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Acquisition and Impact of Consumer Expertise

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Two experiments examined how consumer expertise moderates message learning and product evaluations. It was found that organizing message information and repeating it enhanced novices' learning of the message content and the favorableness of their evaluations. In contrast, experts' learning was for the most part not influenced by these factors, and their evaluations reflected the type of message they received and the extent to which they evaluated the message content.

The acquisition and impact of consumer expertise has been widely investigated in the context of advertising and persuasion (Alba & Hutchinson, 1987; Maheswaran, 1994; Maheswaran & Sternthal, 1990; Sujan, 1985). Extant research suggests that the differences in schematic, categorical, and factual knowledge among consumers affect how they process message information. For example, novices' evaluations reflect a more or less literal processing of the message information, whereas experts are likely to elaborate upon the message information by evaluating it in relation to their prior knowledge (Chi, Feltovich, & Glaser, 1981). This depiction of how consumer knowledge affects information processing suggests that different strategies are needed to prompt favorable evaluations of a message advocacy by novices and experts.

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Alba and Hutchinson (1987) suggested that novices' learning may be limited by their failure to invoke the organizational and inferential strategies used by experts to engage in efficient information processing. Experts' message evaluations are more a function of the reactions elicited by the information communicated in an appeal than of how easy it is to learn the message (Chi et al., 1981; Maheswaran & Sternthal, 1990). Also, providing experts with additional opportunities to scrutinize their prior knowledge increases the polarity of their message judgments (Tesser & Conlee, 1975). Based on these observations, it was hypothesized that facilitating novices' message processing would enhance their learning of the appeal and thereby the favorableness of their message evaluations. In contrast, we hypothesized that experts' evaluations would be influenced by the type of message presented and the opportunity to assess the message in relation to their prior knowledge.

These notions about how experts and novices make judgments were investigated in our research. As a starting point, the literature pertaining to consumer expertise was examined to identify factors that might affect novices' learning and experts' evaluative responses. These factors were then examined in two experiments in which experts' and novices' learning and evaluations of an advertising message were assessed. Experiment 1 examined the impact of message repetition, message organization, and message type. Experiment 2 provided additional insight on the processing differences between experts and novices.

THE EFFECT OF CONSUMER EXPERTISE

In their review of the consumer expertise literature, Alba and Hutchinson (1987) identified factors that are likely to systematically influence the learning of information by experts and novices. They suggested that "because experts possess a richer knowledge base and have a larger amount of available cognitive capacity, they are more likely to elaborate on product-related information and thereby connect the new facts to previously learned facts" (p. 416). These observations suggest that novices' learning of a message might be enhanced by making it easier for them to see the connections among the various bits of message information and by providing them with the resources necessary to do so. Approaches that might be useful in this regard are discussed in the next section.

Message Type

Maheswaran and Sternthal (1990) provided interesting insights on the extent to which motivation and the type of message information influence the processing and evaluations of experts and novices. They found that in addition to motivation, the type of message information also influenced how experts and novices processed the message. In their study, expert and novice subjects were presented with

three types of message information—one version consisting of only the attributes of a personal computer, a second version depicting both the attributes and their corresponding benefits, and a third version representing only the benefits. Experts engaged in a detailed processing of message information only when attributes were present in the message, whereas novices processed the information in detail only when benefit information was presented. Moreover, experts reacted more favorably when messages included attribute information than when only benefits were presented. The absence of attribute information was believed to have prevented experts from assessing the veracity of the benefits claimed, leading them to discount the claim.

In our study, the message was varied to facilitate differential processing by experts. One version included both attributes and the related benefits of the product being advocated, whereas the other version only mentioned the product's benefits. This message factor was not expected to affect novices' responses because novices generally focus on benefits, and both versions of the message included benefit information (e.g., Conover, 1982; Maheswaran & Sternthal, 1990). The variation in the message type was introduced primarily as an aid in understanding experts' responses. Reasoning from Maheswaran and Sternthal's observation, experts are likely to be more favorable toward the attributes and benefits message than they are toward the benefits-only appeal.

Message Organization

Alba and Hutchinson (1987) suggested that novices' information processing is often constrained by their inability to connect facts. Bower and Clark-Meyers (1980) offered an approach that might aid novices in performing this task. They found that when the information being communicated was organized by having related facts presented contiguously, message recall was greater than when the appeal was unorganized and the related facts were dispersed throughout the communication.

