, p = .02\)\(^{18}\). Under lower deliberation \((n = 122)\), the Knowledge Complexity X Attitude term predicted the Inference X Attitude term, \(B = 0.88, t(111) = 3.12, p = .002\)\(^{19}\) and in a model excluding the Inference X Attitude term, the Knowledge Complexity X Attitude term was not significantly predictive of intention, \(B = 0.26, t(111) = 0.70, p = .49\)\(^{20}\).

A model that incorporated the Knowledge Complexity X Attitude term as well as the indirect effect through Inference X Attitude indicated that under higher deliberation, Inference X Attitude did not predict intention, \(B = 0.06, t(116) = 0.45, p = .65\), whereas the direct effect of Knowledge Complexity X Attitude was significant, \(B = 0.80, t(116) = 2.22, p = .03\). The bootstrapping 95% confidence interval included zero, indicating a lack of significant mediation under higher deliberation, \(B = 0.03, 95\% \text{ CI} [-0.11, 0.43]\). Under lower deliberation, however, Inference X Attitude significantly predicted store choice, \(B = 0.36, t(110) = 2.94, p = .004\), and the direct effect of Knowledge Complexity X

\(^{17}\) Though not of theoretical interest, the Attitude X Order term predicted the Attitude X Inference term, \(B = 0.91, t(117) = 3.57, p < .001\).

\(^{18}\) The differential attitude index also predicted intention, \(B = 1.20, t(117) = 6.51, p < .001\).

\(^{19}\) Though not of theoretical interest, the Inference X Attitude term was also predicted by the differential attitude index, \(B = 0.66, t(111) = 4.88, p < .001\), by Attitude X Inference X Order, \(B = 0.76, t(111) = 4.37, p < .001\), and by Attitude X Knowledge Complexity X Order, \(B = -2.11, t(111) = -3.86, p < .001\).

\(^{20}\) Store choice was predicted by the differential attitude index, \(B = 1.28, t(111) = 7.08, p < .001\), however.
Attitude on store choice was not significant, $B = -0.05, t(110) = -0.14, p = .89$.\footnote{Store choice was predicted by the differential attitude index, $B = 1.04, t(110) = 5.40, p < .001$.}

However, the 95% confidence interval for this bootstrapping analysis included the zero point, indicating a lack of significant mediation under lower deliberation, $B = 0.31, 95\%$ CI [-0.03, 0.89].

These bootstrapping analyses for Experiments 1A and 1B are summarized in Appendix B, Table B1, with analyses using the attitude manipulation presented in Table B2.

**Paragraphs Manipulation (Experiment 1B Only)**

I examined the potential impact of whether the departments were presented in one paragraph or in three separate paragraphs within the high complexity condition of Experiment 1B. Although the Paragraphs X Attitude interaction was non-significant in predicting intention, $B = 0.04, t(114) = 0.14, p = .89$, the three-way interaction among differential attitude index, paragraphs, and deliberation was significant, $B = 1.73, t(114) = 2.81, p = .006$. The pattern of results indicated that division of information into paragraphs was associated with greater attitude-intention consistency, but only among those in the higher deliberation condition. Under lower deliberation, with one paragraph, attitude $B = 1.95, t(23) = 5.69, p < .001$, and with three paragraphs, attitude $B = 1.11, t(33) = 4.61, p < .0001$. Under higher deliberation, with one paragraph, attitude $B = 1.08, t(24) = 2.83, p = .009$, and with three paragraphs, attitude $B = 1.97, t(34) = 7.97, p < .001$. These results are surprising given that it had been expected that paragraphs might serve as a superficial cue of sorts (making it clear that the information is complex and easy to
recall, even if people were distracted at the time of behavior), in which case a greater effect of paragraphs on attitude-choice consistency would be expected within the lower deliberation condition. However, attitudes were strongly predictive of behavior in these data, independent of deliberation and paragraphs condition.

I had not predicted that the paragraphs manipulation would have its greatest effects under higher deliberation. However, given this result (when using the attitude measure), I examined whether the paragraphs manipulation might have influenced inference ratings and thereby led to greater attitude-behavior consistency under higher deliberation at the time of behavior. This was not the case: the paragraphs manipulation was not related to inference ratings, $B = -0.009$, $t(114) = -0.04$, $p = .97$, nor was it predictive of any attitude properties.

*Experiments 1A and 1B Discussion*

Although Experiment 1B replicated certain findings from 1A (e.g., knowledge complexity increased inference ratings, and both complexity and inference were associated with greater attitude-intention consistency), it failed to replicate other patterns of results, most notably, the mediation of knowledge complexity effects by inference for higher deliberation store choices. There are many potential reasons for difficulties in examining attitude-behavior (intention) relations using these stimuli. For example, although there must be variability in the effects of attitudes in order to observe moderation of attitude-intention relations, store descriptions were consistently more favorable for one store than for the other. Also, there were few non-attitudinal factors
present at the time of intention (e.g., distance to the stores from where you are while making the store choice) that participants might use when making their decision.

The pilot study and Experiments 1A and 1B also found non-significant effects of deliberation on the effect of knowledge complexity on attitude-behavior consistency. It is possible that knowledge complexity may increase attitude-behavior consistency via a relatively thoughtful process (e.g., the inference mechanism) at the time of the behavior. However, knowledge complexity may also exert its effects via a less thoughtful process, such as a general feeling of usefulness or an applicability “tag” made at the time of attitude formation. Whereas the more thoughtful inference mechanism may be more specific to the behavior in question, the latter may be more broadly applied, with less reliance on perceived relevance of the attitude to the behavior. Experiments 2A and 2B, therefore, were designed to attempt to deal with these issues, as described below.
Experiments 2A and 2B: Analyses of Knowledge Complexity and both Specific and General Inferences

Experiments 2A and 2B were aimed at gaining a clearer picture of knowledge complexity and inference effects, and a potential role for deliberation at the time of behavior. As a means toward that end, I aimed to create greater variability in attitude use: whereas in Experiments 1A and 1B, department store descriptions were consistently more positive for one store than for the other, in Experiments 2A and 2B, these descriptions were more mixed. In other words, although one department store was described more favorably overall, that store was not more favorably described in terms of every piece of information, and thus the other store had some superior aspects. As another means of creating variability in attitude use, Experiments 2A and 2B included a cue at the time of behavior that informed the participant that s/he was closer to one store than to the other at the time of the store choice. As in previous research (Fabrigar et al., 2006), this distance cue was in opposition to the attitude manipulation (i.e., the better store was farther away). Thus, in order to act on one’s attitude, one would generally need to act in opposition to a situational factor at the time of behavior.

Experiments 2A and 2B were also designed so as to better encourage participants to form a general attitude toward the store rather than forming attitudes at the level of the individual departments (in the higher complexity condition). To that end: 1) participants
received instructions to form a general impression and 2) information about separate departments (in the higher complexity condition) was displayed in a mixed order rather than being arranged by department (cf. Sanbonmatsu & Fazio, 1990). In order to encourage participants to form separate attitudes toward each store rather than initially comparing each store to the other, participants completed the attitude and general inference measures following each individual store rather than following presentation of both stores.

In order to begin to examine putative low-thought general inference mechanisms, Experiments 2A and 2B included general inference measures following the store descriptions, as well as more specific inference measures after the store choice items. It seemed plausible that knowledge complexity effects would be mediated by specific inferences among people who were able to deliberate while choosing a store but might be mediated by more general inferences formed at the time of information encoding among people who were distracted at the time of store choices.

Experiments 2A and 2B included dichotomous (Brown’s or Smith’s) store choice items before each continuous (7-point) measure, and included multiple product choices rather than only one (jewelry) purchase decision, though the present analyses focus on the jewelry purchase decision. The product ratings that occurred after the jewelry ratings were no more informative than the jewelry ratings and are not discussed here. Results using the furniture purchase, which came before jewelry, are presented in Appendix B, Table B4.
Method

Participants and Design

Participants in Experiments 2A \((N = 149, 73\) males, 76 females, \(M_{\text{age}} = 19.51\) years, \(SD = 2.10\) years) and 2B \((N = 175, 106\) males, 68 females, 1 undisclosed, \(M_{\text{age}} = 19.64\) years, \(SD = 2.75\) years) were students enrolled in an introductory psychology class at The Ohio State University. These participants completed the study on desktop computers in a psychology laboratory and were given 0.5 course credits for their participation in a 30-minute study.

The design for Experiments 2A and 2B was 2 (Attitude Manipulation: Brown’s more favorable or Smith’s more favorable) X 2 (Order: Brown’s first or Smith’s first) X 2 (Knowledge Complexity: one department or three departments) X 2 (Deliberation Manipulation: lower deliberation or higher deliberation), with knowledge complexity, attitude, order of stores, and deliberation manipulated between participants.

Procedure

**Impression instructions.** Participants completed the study on desktop computers in a laboratory. After consenting to participate, participants were provided with impression formation instructions:

*In everyday life, we may form an assessment of something (a person, a car, a policy, etc.) based on diverse sources of information such as news articles, advertisements, suggestions from friends, and so forth. The following activity will resemble these everyday situations. You will be provided with information about department stores, in which the*
information provided may have come from diverse sources. Please form a general impression of that department store.

These instructions were added in order to encourage participants in the high and low complexity conditions to form a general attitude at the level of the store, rather than forming a set of attitudes at the level of the separate departments (as could be the case in the higher complexity condition). For a similar reason, the department store information in the higher complexity condition was no longer divided by department.

*Store descriptions.* As in the previous experiments, Experiments 2A and 2B included a higher complexity condition (camera, gardening, and sporting goods departments) as well as a lower complexity condition (camera department), manipulated between participants. As noted earlier, the store descriptions in Experiments 2A and 2B were of mixed valence, such that although one department store was superior overall, the other department store had some superior aspects as well. Also, the specific store information was presented as nine bullet points rather than as paragraphs, and in the complex condition, information was no longer arranged by department. For store descriptions, please see Appendix A, Section A2.

*General inference, attitude rating, and attitude properties.* Following each department store description (rather than following both store descriptions, as in the preceding studies), participants completed measures aimed at measuring more general inference assessments, attitudes, and attitude properties. The two general inference items, asked, “To what extent do you feel that the information you just read would be
useful in helping you to evaluate the OVERALL quality of Brown's [Smith’s] Department Store?” and “Earlier, you were asked to form a general impression of the department store. How helpful was the information you received in forming a general impression of Brown's [Smith’s] department store?” Each item was scored using a 7-point scale (not at all useful [helpful] – very useful [extremely helpful]), and these two items were summed to create a general inference score. I hypothesized that these general feelings of usefulness, relatively independent of the specific product to be purchased, might mediate complexity effects under lower deliberation. The attitude items in Experiments 2A and 2B comprised four 7-point bipolar scales (dislike-like, bad-good, undesirable-desirable, negative-positive). As in the preceding studies, these attitude ratings were followed by measures of perceived knowledge, certainty, and ambivalence.

