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The Effects of Age and Expertise on Product Evaluations: Does the Type of Information Matter?

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To better understand two large consumer segments, the boomers and the echo-boomers, we examine whether and why experts and novices from these two segments rely on attribute versus benefit information in product evaluations. In four studies, we show that expertise affects younger consumers, such that younger novices evaluate products more favorably when the descriptions feature benefit information, whereas younger experts evaluate products more favorably when the descriptions feature attribute information. However, both older novices and experts evaluate products described with benefit information more favorably than those described with attribute information. We further show that differences in the perceived diagnosticity of different types of information mediate the effects of expertise and age on product evaluations. We theorize that age differences in perceived diagnosticity occur because older and younger consumers spontaneously construe information in different ways. Therefore, age differences in the effect of expertise on evaluations should disappear when construal levels are controlled. Consistent with our hypotheses, we demonstrate that when primed to construe information at concrete levels, older consumers behave just like younger consumers—older experts formed more favorable evaluations toward products described with attribute information, but older novices formed more favorable evaluations toward products described with benefit information. When younger consumers are primed to construe information at abstract levels, they prefer products described with benefit information regardless of expertise, just like older consumers. We discuss the implications of our results for both researchers and practitioners.

Keywords: age; aging; expertise; branding; segmentation; positioning; communications; information type; construal levels; diagnosticity
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Introduction

The baby boomers (about 78 million people) and the echo boomers or millennials (another roughly 80 million), who together constitute about half of the U.S. population, offer substantial opportunities and challenges to brand managers and marketers. Companies such as Kellogg's and Skechers have begun broadening their target markets to include those 55 and over (Carter and Vega 2011), while sustaining interest in younger consumers who have significant lifetime values. Because the segments are equally important and attractive to businesses, it is important to understand how to position a brand and efficiently communicate its core meaning to both segments.

Marketers face a common positioning and communication dilemma: position brands on attribute information (The iPad mini 3 "has a stunning 7.9-inch Retina display, an incredibly powerful A7 chip, advanced wireless technologies, and Touch ID") or on benefit information ("So many innovations, but it still fits perfectly in your hand").[1] Prior research indicates that consumers' expertise and age can be important factors influencing the impact of the *attribute* and *benefit* positions. Research on expertise shows that novices react more favorably to messages containing benefit information, but experts react more favorably to messages containing attribute information (Maheswaran and Sternthal 1990, Maheswaran et al. 1996). In part, these differences arise because, unlike experts, novices have difficulty assigning meaning to or interpreting attribute information. As a result, novices view benefit information as more informative or useful for decision making than attribute information, whereas experts view attribute information as more informative than benefit information. However, it is not clear whether these findings from research on undergraduate participants generalize to older consumers.

Further complicating the story is preliminary research indicating that older consumers spontaneously construe stimuli at abstract levels whereas younger consumers spontaneously construe stimuli at concrete levels (Hong and Lee 2010). Recent research proposes a functional matching hypothesis linking construal levels to preference for abstract (benefit) or

[1] See http://www.apple.com/ipad-mini-3/design/ (accessed February 19, 2015).

concrete (attribute) information in the context of product warnings (Steinhart et al. 2013) and health information (Zhang et al. 2009). Therefore, it is unclear whether *older experts* will prefer products described with abstract benefits (which matches their default abstract construal levels) or concrete attributes (as a result of their expertise).

Our research attempts to address this ambiguity in the literature: Does expertise affect older consumers in the same way it affects younger consumers? If not, why not? We theorize and show in Study 1 that the expertise effect (as measured by both objective and subjective expertise) exists among younger consumers such that in product evaluations, younger novices evaluate an investment fund more favorably when it is described with benefit information, but younger experts evaluate the investment fund more favorably when it is described with attribute information. However, this expertise effect does not hold for older consumers, who evaluate the product more favorably when it is described with benefit information instead of attribute information, regardless of their expertise. In Study 2, using subjective expertise and MP3 players, we show that expertise increases the perceived diagnosticity of attribute information for younger adults but not for older adults. In Study 3 (using a third product category, toothpaste), perceived diagnosticity mediates the effect of age, expertise, and information type on product evaluation. Thus we replicate the results from Study 2, even though we use different products and measures of perceived diagnosticity. Finally, and more importantly, we theorize and show in Study 4 (using MP3 players) that the age and expertise effects found in the first three studies arise from the different construal levels that older versus younger consumers spontaneously deploy. In the fourth experiment, we show that construal changes the diagnosticity of attribute and benefit information, and diagnosticity mediates the effect of construal level, expertise, and information type on product evaluation.

Our research makes several contributions to theory and practice. First, our findings add to the expertise literature by demonstrating that the previously found effect of expertise on consumers' reliance on attribute versus benefit information does not hold for older consumers, who rely on benefit information regardless of expertise. Second, our findings enrich the aging literature by shedding light on the mechanism underlying the effects of age and expertise on the preference for attribute versus benefit information—the different construal levels deployed by older versus younger consumers. Third, we show that even though older adults spontaneously deploy abstract construal levels, they are cognitively flexible and switch to concrete mind-sets in response to situational cues. Finally, our findings have important implications for marketers and public policy officials, who often communicate with consumers with different ages and levels of expertise.

Theoretical Development

At the heart of our work is the distinction between attribute and benefit information. Benefit information explains how the product solves consumers' problems, whereas attribute information reveals concrete characteristics inherent to the stimulus object (Lamberton and Diehl 2013, Maheswaran and Sternthal 1990). For example, Maheswaran and Sternthal (1990), using a personal computer as the stimulus, included attribute information such as "it has a large memory capacity expandable to 512 k by bank switching" and benefit information such as "it has a large memory capacity adequate to handle heavy duty word processing better than the existing word processors" (p. 68). When presented with attribute information, consumers have to infer what benefits they will obtain if they use the product. On the other hand, benefit information directly informs consumers of the benefits they may receive if they use the product. Prior literature suggests that benefit and attribute messages elicit different responses from people with different expertise (Maheswaran and Sternthal 1990) or of different ages (Fung and Carstensen 2003). In the following section, we review previous findings and propose our hypotheses based on this literature.

Expertise

The work on expertise suggests that whereas novices rely on benefit information in product-evaluation tasks, experts rely on attribute information (Maheswaran and Sternthal 1990, Maheswaran et al. 1996, Su et al. 2008). For example, Maheswaran and Sternthal (1990) find that experts engaged in detailed processing of and responded more favorably to a message about a personal computer when attributes were present in the message, but novices engaged in detailed processing of and responded more favorably to a message about the computer when benefit information was present. Similarly, Su et al. (2008) find that expert consumers were more satisfied after interacting with an interactive recommendation agent (IRA) that provided attribute information, whereas novice consumers were more satisfied after using an IRA focused on benefit information.

Interestingly, although these studies were conducted using objective measures of expertise, the literature suggests that self-assessed expertise also affects people's behavior, whether it is in a consumer context or in the workplace (e.g., Hadar et al. 2013, Morrin et al. 2012, Siemsen et al. 2007, Thomas-Hunt et al. 2003). Objective knowledge is usually defined

as accurately stored information; subjective knowledge is defined as people's beliefs about their own knowledge (Carlson et al. 2009). Subjective and objective expertise often lead to similar results since the two constructs can be highly correlated ($r = 0.63$; Park et al. 1994). In our research, we measure both objective and subjective expertise, but we focus on the results from subjective expertise because "what I think I know" tends to have a more powerful influence on information selection than what one actually knows. Additionally, emerging marketing literature suggests that managers can manipulate subjective expertise levels by varying the way information is presented (Hadar et al. 2013). Therefore, our results based on subjective (as well as objective) knowledge should have more meaningful implications for managers.