We applied this approach in our study by varying how the message was organized. In the organized version, statements pertaining to one benefit were presented before statements related to another were introduced. This was intended to make it easier to see the connection between statements. In the unorganized version, statements related to one benefit were intermixed among the statements related to other benefits, thereby placing the burden of detecting the connection among the statements on the message recipients. Thus, message organization was one strategy introduced to facilitate novices' learning of the message.

As Alba and Hutchinson (1987) noted, experts demonstrate the ability to recognize the connections among ideas quite readily. Hence, experts are likely to make the connection between statements sharing a common benefit, whether or not the message is organized to facilitate this inference. As a consequence, the message organization factor was not expected to affect experts' learning.

Message Repetition

A second factor that Alba and Hutchinson (1987) suggested might moderate the impact of consumer expertise is cognitive capacity. Presumably, increasing novices' capacity to process information would provide additional opportunities to elaborate on message information and represent it in memory. In our research, the number of exposures to the message was used to enhance novices' cognitive capacity because, as Cacioppo and Petty (1979) noted, each additional message exposure provides "time to think about the message arguments, generate new topic relevant thoughts, and so forth" (p. 106).

Along similar lines, experts' prior knowledge of the general content of the message should enable them to process the message whether the communication was presented once or several times. Thus, message repetition was not expected to influence the extent to which experts learn the communication's content.

Thus, in this research we introduced two independent variables believed to affect novices' responses by varying the ease with which they could connect related information items and the opportunity available to process the message content. The third independent variable, message type, was included to induce differential processing for experts, but not for novices.

TESTS OF THEORETICAL PREDICTIONS

To assess the effects of expertise, message organization, and message exposures, several different types of dependent measures were employed. These included subjects' thoughts, learning of the message contents, and evaluation of the communication advocacy.

Thoughts

A thought-listing task was used to detect how novices and experts processed message information. The task was based on the procedures developed by Greenwald (1968) to elicit subjects' thoughts. The analysis followed a variant of the classification scheme suggested by Sujan (1985). *Attribute-oriented thoughts* were ones that involved an assessment of attributes specified in the message. *Attribute-recall thoughts* were verbatim reports of attribute information presented in the message. *Categorization thoughts* were ones that mentioned the similarity between the product described and the overall category in which it held membership. *Simple evaluative thoughts* included global statements of like or dislike for the product.[1]

[1]A fifth category of thoughts was constructed for those thoughts that did not fit in with the other categories. Those miscellaneous thoughts were not significantly affected by the experimental treatments ($ps > .16$).

The pattern of responses on this thought-listing task is useful in making inferences about the extent and nature of message processing (Maheswaran & Sternthal, 1990). Three patterns of outcomes are particularly relevant. A substantial number of categorization and simple evaluative thoughts, but relatively few thoughts of other types, indicate relatively impoverished message processing. Alternatively, an increase in attribute-recall thoughts along with a decline in categorization and simple evaluative thoughts reflect increased literal processing of the message. Finally, an increase in attribute-oriented thoughts accompanied by a decline in categorization and simple evaluative thoughts imply elaboration of the message information.

Applying these inferences to the theorizing described earlier, several predictions emerged. For novices, the hypothesis that increasing message exposures and organization would enhance literal message processing would be supported if such increases enhanced attribute-recall thoughts and reduced categorization and simple evaluative thoughts. For experts, the hypothesis that multiple exposures to the attributes and benefits message would prompt greater elaboration would receive support if more attribute-oriented thoughts and fewer categorization and simple evaluative thoughts were prompted under these conditions relative to the other conditions.

Learning and Evaluation

Subjects' learning of the message was assessed on the basis of three measures. These included free recall of the message content, clustered recall (i.e., extent to which related product benefits were recalled contiguously), and recognition accuracy. Product evaluations were made on a series of bipolar adjective items.

From earlier theorizing, it was expected that increases in message exposures and organization would enhance novices' learning. This prediction would be supported if novices exhibited greater free and clustered recall as well as greater recognition accuracy when the message was organized and repeated than when these conditions were absent. In addition, if novices base their product evaluations on a more or less literal processing of a message, as the literature suggests, the conditions that prompt greater learning should also lead to more favorable product evaluations. Thus, increasing organization and exposures should enhance the favorableness of product evaluations for novices.

A different pattern of outcomes was anticipated for experts. The experimental treatments were not expected to affect experts' learning. But increasing exposure to the attributes and benefits message was hypothesized to enhance their accessibility in memory and thereby induce more favorable product evaluations than in the absence of repeated exposures to the attributes and benefits message.

