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Low-Involvement Learning: Repetition and Coherence in Familiarity and Belief

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Over thirty years ago Krugman (1965) claimed that learning of advertising messages was much more like an Ebbinghaus nonsense syllable memory task than an exercise in rhetoric. If anything, he seems even more right today in a media environment that continues to become more cluttered. In this article, we investigate the role that memory plays in the development of beliefs within this context and focus on the formation of beliefs that develop with little intention or opportunity to learn. Following on previous work, we investigate the effect of repetition-induced increases in belief for advertising claims that are hierarchically related: a superordinate general benefit claim (e.g., security of a lock) and multiple subordinate feature claims (e.g., pick resistant and professional installation required). We find that beliefs in feature claims increase monotonically with number of exposures, although at a diminishing marginal rate. We find no evidence of horizontal spillover of repetition-induced increases in belief from one subordinate feature claim to another. However, we find a substantial amount of vertical spillover of repetition-induced increases in belief from individual subordinate feature claims to the superordinate general benefit. A dual mediation analysis suggests that the vertical spillover comes from both an increase in familiarity of the general benefit and greater belief in the set of subordinate feature claims.

This research explores the ability of consumers to remember and judge the validity of marketing claims found in the overwhelming array of marketing information that confronts them daily. We investigate the role that memory plays in the development of beliefs within this context and focus on the formation of beliefs that develop with little intention or opportunity to learn on the part of consumers—that is, low-involvement learning. Our purpose here is to extend, in several different ways, previous work on repetition-induced increases in belief in advertising claims (Hawkins & Hoch, 1992; Law, Hawkins, & Craik, 1998).

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Dramatic changes in the communications industry are revolutionizing the ways that business, government, and individuals communicate with consumers. The ubiquity of persuasive messages is one of the important characteristics of the marketing communication environment. These messages often occur at a frenetic pace and come from many sources and in multiple formats. This is not a new development (e.g., Bauer & Greyser, 1968), but with the explosion of alternative media and the specter of exponential Internet growth, which offers advertisers the opportunity to purchase scores of very brief and very cheap exposures, the message environment appears to be moving to a new level of clutter (Alba et al., 1997). Clearly, it is not adaptive for consumers to actively process all of these messages (Greenwald & Leavitt, 1984; Payne, Bettman, & Johnson, 1993). Thus, much of the learning that

takes place under these conditions is likely to be more incidental than intentional (Craik & Tulving, 1975; Jacoby, Kelley, Brown, & Jasechko, 1989). The research presented here explores the formation of beliefs in a cluttered message environment (i.e., hundreds of persuasive messages per session) with relatively uninvolving viewing tasks (i.e., simple comprehension ratings).

LOW-INVOLVEMENT LEARNING

Can repeated exposure to messages have an impact on consumers in the absence of an intention to learn from the messages? Previous research has suggested that consumers may develop beliefs about products and product categories simply through repeated exposure to messages. Krugman (1965) proposed that an uninvolved "public lets down its guard to the repetitive commercial use of the television medium …" (p. 354) and that repetitive exposure to commercial claims will (a) "move some information out of short-term memory and into long-term memory systems" and (b) "permit significant alterations in the structure of our perception of a brand or product, but in ways which may fall short of persuasion or of attitude change" (p. 353).

Subsequent research (Arkes, Hackett, & Boehm, 1989; Bacon, 1979; Hasher, Goldstein, & Toppino, 1977) confirmed Krugman's (1965) speculation that simple repetition of claims is sufficient to change people's beliefs. These studies presented participants with general knowledge statements from various categories (e.g., politics, science, and art) and found that participants rated repeated statements as more valid than nonrepeated statements. This finding is known as the *truth effect.*