Attitude ratings for each department store were computed by taking the mean of the four 7-point attitude measures, and the differential attitude index was again computed by subtracting the mean attitude rating for Smith’s from the mean attitude rating for Brown’s Department Store.

**Intention measures and deliberation manipulation.** In the following stage, participants completed purchase intention measures, with participants in the low deliberation condition simultaneously performing a vowel counting task. Participants (independent of deliberation condition) were provided with a purchase choice scenario as below:

*Imagine that you are in your car and have just remembered that you need to purchase JEWELRY.*

43
You are deciding between Brown's department store and Smith's department store.

SMITH'S [BROWN'S] department store is 5 minutes closer.

Where would you go to purchase JEWELRY?

The department store that had been described less favorably in the attitude formation stage was described as being 5 minutes closer in the behavioral intention stage. Each purchase decision included a dichotomous item (Brown’s versus Smith’s) followed by a 7-point item: “How strong is your department store preference (Smith's or Brown's) for the purchase choice you just made?” (1: strongly favor SMITH'S – 7: strongly favor BROWN'S). The products to be purchased were jewelry, toys, cosmetics, electronics, and shoes (presented in that order); in Experiment 2B, these products were preceded by a furniture purchase choice because pretesting indicated that furniture, like jewelry, was not viewed as markedly more related to gardening or sporting goods departments than to camera departments, and thus the high complexity condition would not likely have an unfair advantage due to greater direct relevance of the information to the behavior (cf. Fabrigar et al., 2006).

Following the store choice items, participants completed a manipulation check for deliberation, which asked, “How distracted were you as you completed the purchase decision tasks?” (1: not at all DISTRACTED – 5: very DISTRACTED).

Specific inference measures. As in the preceding experiments, the following stage aimed to assess the specific inference mechanism. Before completing inference measures, participants were asked two filler questions as in previous studies. Participants completed two specific inference items per purchase choice, with the products presented
in the same order as they were in the store choice phase: “How useful was the information about each department store (Smith's and Brown's) in terms of telling you how good or bad the [JEWELRY] was likely to be in each store?” (1: not at all useful – 7: very useful) and “To what extent would your overall impression of each store be helpful in deciding where to shop for [JEWELRY]?” (1: not at all helpful – 7: very helpful).

Following the inference measures, participants completed scales and tasks (including items for a separate study), then all participants completed demographics items (age and sex) and were debriefed and thanked for their participation. Study completion took around 15 to 25 minutes.

For sake of brevity, analyses will focus on the jewelry purchase decision rather than examining all five (in 2A) or six (in 2B) intention measures. The jewelry purchase decision has various desirable properties, including its greater perceived relevance to a store’s camera department than to gardening or sporting goods departments (cf. Fabrigar et al., 2006) and the presence of existing data, both within the present paper and in previous research (Fabrigar et al., 2006), for which store choice scenarios use jewelry as the product to be purchased. However, because the furniture purchase intention measure preceded the jewelry item in Experiment 2B, analyses using the furniture purchase intention are presented in Appendix B, Table B4.
Results

Differential Attitude Index

The attitude scales were reliable (Experiment 2A: $\alpha = .96$ for each store; Experiment 2B: $\alpha = .96$ for Brown’s, .94 for Smith’s). In both experiments, the department store whose department(s) descriptions were more favorable was generally viewed as superior to the other department store. In Experiment 2A, a linear regression with criterion of the differential attitude index indicated that this index was more positive when Brown’s was described more favorably ($M = 1.28, SD = 1.18$) than when Brown’s was described less favorably ($M = -1.18, SD = 1.41$), $B = 2.51, t(133) = 11.55, p < .001$. Likewise, in Experiment 2B, this index was more positive when Brown’s was described more favorably ($M = 0.94, SD = 1.37$) than when Brown’s was described less favorably ($M = -0.95, SD = 1.42$), $B = 1.88, t(159) = 9.06, p < .001$. Neither experiment yielded a significant Knowledge Complexity X Attitude Manipulation interaction; for Experiment 2A, $B = -0.23, t(133) = -0.54, p = .59$; and for Experiment 2B, $B = 0.67, t(159) = 1.62, p = .11$.

As in the preceding studies (and Fabrigar et al., 2006), I focused on the attitude measure when assessing attitude-intention relations.

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22 Though not of theoretical interest, the Knowledge Complexity X Deliberation interaction was significant, $B = -0.89, t(133) = -2.04, p = .04$.

23 Though not of theoretical interest, the Knowledge Complexity X Attitude Manipulation X Order interaction was significant, $B = -1.64, t(159) = -1.97, p = .050$, as was the Knowledge Complexity X Attitude Manipulation X Order X Deliberation manipulation, $B = 5.33, t(159) = 3.21, p = .002$. 

46
Deliberation Manipulation Check

The deliberation manipulation appears to have been effective; higher manipulated deliberation predicted lower distraction ratings in Experiment 2A, $B = -1.83$, $t(133) = -10.59$, $p < .001$, and in Experiment 2B, $B = -1.61$, $t(159) = -9.76$, $p < .001$.

Knowledge Complexity, Inferences, and Attitude Properties

In Experiments 2A and 2B, the two general inference items were reliable (for 2A, Brown’s: $\alpha = .86$, Smith’s: $\alpha = .85$; for 2B, Brown’s: $\alpha = .87$, Smith’s: $\alpha = .89$), and all four (i.e., two per store) were also reliable when taken together ($\alpha = .83$ for Experiment 2A, and .88 for Experiment 2B). The general inference items for Brown’s and Smith’s were significantly correlated, $r(147) = .52$, $p < .001$ for Experiment 2A and $r(173) = .66$, $p < .001$ for Experiment 2B.

The effects of knowledge complexity differed between Experiments 2A and 2B. In Experiment 2A, greater knowledge complexity was not significantly associated with higher general inference assessments for Brown’s, $B = 0.24$, $t(133) = 1.35$, $p = .18$, Smith’s, $B = 0.13$, $t(133) = 0.67$, $p = .51$, nor the mean general inference rating across both stores, $B = 0.19$, $t(133) = 1.13$, $p = .26$. Unlike in the preceding experiments, there

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24 Though not of theoretical interest, distraction ratings were also predicted by the Complexity X Attitude Manipulation X Deliberation Manipulation interaction, $B = 1.56$, $t(133) = 2.25$, $p = .03$.
25 Though not of theoretical interest, Brown’s general inference was predicted by the attitude manipulation, $B = 0.56$, $t(133) = 3.09$, $p = .002$, by the Knowledge Complexity X Attitude Manipulation interaction, $B = -0.88$, $t(133) = -2.42$, $p = .02$, by the Attitude Manipulation X Deliberation interaction, $B = 0.81$, $t(133) = 2.24$, $p = .03$, and by the Attitude Manipulation X Order X Deliberation interaction, $B = -1.68$, $t(133) = -2.33$, $p = .02$.
26 Though not of theoretical interest, Smith’s general inference was predicted by the Order X Attitude Manipulation interaction, $B = -0.85$, $t(133) = -2.21$, $p = .03$, and the Attitude Manipulation X Order X Deliberation interaction, $B = -1.95$, $t(133) = -2.54$, $p = .01$.
27 Though not of theoretical interest, the Attitude Manipulation X Order X Deliberation interaction was significant, $B = -1.82$, $t(133) = -2.74$, $p = .007$. 

47
was not a significant relation between complexity and the specific inference rating for jewelry, $B = 0.23$, $t(133) = 1.02$, $p = .31$. In Experiment 2B, on the other hand, greater knowledge complexity was significantly associated with higher general inference assessments for Brown’s, $B = 0.91$, $t(159) = 4.78$, $p < .001$, 28 Smith’s, $B = 0.83$, $t(159) = 4.46$, $p < .001$, 29 and higher mean general inference rating across both stores, $B = 0.87$, $t(159) = 5.08$, $p < .001$. 30 In contrast with Experiment 2A, in Experiment 2B, all six of the specific product inferences were significantly predicted by the knowledge complexity manipulation. This included knowledge complexity predicting specific inference ratings for jewelry, $B = 0.86$, $t(159) = 3.96$, $p < .001$. 31

In Experiment 2A, knowledge complexity was not significantly associated with the measures of certainty, $B = -0.38$, $t(133) = -1.03$, $p = .31$, 32 ambivalence, $B = 0.22$, $t(133) = 0.59$, $p = .56$, perceived knowledge, $B = 0.21$, $t(133) = 0.55$, $p = .59$, 33 or absolute extremity (distance from 4, the attitude scale midpoint), $B = -0.35$, $t(133) = -0.43$, $p = .67$. In Experiment 2B, knowledge complexity was again not significantly associated with certainty, $B = 0.32$, $t(159) = 0.81$, $p = .42$, 34 but was significantly

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28 Though not of theoretical interest, the Deliberation Manipulation term was also significantly associated with general inference for Brown’s, $B = 0.40$, $t(159) = 2.07$, $p = .04$.
29 Though not of theoretical interest, the Deliberation Manipulation term was also significantly associated with general inference for Smith’s, $B = 0.37$, $t(159) = 1.97$, $p = .050$.
30 Though not of theoretical interest, the Deliberation Manipulation term was also significantly associated with general inference, $B = 0.38$, $t(159) = 2.22$, $p = .03$.
31 Though not of theoretical interest, the Attitude Manipulation X Order X Deliberation interaction was also associated with specific inference ratings for jewelry, $B = 1.80$, $t(159) = 2.07$, $p = .04$.
32 Though not of theoretical interest, certainty was predicted by Order, $B = 0.88$, $t(133) = 2.38$, $p = .02$, by Knowledge Complexity X Order, $B = 1.54$, $t(133) = 2.40$, $p = .04$, and by the Manipulated Attitude X Deliberation interaction, $B = 1.51$, $t(133) = 2.06$, $p = .04$.
33 Though not of theoretical interest, perceived knowledge was associated with Order, $B = 0.92$, $t(133) = 2.43$, $p = .02$, and with the Manipulated Attitude X Order X Deliberation interaction, $B = -5.06$, $t(133) = -3.34$, $p = .001$.
34 Though not of theoretical interest, the Knowledge Complexity X Attitude Manipulation X Deliberation interaction was associated with certainty, $B = -3.81$, $t(159) = -2.37$, $p = .02$. 48
associated with reduced ambivalence, $B = -0.99$, $t(159) = -2.77$, $p = .006$, greater perceived knowledge, $B = 1.16$, $t(159) = 2.96$, $p = .004$, and greater absolute extremity, $B = 2.46$, $t(159) = 3.33$, $p = .001$.\(^{35}\) This poses a potential problem for Experiment 2B analyses: knowledge complexity is expected to increase attitude-behavior consistency, beyond effects due to greater perceived knowledge and extremity or reduced ambivalence, all of which may also be associated with greater attitude-behavior consistency.