In summary, our study attempts to extend current understanding about the impact of consumer expertise on the response to persuasive messages in two ways. One is to assess the premise that the favorableness of novices' reactions to a

message are affected by the extent to which they learn its contents, and that message organization and the number of message exposures are two factors that affect such learning. The other extension pertains to suggestions in the literature that experts' learning is not affected by the devices that aid novices' learning, and the notion that experts' evaluations vary with the availability of product attribute information in the message and the opportunity to process this message information.

EXPERIMENT 1

Method

Subjects. Two hundred and forty-eight students in a management program participated in a new product evaluation study. Subjects were paid $5 for participating and were eligible for a $100 lottery. The experiment was conducted in small groups of five to seven people.

Procedure. Subjects were given booklets that contained a description of the study purpose, the persuasive message, and the dependent measures. The booklets were premixed so as to assign subjects randomly to treatments. The first page of the booklet introduced the study. Subjects were told that a major computer manufacturer was planning to introduce a new personal computer and was interested in their reactions to it. Research subjects then turned the page and read the experimental booklet at their own pace. After completing the dependent measures, subjects responded to an open-ended suspicion probe and were then debriefed.

Independent variables. The experimental message consisted of seven assertions about the new computer. Of these, two pertained to the brand's memory capacity, two to the ease of use, and two to servicing. A filler item dealt with the resolution of the monitor. In the organized condition, the pairs of statements pertaining to memory capacity, ease of use, and service were presented contiguously; whereas, in the unorganized condition, the statements about a particular benefit were separated by statements relating to other benefits. This represented the manipulation of message organization.

The message-type manipulation was operationalized by varying the message content. Two conditions were presented. In the attributes and benefits condition, each statement included an attribute and the benefit it implied. For example, one statement read, "It has a large memory capacity with 2MB RAM expandable to 16 MB [attribute]. This is adequate to handle desktop publishing and other advanced applications (benefit)." In the benefits-only version, only the benefits statement was presented, and the attribute information presented was omitted.

A third independent variable was the number of message exposures. Subjects were asked to read a description of a new personal computer once or three times.

In the three-exposures condition, the message featured in the one-exposure condition was repeated on three consecutive pages. The multiple exposures were explained to subjects by noting that "people's evaluations of a product often are formed by reading about it several times," and they were asked to simulate this situation by reading the message again.

Finally, we assessed subjects' knowledge about personal computers, the topic of the persuasive message. This involved both a self-report of category expertise as well as a 12-item computer knowledge test. Representative items included: "Graphics can only be used with color monitors" and "Bank-switching is used when the processor has limited single unit memory capacity." Because the outcomes on these self-report and knowledge measures converged, only the results using the latter measure are reported here. This measure was administered after the subjects had completed all the dependent variables.

Dependent variables. After reading the message, subjects turned to the next page of the booklet and evaluated the product on seven bipolar adjective items. These 7-point items included *bad–good, outmoded–advanced, inadequate memory–advanced memory, inferior–superior, not useful–useful, a product I'll not try–a product I'll try,* and *not impressive–impressive.* Subjects next listed the thoughts that had occurred to them while reading the message.

The measures were followed by a series of manipulation-check items. Of these, two were designed to check the organization manipulation: *not logically presented–logically presented,* and *poorly organized–well organized.* The two items were highly correlated ($r = .75$) and were averaged to form one message organization index. Another three items assessed the message manipulation: *not technical–technical, complex–simple,* and *not convincing–convincing.* These items were also highly intercorrelated ($\alpha = 0.79$) and were averaged to form a single message-perception index. Finally, one item, *not informative–informative,* checked the expertise variable.

After completing the manipulation checks, subjects were administered two measures of message learning. First they were asked to recall as much of the message as they could remember. They wrote down the items that they were able to recall on a lined paper. Then a recognition test was administered that included four statements that were presented in the message (true items) and eight statements that were thematically congruent with the message but not stated in it (foil items). If subjects were to exhibit accuracy on the foils, they would have to recognize the exact statements and not the foils. No time limits were imposed on these tasks.

Results

The hypotheses were examined by a four-way analysis of variance (ANOVA) involving expertise, message type, message organization, and message repetition. A priori contrasts were used to make the theoretically relevant comparisons. No

subjects were suspicious of the experimental hypotheses, and preliminary analyses showed no gender effects on the major dependent variables.

Expertise. Subjects were classified as either novices or experts based on the number of correct answers on the 12-item computer knowledge questionnaire. Subjects were classified as experts and novices on the basis of a median split. Dividing the sample in this manner resulted in 121 subjects being classified as novices and 127 as experts.