Hawkins and Hoch (1992) replicated the truth effect in the context of marketing communications. Furthermore, they showed that the impact of repetition on belief is greater under low-involvement than under high-involvement viewing conditions. That is, consumers are more likely to believe something simply because of repeated exposure when they lack the motivation or opportunity to scrutinize the validity of the message. In addition, the truth effect has been generalized to elderly consumers, for whom truth ratings are even more sensitive to perceived repetition, due to the increased likelihood of elderly consumers making specific types of memory errors (Law et al., 1998). Finally, this research confirmed the mediating role of memory in repetition-induced belief, which had been suggested by previous studies (Arkes, Boehm, & Xu, 1991; Begg, Armour, & Kerr, 1985). Explicit mediation tests (see Baron & Kenny, 1986) indicated that repeated exposure to a persuasive message serves to increase its familiarity, and in the absence of other relevant cues to the validity of the message, participants are likely to rely on their sense of familiarity to judge the validity of the message.

One of the important findings reported in the original Hasher et al. (1977) truth-effect work, which has been replicated by many others (e.g., Gigerenzer, 1984), was that one or two exposures of a statement increase belief in the validity of the statement, but that belief shows little effect of further repetitions. Recent work by Arkes et al. (1991) compared belief ratings for nonrepeated statements with the belief ratings for statements repeated between one and six times. Although they replicated the usual increase in belief for repeated statements, their data analysis suggested a natural asymptote in belief at higher exposure levels. Stated more colloquially, one earlier exposure was sufficient to evoke a "that rings a bell" response from the individual, and additional exposures had only marginal impact. This research on higher levels of repetition seems to suggest that the ability to increase belief with simple repetition will level off relatively quickly (see also Pechmann & Stewart, 1989).

An interesting variant of the standard truth effect, which has been studied by Begg et al. (1985), involves measuring participants' beliefs in a statement (e.g., "The extended right arm of the Statue of Liberty is 42 ft long") after (a) answering a question that is relevant to the statement (e.g., "Do you have any idea how long the extended right arm of the Statue of Liberty is?"), (b) answering a question that is irrelevant to the statement (e.g., "Do you have any idea how long the Statue of Liberty has been in New York?"), or (c) not answering any question related to the content of the statement. The results indicated that the statement received the highest belief rating when participants had been previously exposed to the relevant question, whereas the statement received the lowest belief rating when participants had not answered any questions related to the statement. Interestingly, the belief ratings for statements were intermediate when participants had answered a question that was irrelevant to the detail of the target statement (but still dealt with the same general topic). Thus, it appears that the partial overlap between the irrelevant question and the target statement induced a small increment in belief in the target statement even though the detail of the question did not match the statement (see also Arkes et al., 1991).

SPECIFIC FEATURES AND GENERAL BENEFITS

A great deal of research in consumer psychology has established that learning is influenced not only by the level of exposure to information, but also by the cognitive elaborations generated by the consumer (Tybout & Artz, 1994). Cognitive elaboration involves associating new information with knowledge already stored in memory (Greenwald & Leavitt, 1984). Studies of persuasion have demonstrated that increasing levels of repetition of a message can cause consumers to become bored or irritated, which may diminish the persuasive impact of the message (Belch, 1982; Cacioppo & Petty, 1979). As a result of this boredom or irritation, additional exposures of a message can encourage negative cognitive responses (e.g., counterarguing in high-involvement settings and source derogation in low-involvement contexts).

However, the persuasion-induced critical evaluations of the message or source are only two possible types of cognitive elaboration. Einstein and Hunt (1980) made a useful distinc-

tion between item-specific and relational elaboration. Item-specific processing involves a focus on the unique, individuating aspects of a stimulus, whereas relational processing involves consideration of the shared or common aspects within a set of stimuli. Einstein and Hunt demonstrated that both types of elaboration are important in improving memory for words. Furthermore, they suggest that both item-specific and relational forms of elaboration are likely to be present under a range of circumstances.

More recently, Meyers-Levy (1991) showed that encouraging relational processing (by providing a pictorial cue to suggest the general benefit implied by a particular feature claim) can improve recall for smaller sets of claims and encouraging item-specific processing (by actively generating images of the product features) can improve recall for larger sets of claims. Meyers-Levy argued that both forms of elaboration contribute to recall performance and that larger sets of claims are more likely to naturally evoke relational processing (noticing similarities across claims), whereas smaller sets of claims are more apt to evoke item-specific processing (noticing distinctive features of individual claims). These findings suggest that recall performance can be improved with cues that induce types of elaboration that are not naturally evoked by the context.