In order to examine whether these attitude properties were associated with attitude-intention consistency in Experiment 2B, I performed regression analyses that incorporated each of these attitude properties, and examined attitude-intention consistency using the jewelry intention (7-point scale) as the dependent variable. None of these attitude properties significantly moderated attitude-intention consistency:

Ambivalence X Attitude $B = 0.005$, $t(159) = 0.14$, $p = .89$.\(^{36}\) Perceived Knowledge X Attitude $B = 0.05$, $t(159) = 1.70$, $p = .09$.\(^{37}\) and Absolute Attitude Extremity X Attitude $B = -0.003$, $t(159) = -0.13$, $p = .90$.\(^{38}\) Given that none of the attitude properties moderated this attitude-intention relationship, these attitude properties would not be viable as alternative explanations for any significant knowledge complexity effects in Experiment 2B (if such effects were to be found).

\(^{35}\) Though not of theoretical interest, the Attitude Manipulation X Order interaction was associated with absolute attitude extremity, $B = -3.92$, $t(159) = -2.66$, $p = .009$.

\(^{36}\) Though not of theoretical interest, the attitude main effect was significant, $B = 0.23$, $t(159) = 3.26$, $p = .001$, as was the Deliberation X Ambivalence interaction, $B = 0.21$, $t(159) = 2.22$, $p = .03$.

\(^{37}\) Though not of theoretical interest, the attitude main effect was significant, $B = 0.19$, $t(159) = 2.62$, $p = .01$, as was the Attitude X Order X Deliberation interaction, $B = 0.65$, $t(159) = 2.21$, $p = .03$.

\(^{38}\) Only the attitude main effect was significant, $B = 0.25$, $t(159) = 2.82$, $p = .005$.\(^{38}\)
Knowledge Complexity and Attitude-Intention Consistency

Attitudes predicted store choices for jewelry; in Experiment 2A, $B = 0.34$, $t(133) = 5.41, p < .001$, and in Experiment 2B, $B = 0.24$, $t(159) = 3.70, p < .001$. However, the Knowledge Complexity X Attitude interaction was not statistically significant, in 2A, $B = 0.07$, $t(133) = 0.58, p = .57$ and in 2B, $B = -0.04$, $t(159) = -0.28, p = .78$. Appendix B, Table B1 presents these regression results, and B2 is similar but uses the attitude manipulation.

Attitude Applicability (Inference Measures)

Specific inferences. I examined a potential enhancing effect of specific inference ratings on attitude-choice consistency. As in Experiment 1A and 1B, this kind of inference rating was intended to be specific to the product purchase in question, and was hypothesized to exert its greatest effects for participants who were able to deliberate at the time of the choice measure (though this pattern did not occur in 1B). These analyses specifically examined the jewelry purchase decision. In Experiment 2A, although the differential attitude index predicted store choice for jewelry, $B = 0.32$, $t(133) = 4.63, p < .001$, the Specific Inference X Attitude interaction was not significant, $B = 0.07$, $t(133) = 1.44, p = .15$, and neither was the Specific Inference X Attitude X Deliberation term, $B = 

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39 Though not of theoretical interest, three interactions were significant: Attitude X Deliberation, $B = -0.29$, $t(133) = -2.26, p = .03$, Knowledge Complexity X Order X Deliberation, $B = -1.83, t(133) = 2.06, p = .04$, and Attitude X Order X Deliberation, $B = -0.68, t(133) = -2.72, p = .008$.

40 Though not of theoretical interest, the attitude main effect was significant, $B = 0.24$, $t(159) = 3.10, p < .001$, as were the Knowledge Complexity term, $B = 0.44, t(159) = 2.07, p = .04$, and the Attitude X Order X Knowledge Complexity interaction, $B = -0.57, t(159) = -2.17, p = .03$. 

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The pattern of results, however, was suggestive of greater effects of specific inference under higher deliberation conditions. Under lower deliberation, the Specific Inference X Attitude interaction was non-significant, $B = 0.01$, $t(67) = .18$, $p = .86$, whereas under higher deliberation, the Specific Inference X Attitude interaction was marginal, $B = 0.13$, $t(66) = 1.71$, $p = .09$.

Similarly, in Experiment 2B, although the differential attitude index predicted store choice for jewelry, $B = 0.31$, $t(159) = 4.34$, $p < .001$, the Specific Inference X Attitude interaction was not significant, $B = 0.01$, $t(159) = 0.26$, $p = .80$, and neither was the Specific Inference X Attitude X Deliberation term, $B = 0.14$, $t(159) = 1.30$, $p = .19$. The pattern of results, however, was suggestive of greater effects of specific inference under higher deliberation conditions. Under lower deliberation, the Specific Inference X Attitude interaction was non-significant and negative, $B = -0.06$, $t(77) = -0.72$, $p = .48$, whereas under higher deliberation, the Specific Inference X Attitude interaction was non-significant, but somewhat positive, $B = 0.08$, $t(82) = 1.16$, $p = .25$. These analyses are presented in Appendix B, Table B1, with similar analyses using the attitude manipulation presented in Table B2.

**General inference.** In Experiment 2A, attitudes predicted behavioral intention for a jewelry purchase, $B = 0.27$, $t(133) = 4.01$, $p < .001$, and General Inference X Attitude interacted to predict store choice, $B = 0.20$, $t(133) = 2.87$, $p = .005$. However, these findings were qualified by a General Inference X Attitude X Deliberation interaction, $B = $$$

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41 Though not of theoretical interest, one interaction was significant: Attitude X Deliberation, $B = -0.31$, $t(133) = -2.23$, $p = .03$.

42 Though not of theoretical interest, one interaction was significant: Attitude X Order X Deliberation, $B = 0.57$, $t(159) = 2.00$, $p = .047$. 

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-0.30, t(133) = -2.13, p = .04. I probed this interaction, examining the Attitude X General Inference interaction within each deliberation condition. Under lower deliberation, the Attitude X General Inference interaction was significant, $B = 0.35$, $t(67) = 3.29$, $p = .002$, whereas under higher deliberation, the Attitude X General Inference interaction was non-significant, $B = 0.05$, $t(66) = 0.55$, $p = .58$. These results are in line with the general inference process being a relatively low-deliberation mechanism. In Experiment 2B, attitudes again predicted intention, $B = 0.21$, $t(159) = 2.73$, $p < .007$, but unlike in Experiment 2A, the Attitude X General Inference interaction was not significant in Experiment 2B, $B = 0.06$, $t(159) = 0.78$, $p = .44$, and there was no 3-way interaction with deliberation, $B = 0.03$, $t(159) = 0.21$, $p = .83$.

**Bootstrapping Analyses**

*Specific inference.* As in Experiments 1A and 1B, I performed bootstrapping analyses using the PROCESS macro (Hayes, in press), Model 4. I first divided the data by deliberation then examined whether specific inferences would only significantly mediate complexity effects for participants who had been able to deliberate at the time of behavior. These analyses are presented separately for each experiment.

In Experiment 2A, under higher deliberation ($n = 74$), the Knowledge Complexity X Attitude term predicted the Specific Inference X Attitude term, $B = 0.55$, $t(63) = 2.07$, $p = .04$, and was marginally predictive of intention when Specific Inference X Attitude

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43 Though not of theoretical interest, there was a significant Attitude X Order X Deliberation interaction, $B = -0.79$, $t(133) = -2.91$, $p = .004$.

44 Though not of theoretical interest, the Specific Inference X Attitude term was also significantly predicted by the Attitude term, $B = 0.29$, $t(63) = 2.18$, $p = .03$, by the Knowledge Complexity term, $B = -1.22$, $t(63) = -2.70$, $p = .009$, and by the Specific Inference X Order term, $B = 0.86$, $t(63) = 2.44$, $p = .02$. 

52
was not in the model, $B = 0.34, t(63) = 1.92, p = .06$. Under lower deliberation ($n = 75$), the Knowledge Complexity X Attitude term did not significantly predict the Specific Inference X Attitude term, $B = -0.44, t(64) = -1.09, p = .28$, and was not predictive of store choice when Specific Inference X Attitude was not in the model, $B = -0.12, t(64) = -0.61, p = .55$. A model that incorporated the indirect effect through Specific Inference X Attitude as well as the Knowledge Complexity X Attitude term indicated that under higher deliberation, Specific Inference X Attitude did not significantly predict intention, $B = 0.09, t(62) = 1.04, p = .30$, and Knowledge Complexity X Attitude was also not significant, $B = 0.29, t(62) = 1.59, p = .12$. The bootstrapping 95% confidence interval included zero, indicating a lack of significant mediation, $B = 0.05, 95\% \text{ CI} [-0.04, 0.38]$. Under lower deliberation, Specific Inference X Attitude did not significantly predict store choice, $B = -0.005, t(63) = -0.08, p = .94$, and the direct effect of Knowledge Complexity X Attitude on store choice was not significant, $B = -0.12, t(63) = -0.61, p = .55$. The 95% confidence interval for this bootstrapping analysis included zero, indicating no significant mediation, $B = 0.002, 95\% \text{ CI} [-0.26, 0.25]$.

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45 Though not of theoretical interest, store choice was predicted by Attitude, $B = 0.20, t(63) = 2.35, p = .02$, Specific Inference X Order, $B = 0.48, t(63) = 2.04, p = .045$, and by Attitude X Order, $B = -0.41, t(63) = -2.30, p = .02$.

46 Though not of theoretical interest, the Specific Inference X Attitude term was predicted by Attitude, $B = 0.62, t(64) = 2.94, p = .005$, the Specific Inference term, $B = -0.97, t(64) = -3.45, p = .001$, the Knowledge Complexity X Order term, $B = 3.02, t(64) = 2.16, p = .03$, and the Attitude X Order term, $B = 1.21, t(64) = 2.90, p = .005$.

47 Though not of theoretical interest, store choice was predicted by Attitude, $B = 0.49, t(64) = 4.83, p < .001$, and by the Knowledge Complexity X Order interaction, $B = 1.34, t(64) = 2.01, p = .049$.

48 Though not of theoretical interest, only Attitude X Order was significant, $B = -0.38, t(62) = -2.12, p = .04$.

49 Store choice was only predicted by Attitude, $B = 0.49, t(63) = 4.52, p < .001$. 53
In Experiment 2B, under higher deliberation \((n = 90)\), the Knowledge Complexity \(\times\) Attitude term predicted the Specific Inference \(\times\) Attitude term, \(B = 1.22, t(79) = 4.64, p < .001\), and was not predictive of intention when Specific Inference \(\times\) Attitude was not in the model, \(B = -0.14, t(79) = -0.75, p = .46\). Under lower deliberation \((n = 85)\), the Knowledge Complexity \(\times\) Attitude term did not significantly predict the Specific Inference \(\times\) Attitude term, \(B = 0.30, t(74) = 1.00, p = .32\), and was not predictive of store choice when Specific Inference \(\times\) Attitude was not in the model, \(B = 0.11, t(74) = 0.55, p = .58\).