Manipulation checks. The treatment effects on the manipulation-check measures were examined to provide an indication of whether our manipulations were successful. An ANOVA performed on the two-item message organization index indicated that subjects found the organized message to be more logical and organized ($M = 5.29$) than the unorganized appeal ($M = 4.78$), $F(1, 231) = 9.43, p < .01$. These data offer support for the notion that the message organization variable operated in the manner intended.

To help assess the adequacy of the message-type manipulation, an ANOVA was performed on the three-item message perception index. This analysis indicated that the attributes and benefits message was perceived to be more technical, complex, and convincing than the benefits appeal (Ms = 5.10 and 4.32, respectively), $F(1, 231) = 78.99$, $p < .001$. Thus, it appears that subjects apprehended the difference between the messages.

The success of the expertise classification was evaluated by examining subjects' perceptions of how informative the messages were perceived to be. The results indicate that novices ($M = 5.62$) considered the messages to be more informative than did experts ($M = 4.41$), $F(1, 231) = 38.14$, $p < .001$, an outcome that is consistent with the definition of expertise. No other effects were significant on these measures.

Thoughts. Subjects' thoughts were classified into several categories using a taxonomy developed in prior research on consumer expertise (Maheswaran & Sternthal, 1990; Sujan, 1985). This task was performed by two independent judges who were blind to the experimental treatments. The few discrepancies that occurred in classification were resolved by a meeting between the judges. Means for the various thoughts are presented in Table 1.

An ANOVA was performed to determine whether the experimental treatments affected average total thoughts. None of these effects was significant ($ps \geq .13$). This invariance made it appropriate to assess treatment effects on the average number of thoughts in each category. To simplify exposition of the treatment effects on thoughts, we report the most encompassing higher order effects. These include significant three-way interactions among expertise, message exposures, and message type on the attribute-oriented thoughts, $F(1, 232) = 4.44$, $p < .05$, and simple evaluative thoughts measures, $F(1, 232) = 5.06$, $p < .05$, as well as

TABLE 1
Experiment 1: Means for Thoughts and Product Evaluations

	Novices				*Experts*			
	1 Exposure		*3 Exposures*		*1 Exposure*		*3 Exposures*	
Thought Type	*Attributes & Benefits*	*Benefits*	*Attributes & Benefits*	*Benefits*	*Attributes & Benefits*	*Benefits*	*Attributes & Benefits*	*Benefits*
Total	3.39	3.78	3.69	3.67	3.72	3.10	3.69	3.19
Attribute-oriented	1.45	1.19	1.99	1.85	1.33	1.13	2.56	0.92
Attribute-recall	0.22	0.31	0.81	0.96	0.27	0.13	0.36	0.26
Simple evaluative	0.90	1.25	0.56	0.62	1.23	1.07	0.35	1.21
Categorization	0.79	0.91	0.23	0.17	0.80	0.67	0.34	0.73
Product evaluations	4.41	4.29	5.59	5.79	5.23	3.79	5.91	2.69

significant two-way interactions between expertise and message exposures on the attribute recall, $F(1, 232) = 4.48, p < .05$, and categorization thought measures, $F(1, 232) = 4.47, p < .05$. These outcomes are examined next in the context of novices' and experts' responses.

The pattern of thoughts for novices was examined first. It was anticipated that increasing the number of message exposures would stimulate data-driven novices to process the message content and to elaborate on attribute information. Consistent with this expectation, increasing the number of message exposures enhanced the generation of attribute recall thoughts, $F(1, 232) = 12.02, p < .01$, and attribute-oriented thoughts, $F(1, 232) = 5.54, p < .05$. At the same time, increasing exposures prompted a reduction in the number of simple evaluative thoughts, $F(1, 232) = 5.28, p < .05$, and categorization thoughts, $F(1, 232) = 18.91, p < .001$, suggesting that additional message exposures diminished heuristic processing for novices.