How Age and Construal Level Moderate the Expertise Effect

According to construal-level theory (Trope and Liberman 2010), people can process stimulus information at different levels of abstractness. When processing stimulus information at an abstract level, people form relatively abstract mental representations, whereas when processing stimulus information at a concrete level, people form relatively concrete mental representations that reflect the details or specific characteristics of actions and events. Several studies show that older consumers are more likely to process information at a more abstract level than younger consumers (Hong and Lee 2010, McGinnis and Zelinski 2000). For example, one study showed that older people construed unfamiliar stimuli with abstract interpretations, whereas younger people construed the same stimuli with concrete and contextualized interpretations (McGinnis and Zelinski 2000). More directly, Hong and Lee (2010) measure younger and older participants' construal levels and show that older people indeed construed the same actions at a more abstract level than younger people.

Recent literature also links construal to the use and persuasiveness of different types of information (Steinhart et al. 2013, White et al. 2011). People using abstract construals tend to attend to and process abstract information (e.g., message trustworthiness), whereas people using concrete construals tend to attend to and process concrete information (e.g., side effects information). Similarly, when White et al. (2011) manipulated participants' construal levels (mind-set) and presented them with information that was either abstract (framed in terms of potential gains) or concrete (framed in terms of potential losses), they found that participants who viewed information that fit with their construal levels (gains for abstract-level participants and losses for concrete-level participants) were more persuaded by the messages. They indicate greater behavioral intentions advocated in the messages and actually engaged in more consistent behaviors.

The above-mentioned literature has intriguing implications regarding whether consumers with different construal levels might spontaneously direct attention to attribute or benefit information. Whereas attribute information informs consumers of the concrete details about products or brands, benefit information directly informs consumers of the goals that they can achieve with the product, and it therefore captures "aspects of products that are higher on the means–end chain . . . translating to an increase in abstraction" (Lamberton and Diehl 2013, p. 395). As a result, attribute information fits better with concrete construals, whereas benefit information fits better with abstract construals.

Combining the above-mentioned two streams of research showing that older people deploy abstract construals and that benefit product information fits better with people with abstract construals, we predict that *older* experts should rely on benefit information in product evaluations more than on attribute information. In other words, we argue that the previously found effect that experts rely more on attribute information in product evaluations should not hold for older consumers. This leads to our first hypothesis.

Hypothesis 1A (H1A). *Younger experts* (*novices*) *will evaluate a product more favorably when the product is described with attribute* (*benefit*) *information than when it is described with benefit* (*attribute*) *information*.

Hypothesis 1B (H1B). *Older consumers will evaluate a product more favorably when the product is described with benefit information than when it is described with attribute information, regardless of their level of expertise*.

The Role of Information Diagnosticity

Because prior research has demonstrated that perceived information diagnosticity often affects the type of information consumers use (Ahluwalia 2002, Nam et al. 2012), we investigate information diagnosticity as a mechanism mediating the effects of expertise and age on product evaluations. For example, Nam et al. (2012) examine how experts and novices use alignable and nonalignable attribute information about two competing brands in their product evaluations. The authors find that, whereas novices rely more on alignable differences in evaluating products, experts rely more on nonalignable differences. More relevant to the current theorizing, the authors show that the differences in the reliance on alignable versus nonalignable differences occur because novices find alignable information to be more diagnostic, whereas experts find nonalignable differences to be more diagnostic. Based on the above literature, we predict that

participants' perceived information diagnosticity will mediate the effects of age and expertise on product evaluations.

Hypothesis 2 (H2). *Younger experts will consider attribute* (*benefit*) *information to be more* (*less*) *diagnostic than younger novices, whereas expertise will not affect the diagnosticity of attribute versus benefit information for older adults.*

Hypothesis 3 (H3). *Perceived information diagnosticity will mediate the effects of age and expertise on evaluation of products described with attribute versus benefit information.*

According to our theory, older and younger consumers have different perceived diagnosticity of attribute versus benefit information because they spontaneously deploy different construal levels. But consumers' preferences for a particular type of information should change if their construal levels change in response to a situational cue such as an instruction to elaborate on the big picture versus on specific details (Trope and Liberman 2010). As a result, when consumers are prompted to use abstract or concrete construal levels, age should no longer moderate the expertise effect on the diagnosticity of attribute and benefit information. Instead, construal levels should moderate the expertise effect such that when induced to construe information abstractly, all consumers (regardless of age or expertise) should prefer benefit information. When induced to construe information concretely, all experts (regardless of age) should prefer attribute information, whereas all novices (regardless of age) should prefer benefit information. Again, we expect that perceived diagnosticity of information drives these effects.

Hypothesis 4A (H4A). *Under concrete levels of construal, experts* (*novices*) *will evaluate a product more favorably when it is described with attribute* (*benefit*) *information than when it is described with benefit* (*attribute*) *information.*

Hypothesis 4B (H4B). *Under abstract levels of construal, novices and experts* (*of all ages*) *will evaluate a product more favorably when it is described with benefit information than when it is described with attribute information.*

Next we present four studies that test our hypotheses.

Study 1

The objective of Study 1 was to test Hypotheses 1A and 1B, that the previously found expertise effect on evaluations of products described with attribute or benefit information holds for younger, but not for older, consumers. We employed a 2 (age group: younger versus older) × 2 (information type: attribute versus benefit) × expertise (continuous) between-subject design. Two groups of participants (younger versus older) evaluated a mutual fund after reviewing product information. Roughly half of the participants in each age group read attribute information whereas the rest read benefit information. We measured participants' objective expertise by asking them a series of true/false questions that access expertise in financial decision making. We also measured participants' subjective expertise with a series of self-report questions. Participants' evaluation of the mutual fund served as the dependent variable.

Method

One hundred and twenty-six younger participants (61 males, $M_{age} = 20.21$, $SD_{age} = 1.38$, age range: 18–23) received extra course credit and 77 older participants (33 males, $M_{age} = 52.78$, $SD_{age} = 5.76$, age range: 45–76) received \$10 to participate in a consumer survey about a new mutual fund. All participants completed the survey in a computer lab. Younger participants were undergraduate students taking an introductory marketing course, and older participants were members of community groups such as choruses and booster clubs. In all four studies, we controlled for the level of educational background by only including participants who had completed at least some college.

Participants reviewed information about the mutual fund and evaluated it. We randomly assigned participants to receive product information stated in terms of either attributes or benefits along six dimensions (how it produces high yields, how it avoids variable yields, 15-year gains, expense ratio, gain from \$10,000 in 10 years, and likelihood of losing; see Appendix A). The information appeared in direct view in a bullet-point format. Forty younger participants (16 males, $M_{age} = 19.30$) and 40 older participants (19 males, $M_{age} = 49.90$) from the same pool of participants as in the main study evaluated the six dimensions in a pretest. Half of the participants in each age group evaluated attribute information of the mutual fund on the six dimensions, whereas the other half evaluated benefit information. Participants rated each piece of information in terms of its importance (1 = very unimportant, 7 = very important) and favorability (1 = very unfavorable, 7 = very favorable). The pretest results showed that participants rated the attribute information equally important (p's > 0.3) and equally favorable (p's > 0.2) as the benefit information along all six dimensions.