A model that incorporated the indirect effect through Specific Inference \(\times\) Attitude as well as the Knowledge Complexity \(\times\) Attitude term indicated that under higher deliberation, Specific Inference \(\times\) Attitude marginally predicted intention, \(B = 0.14, t(78) = 1.77, p = .08\), and Knowledge Complexity \(\times\) Attitude was not significant, \(B = -0.30, t(78) = -1.49, p = .14\). The bootstrapping 95% confidence interval included zero, indicating a lack of significant mediation, \(B = 0.17, 95\% CI [-0.05, 0.58]\). Under lower deliberation, Specific Inference \(\times\) Attitude did not significantly predict store choice, \(B = -0.04, t(73) = -0.56, p = .57\), and the direct effect of Knowledge Complexity

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\(^{50}\) Though not of theoretical interest, the Specific Inference \(\times\) Attitude term was also significantly predicted by Attitude, \(B = 0.30, t(79) = 2.18, p = .03\) and by the Specific Inference \(\times\) Order term, \(B = -0.69, t(79) = -2.13, p = .04\).

\(^{51}\) Store choice was only predicted by Attitude in this model, \(B = 0.32, t(79) = 3.30, p = .001\).

\(^{52}\) Though not of theoretical interest, the Specific Inference \(\times\) Attitude term was predicted by Order, \(B = -1.73, t(74) = -3.56, p < .001\) and by the Attitude \(\times\) Order \(\times\) Specific Inference term, \(B = -0.80, t(74) = -3.76, p < .001\).

\(^{53}\) Though not of theoretical interest, intention was predicted by Attitude, \(B = 0.25, t(74) = 2.43, p = .02\), by the Knowledge Complexity term, \(B = 0.74, t(74) = 2.30, p = .02\), and by the Attitude \(\times\) Knowledge Complexity \(\times\) Order interaction, \(B = -0.98, t(74) = -2.50, p = .01\).

\(^{54}\) In this model, only the Attitude term was significant, \(B = 0.27, t(78) = 2.83, p = .006\).
55 X Attitude on store choice was not significant, $B = 0.12$, $t(73) = 0.61$, $p = .54$.

55 The 95% confidence interval for this bootstrapping analysis included zero, indicating a lack of

55 significant mediation, $B = -0.01$, 95% CI [-0.28, 0.06]. Appendix B, Table B1

55 summarizes these results across all experiments, and Table B2 presents the same analyses

55 using the attitude manipulation.

55

**General inferences.** In order to examine whether general inference mediates the

55 link between complexity and attitude-intention consistency under lower deliberation, I

55 performed bootstrapping analyses as above, using the general inference measures rather

55 than specific (jewelry) inference measures.

55

55 In Experiment 2A, under higher deliberation ($n = 74$), the Knowledge Complexity

55 X Attitude term marginally predicted the General Inference X Attitude term, $B = 0.43$,

55 $t(63) = 1.78$, $p = .08$, and was not significantly predictive of intention when General

55 Inference X Attitude was not in the model, $B = 0.28$, $t(63) = 1.56$, $p = .12$. Under lower

55 deliberation ($n = 75$), the Knowledge Complexity X Attitude term significantly predicted

55 the General Inference X Attitude term, but negatively, $B = -0.53$, $t(64) = -2.58$, $p = .01$.

55

55 Though not of theoretical interest, intention was predicted by Attitude, $B = 0.25$, $t(73) = 2.41$, $p = .02$, by

55 the Knowledge Complexity term, $B = 0.72$, $t(73) = 2.21$, $p = .03$, and by the Attitude X Knowledge

55 Complexity X Order interaction, $B = -0.95$, $t(73) = -2.42$, $p = .02$.

55 Though not of theoretical interest, the Specific Inference X Attitude term was predicted by Attitude, $B = 0.42$, $t(63) = 3.50$, $p < .001$, and by the General Inference X Attitude X Order term, $B = -0.96$, $t(63) = -4.45$, $p < .001$.

55 Though not of theoretical interest, intention was predicted by Attitude, $B = 0.18$, $t(63) = 2.08$, $p = .04$ and

55 by General Inference X Order, $B = 0.48$, $t(63) = 2.04$, $p = .045$, and Attitude X Order, $B = -0.43$, $t(63) = -2.31$, $p = .02$.

55 Though not of theoretical interest, the Specific Inference X Attitude term was also predicted by Attitude, $B = 0.29$, $t(64) = 2.91$, $p = .005$, and by the Knowledge Complexity X Attitude X Order term, $B = -1.07$, $t(64) = -2.65$, $p = .01$. 55
and was not predictive of store choice when General Inference X Attitude was not in the model, $B = -0.13$, $t(64) = -0.64$, $p = .53$.\(^{60}\)

A model that incorporated the indirect effect through General Inference X Attitude as well as the Knowledge Complexity X Attitude term indicated that under higher deliberation, General Inference X Attitude did not significantly predict intention, $B = 0.02$, $t(62) = 0.24$, $p = .81$, and Knowledge Complexity X Attitude was also not significant, $B = 0.27$, $t(62) = 1.45$, $p = .15$.\(^{61}\) The bootstrapping 95% confidence interval included zero, indicating a lack of significant mediation, $B = 0.01$, 95% CI [-0.12, 0.36].

Under lower deliberation, General Inference X Attitude significantly predicted store choice, $B = 0.31$, $t(63) = 2.71$, $p = .009$, and the direct effect of Knowledge Complexity X Attitude on store choice was not significant, $B = 0.04$, $t(63) = 0.20$, $p = .84$.\(^{62}\) The 95% confidence interval for this bootstrapping analysis included zero, indicating no significant mediation, $B = -0.17$, 95% CI [-0.63, 0.03].

In Experiment 2B, under higher deliberation ($n = 90$), the Knowledge Complexity X Attitude term did not predict the General Inference X Attitude term, $B = 0.14$, $t(79) = 0.70$, $p = .49$,\(^{63}\) and was not predictive of intention when Specific Inference X Attitude

\(^{59}\) The negative relationship between knowledge complexity and general inference among those in the low deliberation condition only is especially surprising given that the deliberation manipulation came after the general inference measures.

\(^{60}\) Though not of theoretical interest, intention was predicted by Attitude, $B = 0.49$, $t(64) = 5.10$, $p < .001$, and by the Knowledge Complexity X Order interaction, $B = 1.42$, $t(64) = 2.07$, $p = .042$.

\(^{61}\) In this model, only Attitude X Order was significant, $B = -0.45$, $t(62) = -2.29$, $p = .03$.

\(^{62}\) Intention was only predicted by Attitude, $B = 0.40$, $t(63) = 4.10$, $p < .001$.

\(^{63}\) Though not of theoretical interest, General Inference X Attitude was also significantly predicted by Attitude, $B = 0.59$, $t(79) = 5.65$, $p < .001$, by General Inference, $B = 0.32$, $t(79) = 2.13$, $p = .04$, by General Inference X Order, $B = -0.86$, $t(79) = -2.97$, $p = .004$, and by Attitude X Order X General Inference, $B = 0.98$, $t(79) = 5.03$, $p < .001$. 

56
was not in the model, $B = -0.14$, $t(79) = -0.74$, $p = .46$.\textsuperscript{64} Under lower deliberation ($n = 85$), the Knowledge Complexity X Attitude term predicted the General Inference X Attitude term, $B = 0.44$, $t(74) = 2.02$, $p = .047$.\textsuperscript{65} but was not predictive of store choice when General Inference X Attitude was not in the model, $B = -0.01$, $t(74) = -0.05$, $p = .96$.\textsuperscript{66}

A model that incorporated the indirect effect through General Inference X Attitude as well as the Knowledge Complexity X Attitude term indicated that under higher deliberation, General Inference X Attitude did not predict intention, $B = 0.09$, $t(78) = 0.92$, $p = .36$, and Knowledge Complexity X Attitude was not significant, $B = -0.15$, $t(78) = -0.81$, $p = .42$. The bootstrapping 95\% confidence interval included zero, indicating a lack of significant mediation, $B = 0.01$, 95\% CI [-0.04, 0.24]. Under lower deliberation, General Inference X Attitude did not significantly predict store choice, $B = -0.03$, $t(73) = -0.23$, $p = .82$, and the direct effect of Knowledge Complexity X Attitude on store choice was also not significant, $B = 0.001$, $t(73) = 0.006$, $p > .99$.\textsuperscript{67} The 95\% confidence interval for this bootstrapping analysis included zero, indicating a lack of significant mediation, $B = -0.01$, 95\% CI [-0.28, 0.06].

\textsuperscript{64} Though not of theoretical interest, intention was only predicted by Attitude, $B = 0.23$, $t(79) = 2.46$, $p = .02$.

\textsuperscript{65} Though not of theoretical interest, Specific Inference X Attitude term was predicted by Attitude X Order X Knowledge Complexity, $B = -1.08$, $t(74) = -2.51$, $p = .01$, and by Attitude X Order X General Inference, $B = -0.66$, $t(74) = -3.01$, $p = .004$.

\textsuperscript{66} Though not of theoretical interest, intention was predicted by Attitude, $B = 0.22$, $t(74) = 2.21$, $p = .03$, by the Knowledge Complexity term, $B = 0.90$, $t(74) = 2.57$, $p = .01$, and by the Attitude X Knowledge Complexity X Order interaction, $B = -0.88$, $t(74) = -2.52$, $p = .03$.

\textsuperscript{67} Though not of theoretical interest, intention was predicted by Attitude, $B = 0.22$, $t(73) = 2.19$, $p = .03$, by the Knowledge Complexity term, $B = 0.90$, $t(73) = 2.56$, $p = .01$, and by the Attitude X Knowledge Complexity X Order interaction, $B = -0.91$, $t(73) = -2.12$, $p = .04$. 57
Experiments 2A and 2B Discussion

Follow-up Experiments 2A and 2B did not consistently replicate findings from previous experiments, though some effects did replicate (e.g., knowledge complexity enhanced specific inferences in Experiment 2B, and the enhancing effect of specific inferences on attitude-intention consistency, though non-significant, was greater for higher-deliberation behavioral intentions in Experiments 2A and 2B). Perhaps the most novel contribution of these experiments was the finding of an enhancing effect of general inferences on attitude-behavior consistency in Experiment 2A, an effect that was strongest under lower-deliberation conditions. However, despite the minimal differences between these two experiments, this pattern of results was not found in Experiment 2B.
General Discussion

The present experiments examined whether the enhancing effect of knowledge complexity on attitude-behavior consistency requires that one be able to deliberate at the time of behavior, as well as whether the effect of complexity is mediated by an inference process, at least when one can deliberate at the time of behavior (cf. Fabrigar et al., 2006). Across a series of studies, evidence for each of these relationships was mixed.