A different pattern of outcomes on the thought measures was found for experts. A significant interaction between message exposures and message type was found on attribute-oriented thoughts, $F(1, 232) = 8.55, p < .01$, and simple evaluative thoughts, $F(1, 232) = 6.67, p < .05$, along with a marginally significant effect for categorization thoughts, $F(1, 232) = 3.43, p = .07$. As anticipated, increasing the number of message exposures to the attributes and benefits appeal induced experts to generate a greater number of attribute-oriented thoughts, $F(1, 232) = 11.65, p < .01$, and fewer categorization thoughts, $F(1, 232) = 4.87, p < .05$, as well as simple evaluative thoughts, $F(1, 232) = 9.87, p < .01$. Message exposures did not affect attribute-recall thought production, $F < 1$. Thus, increasing message exposures appeared to have enhanced experts' elaboration of the attributes and benefits message but did not affect their literal processing of it. Unexpectedly, message exposures did not affect the thoughts prompted in response to the benefits-only message, Fs < 1. Contrary to expectations, message organization did not have a significant effect on thoughts, indicating that it did not influence message elaboration.

Message learning. Learning of the message was assessed in two ways. One measure was free recall of the communication content, that is, a count of the number of message attributes recalled. An ANOVA indicated a significant interaction between expertise and message organization, $F(1, 232) = 8.00, p < .01$. Novices' free recall of the message was greater when the message was organized ($M = 4.36$) than when organization was absent ($M = 3.28$), $F(1, 232) = 11.94, p < .01$, whereas experts' recall was similar whether the message was organized or not (Ms = 3.91 and 4.09, respectively). Contrary to expectations, message repetition did not have a systematic influence on either experts' or novices' recall.

Learning of the message was also examined via recognition accuracy. Signal detection analysis was used for this purpose because it adjusts the data for

response biases or guessing and assesses the extent to which subjects discriminate between the true and foil items in recognition (Singh & Churchill, 1986). An analysis of the signal detection index d' (Grier, 1971) revealed a significant interaction between expertise and message organization, $F(1, 229) = 4.24$, $p < .05$. As Table 1 suggests, this interaction occurred because organization enhanced novices' discrimination between true and foil items, $F(1, 229) = 4.60$, $p < .05$, but not that of experts, $F < 1$. A significant interaction between expertise and number of message exposures was also found, $F(1, 229) = 4.89$, $p < .05$. Increasing message exposures from one ($d' = .56$) to three ($d' = .63$) enhanced novices' ability to discriminate between true and foil items, $F(1, 229) = 7.34$, $p < .01$, whereas experts' discriminating ability did not vary as a function of whether one ($d' = .67$) or three exposures ($d' = .66$) were presented, $F < 1$.

Product evaluations. In assessing the effects of the experimental treatments on product evaluations, measurement issues were examined first. A factor analysis showed that the seven bipolar items loaded on a single scale ($\alpha = .90$). These seven items were summed and averaged to compose a product evaluation score (see Table 1).

An ANOVA performed on the product evaluation scores revealed the presence of a three-way interaction between expertise, message exposures, and message type, $F(1, 232) = 12.50$, $p < .001$. For novices, there was a significant main effect such that increasing message exposures enhanced product evaluations, $F(1, 232) = 41.33$, $p < .001$. By contrast, for experts there was a significant interaction between message exposure and message type, $F(1, 232) = 18.12$, $p < .001$. Increasing message exposures from one to three enhanced product evaluations when the message included attributes and benefits, $F(1, 232) = 4.65$, $p < .05$, whereas increasing exposures caused a decline in evaluations when the message stated only benefits, $F(1, 232) = 15.20$, $p < .001$.

Discussion

The findings from the first experiment provided evidence for the asymmetric effect of message repetition, message organization, and message content on the processing and evaluations of experts and novices. The analyses of the cognitive responses showed that repetition enhanced novices' elaboration regardless of message content. However, for experts, such elaboration was evidenced only with the attributes and benefits message. The findings based on evaluations exhibited a similar pattern. For novices, increasing repetition led to more favorable evaluations of the product, regardless of message content. Experts' evaluations were more favorable only when the message featured attributes and benefits.

The findings based on learning measures showed that for novices, free recall was influenced by organization but not by repetition. However, recognition

accuracy increased both as a function of organization and of repetition. In contrast, experts showed no differences in recall or recognition.

Two unexpected findings based on thoughts and evaluations that emerged from this experiment needed further scrutiny. The first finding related to novices. Repetition enhanced the favorableness of novices' evaluations, whereas message organization had no effect. This suggests that repetition and message organization may have different effects on novices' evaluations. The second issue related to experts. Experts evaluated attributes and benefits information more favorably than benefits-only information. Also, experts' cognitive responses showed that they did not elaborate on the benefits-only message. This finding is intriguing because their unfavorable evaluations of the benefits-only message could suggest a negative elaboration of that message. A second experiment was designed to provide additional insights on these unexpected observations.