After reviewing the information, participants proceeded to the next screen to evaluate the mutual fund with a three-item 7-point scale (1 = dislike very much,

very unfavorable, very bad; 7 = like very much, very favorable, very good) and responded to the objective expertise measure consisting of nine true/false/don't know questions on investment and personal finance decision making (see Appendix B). Items in the expertise measure were adapted from published scales (Lusardi and Mitchell 2011). In addition to objective expertise, we also measured participants' subjective expertise with a three-item scale ("compared to other people your age…"; 1 = not at all knowledgeable/not at all familiar/not at all frequently purchase; 7 = very knowledgeable/very familiar/very frequently purchase).

Results

Product Evaluation. Participants' evaluations of the mutual fund on the three items were averaged to form an evaluation index ($\alpha = 0.93$). Responses to the nine items measuring objective financial expertise were coded (1 = correct, 0 = incorrect), summed, and mean-centered ($M = 5.36$, SD = 1.90; see Table 1) to form an expertise index. Younger and older participants did not differ in their objective expertise ($M = 5.44$ versus 5.25, $t < 1$). A regression analysis on the evaluation index with age (−1 = young, 1 = old), expertise, information type (−1 = attribute, 1 = benefit), and their interactions as predictors revealed three main effects. The evaluation of the mutual fund was more favorable as participants' financial expertise increased ($\beta = 0.11$, $t = 2.31$, $p < 0.05$), when the information focused on benefits instead of attributes ($\beta = 0.34$, $t = 4.08$, $p < 0.001$), and when participants were younger ($\beta = -0.25$, $t = -2.93$, $p < 0.01$). All the two-way interactions were significant as well ($\beta = -0.16$, $t = -3.20$, $p < 0.01$ for expertise × information type; $\beta = -0.21$, $t = -4.40$, $p < 0.001$ for expertise × age; $\beta = 0.38$, $t = 4.50$, $p < 0.001$ for age × information type). More importantly, the main effects and two-way interactions were qualified by the predicted three-way interaction ($\beta = 0.19$, $t = 3.88$, $p < 0.001$).

To further explore the nature of the three-way interaction, we conducted simple slope analyses on the effect of expertise in the four age × information type conditions. Results showed that after reading attribute information, younger experts formed more favorable evaluations than younger novices ($\beta = 0.67$, $t = 9.29$, $p < 0.001$). However, expertise did not affect product evaluations in any other condition ($|t|$'s < 1, p's > 0.3; see Figure 1). To directly test H1A and H1B, we conducted spotlight analyses at one standard deviation above and below the mean of expertise. Consistent with H1A, younger experts had more favorable product evaluations when the judgment was formed on the basis of attribute rather than benefit information ($\beta = -0.68$, $t = -4.91$, $p < 0.001$). Additionally, consistent with H1A and H1B, younger novices ($\beta = 0.61$, $t = 4.42$, $p < 0.001$), older experts ($\beta = 0.78$, $t = 3.84$, $p < 0.001$), and older novices ($\beta = 0.66$, $t = 3.23$, $p < 0.01$) evaluated the product more favorably after reading benefit information than after reading attribute information.

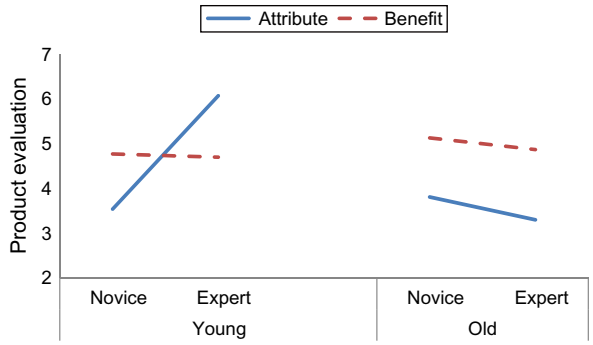
Objective vs. Subjective Expertise. Participants' responses to the three items measuring subjective

Table 1 Summary Statistics of Expertise

	N	Maximum	Minimum	Mean	Median	SD	α
Study 1: Objective expertise of mutual funds (possible range: 0–9)							
Overall	203	9	0	5.36	6	1.90	
Younger	126	9	0	5.44	6	2.00	
Older	77	8	0	5.25	6	1.73	
Study 1: Subjective expertise of mutual funds (possible range: 1–7)							
Overall	203	7	1	4.45	4.67	1.65	0.86
Younger	126	7	1	4.43	4.67	1.73	0.91
Older	77	7	1	4.48	4.67	1.51	0.86
Study 2: Subjective expertise of MP3 players (possible range: 1–7)							
Overall	219	6.33	1	3.48	3.67	1.46	0.87
Younger	115	6.33	1	3.68[a]	3.67	1.35	0.89
Older	104	6.33	1	3.26[b]	3.33	1.55	0.85
Study 3: Subjective expertise of toothpaste (possible range: 1–7)							
Overall	180	7	1.33	4.55	4.67	1.24	0.87
Younger	90	7	1.33	4.28[a]	4.33	1.24	0.87
Older	90	7	2	4.82[b]	4.67	1.18	0.86
Study 4: Subjective expertise of MP3 players (possible range: 1–7)							
Overall	282	7	1	4.41	4.33	1.16	0.85
Younger	166	7	1	4.21[a]	4.00	1.10	0.87
Older	116	7	1	4.72[b]	4.67	1.18	0.81

Note. Means in the same study having different superscripts differ at $p < 0.05$.

Figure 1 **(Color online) Study 1: Estimated Product Evaluation from the Regression Equation at One Standard Deviation Above and Below the Mean of Expertise**



expertise were averaged and mean-centered to form a subjective expertise index ($\alpha = 0.86$). A correlation analysis examining the relationship between subjective and objective expertise showed a significant correlation between the two variables ($\gamma = 0.70$, $p < 0.001$). The correlation was similar among younger participants ($\gamma = 0.73$, $p < 0.001$) and older participants ($\gamma = 0.64$, $p < 0.001$) and is consistent with the Park et al. (1994) finding that subjective and objective expertise can be highly correlated ($\gamma = 0.63$). We also conducted a regression analysis on the evaluation index with age, subjective expertise, information type, and their interactions as predictors. The evaluation of the mutual fund was marginally more favorable as participants' subjective financial expertise increased ($\beta = 0.10$, $t = 1.76$, $p = 0.08$), when the information focused on benefits instead of attributes ($\beta = 0.39$, $t = 3.97$, $p < 0.001$), and when participants were younger ($\beta = -0.18$, $t = -1.89$, $p = 0.06$). All the two-way interactions were significant ($\beta = -0.13$, $t = -2.20$, $p < 0.05$ for expertise × information type; $\beta = -0.14$, $t = -2.34$, $p < 0.05$ for expertise × age; $\beta = 0.32$, $t = 3.30$, $p = 0.001$ for age × information type). More importantly, the three-way interaction remained significant ($\beta = 0.13$, $t = 2.26$, $p < 0.05$). The result patterns were identical to those using objective expertise reported above.