Knowledge Complexity Effects and Deliberation

The Knowledge Complexity X Attitude interaction was statistically significant and positive in three of the five studies, as in previous research, but was non-significant in Experiments 2A and 2B (positive in 2A, negative in 2B; see Appendix B, Table B1). Deliberation did not appear to affect knowledge complexity effects: None of the five experiments exhibited a significant Deliberation X Knowledge Complexity X Attitude interaction when using the differential attitude index to predict intentions, and the simple effects (Knowledge Complexity X Attitude) within each deliberation condition did not display consistent relations between deliberation and knowledge complexity effects.

The failure to find knowledge complexity effects in Experiments 2A and 2B was surprising, but there are multiple potential reasons for this result. It is notable that whereas the pilot study, Experiments 1A and 2A, and Fabrigar and colleagues’ previous
research (2006) each used unambivalent store descriptions (i.e., all pieces of information favored one department store over the other) and organized the store descriptions by department in the complex condition, Experiments 2A and 2B used ambivalent descriptions and did not organize store descriptions by department (cf. Sanbonmatsu & Fazio, 1990). It is possible that the failure to find complexity effects in Experiments 2A and 2B was due, at least in part, to the store information not being arranged by department. The knowledge complexity manipulation consisted of presenting information about three or one department(s). It might be the case that arranging information by department makes it clear that the knowledge is complex, whereas mixing the order information may dilute this effect and, by extension, inferences of attitude applicability. As another possibility, the ambivalence of the descriptions provided in Experiments 2A and 2B may be to blame for the lack of complexity effects. Fabrigar and colleagues (2006) suggest that inference assessments may be less enhanced by knowledge complexity if the knowledge is ambivalent. In other words, whereas the inference process might involve extrapolation, perhaps ambivalent information is less likely to allow for extrapolation (from the specific departments described to judgments of the store or of unmentioned departments). Indeed, the effect of knowledge complexity on rated inference was non-significant in Experiment 2A. However, this relation was significant in Experiment 2B, thus it appears that inferences of attitude applicability are not always eliminated when information is ambivalent or presented in a mixed order.

Future research is needed to determine to what extent complexity effects are dependent on organization by dimensions of knowledge, unambivalence of the
knowledge, both, or other properties of the knowledge. For example, within-dimension ambivalence (e.g., positive and negative information about the camera department) and between-dimension ambivalence (e.g., positive information about the camera and gardening department and negative information about the sporting goods department) may have different consequences. Though both kinds of ambivalence would be expected to reduce inferences of applicability, between-dimension ambivalence might be especially detrimental to the inference process. For example, if two-thirds of the information one possesses regarding a store’s camera department is favorable, and the same is true of the gardening and sporting goods departments, one may infer that another department (e.g., jewelry) is also good overall. However, if two-thirds of the information one has about a store is positive, but is divided across dimensions such that one knows that the camera and gardening departments are good, but the sporting goods department is bad, one may be less likely to infer that the jewelry department is good. This situation is similar to that presented to participants in Sanbonmatsu and Fazio’s (1990) studies. In high-thought settings in their research, Sanbonmatsu and Fazio (1990) did not find participants making attitude-consistent choices, presumably because they had directly decision-relevant information that was evaluatively opposite of their overall store evaluations. In such cases, the overall attitude should have been viewed as inapplicable to the choice, and similar effects might also occur when the between-dimension ambivalence does not involve information that is directly relevant to the decision.

I began this line of research with a focus on high-deliberation inference processes. If inferences about the applicability of the attitude to the specific behavior require some
level of deliberation at the time of behavior, then the current effects of knowledge consistency (unmoderated by deliberation) would seem to call for consideration of other potential mechanisms by which to create low-deliberation attitude-intention consistency.

Examining Inference Mechanisms

Specific inferences. Whereas the null effects of deliberation on complexity effects were consistent, the evidence for a mediating role of specific inferences in complexity processes under higher deliberation was inconsistent across studies. In support of the hypothesis that knowledge complexity increases inferences of usefulness or relevance of one’s attitude to a given behavior (cf. Fabrigar et al., 2006), greater knowledge complexity was consistently associated with higher specific inference ratings (significantly in three out of four experiments that included these inference ratings, and in the same direction, but nonsignificant for the fourth study; see Appendix B, Table B3). However, the effect of inference on attitude-intention consistency under higher deliberation varied across studies. Within the higher-deliberation conditions, the Specific Inference X Attitude interaction only significantly predicted intention in Experiment 1A, and marginally predicted intention in Experiment 2A. Though the enhancing effect of specific inferences was greatest under higher-deliberation conditions in three out of four experiments, one experiment (1B) indicated that the Specific Inference X Attitude interaction was only significant under lower-deliberation conditions. See Appendix B, Table B1 for these analyses.

The results summarized above indicate that the present experiments provide mixed evidence for a mediating role for specific inferences in knowledge complexity
processes, and a potential moderating role for deliberation at the time of behavior (or intention). Experiment 1A provided arguably the strongest evidence for the theoretical model: inference significantly mediated the moderating effect of knowledge complexity on attitude-intention consistency, but only when participants were not distracted at the time of the intention measure. Although certain components of the model replicated, such as the link between knowledge complexity and inference ratings, and the enhancing effect of inference on attitude-intention consistency, the complete path (moderated mediated moderation) did not replicate across studies.

These experiments are the first to measure the proposed specific inference mechanism, and future examinations are required in order to ensure that the specific inference scale measures what it intends to (i.e., has construct validity). Scale reliability was good, and the mediational pattern found in Experiment 1A suggested that the inference measures were effective. However, results obtained in follow-up experiments were inconsistent, which may suggest that the measures and/or characteristics of the experimental setting will need to be better understood in order to replicate this mediational pattern. Experiments 1A and 1B were very similar, but nonetheless exhibited opposite patterns in terms of whether specific inferences mediated knowledge complexity effects under higher deliberation (as in 1A) or lower deliberation (as in 1B). As noted earlier, knowledge complexity may increase attitude-behavior consistency via more or less deliberative mechanisms. As discussed more thoroughly in the next section, it is possible that some general inference processes are less deliberative (e.g., a feeling or cue of attitude usefulness in general) whereas other inferences may be more deliberative.
(e.g., believing that the attitude is worthy of being applied to a jewelry purchase decision, even though one is aware that the information underlying the attitude did not involve jewelry per se). The “specific” inference items might also have tapped into general inferences in the present studies. Admittedly, this possibility cannot completely explain why Experiments 1A and 1B yielded different results. However, in Experiments 2A and 2B, general and specific inference items were correlated; thus, further work is needed in order to ensure the quality of the inference scales, as well as to see if more and less thoughtful inferences may be assessed separately, perhaps by altering the wording of the scale items or the method of assessment of these inferences.

Another potential issue involved in attempting to assess specific inferences following behavioral intention measures is the possibility that the inference ratings are impacted by people’s perceived use (or lack of use) of their attitudes, rather than only vice-versa. That is, people might in part use inference ratings as a means of retrospectively describing or justifying their use of the attitude. It is unclear whether such a process would be impacted by deliberation at the time of intention – perhaps participants in lower-deliberation conditions would be less likely to have thought of reasons for using their attitudes to guide their behavior, in which case this justification process might be greatest among these participants, and could yield results similar to those of Experiment 2B (i.e., greater effects of specific inferences under lower-deliberation conditions). Future studies could assess inference before assessing intentions. However, such studies would also run the risks of artificially creating
inferences by asking for them or making them more salient prior to behavior than they otherwise would be.

**General Inference.** Given the non-significant effects of deliberation on knowledge complexity effects in each of the present studies, it is plausible that knowledge complexity may act via a low-thought mechanism under lower deliberation, and via high-thought mechanisms (e.g., the specific inference process) under higher deliberation at the time of behavior. In Experiment 2A, I obtained evidence for general inference (appraisals of the usefulness of the information for forming a judgment of the store) that increased attitude-intention consistency under lower deliberation; however, these inferences did not significantly mediate knowledge complexity effects under lower deliberation in Experiment 2A, and the inferences did not affect attitude-intention relations in Experiment 2B. Therefore, though Experiment 2A hints at the possibility of higher- and lower-deliberation inference mechanisms, the precise nature of these processes, and the best means of assessing them, remain unclear. As will be described shortly, future research holds the potential to enrich our understanding of inference processes by clarifying when and how attitude-behavior consistency will be enhanced via higher-deliberation specific inferences or via lower-deliberation general inference processes.

**Future Directions**

*Specific and general inferences.* Further modifications of the present paradigm may help disentangle low- and high-thought inference mechanisms, the former being
understood as more specific to a behavior, and the latter as more general impressions of the attitude’s usefulness. In the present studies, deliberation was never manipulated at the time of reception of department store information. It is plausible, however, that higher deliberation during attitude formation may allow people to learn and remember that a store has good gardening, camera, and sporting goods departments, whereas distraction during attitude formation may encourage people to form broader inferences of applicability, even if the specific bases for that inference (i.e., the three departments) are not remembered. If this is the case, then deliberation at the time of attitude formation may be required in order for an individual to form an attitude that comprises multiple dimensions, which may be a prerequisite for one to later make specific inferences while deciding on a behavior under higher-deliberation conditions. Some deliberation at the time of attitude formation is likely also required in order for less-thoughtful inference judgments to be made at the time of behavior. However, it is also possible that somewhat less deliberation at the time of attitude formation may enhance the formation and impact of more general inferences.