EXPERIMENT 2

A surprising finding in Experiment 1 was the null effect of message organization on novices' evaluations. We hypothesized that providing additional opportunity to scrutinize the message would increase novices' likelihood of elaborating the message. Both repetition and message organization were expected to provide an additional opportunity to process and induce elaboration. Our findings showed that for novices, repetition increased elaboration and resulted in more favorable evaluations. Similarly, we expected that message organization would also facilitate learning and lead to more favorable evaluations. Indeed, message organization facilitated learning; however, it had no effect on elaboration or evaluations. Perhaps repetition and organization represent different types of opportunity to process and may lead to different outcomes. Repetition may provide novices with additional resources to engage in processing. In contrast, message organization may reduce the resource demands on the novices to engage in processing. Message organization in Experiment 1 was operationalized as either a clustered or dispersed presentation of the same features of the personal computer. Such organization may have facilitated learning of the message as evidenced in recall and recognition; however, it may not have facilitated message elaboration by the capacity-limited novices. We suggest that message elaboration for novices may be a function of increasing their capacity to process rather than of reducing their resource demands.

Experiment 2 examined the effects of providing additional resources for novices to increase their capacity to process information. In Experiment 1, additional resources for processing were operationalized externally by repeating the message three times. In Experiment 2, additional resources were presented, within the message, by providing the subjects with a basis of comparison. Specifically, they were given a product description that either presented a basis

for novices to evaluate the efficacy of the attributes or provided no basis for comparison. Past research showed that message elaboration may be facilitated by providing experts with information that allows them to relate to or draw upon their previous knowledge (Alba & Hutchinson, 1987). We suggest that if novices were provided with information that facilitates such an association process, they would then be likely to engage in message elaboration.

The lack of elaboration of the benefits message by the experts was also examined. Experts may have determined that the benefits message was not informative to them and thus did not elaborate on it. Hence, it is suggested that the perceived informational content of the message determines whether experts engage in message elaboration.

Finally, Experiment 2 also addressed another issue related to novices' processing. In Experiment 1, both versions of the message contained benefits that required less capacity to process. Past research showed that novices focus on benefit information and ignore attribute information (Maheswaran & Sternthal, 1990). This raised a question: When would novices elaborate on attribute information? Experiment 2 also examined the premise that novices will elaborate on attribute information if it is presented in a format that facilitates the use of their limited knowledge.

Hypotheses

As in Experiment 1, experts and novices were provided with a message that described a new personal computer. This product description either presented a list of six computer-related attributes or provided comparisons of the target brand to competing brands on each of these attributes. Featuring an attribute comparison in the message was expected to increase novices' capacity to process by providing them with an instant basis for evaluation. In contrast, we recognized it may not affect experts' elaboration or evaluations because both versions of the product description featured the same attribute information, and the comparison provided only marginal information that could easily be inferred by the experts. Cognitive responses were expected to support the elaboration predictions. Novices are more likely to engage in message elaboration and to generate more attribute-related thoughts in response to the relative comparison (vs. noncomparison format). In contrast, experts are likely to generate equivalent amounts of attribute-related thoughts, regardless of message format. Also, in conditions in which no elaboration was hypothesized, we expected more categorization and simple evaluative thoughts.

Method

Subjects and procedure. Seventy-two undergraduate management students participated in the study for partial course credit. The subjects were run in small groups of five to seven people and were randomly assigned to either a

relative-attribute comparison or a noncomparison (absolute) condition. The experimental procedures were similar to those followed in Experiment 1. Briefly, subjects read the product description, responded to the dependent variables, and completed an expertise questionnaire.

Independent variables. Expertise was operationalized using both objective measurement and self-reports. These measures converged, and the results are reported based on the objective measure ($r = .82$). As noted earlier, two versions of the message were administered. In the relative (comparison) format, each attribute of the target product was compared to two brands, Compaq and IBM. The target product was featured as superior to competing brands on four of the six attributes, equivalent on one, and inferior on another. For example, the description of the microprocessor speed stated that "The new PC XT1800 has a Pentium Microprocessor with a processing speed of 133 MHz. The two leading competing models from Compaq and IBM featured a Pentium Microprocessor with a processing speed of 120MHz." In the absolute format, a brief description of the attributes of the target computer was given, but they were not compared with any other competing brands.

Dependent variables. The dependent measures were similar to those used in Experiment 1. Subjects evaluated the product on the same seven scale items, and their cognitive responses and recall were assessed using the same procedures that were employed in Experiment 1. The expertise questionnaire was administered last.[2]

Results

The hypotheses were examined using a 2 (Expertise) × 2 (Message Format) between-subjects ANOVA. No gender effects were observed, and none of the subjects were suspicious of the experimental objectives.