What kinds of elaborate inferences do consumers spontaneously generate? One common type of inference generated by consumers is to draw generalizations about missing features or more abstract properties of products based on exposure to a specific feature claim (Burke, DeSarbo, Oliver, & Robertson, 1988; Pechmann, 1996; Shimp, 1978). Indeed, Kardes (1988) demonstrated that individuals are likely to generate their own conclusions about abstract product benefits when they are exposed to claims about specific product features, especially under high-involvement (see also Hovland, Janis, & Kelley, 1953).

This article explores the possibility that repeated exposure to marketing claims may encourage relational processing even in the absence of explicit instruction to generate such elaborations (Einstein & Hunt, 1980) and in the absence of pictorial cues to help organize the claims (Malaviya, Kisielius, & Sternthal, 1996; Meyers-Levy, 1991). Specifically, we are interested in whether increasing the number of similar product-feature claims will encourage a greater sense of familiarity and belief not only for the specific feature claims, but also for a more general benefit implied by those claims.

Note that the exposure of multiple, related feature claims is a well-established advertising technique used to fight wear out associated with higher levels of repetition: "variations on a theme" advertising (i.e., using slightly different ad executions to convey the same underlying point in different contexts or different points in the same context). For example, it is possible to convey a product benefit using related claims about specific product features that imply the general benefit; an advanced climate-control system or fully adjustable seats imply driving comfort. Previous research has established that there are a number of advantages in varying the ads in a communication campaign. Unnava and Burnkrant (1991) demonstrated that changing the images and the wording of the claims in a print ad can increase attention and enhance memory for the brand name and message. A study by Schumann, Petty, and Clemons (1990) indicated that cosmetic variations in advertising (e.g., pictures and layouts) influenced attitudes under low-involvement conditions, whereas variations in substantive features of an ad (e.g., feature claims) had an impact on product attitudes under high-involvement conditions.

This study extends previous results by examining participants' beliefs in a conclusion (i.e., a general product benefit) based on simple exposure to a set of propositions (i.e., feature claims) with unknown truth status. One possible impact of exposing participants to a set of related feature claims is that they will show greater belief in the general benefit implied by these feature claims, which Kardes (1993) labeled *interpretive inferences.* In this article, we explore the impact of increasing the number of related feature claims on the familiarity and belief in a superordinate product benefit. If participants consciously or unconsciously process the similarity (overlap) among the related feature claims, increasing the number of related feature claims may enhance familiarity of, and belief in, other feature claims or a previously unexposed general benefit. This hypothesis is based on the use of coherence for judging the validity of a set of product claims. In contrast to a correspondence approach to validity, which involves assessing the match between a set of propositions (product claims) and a set of external criteria (Hastie & Rasinski, 1988), a coherence heuristic involves assessing the internal consistency and interdependence of the individual claims without reference to an external standard.

The easiest way to explain what we are trying to accomplish is through reference to a visual example of a particular belief hierarchy that might exist in memory. Imagine that these beliefs all have to do with the level of security of a door lock that you are considering buying. Security is a general, superordinate concept. Beneath and subordinate to security are particular related features. Each of the four feature claims shown in Figure 1 has some relevance to the

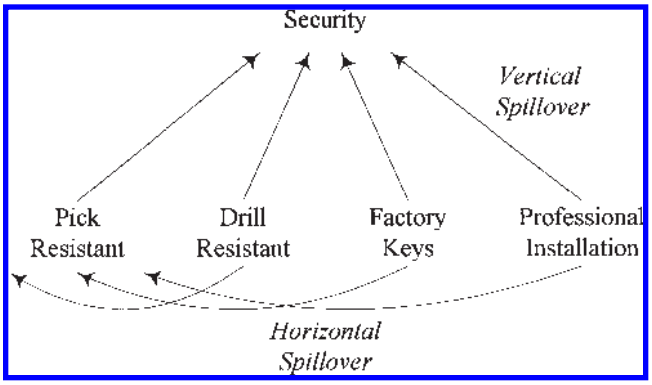

FIGURE 1 Schematic representation of "variations on a theme" advertising.