Future research may also benefit from incorporating a delay between the attitude formation stage and the behavioral intention measures. Incorporating a delay may increase the likelihood of people holding an attitude at the level of the store, even if memories for the specific departments have decayed. In this case, the finding of significant knowledge complexity effects, independent of deliberation at the time of behavior and even in the absence of specific memory for the departments, would provide evidence that this inference process is occurring at the level of the broad attitude (one’s
attitude toward Brown’s or Smith’s is viewed as useful) rather than occurring at the level of the specific department (e.g., one’s attitude toward the gardening department being viewed as relevant to the intention). As another possibility, a delay period may serve as a sort of discounting cue, in the sense that people are less likely to see their attitude as trustworthy if they are not confident in the accuracy of their memory for the information. In such a situation, perhaps higher deliberation at the time of behavior would be associated with reduced effects of complexity, whereas lower deliberation at the time of behavior would be associated with typical complexity effects, because these people are not sufficiently able to discount their memory (or, alternatively, these people are more likely to use a low-deliberation inference). However, it is also possible that a more moderate delay (i.e., not so long as to lead to people forgetting the department information; cf., Sanbonmatsu & Fazio, 1990) might increase high-deliberation inference effects. The moderate delay may make people feel the need to refer back to their memory (i.e., the specific departments) rather than simply making the purchase decision without worrying about recalling the specific information they had received earlier. In the present experiments, only the pilot study and 1A (lab participants) incorporated any delay, and this delay was brief (around 5 minutes). Similarly, Fabrigar and colleagues (2006) did not include a delay. By manipulating delays between attitude formation and behavior, future studies can test these different possibilities, further clarifying knowledge complexity effects and the potential mediating role of low-deliberation and high-deliberation inferences.
**Inference and strength-related attitude properties.** Future research could examine whether inference plays a role in the effects of other strength-related attitude properties, as well as clarifying the role for inference processes in knowledge complexity effects. For example, it is possible that attitudes held with greater certainty or less ambivalence are seen as more useful (Fabrigar et al., 2005), which may be similar to the idea of general inferences. In general, examinations of mechanisms underlying the effects of these moderators adds nuance to the field: rather than simply saying that an attitude property increases attitude-behavior consistency, an understanding that the property increases attitude-behavior consistency via certain processes (e.g., inference), in certain conditions (e.g., when one can deliberate at the time of the behavior) allows for more precise prediction of behavior. For example, some researchers conceptualize attitude clarity and correctness as being distinct components of certainty, and have found that each facet independently predicts resistance to persuasion attempts (Petrocelli, Tormala, & Rucker, 2007). It is possible that perceived correctness is associated with greater inference of utility, whereas clarity (merely being certain that you like or dislike something) may be less related to inferences of utility. If this is the case, then perhaps attitude certainty will be most associated with attitude-behavior consistency when this certainty is based on perceptions of correctness rather than clarity. As another, non-mutually exclusive possibility, perhaps certainty may act via a low-deliberation inference mechanism (e.g., “I am certain of my attitude, so it is worthy of being used”) as well as a higher-deliberation mechanism. In the former case, the primary antecedent of one’s certainty (clarity or correctness) may be less consequential, and attitude certainty may be
associated with greater attitude-behavior consistency for lower-deliberation behaviors. Likewise, perhaps some antecedents of attitude certainty, such as accessibility (Holland, Verplanken, & van Knippenberg, 2003), are less likely to increase high-deliberation inferences – after all, an attitude that comes to mind is not necessarily seen as more applicable to behavior (even if accessibility may be a necessary first step in the attitude-behavior link). Then again, it is possible that perceptions of accessibility and/or certainty may serve as a cue that one’s attitude is useful (similar to the proposed general inference mechanism). It may even be the case that whether accessibility leads to inferences of usefulness may depend on properties of the attitude itself. Perhaps repeatedly expressing a high-knowledge attitude, for example, brings to mind the complexity, and the utility, of the attitude, whereas repeatedly expressing a low-knowledge attitude serves to remind an individual of how little one knows about the attitude object. In the former case, inference may indeed be increased along with accessibility, whereas in the latter case, inferences of applicability may be reduced even as accessibility is increased. Therefore, knowing that an attitude is highly accessible or held with certainty may not be sufficient to know whether it will guide behavior, or how it will guide behavior (e.g., whether it will guide lower- but not higher-deliberation behavior, or vice versa). However, a more nuanced approach, such as one that distinguishes between situations in which inferences of applicability will or will not be formed, may improve our understanding of the mechanisms at play, and by extension, the predictive power of the attitude.

*Multiple roles for attitudes.* The kind of examination just described is promising, but remains in its nascent stages for knowledge complexity, and is lacking for many of
the other strength-related properties of attitudes (despite their longer tenure in the attitude-behavior literature). Much like how a multiple roles view of persuasion variables has enriched the literature on attitude change, a multiple roles perspective on strength-related attitude properties might greatly benefit research on attitude-behavior consistency. Within the persuasion domain, a multiple roles perspective has helped explain why the same persuasion variable (e.g., source expertise) may act via different processes depending on one’s motivation and ability to elaborate and has shown that the process (i.e., low-elaboration vs. high-elaboration roles) can be consequential in terms of determining to what extent the resultant attitude is strong and likely to guide behavior. Likewise, within the domain of attitude-behavior consistency, whether an attitude is serving as a cue or as a direct argument for behavior may be a crucial distinction. For example, a cue effect may not be enduring in its impact on one’s behavior – while in a rush, you may buy a pack of gum merely because you felt good about it (due to celebrity endorsement), but you may not make the same purchase next time (especially if you are able to think carefully about it). On the other hand, an argument effect may be long-lasting in its impact – if you thought carefully about a given decision, and decided your attitude was a reasonable argument (e.g., for attending a friend’s party), this attitude may continue to be perceived as a worthy guide for future behavior. It is possible that initial elaboration at the time of behavior may lead to memory for the usefulness of the attitude, thereby making future use of that attitude more likely even when one has less time or motivation to deliberate while making a decision. However, it is also possible that in some situations an attitude that had previously guided behavior via the argument
mechanism may fail to guide behavior either because the later behavior is performed under lower-deliberation conditions – in which case one cannot think about the validity of one’s attitude as an argument – or because the later behavior is not one for which the attitude is a valid argument (e.g., one’s positive attitude toward a friend based on his friendliness may not be seen as a valid argument for hiring him as your accountant; cf. Fabrigar et al., 2010).

As another interesting possibility, a multiple roles perspective may reveal that various moderators increase attitude-intention consistency in some situations but reduce consistency in other situations (Fabrigar et al., 2010). For example, it is plausible that attitude certainty may increase attitude-behavior consistency via an attitude-as-cue mechanism, perhaps due to the proposed general inference mechanism, independent of whether one believes that one should “trust one’s gut”. On the other hand, it is possible that certain persons (e.g., those lower in the Need for Affect, Maio & Esses, 2001) may be less inclined to trust their intuitions, and thus may fail to take feelings of certainty into account, or may even compensate for their gut feelings, when deciding how to behave in high-deliberation situations.

Conclusion

It is clear that much further examination is required to understand the potential multiple roles through which attitudes guide behavior. An improved understanding of the multiple roles of attitudes in influencing behavior holds great promise for improving our
ability to predict human behavior, which is one of the great goals of research on attitudes in particular and social psychology in general.
References


Appendix A: Sample Department Store Descriptions

Section A1. Sample Department Store Descriptions for Pilot Study, Experiment 1A, and Experiment 1B

Descriptions below are from the pilot study. As noted in the Method section, minor changes were made in Experiments 1A and 1B.

Brown’s [Smith’s] Department Store (more favorable attitude manipulation, lower complexity description)

Brown’s Department Store

Brown's department store is a 6 minute walk from your house. It is a large department store covering thirty thousand square feet on three different floors. On the third floor there is a restaurant. Brown's is a family owned department store. It has been owned by the same family since it was first opened. It has several departments, including camera, sporting goods, automotive, men's wear, ladies' wear, children's apparel, cosmetics, jewelry, housewares and gardening departments. Each department manager has the power to make all policy decisions within his or her department. Because of this, policies and procedures of specific departments differ from one another, as can the quality of their products and services.

Brown's department store is particularly proud of their camera department, and the department manager works hard to maintain the department's reputation. In fact, the camera department is considered to be Brown's best department. Brown's camera department has an extensive camcorder selection. They have the most advanced camcorders available, including some that can fit in the palm of your hand. In addition to a wide selection of items, Brown's camera department works hard to assure the quality of their products. The manager of the department regularly reads the leading photography magazines and magazines such as "Consumer Reports" and the manager only stocks products which have proven records for reliability and quality. Brown's camera department also has a wide range of services that they offer to their clients. For example, Brown's camera department has a full film development center in the store which features one hour processing and free duplicates. The center also does photo touch ups and restorations. Brown's camera department also has two full time photographers who do portrait work in the department, and can be hired out for special occasions. Brown's camera department has a specially trained staff who attend seminars in order to familiarize themselves with the products they sell. Each employee is required to attend a minimum of three manufacturer sponsored seminars each year. Brown's camera department also guarantees competitive prices. They will beat any price on cameras and accessories from any store. In order to make sure they have competitive prices at all times, Brown's camera department has two employees who work full time researching prices of cameras and equipment in other department stores, specialty stores and in catalogues. When they find a price which is lower than theirs, they beat it by 2%.
Smith’s [Brown’s] Department Store (more favorable attitude manipulation, higher complexity description)

Smith’s Department Store

Smith’s department store is a 7 minute walk from your house. It is a large department store covering thirty thousand square feet on three different floors. On the third floor there is a restaurant. Smith’s is a family owned department store. It has been owned by the same family since it was first opened. It has several departments, including camera, sporting goods, automotive, men’s wear, ladies’ wear, children’s apparel, cosmetics, jewelry, housewares and gardening departments. Each department manager has the power to make all policy decisions within his or her department. Because of this, policies and procedures of specific departments differ from one another, as can the quality of their products and services.

Smith’s department store is proud many of their departments for different reasons. In fact, the camera department is considered to be Smith’s best department. Smith’s camera department has an extensive camcorder selection. They have the most advanced camcorders available, including some that can fit in the palm of your hand. In addition to a wide selection of items, Smith’s camera department works hard to assure the quality of their products. The manager of the department regularly reads the leading photography magazines and magazines such as “Consumer Reports” and the manager only stocks products which have proven records for reliability and quality.

Two other departments are the sporting goods department and the gardening supplies department. The manager of Smith’s sporting goods department will only stock products that have been personally tested for at least one month by a departmental employee. Smith’s sporting goods department also has a wide range of services that they offer to their clients. For example, Smith’s sporting goods department supports school sports teams by providing them with equipment and uniforms, at cost.

Smith’s gardening supplies department also has high standards. Each employee in the department is expected to be an accomplished gardener. Employees are encouraged to attend seminars and read books to increase their knowledge. At least twice every year each employee is expected to lead a seminar for all departmental employees on topics they have learned about. Smith’s gardening supplies department also guarantees competitive prices. If a customer comes to the department and shows they have found a lower price at another store, Smith’s gardening supplies department will give that customer an additional 10% off the competitor’s price.