Discussion

Previous research has found that novices prefer messages containing benefit (versus attribute) information, whereas experts prefer messages containing attribute (versus benefit) information (Maheswaran and Sternthal 1990). In our research, we predicted that consumers' age would moderate this effect. The results of Study 1 support our hypotheses. Our younger participants' responses were consistent with those in Maheswaran and Sternthal's (1990) study. Younger experts formed more favorable product evaluations when the product description contained attribute information rather than benefit information. Novices showed the opposite pattern. However, we did not find any expertise effect among older participants. Regardless of their product-category expertise, older participants evaluated the product more favorably after reviewing benefit than attribute information. These results for our older participants are consistent with those of Williams and Drolet (2005), which show that older adults have lower recall of and less favorable attitudes toward attribute ads than to emotional ads. It seemed that among older participants, the age effect (the preference for benefit information) dominated the expertise effect (the preference for attribute information) when they evaluated products based on attribute versus benefit information. In the next study, we further examine the mechanism underlying the age and expertise effects found in Study 1.

Consistent with previous research (Park et al. 1994), the results of Study 1 show that subjective expertise and objective expertise are highly correlated. In addition, we showed that the two expertise measures interacted with age and information type in the same way and had the same impact on product evaluation. As a result, we use subjective expertise in the next three studies.

Study 2

The objective of Study 2 was to test H2, that attribute information is more diagnostic to younger experts than younger novices, but that expertise does not affect information diagnosticity for older adults. In our 2 (age group: younger versus older) × expertise (continuous) between-subject study, participants were asked to evaluate a fictitious brand of MP3 player. To help with the evaluation process, participants were instructed to choose the type of information (either attribute or benefit information) that they consider most useful for their evaluation—a measure of information diagnosticity. Hence, the key dependent variable in this study was the choice of information type.

Method

Stimuli and Procedure. One hundred fifteen younger participants (aged between 18 and 23, $M = 20.83$, $SD = 1.29$) received extra course credit and 104 older participants (aged between 47 and 84, $M = 58.25$, $SD = 8.44$) received $10 to participate in a consumer survey for a new brand of MP3 player. All participants came to the computer lab to complete the survey. The older participants were members of community groups such as choruses and booster clubs.

Participants learned that an MP3-player manufacturer, which was in the process of developing an advertising campaign for a new brand of MP3 player, was interested in their opinions. Before evaluating the product, participants reviewed information about

the MP3 player. They chose whether they would like to review attribute or benefit information. Prior to making this choice, participants received definitions of attribute and benefit product information. We defined attribute information as information relating to detailed facts about the products, and we defined benefit information as information that informs consumers of the benefits of using the product. We cited "35 mpg" as an example of attribute information about a car because the claim only contains facts about the product. We cited "You'll love the car because of the fuel efficiency" as an example of benefit information. To make sure participants understood the differences between the two types of information, we asked them to complete a test where they were given four features of a movie and asked to indicate whether the features contained attribute or benefit information (attribute information: 90 minutes long, the movie will be in theaters this Friday; benefit information: it is great summer fun, you will laugh throughout the movie). If any of their four answers was incorrect, participants were redirected to the definition screen so that they could reread the definition and answer the test questions again. Only participants who correctly categorized the movie features as attribute versus benefit information could proceed to the next screen. The majority of participants ($n = 200$, 91.3%) answered the questions correctly during their first trial and then proceeded to the main task. The remaining participants ($n = 19$, 8.7%) had to go back to read the definition again and passed the test the second time they tried. Returning to the main evaluation task, participants learned that their task was to evaluate a new MP3 player. They further learned that the experiment was designed to simulate consumer settings in real life. Because consumers often do not have enough time or opportunity to review all information about products, participants were asked to choose to review either attribute information or benefit information. They were told that the content of information they chose would appear on the next screen and that this was the only information they would have before they evaluated the MP3 player.

After participants chose either attribute or benefit information, they proceeded to the next screen, where they received the selected type of information about the MP3 player along four dimensions (size and weight, built-in camera, Wi-Fi connections, and storage capacity; see Appendix A). The information appeared in direct view in a bullet-point format. After reviewing the information, participants proceeded to the next screen to evaluate the MP3 player with a three-item 7-point scale (1 = dislike very much, very unfavorable, very bad; 7 = like very much, very favorable, very good) and responded to some miscellaneous measures that included the subjective expertise measure with the same scale as that used in Study 1.

Pretest. Thirty-four younger participants (17 males, $M_{age} = 21.15$) and 34 older participants (12 males, $M_{age} = 54.71$) from the same pool as those in the main study participated in a pretest. Half the participants in each age group were given a list of MP3-player attributes, and the other half were given a list of benefits. Participants rated each feature in terms of its importance (1 = very unimportant, 7 = very important) and favorability (1 = very unfavorable, 7 = very favorable). We selected four dimensions of MP3-player descriptions along which attribute information was as important (p's > 0.2) and as favorable (p's > 0.3) as the corresponding benefit information. The four features were size and weight, built-in camera, Wi-Fi connections, and storage capacity.

Results

Information Diagnosticity. The key dependent variable was participants' choice of attribute versus benefit information. The three items for the expertise measure were averaged and mean-centered to form an expertise index ($\alpha = 0.87$). Younger participants considered themselves as more knowledgeable of MP3 players than older participants ($M = 3.68$ versus 3.26, $t = 2.18$, $p < 0.05$; see Table 1). We ran a binary logistic regression analysis on participants' choice of attribute versus benefit information (1 = attribute, 0 = benefit) with participants' age (−1 = younger, 1 = older), mean-centered expertise, and their interaction as predictors. Consistent with previous research, we found two main effects. Younger participants were more likely to choose attribute information than were older participants ($\beta = -0.36$, $\chi^2(1) = 4.73$, $p < 0.05$), and experts were more likely to choose attribute information than were novices ($\beta = 0.39$, $\chi^2(1) = 10.65$, $p < 0.01$).

More importantly, the main effects were qualified by a significant interaction between age and expertise ($\beta = -0.38$, $\chi^2(1) = 10.27$, $p < 0.01$). Simple slope analyses in separate age conditions showed that, consistent with H2, younger experts considered attribute information to be more diagnostic to their evaluation than younger novices ($\beta = 0.77$, $t = 4.35$, $p < 0.001$), whereas expertise did not affect older consumers ($t < 1$, $p > 0.9$). From a different perspective, spotlight analyses at one standard deviation above and below the mean of expertise showed significant differences between experts and novices: attribute information was more diagnostic to younger than older experts ($\beta = -1.69$, $t = -3.91$, $p < 0.001$), whereas benefit information was more diagnostic to older than younger novices ($\beta = 0.96$, $t = 2.10$, $p < 0.05$).

Product Evaluation. Participants' responses to the three items measuring MP3 player evaluation were averaged to form an evaluation index ($\alpha = 0.81$). Unlike in Study 1, where participants were *given* a type of information to review, all participants in this study *chose* the type of information they preferred. Since the pretest data showed that attribute information is as important and favorable as benefit information along corresponding dimensions, we did not expect any difference in product evaluation. A regression analysis on the evaluation index with age, expertise, and their interaction as predictors showed only a main effect of expertise, such that experts evaluated the product more favorably than did novices ($\beta = 0.32$, $t = 7.29$, $p < 0.001$). Neither the main effect of age nor the interaction was significant ($|t|$s < 1, p's > 0.6).

Discussion

Previous research showed that, compared with younger people, older people responded more favorably to and had better memory of messages containing benefit information than those containing attribute information (Williams and Drolet 2005). In this study, we examined whether people of different ages and different expertise levels consider a particular type of information (benefit versus attribute) to be more diagnostic in their decision-making process. Consistent with previous research, we observed an expertise effect, but only for younger consumers: younger experts were more likely to choose to review attribute information than were younger novices (Maheswaran and Sternthal 1990). Consistent with the results of Study 1, it seems that the age effect (the preference for benefit information) dominates the expertise effect (the preference for attribute information) when participants can only chose one type of information as the basis of their evaluation.