more general concept (security provided by the door lock). However, none of the feature claims explicitly mention the general benefit. The up-arrows from features to general benefits signify *vertical spillover*, indicating that a change in belief in a feature leads to some increment in belief of the general concept. This vertical spillover would be enhanced if individuals spontaneously noticed that a number of product feature claims all suggested a similar or common benefit (i.e., engaged in relational processing). We examine whether this type of interpretive inference (i.e., belief in the general benefit) increases as the number of related feature claims increases. Clearly, it is also possible and likely for the spillover to be downward or bidirectional.

The arrows pointing into "pick resistant" from the three other features represent *horizontal spillover*, signifying the effect that exposure to a specific feature would have on other similar features at the same level in the hierarchy. This hypothesis is suggested by the results of Begg et al. (1985), which suggested that a partial overlap between information exposed earlier and a later target statement may increase the perceived validity of the target statement. Note, however, that the connections among the related feature claims is even more limited than in the studies by Begg et al. Rather than having several words in the target phrase repeated, the feature claims used here will generally only share the brand name among them. Bidirectional arrows could exist between all pairs of subordinate feature claims.

In this experiment, participants saw between zero and three product feature claims from each set of claims that all suggested some general product benefit. In addition, these statements were exposed between one and four times. This experiment examines the possibility that familiarity and belief can be induced by repeatedly exposing the same claim (exact repetition) or by exposing related claims (related repetition). We have three goals in this research: (a) How effective are higher levels of repetition in inducing belief in a target feature claim, (b) does repetition-induced belief in a specific feature claim influence belief in related feature claims (horizontal spillover), and (c) do repetition-induced increases in belief in specific feature claims influence belief in more general, superordinate concepts implied by those very same claims (vertical spillover)?

METHOD

Stimuli

Participants evaluated various product-related claims in this study. There were 20 sets of product claims (2 sets are reproduced in Table 1). In this study, *set of claims* refers to a related group of 5 claims: 1 general claim about a product benefit and 4 specific claims about product features that support the general benefit. Thus, a total of 100 claims were used in this study. In addition, each set of 5 claims referred to a unique product category, brand name, and benefit. One half of the feature claims were true, and one half were false according to *Consumer Reports* or other consumer information sources.

Design

The participants were involved in two sessions: study and test. The design was implemented by varying the exposure of feature claims in the study session. In the study session, each of the 20 sets of statements were exposed according to the following within-subjects design: 3 (related repetition: number of exposed feature claims from a set) × 3 (exact repetition: repetition level of each exposed claim) along with a no-exposure control condition. None of the general benefit claims were exposed during the study session.

For a particular set of claims, participants saw one, two, or three out of the four possible feature claims (i.e., related repetitions). Within a set of claims, each of the exposed feature claims was exposed either one, two, or four times during the study session (i.e., exact repetitions). All feature claims selected for exposure within a particular set were repeated the same number of times for a particular participant. That is, an individual participant saw no variation in the number of exact repetitions within a set of claims—the variations occurred only across sets of claims. In addition, there was a control condition in which participants saw no feature claims from some of the sets (of course, there were also no exact repetitions in this control condition).

There were 20 sets of statements, and 2 sets of statements were assigned to each of the 10 (3 × 3 plus the control) within-subject conditions. The sets of statements were ran-