Expertise. As in Experiment 1, subjects were classified as experts and novices using a median split based on the expertise questionnaire. Thirty-nine subjects were classified as novices, and 33 were classified as experts.

Manipulation checks. Subjects' perceptions of the message format were examined by asking them to rate the extent to which the message provided a basis for comparison and featured relevant information regarding other brands. These two items were correlated and averaged to form an index ($r = .78$). An ANOVA on this index showed that the relative format ($M = 5.19$ vs. 2.60) was

[2]No specific hypotheses were advanced for the recall measure, and no further analyses were done on this variable in Experiment 2.

correctly perceived as providing a basis for comparison, $F(1, 68) = 114.55$, $p < .001$.

Product evaluations. An ANOVA on the product evaluations index ($\alpha = .88$) indicated a main effect for message format such that the relative format was rated more favorably than the absolute format, $F(1, 68) = 12.65$, $p < .01$. Moreover, the hypothesized interaction of Expertise × Message Format was also significant, $F(1, 68) = 4.61$, $p < .05$. Simple effects revealed that novices evaluated the relative format more favorably than the absolute format, simple $F(1, 68) = 17.99$, $p < .001$. For experts, the evaluations were invariant, regardless of whether a basis of comparison was present, $p > .31$. (See Table 2)

Cognitive responses. An analyses of the total number of thoughts revealed no significant effects, $p > .42$.[3] An ANOVA on the attribute-related thoughts indicated main effects for message format, $F(1, 68) = 21.29$, $p < .001$, and expertise, $F(1, 68) = 26.70$, $p < .001$. In addition, expertise also interacted with message format, $F(1, 68) = 15.14$, $p < .001$. Follow-up contrasts confirmed the evaluation findings, namely that the relative format induced more elaboration only for novices. More attribute-related thoughts were generated by novices when the message featured a relative format, simple $F(1, 68) = 38.51$, $p < .001$. In contrast, for experts, the number of attribute-related thoughts did not vary as a function of message format, $F < 1$.

An analysis of the simple evaluative thoughts also supported the hypotheses. An ANOVA on these thoughts indicated main effects for message format, $F(1, 68) = 29.79$, $p < .001$, and expertise, $F(1, 68) = 41.89$, $p < .001$. In addition, the

TABLE 2
Experiment 2: Means for Thoughts and Product Evaluations

	Format			
	Novices		*Experts*	
Thought Type	*Absolute*	*Relative*	*Absolute*	*Relative*
Total thoughts	5.00	5.35	5.39	5.27
Attribute thoughts	1.58	3.80	3.94	4.13
Simple evaluative thoughts	3.16	1.35	1.17	1.00
Product evaluations	4.82	6.13	5.06	5.38

[3]Because similar patterns of response were expected and observed on some of the theoretically related subcategories of thoughts, they were combined. Specifically, attribute-recall thoughts and attribute-evaluation thoughts were combined as attribute-related thoughts. Similarly, categorization and simple evaluative thoughts were combined as simple evaluative thoughts.

hypothesized Expertise × Message Format interaction was also significant, $F(1, 68) = 20.58$, $p < .001$. Follow-up contrasts showed that the absolute format induced less message elaboration for novices, such that more simple evaluative thoughts were generated in the absolute (vs. relative format) condition, simple $F(1, 68) = 53.09$, $p < .001$. For experts, as predicted, the number of simple evaluative thoughts was invariant across the experimental conditions, $F < 1$.

Discussion

The findings of Experiment 1 suggested that increasing the opportunity to process for novices had mixed effects on their product evaluations. When the opportunity to process was operationalized using message repetition, it enhanced elaboration and evaluations. When the opportunity to process was based on message organization, it had no impact on elaboration or evaluations. Experiment 2 established that when processing opportunity increased novices' capacity to process, greater elaboration and more favorable evaluations were evidenced. The findings based on both evaluations and cognitive responses converged, indicating that when the message provided a basis for comparison, that is, more resources to process, novices engaged in more attribute elaboration. Another interesting finding is that for experts the informational content of the message appears to be central to elaboration. This study provided two versions of the same message with the same informational content. Experts elaborated on the information under both of these conditions. Interestingly, providing comparisons did not appear to lead to more elaboration for experts, presumably because they had their own standards of comparison.