However, the design in this study did not allow us to test whether attitudinal differences arise when consumers of different ages and expertise receive benefit or attribute information, because all participants reviewed the type of information (pretested to be equally favorable and important) that was the most diagnostic to them according to their age and expertise. In the next study, we aim to test whether perceived diagnosticity mediates the age and expertise effects on product evaluations observed in Study 1.

Study 3

The objectives of Study 3 were twofold. First, we aimed to demonstrate the robustness of our findings by replicating the effects found in Study 1. Second, we tested whether perceived diagnosticity mediates the age by expertise interaction as predicted in H3. We used a 2 (age group: younger versus older) × 2 (information type: attribute versus benefit) × expertise (continuous) between-subject design. Two groups of participants (younger versus older) evaluated a fictitious brand of toothpaste after reviewing product information. Roughly half of the participants in each age group read attribute information whereas the rest read benefit information. We measured participants' self-assessed subjective expertise. Evaluations of the product and the diagnosticity of product information served as the dependent variables.

Method

Ninety younger participants (43 males, $M_{age} = 22.13$, $SD_{age} = 2.70$, age range: 18–29) received extra course credit and 90 older participants (47 males, $M_{age} = 60.63$, $SD_{age} = 7.90$, age range: 44–80) received \$10 to participate in a consumer survey for a new brand of toothpaste. We drew all participants from the same subject pools as in Studies 1 and 2. The participants completed the survey in the computer lab. Participants learned that a toothpaste manufacturer, which was in the process of developing an advertising campaign for a new brand of toothpaste, was interested in their opinions. Before evaluating the toothpaste, participants reviewed information about the toothpaste. We randomly assigned participants to receive product information stated in terms of either attributes or benefits. Participants received either attribute or benefit information about the toothpaste along six dimensions (teeth whitening, cavity prevention, breath freshening, plaque prevention, enamel strengthening, and gingivitis prevention; see Appendix A). The information appeared in direct view in a bullet-point format. These features were adopted from Wang and Lee (2006) and pretested with 34 younger participants (17 males, $M_{age} = 20.94$) and 50 older participants (26 males, $M_{age} = 61.44$) from the same populations as those in the main study. Half of the participants in each age group evaluated attributes of the toothpaste on the six dimensions, whereas the other half evaluated benefits. Participants rated each feature in terms of its importance (1 = very unimportant, 7 = very important) and favorability (1 = very unfavorable, 7 = very favorable). The pretest results showed that participants rated the attributes as important (p's> 0.1) and as favorable (p's> 0.1) as the benefits along all six dimensions.

After reviewing the information, participants proceeded to the next computer screen to evaluate the toothpaste with a three-item 7-point scale (1 = dislike very much, very unfavorable, very bad; 7 = like very much, very favorable, very good) and responded to the same subjective expertise measure as that used in Studies 1 and 2. Participants also indicated their perception of the information diagnosticity on a three-item measure adopted from Ahluwalia (2002; 1 = extremely irrelevant, not at all useful, not at all

indicative; 7 = extremely relevant, of very great use, very indicative).

Results

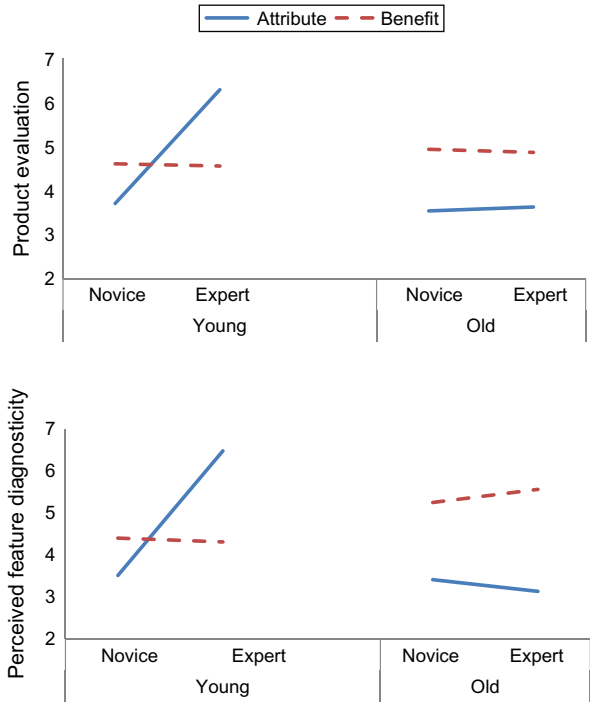
Product Evaluation. Participants' evaluations of the toothpastes on the three items were averaged to form an evaluation index ($\alpha = 0.86$). The three items for the expertise measure were averaged ($\alpha = 0.87$) and mean-centered to form an expertise index. Older participants reported higher expertise than younger participants did ($M = 4.82$ versus 4.28, $t = 2.98$, $p < 0.01$; see Table 1). A regression analysis on the evaluation index with age, expertise, information type, and their interactions as predictors showed a main effect of expertise such that the evaluation of the toothpaste became more favorable as participants' category expertise increased ($\beta = 1.04$, $t = 7.42$, $p < 0.001$). There was also a significant main effect of age, such that younger participants had more favorable product evaluations than did older participants ($\beta = -1.42$, $t = -5.66$, $p < 0.001$). In addition, all the two-way interactions were significant ($\beta = -1.06$, $t = -5.38$, $p < 0.001$ for expertise × information type; $\beta = -1.00$, $t = -5.11$, $p < 0.001$ for expertise × age; $\beta = 1.74$, $t = 4.99$, $p < 0.001$ for age × information type). More importantly, the main effects and two-way interactions were qualified by the predicted three-way interaction ($\beta = 0.99$, $t = 3.53$, $p = 0.001$).

To further explore the nature of the three-way interaction, we conducted simple slope analyses. Consistent with the results of Study 1, when participants evaluated the product on the basis of attribute information, younger experts formed more favorable product evaluations than younger novices did ($\beta = 1.04$, $t = 7.42$, $p < 0.001$). However, expertise did not matter in all the other conditions (t's < 1, p's > 0.7; see Figure 2).

Spotlight analyses at one standard deviation above and below the mean of expertise showed that, consistent with H1A and the results of Study 1, younger experts had more favorable product evaluations when the judgment was formed on the basis of attribute versus benefit information ($\beta = -1.73$, $t = -4.49$, $p < 0.001$), whereas younger novices evaluated the product more favorably when the product was described with benefit than with attribute information ($\beta = 0.90$, $t = 2.93$, $p < 0.01$). Consistent with H1B, both older experts ($\beta = 1.24$, $t = 4.10$, $p < 0.001$) and older novices ($\beta = 1.40$, $t = 3.61$, $p < 0.001$) evaluated the product more favorably after reading benefit versus attribute information.

Information Diagnosticity. Participants' responses to the three items measuring the diagnosticity of the product information were averaged and mean-centered to form a diagnosticity index ($\alpha = 0.93$).