TABLE 1
Example Sets of General Benefits (in Bold) and Related Feature Claims

Of all minivans, the Chevy Lumina provides travelers the most comfortable driving experience.
The Chevy Lumina minivan has the most advanced suspension system in its class. (true)
The Chevy Lumina has 8-way power driver and passenger seats to provide restful body support. (false)
Extra-wide, softly cushioned, fully reclining bucket seats are standard equipment in the Chevy Lumina minivan. (false)
The powerful temperature control system in the Chevy Lumina minivan responds quickly and quietly even in severe weather conditions. (true)
When it comes to security, ACE provides the best door locks.
The cylinders in ACE locks are more difficult to pick than any other lock. (true)
ACE locks have hardened iron pins embedded above the keyhole, which make the locks drill-resistant. (false)
Keys for the ACE lock can be duplicated only at ACE's manufacturing factory. (true)
The manufacturer of ACE locks requires professional installation to ensure proper functioning. (false)

domly assigned to different levels of exact and related repetition for each participant via a computer program. Thus, each participant saw all 10 repetition conditions, and each repetition condition was paired with a unique set of claims (i.e., for two brands they saw one feature claim exposed once, for two brands they saw one feature claim exposed twice, for two brands they saw two feature claims exposed once, etc.).

Procedure

A total of 50 undergraduate students participated in two 20-min sessions separated by an unrelated 20-min filler task. In the study session, each participant saw the feature claims in a different random order and rated the ease of comprehension on a 7-point scale ranging from 1 (*definitely not understandable*) to 7 (*definitely understandable*) for each of the exposed items. In previous work, this low-involvement, instructional manipulation produced a truth effect about twice as large as that observed under high-involvement evaluative processing instructions (Hawkins & Hoch, 1992). Thus, participants were exposed to between zero and three feature claims from each set of claims, and the exposed feature claims were repeated one, two, or four times. In addition, participants saw 30 unrelated filler items, which were intermingled with the feature claims. A computer program displayed each statement for 8 sec and collected the ratings of comprehension.

During the second test session, each participant saw all 80 feature claims and a new set of 30 unrelated filler items in a different random order. Participants were told that they had seen some of the statements before, whereas others were new. They were also told that some of the statements were true, and some of the statements were false. These instructions were provided to discourage participants from inferring that claims that they remembered seeing must be true (i.e., prior exposure was not diagnostic of a claim's validity). For each of these claims, participants made two responses. First, they rated the truth of the claim using a 7-point scale ranging from 1 (*definitely false*) to 7 (*definitely true*). Next, they indicated how familiar the item seemed on a 7-point scale ranging from 1 (*not at all familiar*) to 7 (*extremely familiar*). After rating the truth and familiarity of the 80 feature claims and 30 unrelated filler claims, participants provided truth ratings and familiarity judgments for the 20 general benefit claims.

RESULTS

The results of this study are presented in four sections. The first set of analyses examines the impact of exact repetition and related repetition on the belief and familiarity ratings for the individual feature claims. The second section presents evidence that feelings of familiarity mediate the impact of exact repetition on belief in the feature claims. The third section reports the influence of the number of related feature claims and their level of exact repetition on the belief and familiarity for the relevant general benefit claims. The final analysis involves an explicit test of the mediators of the relation between repetition and belief in the general benefit claims.

Repetition and Feature Claims

The mean truth rating for feature claims across all conditions was 4.39, and the mean familiarity rating was 4.63. We first conducted an analysis of the belief and familiarity ratings based on the actual truth value of each of the claims. (Recall that one half of the claims were actually true, and one half were actually false.) Because no significant main effects or interactions emerged for the actual truth value of the feature claims, $ps > .1$, actual truth value is not examined in the subsequent analyses.

The next set of analyses examined the impact of exact and related repetition on belief in the individual feature claims within each set. The analysis design for these individual feature claims is slightly different from the 3 (exact repetition) × 3 (related repetition) plus control, within-subjects design that was used to assign sets of claims to repetition conditions and that is relevant to analyzing the general benefit data. As Table 2 shows, we are interested in how belief in an individual feature claim is influenced by exact repetition of that claim (with possible levels of 0, 1, 2, or 4 exposures) and repetition of other feature claims from the same set (either 0, 1, or 2 other claims were exposed). This results in a 4 (exact repetition) × 3 (number of other claims) full factorial. Note that the number of other claims independent variable differs from the number of related claims variable, which does not consider whether the target feature claim, itself, was one of the related claims to have been exposed. If the target feature claim is exposed, then the number of other claims is equal to the number of related claims minus one; if the target feature claim is not exposed, then the number of other claims is equal to the number of related claims. This distinction is critical because previous research has demonstrated that a single prior exposure of a claim can increase its perceived validity (i.e., if the target claim, itself, has been previously exposed, it should receive a higher truth rating than if it has not been exposed, even if the number of related claims exposed in the set is held constant).