Smith’s [Brown’s] Department Store (less favorable attitude manipulation, lower complexity description)

Smith’s Department Store

Smith's department store is a 7 minute walk from your house. It is a large department store covering thirty-four thousand square feet on four different levels. On the upper level there is a restaurant. Smith's is a family owned department store. It has been owned by the same family since it was first established. It has several departments, including housewares, camera, automotive, men’s wear, ladies’ wear, gardening, sporting goods, cosmetics, jewelry, and children’s apparel departments. Each of the department managers sets policies for his or her own department. Because of this, policies and procedures of the specific departments differ from one another, as can the quality of their products and services.
Smith’s camera department is one of their average departments, but the department manager tries to make sure it has a good reputation. Smith’s camera department carries some camcorders. They have one of the most advanced camcorders available, one that has a screen that displays what you are taping. It is even possible to rent film cameras from Smith’s. In addition to their selection of items, Smith’s camera department works hard to assure the quality of their products. The manager of the department regularly reads a leading photography magazine and “Consumer Reports” at least once every six months and the manager tries to stock products which have proven records for reliability and quality. Smith’s camera department also has a wide range of services that they offer to their clients. For example, Smith’s camera department has a film development center in the store which features one day processing and inexpensive duplicates. The center also does photo reprinting. Smith’s camera department has one part time photographer who does portrait work in the department, and can be hired out for special occasions. Smith’s camera department has a specially trained staff who attend seminars in order to familiarize themselves with the products they sell. Each employee is required to attend a minimum of one manufacturer sponsored seminars each year. Manufacturers provide such seminars in order to familiarize retailers with their products and the product's features. When the employee returns from the seminar, they must write up a paragraph describing what they learned and post it on the departmental bulletin board so others can see it. Smith’s also guarantees competitive prices. They will match any price on cameras and accessories from any store they directly compete with. In order to make sure they have competitive prices at all times, Smith’s camera department has an employee who spends at least 30 minutes a day researching prices of cameras and equipment in other department stores.

Brown’s [Smith’s] Department Store (less favorable attitude manipulation, higher complexity description)

Brown’s Department Store

Brown’s department store is a 6 minute walk from your house. It is a large department store covering thirty thousand square feet on three different floors. On the third floor there is a restaurant. Brown’s is a family owned department store. It has been owned by the same family since it was first opened. It has several departments, including camera, sporting goods, automotive, men’s wear, ladies’ wear, children’s apparel, cosmetics, jewelry, housewares and gardening departments. Each department manager has the power to make all policy decisions within his or her department. Because of this, policies and procedures of specific departments differ from one another, as can the quality of their products and services.

Brown’s department store is proud many of their departments for different reasons. The camera department is considered to be one of Brown’s average departments. Brown’s camera department carries some camcorders. They have one of the most advanced camcorders available, one that has a screen that displays what you are taping. It is even possible to rent film cameras from Brown’s. In addition to their selection of items, Brown’s camera department works hard to assure the quality of their products. The manager of the department regularly reads a leading photography magazine and “Consumer Reports” at least once every six months, and the manager tries to stock products which have proven records for reliability and quality.

Two other departments are the sporting goods department and the gardening supplies department. The manager of Brown’s sporting goods department tries to ensure that products have been personally tested at least once by a departmental employee. Brown’s sporting goods department also has a wide range of services that they offer to their clients. For example, Brown’s sporting goods department supports school sports teams by providing uniforms slightly above cost.

Brown’s gardening supplies department also has high standards. Each employee in the department is expected to be interested in gardening. Employees are encouraged to read books and magazines in order to increase their knowledge about gardening. The employees are also encouraged to tell other employees about what they have learned. Brown’s gardening supplies department guarantees competitive prices. If a
customer comes to the department and can prove they have found a lower price at another store, Brown's gardening supplies department will give that customer an additional 2% off the competitor's price.

Section A2. Sample Department Store Descriptions for Experiments 2A and 2B

Note: Either department store could be described more favorably. These samples have Brown’s described more favorably.

Brown’s Department Store (introduction)

On the next two pages, you will receive information about Brown's Department Store.

Brown's department store was established in 1967. It is a large department store covering thirty-four thousand square feet on four different levels. Brown's is a family owned department store. It has been owned by the same family since it was first established. It has several departments, including housewares, camera, automotive, men's apparel, ladies' apparel, gardening, sporting goods, cosmetics, jewelry, and children's apparel departments. Each of the department managers sets policies for his or her own department. Because of this, policies and procedures of the specific departments differ from one another, as can the quality of their products and services.

(More favorable, low complexity description)

- Brown’s camera department has an extensive camcorder selection. They have the most advanced camcorders available, including some that can fit in the palm of your hand.
- Brown’s camera department carries almost all brands of cameras on the market, made by high-quality manufacturers such as Kodak, Fujifilm, Panasonic and Casio. They carry a broad array of photo-editing software.
- Brown’s camera department does not carry a wide selection of tripods, though they do have one ‘steadicam’ (a weight used for maintaining a stable image while taking videos).
- The camera department manager surveys customers in order to make sure that their products have demonstrated high customer satisfaction.
- Brown’s camera department carries a wide variety of tinted filters, which may be used to darken, lighten, and change the color of photos as one takes a picture.
- The manager of the camera department sometimes reads one of the leading photography magazines.
- Brown’s camera department carries a variety of camera lenses, but does not offer panoramic or fish-eye lenses.
- Brown’s camera department has specially trained staff who are experienced photographers.
- The camera department manager only stocks products that have proven records for reliability and quality based on Consumer Reports.
(More favorable, high complexity description)

- Brown's camera department has an extensive camcorder selection. They have the most advanced camcorders available, including some that can fit in the palm of your hand.
- Brown’s sporting goods department carries almost all brands of sporting goods available on the market, made by high-quality manufacturers such as Nike, Reebok, Puma, and Everlast. They carry a broad array of equipment for sports including soccer, baseball, basketball, football, and many others.
- Brown's gardening department does not carry a wide selection of plants, though they do have a diverse array of cacti.
- The sporting goods department manager will only stock products that have proven records for reliability, quality, and customer satisfaction.
- Brown's gardening department carries a wide variety of gardening equipment, including an assortment of trowels, shovels, sprinklers, and more.
- The manager of the camera department sometimes reads some of the leading photography magazines.
- Brown's sporting goods department has some camping equipment that normally cannot be purchased in department stores, such as full size tents.
- Brown's gardening department has staff who are inexperienced as gardeners but are learning how to garden by using the tools available in the gardening department.
- The camera department manager only stocks products that have proven records for reliability and quality.

Smith’s Department Store (introduction)

On the next two pages, you will receive information about Smith's Department Store

Smith's department store was established in 1965. It is a large department store covering thirty thousand square feet on three different floors. Smith's is a family owned department store. It has been owned by the same family since it was first opened. It has several departments, including housewares, camera, automotive, men's apparel, ladies' apparel, gardening, sporting goods, cosmetics, jewelry, and children's apparel departments. Each department manager has the power to make all policy decisions within his or her department. Because of this, policies and procedures of specific departments differ from one another, as can the quality of their products and services.

(Less favorable, low complexity description)
• Smith’s camera department carries some camcorders, although most of their camcorders are older models.
• Smith’s camera department carries equipment from only a few different manufacturers, but the manager tries to include a few quality brands such as Canon and Nikon. They have a relatively limited selection of photo-editing software.
• Smith’s camera department has a wide variety of tripods, including portable tripods that can fit in one’s pocket.
• The manager of the camera department stocks products based on the recommendations of sales representatives.
• Smith’s camera department has a few accessories that cannot normally be purchased in a department store, such as colored ‘tints’ for sun photography.
• The manager of the camera department sometimes consults one photography industry journal.
• Smith’s camera department has some equipment that normally cannot be purchased in department stores, such as extra-bright LEDs for flash photography.
• Smith’s camera department has staff who are inexperienced as photographers but are learning by using the tools available in the camera department.
• The camera department manager generally stocks products that had been viewed as reasonably reliable when they were introduced.

(Less favorable, high complexity description)

• Smith’s camera department carries some camcorders, although most of their camcorders are older models.
• Smith’s sporting goods department carries equipment from only a few different manufacturers, but the manager tries to include a few quality brands such as Spalding and Titleist. They have equipment for a relatively limited number of sports.
• Smith’s gardening department has a wide selection of plants, including flowers ranging from tulips and roses to rarer flowers and shrubs.
• The manager of the sporting goods department stocks products based on the recommendations of sales representatives.
• Smith’s gardening department carries a variety of shovels, but does not offer many other types of gardening equipment.
• The manager of the camera department sometimes consults some of the leading photography industry journals.
• Smith’s sporting goods department has a few accessories that cannot normally be purchased in a department store, such as canoes and kayaks.
• Smith’s gardening department has specially trained staff who are experienced gardeners.
• The camera department manager generally stocks products that had been viewed as reasonably reliable when they were introduced.
Appendix B: Results Summary across Studies

<table>
<thead>
<tr>
<th>Term</th>
<th>Pilot Study $(df = 168)$</th>
<th>Experiment 1A $(df = 203)$</th>
<th>Experiment 1B $(df = 234)$</th>
<th>Experiment 2A $(df = 133)$</th>
<th>Experiment 2B $(df = 159)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Complexity in Model</td>
<td>$B = 0.59^*$ $p = .017$</td>
<td>$B = 0.63^* p = .014$</td>
<td>$B = 0.54^* p = .032$</td>
<td>$B = 0.07 p = .566$</td>
<td>$B = -0.04 p = .779$</td>
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<td>$B = -0.18 p = .709$</td>
<td>$B = 0.39 p = .446$</td>
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<td>$B = 0.37 p = .147$</td>
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<td>Deliberation X Knowledge Complexity X Attitude</td>
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<tr>
<td>Knowledge Complexity X Attitude</td>
<td>Lower Deliberation $(df = 85)$</td>
<td>Lower Deliberation $(df = 99)$</td>
<td>Lower Deliberation $(df = 114)$</td>
<td>Lower Deliberation $(df = 67)$</td>
<td>Lower Deliberation $(df = 77)$</td>
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<td>$B = 0.68^* p = .053$</td>
<td>$B = 0.43 p = .306$</td>
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<td>Higher Deliberation $(df = 104)$</td>
<td>Higher Deliberation $(df = 120)$</td>
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<td>$B = 0.49 p = .156$</td>
<td>$B = 0.81^* p = .007$</td>
<td>$B = 0.79^* p = .024$</td>
<td>$B = 0.26 p = .140$</td>
<td>$B = -0.15 p = .434$</td>
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Table B1. Results using differential attitude index (measure) and specific inference (if applicable), with dependent variable of purchase intention. Significant values are marked with an asterisk and marginal values are marked with a cross.
Table B1 continued