Figure 2 (Color online) Study 3: Estimated Product Evaluation and Diagnosticity from the Regression Equation at One Standard Deviation Above and Below the Mean of Expertise



We predicted that benefit information would be more diagnostic for older participants regardless of their expertise, whereas benefit information would be more diagnostic for younger novices and attribute information would be more diagnostic for younger experts. A regression analysis on the diagnosticity index with age, expertise, information type, and their interactions as predictors showed three main effects: all product information was more diagnostic for experts than for novices ($\beta = 1.20$, $t = 8.90$, $p < 0.001$), younger participants found the product information to be more diagnostic than older participants did ($\beta = -1.73$, $t = -7.18$, $p < 0.001$), and attribute information was more diagnostic than was benefit information ($\beta = -0.64$, $t = -2.69$, $p < 0.01$). All the two-way interactions were significant ($\beta = -1.24$, $t = -6.54$, $p < 0.001$ for expertise × information type; $\beta = -1.32$, $t = -6.98$, $p < 0.001$ for expertise × age; $\beta = 2.78$, $t = 8.30$, $p < 0.001$ for age × information type). More importantly, the main effects and two-way interactions were qualified by the predicted three-way interaction ($\beta = 1.48$, $t = 5.46$, $p < 0.001$).

Simple slope analyses showed that, as predicted in H2, younger experts found attribute information to be more diagnostic than did younger novices ($\beta = 1.20$, $t = 8.90$, $p < 0.001$), whereas expertise did not affect attribute diagnosticity for older consumers (t's < 1, p's > 0.3). In a pattern consistent with H2 and

the results of Study 2, spotlight analyses at one standard deviation above and below the mean of expertise showed that benefits were more diagnostic than attributes for younger novices ($\beta = 0.89$, $t = 3.02$, $p < 0.01$), older experts ($\beta = 2.43$, $t = 8.31$, $p < 0.001$), and older novices ($\beta = 1.84$, $t = 4.91$, $p < 0.001$). However, attributes were more diagnostic than benefits for younger experts ($\beta = -2.18$, $t = -5.89$, $p < 0.001$).

Mediation Analyses. To test H3, that perceived diagnosticity mediates the effect of age, expertise, and information type on evaluation, we ran a series of regressions following Baron and Kenny (1986). First, the three-way interaction of age, expertise, and information type significantly predicted both perceived diagnosticity ($\beta = 1.48$, $t = 5.46$, $p < 0.001$) and product evaluation ($\beta = 0.99$, $t = 3.53$, $p = 0.001$). When diagnosticity was included in the model to predict product evaluation, the three-way interaction became nonsignificant ($t < 1$, $p > 0.9$), whereas the effect of diagnosticity was significant ($\beta = 0.68$, $t = 11.19$, $p < 0.001$). The result of the Sobel test (Sobel 1982) confirmed that perceived diagnosticity mediated the effect of age, expertise, and information type on product evaluation ($z = 4.91$, $p < 0.001$). The significance of the indirect effect was also confirmed using bootstrapping procedures (Preacher et al. 2007). The procedures generated a 95% confidence interval (CI) around the indirect effect with zero falling outside the confidence interval (95% CI = 0.6420 to 1.4316), suggesting that the mediating pathway was significant. These results suggest that participants' perceived diagnosticity of the information drove the effect of expertise, age, and information type on evaluation.

Discussion

The results of Study 3 replicated those of Studies 1 and 2 with a different product category and a different diagnosticity measure. Younger experts (novices) formed more favorable product evaluations when the product description was based on attribute (benefit) versus benefit (attribute) information. However, regardless of their product category expertise, older participants evaluated the product more favorably after reviewing benefit versus attribute information. We hypothesized that the different patterns among younger and older participants result from the perceived diagnosticity of attributes and benefits. Although we assessed diagnosticity differently in this study and in Study 2, these results replicated the findings of Study 2. We again found that attribute information is more diagnostic to younger experts than to younger novices, whereas benefit information is more diagnostic to older adults regardless of their expertise. In addition, we showed that the perceived diagnosticity of attributes and benefits mediated the effect of age, expertise, and information type on product evaluation.

We theorized earlier that age differences in perceived diagnosticity of information occur because younger and older consumers spontaneously deploy different construal levels. In our last study, by experimentally controlling construal levels, we obtain additional evidence for our underlying mechanism. We test Hypotheses H4A and H4B.

Study 4

The main objective of Study 4 is to test H4A and H4B, which suggest that once we control for construal levels, age differences in the expertise effect on preference for different types of information will disappear. The study had a 2 (construal level: abstract versus concrete) × 2 (age group: younger versus older) × 2 (information type: attribute versus benefit) × expertise (continuous) between-subject design. Participants went through the same procedure as in Study 3, with one exception. Participants went through a construal-level priming task before evaluating the product. We predicted that age effects should disappear once construal levels are controlled, and that the effects of construal level, expertise, and information type on evaluation should be mediated by the perceived diagnosticity of the different types of information.

Method

Stimuli and Procedure. One hundred sixty-six younger participants (84 males, $M_{age} = 20.87$, $SD_{age} = 1.07$) participated for extra course credit and 116 older participants (60 males, $M_{age} = 67.59$, $SD_{age} = 7.69$) participated in a consumer survey for a new brand of MP3 player with a chance of winning a lottery of various amounts varying from \$2 to \$45. Participants in both age groups were first randomly assigned to construal-level priming conditions. The procedure was adopted from Freitas et al. (2004), where participants elaborate on reasons or ways of doing actions. Those in the abstract conditions were told that there is always a reason for everything people do. Then they were asked to write down *why* they would recycle and exercise, by listing three reasons in a way that any particular reason is more abstract than the previous one. Similarly, those in the concrete conditions were told that there is always a process of how things are done. They were asked to write down *how* they would recycle and exercise, by listing three ways in a manner that any particular way is more concrete than the previous one.

After the priming task, participants were told in an ostensibly different task that a manufacturer of MP3 players was in the process of developing an

advertising campaign for the brand and was interested in their opinions. Participants were randomly assigned to the two information-type conditions and went through the same procedure and responded to the same questions as in Study 3. The features of the MP3 player were identical to those used in Study 2. In addition, the order of the product-attitude and perceived-diagnosticity measures was counterbalanced. Finally, as a manipulation check, participants completed the Behavior Identification Form (BIF; Vallacher and Wegner 1989). This is a 25-item questionnaire that measures individuals' construal levels. For each question, participants were asked to describe what an action (e.g., picking an apple) means to them by choosing one of two options corresponding to either a more abstract representation (e.g., getting something to eat) or a more concrete representation (e.g., pulling an apple off a branch). Each answer was coded as 1 if participants chose the abstract representation or as 0 if they chose the concrete representation. The 25 responses were summed for each participant, yielding a BIF score. Higher BIF scores indicate a greater tendency toward abstract construals.

Results and Discussion

Manipulation Check. Participants' responses to the BIF were calculated into BIF scores following Vallacher and Wegner (1989). A one-way analysis of variance on participants' BIF scores revealed a significant effect of the construal-level manipulation. Participants in the abstract condition construed the stimuli more abstractly than those in the concrete condition ($M = 17.46$ versus 15.86, $F(1,280) = 6.04$, $p < 0.05$). In addition, we also conducted a regression analysis of the BIF scores as a function of construal-level manipulation ($-1 =$ concrete, $1 =$ abstract), age, information type, expertise, and all the interactions. There were only two significant main effects. Those who had thought about reasons for activities construed the stimuli at a more abstract level than those who had thought about ways to do the activities ($\beta = 0.81$, $t = 2.29$, $p < 0.05$), indicating the success of our manipulation. In addition, consistent with our theorizing, older participants construed the stimuli at a more abstract level than did younger participants ($\beta = 0.94$, $t = 2.65$, $p < 0.01$).