Table 2 shows that exact repetition increases belief in the feature claims, $F(3, 144) = 15.9$, $p < .001$. The biggest in-

TABLE 2
Impact of Number of Exact Repetitions of a Feature Claim and Number of Other Feature Claims on Belief Ratings for Feature Claims

	Number of Exact Repetitions				
Number of Other Claims	*0*	*1*	*2*	*4*	*M*
0	4.04	4.19	4.53	4.60	4.34
1	4.06	4.47	4.42	4.59	4.39
2	3.98	4.60	4.52	4.67	4.44
M	4.03	4.42	4.49	4.62	4.39

crease occurs between zero and one exact repetition, almost 0.4 scale points. Increases in belief with subsequent repetitions are smaller than the increase observed between zero and one repetition. Polynomial contrasts corroborate these effects: The linear trend over levels of exact repetition is significant, $F(1, 144) = 39.6$, $p < .001$, and the quadratic trend is marginally significant, $F(1, 144) = 3.8$, $p = .056$. Thus, higher levels of repetition increased the belief in a specific feature claim, but this increase was smaller at higher levels of repetition. This pattern is comparable to previously reported results (e.g., Hasher et al., 1977).

Table 2 also indicates that there was no corresponding effect of the number of other claims on belief in the feature claims, $F(2, 96) < 1.0$, and the number of exact repetitions did not interact with the number of related claims, $F(6, 288) < 1.5$. This suggests that there was little, if any, horizontal spillover from one feature claim to another. The only kind of repetition that increased belief in a particular feature claim was exact repetition of that claim. Only in the case in which there was a single exact repetition do we see a monotonic increase in belief with increases in the number of other claims. The nonsignificant, two-way interaction precludes use of simple effect tests, but multiple comparisons using Tukey's post hoc exploratory data analysis procedure indicate that with one exact repetition there was a significant, $p < .05$, increase from zero ($M = 4.19$) to two ($M = 4.60$) related claims. One possibility is that the combination of exact and other repetition produces a ceiling effect that masks horizontal spillover at higher levels of exact repetition. Whatever the reason, exact repetition has a much bigger impact on the belief in feature claims than does exposure of related claims.

The familiarity ratings for the individual feature claims revealed a similar pattern of results. Table 3 indicates that a greater number of exact repetitions increased the familiarity of the individual feature claims, $F(3, 144) = 82.5$, $p < .001$, which is a 2.5 (out of 7) scale point increase from zero to four repetitions. In addition, polynomial contrasts indicate that both the linear and quadratic trends over levels of exact repetition were significant, $F(1, 144) = 116.1$, $p < .001$, and $F(1, 144) = 53.1$, $p < .001$, respectively. Just as with the belief ratings, the familiarity ratings increased over levels of exact repetition, but the impact of repetition decreased as the level of repetition increased. Moreover, there was no evidence of any horizontal spillover in familiarity. Participants' familiarity judgments were uninfluenced by the exposure of other feature claims, $F(2, 96) < 1.5$. Finally, there was no interaction of Number of Other Claims × Number of Exact Repetitions on familiarity ratings, $F(6, 288) < 1.0$.