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<tr>
<th>Term</th>
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<th>Experiment 1A ((df = 203))</th>
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<th>Experiment 2A ((df = 133))</th>
<th>Experiment 2B ((df = 159))</th>
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<td>(B) and (p)</td>
<td>(B) and (p)</td>
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<td>(p = .017)</td>
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<td>(p = .136)</td>
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<td>Lower Deliberation ((df = 116))</td>
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<td>Term</td>
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<td>Experiment 1A ($df = 203$)</td>
<td>Experiment 1B ($df = 234$)</td>
<td>Experiment 2A ($df = 133$)</td>
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<td>Knowledge Complexity X Attitude</td>
<td>$B = 2.50^*$, $p = .007$</td>
<td>$B = 2.97^*$, $p &lt; .001$</td>
<td>$B = 1.77^*$, $p = .022$</td>
<td>$B = 0.62$, $p = .194$</td>
<td>$B = 0.91^*$, $p = .046$</td>
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<td>$B = -0.83$, $p = .956$</td>
<td>$B = -2.51^*$, $p = .106$</td>
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<td>$B = -1.10$, $p = .224$</td>
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<td>Knowledge Complexity X Attitude</td>
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<td>Lower Deliberation ($df = 85$)</td>
<td>$B = 2.50^*$, $p = .062$</td>
<td>$B = 3.02^*$, $p = .013$</td>
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<td>$B = 2.49^*$, $p = .050$</td>
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<td>Inference X Attitude</td>
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<td>$B = 1.21^*$, $p &lt; .001$</td>
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<td>Inference X Attitude</td>
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<tr>
<td>Lower Deliberation ($df = 99$)</td>
<td>$B = 0.91^*$, $p = .041$</td>
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<td>Higher Deliberation ($df = 104$)</td>
<td>$B = 1.63^*$, $p &lt; .001$</td>
<td>$B = 0.64$, $p = .156$</td>
<td>$B = 0.12$, $p = .629$</td>
<td>$B = 0.41^*$, $p = .063$</td>
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Table B2. Results using the attitude manipulation and specific inference (if applicable), with dependent variable of purchase intention. Significant values are marked with an asterisk and marginal values are marked with a cross.
Table B2 Continued

| Term                                      | Pilot Study  
|                                          | (df = 168) | Experiment 1A  
|                                          | (df = 203) | Experiment 1B  
|                                          | (df = 234) | Experiment 2A  
|                                          | (df = 133) | Experiment 2B  
|                                          | (df = 159) |
| **Knowledge Complexity and Inference in Model** |            |            |
| (Lower Deliberation) |            |            |
| Knowledge Complexity X Attitude |            |            |
| $B = 2.84^*$ | $p = .023$ | $B = 2.23^*$ | $p = .043$ | $B = -0.42$ | $p = .582$ | $B = 1.56^*$ | $p = .031$ |
| Inference X Attitude | $B = 0.51$ | $p = .269$ | $B = 1.64^*$ | $p < .001$ | $B = 0.35$ | $p = .235$ | $B = 0.06$ | $p = .822$ |
| Bootstrapping 95% CI for Mediation | $[-0.33, 1.52]$ | $[0.13, 1.97]^*$ | $[-1.14, 0.25]$ | NA$^c$ |
| (Higher Deliberation) |            |            |
| Knowledge Complexity X Attitude |            |            |
| $B = 2.40^*$ | $p = .006$ | $B = 0.37$ | $p = .737$ | $B = 1.36^*$ | $p = .033$ | $B = -0.11$ | $p = .875$ |
| Inference X Attitude | $B = 1.47^*$ | $p < .001$ | $B = 0.55$ | $p = .238$ | $B = 0.03$ | $p = .905$ | $B = 0.44^t$ | $p = .072$ |
| Bootstrapping 95% CI for Mediation | $[-0.44, 1.37]$ | $[-0.18, 1.24]$ | $[-0.28, 0.43]$ | NA$^c$ |

a. As the negative sign indicates, this interaction displays a pattern opposite to that found when using the differential attitude index and also differs from the same analysis using the attitude measure within Experiment 1B.
b. In 1A, this term had been marginally significant and in a different direction (i.e., $B = 0.71$). Although this interaction was only marginally significant, it seemed that in 1A, Attitude Manipulation X Inference most strongly predicted store choice when individuals were able to deliberate. In other words, the pattern of results in Experiment 1B was a reversal, albeit a marginal one, of the pattern in 1A, in which inference had increased attitude-behavior consistency under higher deliberation.
c. Previous analyses indicated that knowledge complexity predicted perceived knowledge and absolute attitude extremity, and that these attitude properties predicted greater attitude-intention consistency (when using the attitude manipulation). If perceived knowledge and its interactions (excluding interactions with knowledge complexity) are included in this model, the Knowledge Complexity X Attitude Manipulation term drops to $B = 0.70$, $p = .138$, but Perceived Knowledge X Attitude Manipulation is significant, $B = 0.19$, $p = .049$. If absolute attitude extremity and its interactions (excluding interactions with knowledge complexity) are included in this model, the Knowledge Complexity X Attitude Manipulation term drops to $B = 0.73$, $p = .131$, and the
Absolute Attitude Extremity X Attitude Manipulation interaction is also non-significant, \( B = 0.08, p = .116 \).

d. As the negative sign (and Inference X Attitude terms within each level of deliberation) indicates, this non-significant trend indicated that inference increased attitude-intention consistency more under lower deliberation. The opposite pattern (i.e., greater inference effects under higher deliberation) was found when using the differential attitude index rather than the attitude manipulation in 2A.

e. The PROCESS macro was unable to compute a bootstrapping confidence interval. (See [http://www.afhayes.com/macrofaq.html](http://www.afhayes.com/macrofaq.html) for details.)

<table>
<thead>
<tr>
<th></th>
<th>Experiment 1A (df = 203)</th>
<th>Experiment 1B (df = 234)</th>
<th>Experiment 2A (df = 133)</th>
<th>Experiment 2B (df = 159)</th>
</tr>
</thead>
<tbody>
<tr>
<td>( B )</td>
<td>0.53</td>
<td>0.54</td>
<td>0.23</td>
<td>0.86</td>
</tr>
<tr>
<td>( p )</td>
<td>.005</td>
<td>.001</td>
<td>.31</td>
<td>&lt; .001</td>
</tr>
</tbody>
</table>

Table B3. Regression coefficients for the relation between knowledge complexity and specific inference.

<table>
<thead>
<tr>
<th>Term</th>
<th>Using Specific Inference Term</th>
<th>Using General Inference Term</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Using Differential Attitude Index</td>
<td>Using Attitude Manipulation</td>
</tr>
<tr>
<td>Knowledge Complexity X Attitude</td>
<td>( B = -0.009 ) ( p = .940 )</td>
<td>( B = -0.69 ) ( p = .446 )</td>
</tr>
<tr>
<td>Deliberation X Knowledge Complexity X Attitude</td>
<td>( B = 0.49^* ) ( p = .046 )</td>
<td>( B = 0.49^* ) ( p = .446 )</td>
</tr>
<tr>
<td>Knowledge Complexity X Attitude</td>
<td>Lower Deliberation (df = 77)</td>
<td>Lower Deliberation (df = 77)</td>
</tr>
<tr>
<td></td>
<td>( B = -0.26 ) ( p = .155 )</td>
<td>( B = 1.47^* ) ( p = .029 )</td>
</tr>
<tr>
<td>Higher Deliberation (df = 82)</td>
<td>( B = 0.23 ) ( p = .164 )</td>
<td>( B = 0.37 ) ( p = .546 )</td>
</tr>
</tbody>
</table>

Table B4. Results from Experiment 2B, using dependent variable of purchase intention for furniture, divided by attitude (differential attitude index or manipulation) and inference (specific or general). Significant values are marked with an asterisk and marginal values are marked with a cross.
Table B4 continued

<table>
<thead>
<tr>
<th>Term</th>
<th>Using Specific Inference Term</th>
<th>Using General Inference Term</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Using Differential Attitude Index</td>
<td>Using Attitude Manipulation</td>
</tr>
<tr>
<td>Inference in Model</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inference X Attitude</td>
<td>$B = 0.04$</td>
<td>$B = 0.24$</td>
</tr>
<tr>
<td></td>
<td>$p = .443$</td>
<td>$p = .157$</td>
</tr>
<tr>
<td>Deliberation X Inference X Attitude</td>
<td>$B = -0.01$</td>
<td>$B = 0.01$</td>
</tr>
<tr>
<td></td>
<td>$p = .915$</td>
<td>$p = .974$</td>
</tr>
<tr>
<td>Inference X Attitude</td>
<td>Lower Deliberation ($df = 77$)</td>
<td>Lower Deliberation ($df = 77$)</td>
</tr>
<tr>
<td></td>
<td>$B = 0.05$</td>
<td>$B = 0.23$</td>
</tr>
<tr>
<td></td>
<td>$p = .585$</td>
<td>$p = .405$</td>
</tr>
<tr>
<td></td>
<td>Higher Deliberation ($df = 82$)</td>
<td>Higher Deliberation ($df = 82$)</td>
</tr>
<tr>
<td></td>
<td>$B = 0.04$</td>
<td>$B = 0.24$</td>
</tr>
<tr>
<td></td>
<td>$p = .591$</td>
<td>$p = .222$</td>
</tr>
<tr>
<td>Knowledge Complexity and Inference in Model</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Lower Deliberation)</td>
<td>Lower Deliberation ($df = 73$)</td>
<td>Lower Deliberation ($df = 73$)</td>
</tr>
<tr>
<td>Knowledge Complexity X Attitude</td>
<td>$B = -0.27$</td>
<td>$B = 1.66^*$</td>
</tr>
<tr>
<td></td>
<td>$p = .171$</td>
<td>$p = .023$</td>
</tr>
<tr>
<td>Inference X Attitude</td>
<td>$B = 0.02$</td>
<td>$B = 0.22$</td>
</tr>
<tr>
<td>Bootstrapping 95% CI for Mediation</td>
<td>[-0.08, 0.23]</td>
<td>NA$^b$</td>
</tr>
<tr>
<td>(Higher Deliberation)</td>
<td>Higher Deliberation ($df = 78$)</td>
<td>Higher Deliberation ($df = 78$)</td>
</tr>
<tr>
<td>Knowledge Complexity X Attitude</td>
<td>$B = 0.28$</td>
<td>$B = 0.85$</td>
</tr>
<tr>
<td></td>
<td>$p = .114$</td>
<td>$p = .180$</td>
</tr>
<tr>
<td>Inference X Attitude</td>
<td>$B = -0.001$</td>
<td>$B = 0.14$</td>
</tr>
<tr>
<td></td>
<td>$p = .986$</td>
<td>$p = .527$</td>
</tr>
<tr>
<td>Bootstrapping 95% CI for Mediation</td>
<td>[-0.16, 0.17]</td>
<td>NA$^b$</td>
</tr>
</tbody>
</table>

a. When controlling for perceived knowledge or absolute attitude extremity, the Knowledge Complexity $\times$ Attitude Manipulation remained significant, $B$s $> 1.13$, $t$s$(151) > 2.41$, $ps < .018$. The Perceived Knowledge $X$ Attitude Manipulation term was non-significant when included in the model, $B = 0.16$, $t(151) = 1.62$, $p = .107$, and the Absolute Attitude Extremity $X$ Attitude Manipulation term was also non-significant when included in the model, $B = 0.08$, $t(151) = 1.58$, $p = .116$.

b. The PROCESS macro was unable to compute a bootstrapping confidence interval. (See http://www.afhayes.com/macrofaq.html for details.)