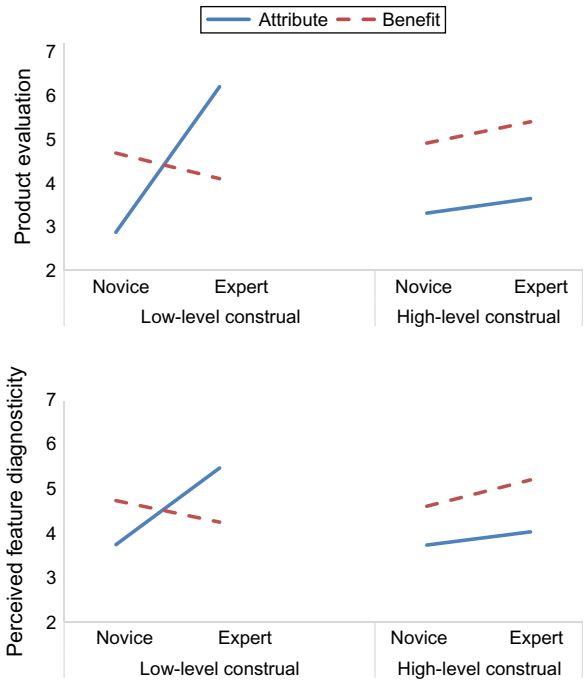
Product Evaluation. Participants' evaluations of the MP3 player on the three items were averaged to form an evaluation index ($\alpha = 0.90$). The three items for the expertise measure were averaged ($\alpha = 0.85$) and mean-centered to form an expertise index. Older participants believed that they had higher expertise among their peers than younger participants did ($M = 4.72$ versus 4.21, $t = 3.67$, $p < 0.001$; see Table 1). Results of the regression analysis on the evaluation index with age, expertise, information type, construal level, and their interactions as predictors supported our hypothesis that when construal levels were taken into account, the previously found age × information type × expertise interaction was no longer significant ($\beta = -0.04$, $t = -0.55$, $p > 0.5$), whereas the construal level × information type × expertise interaction was significant ($\beta = 0.43$, $t = 6.22$, $p < 0.001$). The four-way interaction was not significant ($\beta = 0.05$, $t = 0.76$, $p > 0.4$).

To further explore the nature of the three-way interaction, we conducted a regression analysis with expertise, information type, construal level, and their interactions as predictors. We initially included the order of the product evaluation measure and the perceived diagnosticity measure as an additional factor in addition to the three main factors (i.e., the predictors included all four main effects and possible interactions), but none of the effects involving order was significant (p's> 0.2). Therefore, order was excluded from further analyses. As predicted, the three-way interaction between expertise, information type, and construal level was significant ($\beta = 0.42$, $t = 6.4$, $p < 0.001$). Furthermore, simple slope analyses showed that under concrete construal levels, experts rated products described with attributes more positively than novices ($\beta = 1.38$, $t = 12.02$, $p < 0.001$). However, expertise did not lead to more (or less) favorable evaluations for the MP3 player in any other condition (p's> 0.1; see Figure 3).

Spotlight analyses at one standard deviation above and below the mean of expertise showed that experts and novices behaved as predicted in H4. In the concrete construal condition (H4A), experts (regardless of age) had more favorable product evaluations when they formed judgments based on attribute versus benefit information ($\beta = -1.00$, $t = -6.69$, $p < 0.001$). However, novices evaluated the product more favorably when the product was positioned on benefit information than on attribute information ($\beta = 0.87$, $t = 5.75$, $p < 0.001$). Also consistent with H4B, experts and novices in the abstract construal condition evaluated the product more favorably after reading benefit information than after reading attribute information (experts: $\beta = 0.85$, $t = 5.55$, $p < 0.001$; novices: $\beta = 0.77$, $t = 5.05$, $p < 0.001$).

Information Diagnosticity. Participants' responses to the three items measuring the diagnosticity of the product information were averaged to form a diagnosticity index ($\alpha = 0.74$). We predicted that benefit information is more diagnostic for participants with an abstract construal regardless of their age or expertise. However, at concrete construal levels, the expertise effect is observed such that benefit information

Figure 3 **(Color online) Study 4: Estimated Product Evaluation and Diagnosticity from the Regression Equation at One Standard Deviation Above and Below the Mean of Expertise**



is more diagnostic for novices and attribute information is more diagnostic for experts. A regression analysis on the diagnosticity index with construal level, expertise, information type, and their interactions as predictors revealed the same three-way interaction ($\beta = 0.27$, $t = 4.06$, $p < 0.001$) as in product evaluation. Simple slope analyses showed that under concrete construal, as predicted, experts found attributes to be more diagnostic than novices ($\beta = 0.75$, $t = 6.32$, $p < 0.001$). However, expertise did not affect feature diagnosticity in any other condition (p's > 0.1).

Spotlight analyses at one standard deviation above and below the mean of expertise showed that experts and novices differed as predicted in the concrete construal conditions. Novices viewed benefits as more diagnostic than attributes, whereas experts viewed attributes as more diagnostic than benefits (novices: $\beta = 0.50$, $t = 3.21$, $p < 0.01$; experts: $\beta = -0.62$, $t = -3.97$, $p < 0.001$). Additionally, as predicted, both experts and novices in the abstract construal condition viewed benefits as more diagnostic than attributes (experts: $\beta = 0.59$, $t = 3.78$, $p < 0.001$; novices: $\beta = 0.44$, $t = 2.79$, $p < 0.01$).

Mediation Analyses. To test our hypothesis that perceived diagnosticity mediates the effect of construal level, expertise, and information type on evaluation, we ran a series of regressions following Baron and Kenny (1986). First, the three-way interaction of construal level, expertise, and information type significantly predicted both perceived diagnosticity ($\beta = 0.27$, $t = 4.06$, $p < 0.001$) and product evaluation ($\beta = 0.42$, $t = 6.4$, $p < 0.001$). When diagnosticity was included in the model to predict product evaluation, the three-way interaction became less significant ($\beta = 0.26$, $t = 4.80$, $p < 0.001$), whereas the effect of diagnosticity was significant ($\beta = 0.59$, $t = 12.66$, $p < 0.001$). The result of the Sobel (1982) test confirmed that perceived diagnosticity mediated the effect of construal level, expertise, and information type on product evaluation ($z = 3.86$, $p < 0.001$). The significance of the indirect effect was also confirmed using bootstrapping procedures (Preacher et al. 2007). The procedures generated a 95% confidence interval around the indirect effect, with zero falling outside the confidence interval (95% CI = 0.0617 to 0.3240), suggesting that the mediating pathway was significant. These results suggest that participants' perceived information diagnosticity drove the expertise, construal-level, and information-type effects on evaluation.

General Discussion

In four studies, we examined how age and expertise jointly affect consumer reliance on attribute versus benefit information in product evaluations. We showed that younger experts evaluated products described with attribute information more favorably, whereas younger novices and all older adults (both experts and novices) evaluated products described with benefit information more favorably. We obtained the same results whether we used objective or subjective measures of expertise. Our mediation analysis showed that these differences in product evaluations were due to differences in perceived diagnosticity of attribute versus benefit information by experts and novices of different ages. However, once we controlled for spontaneously adopted construal levels, age differences in the expertise effect disappeared: when consumers deployed concrete levels of construal, experts evaluated the product more favorably when the product was described with attribute information, but novices evaluated the product more favorably when the product was described with benefit information. By contrast, when consumers deployed abstract levels of construal, both novices and experts evaluated the products described with benefit information more favorably than products described with attribute information.