GENERAL DISCUSSION

This study offers evidence that generally follows from the depiction of experts as conceptually driven information processors. In accord with this characterization, experts' prior knowledge seems to enable them to learn the contents of a message spontaneously. Thus, varying factors that are likely to have an impact on learning do not affect experts' responses. Also as anticipated, experts' product evaluations are influenced by the type of message and the number of exposures to it. Increasing exposures to a message that included specification of the product's attributes enhanced the favorableness of experts' evaluations, whereas increasing exposures to the benefits-only appeal prompted their evaluations to become less favorable.

The findings also provide some insight about experts that is less apparent from their depiction as conceptually driven processors. Repeating a benefits message lowered the favorableness of product evaluations, but there was no concomitant effect on thoughts. Apparently, in the absence of attribute informa-

tion, experts responded with a heuristic processing strategy that Greenwald (1968) termed *discounting*; that is, they rejected the assertion without providing arguments for this rejection. In accordance with this view, repeating a message that included only benefits may have caused experts to rehearse their unfavorable opinion about it, but not the arguments for their opinion. This would account for the fact that message repetition caused a polarization in the product evaluations generated without a corresponding change in the arguments for that opinion.

Why might experts engage in discounting? Britton and Tesser (1982) suggested that considerable resources are necessary to activate experts' substantial knowledge base and that experts may not engage these resources unless they perceive benefits in doing so. In Experiment 1, the absence of attribute information in the message may have led experts to infer that they would not be able to use their knowledge to assess the product. This may have reduced their motivation to activate their repertoire of counterarguments. Experiment 2 supported this view by providing evidence that the information content is an important determinant of whether or not experts engage in message elaboration.

Novices' responses for the most part are also consistent with their characterization as data-driven processors. As expected, message organization enhanced novices' learning of it, and repeated exposures to the message prompted elaboration of the message content and more advocacy-consistent product evaluations. However, contrary to expectations, message organization did not induce elaboration in Experiment 1. This issue was addressed in Experiment 2, which showed that elaboration is improved by increasing novices' capacity to process rather than by reducing their resource demands. It demonstrated that novices, like experts, engage in message elaboration under conditions that facilitate association with their prior knowledge. If novices' knowledge base is increased by providing a basis of comparison, they can engage in message elaboration. This finding also extends past research that suggested that novices do not elaborate on attribute information (Maheswaran & Sternthal, 1990). Our findings show that novices can be induced to elaborate on attribute information by presenting it in a relative-comparison format that provides an instant knowledge base.

Experiment 1 showed that free recall was not affected by additional exposures to the communication. This was despite the fact that novices' attribute-recall thoughts, which are verbatim representations of message information, were enhanced by repeated message exposures. This seeming inconsistency may be explained by the unique demands imposed by the thought-listing and free recall measures. In response to a thoughts solicitation, for which there are no right or wrong answers, novices may have felt free to report whatever came to mind. Thus, if increased message exposures prompted greater attribute-recall thoughts, novices would be likely to report these. By contrast, when novices were asked to recall message information, they may have reported what came to mind only if they were confident that the recalled information had its origin in the message. Thus, although the effect of increasing message exposures was manifested in the

increase in novices' attribute-recall thoughts, it was not reflected in a concomitant increase in novices' confidence about the origin of their knowledge. As a result, novices may have failed to report some of what they had learned from the repeated exposures. The fact that novices' recognition was enhanced by increasing exposures is also consistent with this account. In effect, a recognition test allows novices to increase their confidence about the origin of their recall by comparing their knowledge to the information presented in the stimulus.

More generally, this research contributes to the growing evidence for the premise that recall and judgment are unique factors (Johnston, Dark, & Jacoby, 1985; Seamon, Marsh, & Brody, 1984). Along these lines, it appears that recall tasks prompt a detailed search of memory. The productivity of this search is enhanced by factors such as message organization. By contrast, evaluation tasks prompt people to use information that is most accessible as a basis for response. Message exposures and message format are factors that affect this process by influencing elaboration and, thereby, the extent of information accessibility.

From an applied perspective, our findings underscore the value of segmentation on the basis of message recipients' prior knowledge and suggest a general approach to such segmentation. For novices, devices that facilitate learning of the message and, more particularly, a familiarity with the arguments supporting the message advocacy are likely to enhance the persuasive impact of a message. This is because for the data-driven, literal-minded novice, evaluation is often based on what has been learned from a message. For conceptually driven experts, messages are likely to have greater impact when they provide attribute information and allow enough time to elaborate on this information.

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