TABLE 3
Impact of Number of Exact Repetitions of Feature Claims and Number of Other Feature Claims on Familiarity Ratings for Feature Claims

	Number of Exact Repetitions				
Number of Other Claims	*0*	*1*	*2*	*4*	*M*
0	2.89	4.87	5.19	5.47	4.60
1	2.99	4.87	5.10	5.41	4.59
2	3.04	4.83	5.38	5.53	4.70
M	2.97	4.85	5.23	5.47	4.63

The Mediating Role of Familiarity in Belief for Feature Claims

To establish that the familiarity created by exactly repeating feature claims actually mediates the relation between number of repetitions and belief in the feature claims, we estimated a set of regressions for each participant (Baron & Kenny, 1986; Hawkins & Hoch, 1992). In these regressions, we fit four models for each participant: (a) the number of exact repetitions was used to predict the familiarity for the 80 feature claims, (b) the number of exact repetitions was used to predict the belief ratings for the feature claims, (c) the familiarity of the claims was used to predict the belief ratings for the feature claims, and (d) both number of exact repetitions and familiarity ratings were used to predict the belief ratings for the claims. Figure 2 presents the mean unstandardized regression coefficients from these participant-level regressions; the bivariate coefficients appear above the path arrows, and the multivariate coefficients appear below the arrows.

This analysis indicates that repetition of a claim increases both the familiarity of that claim, $t(49) = 10.6$, $p < .001$, and the belief in the claim, $t(49) = 6.5$, $p < .001$. Furthermore, a higher level of familiarity predicts a greater belief in the claim, $t(49) = 8.7$, $p < .001$. Finally, when both the number of repetitions and the familiarity of the claim are included in the models, only the familiarity is a significant predictor of belief, $t(49) = 8.7$, $p < .001$. Thus, familiarity mediates the impact of number of exact repetitions on belief ratings for the feature claims. This result extends the previous findings of Hawkins and Hoch (1992) by demonstrating that higher levels of exact repetition of feature claims (more than one exposure) continue to increase the familiarity of the claims, which in turn leads to greater belief in those claims.

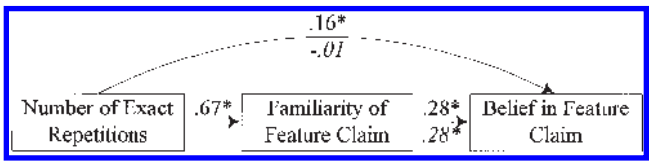

FIGURE 2 Path analysis showing relations among number of exact repetitions, familiarity of feature claims, and belief ratings for feature claims. Numbers are unstandardized simple regression coefficients, and numbers in italics are unstandardized multiple regression coefficients. An asterisk (*) represents that the coefficient is significantly different from zero, $p < .05$.

Repetition and General Benefit Claims

The mean truth rating for general benefit claims across all conditions was 4.04, and the mean familiarity rating for these claims was 3.90. When performing the analyses of belief and familiarity ratings for the general benefit claims, each participant's mean rating in the zero–zero control condition (zero feature claims and zero exact repetitions) was subtracted from each of their responses in the other within-subject conditions. This procedure controls for variation in participants' baseline beliefs in the general benefit statement and also retains a factorial design. This transformation results in nine difference scores per participant that were analyzed using a 3 (number of repeated claims) × 3 (repetition level of the repeated claims) repeated-measures analysis of variance. Table 4 presents the belief data, and Table 5 presents the familiarity data.

The first analysis of the general benefit claims examines whether there was any difference between the control condition and the treatments involving at least one feature claim being repeated at least once. This is equivalent to testing the grand mean (intercept) of the treatment-control difference scores. As can be seen from Table 4, when participants saw one or more related feature claims with one or more exact repetitions, belief in the general benefit increased by 0.37 scale points—from 3.71 in the control condition to an average of 4.08 across the nine repetition cells, $F(1, 49) = 11.6$, $p < .001$. Table 5 shows a similar pattern for the familiarity judgments.

TABLE 4
Impact of Number of Related Feature Claims and Exact Repetitions on Belief Ratings for General Benefit Claims

	Number of Exact Repetitions				
Number of Related Feature Claims	*0*	*1*	*2*	*4*	*M*
0	3.71	—	—	—	—
1	—	3.91	3.94	3.93	3.92
2	—	4.05	3.96	3.86	3.96
3	—	4.23	4.29	4.51	4.34
M	—	4.06	4.06	4.10	4.08[a]

[a]This average does not include the zero–zero control condition.