The extant literature suggests two alternative explanations for older adults' preferences for benefit information regardless of expertise. On the one hand, findings from cognitive psychology suggest that age-related declines in cognitive resources such as working memory may negatively affect some older adults' *ability* to process attribute information (for a review,

see Yoon et al. 2009). On the other hand, socioemotional selectivity theory suggests that older adults may have reduced *motivation* to process attribute information because they tend to allocate fewer cognitive resources to achieving knowledge-related goals such as learning attribute information (Carstensen et al. 2003). Results of our research seem to be compatible with the motivation account. In Study 2, older participants had the opportunity to choose the type of information that is most diagnostic to their evaluation, and they actively chose to review benefit information regardless of expertise. This suggests that they were more motivated to process the benefit information than the attribute information, even before being exposed to the content of the information.

Of course, one could argue that older participants in Study 2 chose benefit information because they anticipate that they might not understand attribute information. However, results of Study 4 demonstrated that when primed to construe information at a concrete level, older experts also based their product evaluations on attribute information. This is clear evidence that older participants were able to process attribute information, but, without a prompt to shift their default abstract construal levels to be concrete, they were not motivated to process attribute information. As one respondent in Lambert-Pandraud et al. (2005, p. 108) study put it, "The older one gets, the less one wants to make one's life difficult with this kind of thing" (i.e., making choices complicated). Our research adds to the literature suggesting that older adults have different motivations (instead of abilities) than younger adults and that these differences in motivations affect preference for and attention to attribute versus benefit information.

These results generate two broad directions for brand managers and public policy makers targeting consumers with different levels of expertise and of different ages. In an accommodation approach, managers would design communications with the right type of information to fit customers' preferences (Yoon et al. 2009, Sternthal and Bonezzi 2009). For example, information search sites (such as retailer websites, travel websites such as TripAdvisor, or insurance-market websites) could allow consumers to choose whether to search for attribute or benefit information. Social media communications that are targeted to older consumers or novice consumers might emphasize the benefits of using a brand rather than the attributes of the brand. Our studies indicate that when consumers receive the type of information they prefer, they will evaluate the described option more favorably. Our research suggests that such an accommodation approach should emphasize benefits to most groups (e.g., those with low expertise or those in the baby boomer generation) but should focus on attributes to younger experts.

In addition to the accommodation approach that tailors the information to better fit consumers' expertise and age, our results suggest that managers and public policy officials could use another approach that stimulates consumer regulation by cueing certain types of processing (Sternthal and Bonezzi 2009). In this approach, managers would provide cues to shift consumers' preference for benefit information to preference for attribute information. For example, for younger adults, it is possible to increase consumers' subjective knowledge by asking consumers easy questions to test knowledge in a domain (Hadar et al. 2013). Our research suggests that younger experts will prefer attribute information. For older consumers, marketers and public policy officials may nudge elderly experts to engage in detailed processing of attributes by providing external cues or instructions. For example, when thinking about how to position a driverless car to experienced drivers of all ages, marketers might prompt concrete processing of the accident records, gas mileage, and the software programming by encouraging the target audience to think about *how* they would use a driverless car, rather than *why* they would use such a car. In arenas such as financial decision making or prescription drug use, communications might prompt concrete construals by directing individuals to follow step-by-step decision-making procedures (suggested by Sternthal and Bonezzi 2009).

There are limitations to our studies that suggest directions for future research. In our research, we enrolled college student subjects as younger participants and healthy active older adults who drove to our laboratory as older participants. We also gave class credit to the students and monetary incentives to the older participants. These differences between our two samples could potentially influence the results in the first three studies. However, in Study 4, when we controlled for participants' construal levels, we eliminated age differences. We showed that when undergraduate students participating for class credits were primed to process information at an abstract level, they behaved in the same manner as paid older participants. Similarly, when paid older participants were primed to process information at a concrete level, they behaved in the same way as undergraduate students who participated for class credits. These results suggest that subject population and compensation methods could not have caused the result patterns found in Studies 1–3. Of course, future research could recruit older and younger participants from the same population and could examine whether our results can be generalized to less educated younger consumers and to less healthy older consumers.

Another limitation is that although the attribute information we provided offered details, it was not so complicated that ordinary consumers could not comprehend it. Future research could explore the strategies used by consumers when heightened motivation is insufficient to process complex concrete information. Such situations might occur when attribute information is complicated (e.g., prescription drug information), when consumers suffer from cognitive declines or overload, or when they are making decisions under stress. The consumer learning by analogy (CLA) model suggests how consumers transfer their internal knowledge to a complicated novel domain (Gregan-Paxton and John 1997). Future research could explore how age, construal, and situational factors such as information complexity influence the steps in the CLA model.

Appendix A. Attribute and Benefit Stimuli Information in All Studies

Mutual Fund Attribute Information

It selects stocks with good valuations/prospects

It invests 35% of fund assets in bonds

It has 572% 15-year gains compared with 363% for the S&P 500

It has a 0.18% expense ratio (below the 1.17% average)

It has a $16,230 gain from a 10-year, $10,000 investment

It is one of the lowest risk funds (in the lowest 10% measured risk of all funds in this category)

Mutual Fund Benefit Information

It selects wise investments so you can enjoy your retirement

It invests in both stocks and bonds so you do not have to worry about fluctuating yields

The 15-year gains makes you feel like a smart investor with above-average returns

You will not feel like you are wasting money because the expense ratio is below average

You will feel good because your investment will increase a lot in 10 years

You will feel safe because there is a very low risk of losing money

MP3 Attribute Information

It is $4.65'' \times 2.8'' \times 0.71''$, and it weighs 6.33 oz

It features a 3-megapixel camera with video capture

It has integrated Wi-Fi connectivity

It has 250 GB memory

MP3 Benefit Information

It is so small that it fits into a shirt pocket

You can take fun pictures and videos anywhere you want

You can use wireless connections to improve your productivity in and out of the office

You can run the programs that you want to and store many photos and other media

Toothpaste Attribute Information

It has natural polishers—bamboo and silica—to whiten your teeth

It prevents cavities with tea tree oil to inhibit the growth of decay

It freshens your breath with perilla seed and grapefruit seed extract

It has a special ingredient—Calprox—which helps you fight plaque buildup

It strengthens tooth enamel with calcium, sodium, and zinc

It has two enzymes—glucose oxidase and lysozyme—to help prevent gingivitis

Toothpaste Benefit Information

It makes your smile unforgettable

You will say good-bye to painful tooth decay

You will kiss and hug without fear

You will enjoy healthy gums, teeth, and mouth

You will experience the joy of strong teeth

You will avoid the pain of bleeding gums

Appendix B. Objective Expertise Measure—Mutual Funds

1. Creditors are required to tell you the APR [annual percentage rate] that you will pay when you get a loan. (True)
2. Recent stock market performance is not a good guide for how to invest your money for retirement. (True)
3. Gross income is income after taxes. (False)
4. A stock mutual fund combines the money of many investors to buy a variety of stocks. (True)
5. Mutual funds pay a guaranteed rate of return. (False)
6. Long-term government bonds always offer protection against inflation. (False)
7. For every dollar that you save, the younger you are when you save that dollar, the more money you will have in retirement. (True)
8. It is possible for investors to be diversified even if they invest in just one mutual fund. (True)
9. Some risk is necessary in order to obtain long-term investment growth. (True)

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