TABLE 5
Impact of Number of Related Feature Claims and Exact Repetitions on Familiarity Ratings for General Benefit Claims

	Number of Exact Repetitions				
Number of Related Feature Claims	*0*	*1*	*2*	*4*	*M*
0	3.06	—	—	—	—
1	—	3.79	3.75	3.55	3.70
2	—	4.09	3.63	3.86	3.84
3	—	4.14	4.45	4.41	4.33
M	—	4.01	3.94	3.92	3.96[a]

[a]This average does not include the zero–zero control condition.

Compared to the zero–zero control ($M = 3.06$), exposure to one or more feature claims with one or more exact repetitions increased familiarity ($M = 3.96$) by a substantial 0.90 scale points, $F(1, 49) = 37.1$, $p < .001$.

We now turn to the analysis of the treatment-control difference scores to understand the effect of the number of related and exact repetitions of feature claims on belief and familiarity ratings for the general benefit claims. Table 4 indicates that increasing the number of exact repetitions of the feature claims, beyond a single repetition—the zero to one difference of 4.06 – 3.71 = 0.35 is marginally significant, $t(49) = 1.8$, $p < .08$—does not increase belief in the general benefit, $F(2, 96) < 1.0$. Likewise, Table 5 shows that increasing the number of exact repetitions beyond a single repetition has no significant impact on familiarity ratings for the general benefit claims, $F(2, 96) < 1.0$.

Increasing the number of related feature claims, however, does enhance belief in the general benefit claim, $F(2, 96) = 17.5$, $p < .001$, an increase of 0.42 scale points from one to three repeated feature claims. Additional polynomial contrasts for the linear, $F(1, 96) = 28.9$, $p < .001$, and quadratic trends, $F(1, 96) = 6.7$, $p < .025$, were also significant. Again, the familiarity judgments correspond to the pattern of results for belief judgments. Increasing the number of repeated feature claims increases the familiarity of the general benefit claim, $F(2, 96) = 23.3$, $p < .001$. Familiarity ratings showed a significant linear, $F(1, 96) = 36.0$, $p < .001$, and quadratic trend, $F(1, 96) = 5.2$, $p < .05$, with an increasing number of repeated feature claims, an increase of 0.73 moving from one to three repeated claims. Taken as a whole, these data suggest the operation of vertical spillover in which repetition-induced increases in belief and familiarity of subordinate feature claims have a substantial impact on superordinate general benefits.

Before moving on to the mediation analysis for the general benefits, it is important to summarize the findings and resolve what might, at first glance, appear to be an incompatibility between the results for the individual feature claims and those for the general benefit claims. With the individual feature claims, we saw that increases in belief and familiarity occurred only with exact repetitions of the claim. Exposure of other feature claims from the set had no impact on familiarity or belief for a target feature claim (i.e., no evidence of horizontal spillover). With the general benefits, belief and familiarity were influenced only by the number of related feature claims; exact repetition had no impact. Reconciliation of these results comes from the fact that there are diminishing marginal increases in feature claim beliefs that accrue to higher levels of exact repetition. The biggest boost comes with one repetition. Apparently, belief in the general benefit is more influenced by the belief for the feature claims induced by a single repetition (note that increasing the number of related claims necessarily increases the number of feature claims that receive at least one exposure) than by the further increases in belief of an individual feature claim that comes with higher levels of exact repetition. Thus, number of related

claims captures this simple truth effect, which seems to spill over to the superordinate benefits.

It is also important to note that the increased familiarity and belief in the general benefit claims is not simply the result of repeated exposure to the brand name in the higher repetition conditions. Both the exact repetition and the related repetition conditions expose the brand name the same number of times, and yet, only the number of related repetitions increases familiarity and belief in the general benefit claims.

The Mediating Role of Familiarity in Belief for General Benefit Claims

To determine whether the familiarity of the general benefit claims mediates the relation between number of related feature claims and belief in the general benefit claims, we fit a set of regression models analogous to those used to test mediation for the feature claims. Figure 3 shows the mean unstandardized regression coefficients for each relation. The pattern of results indicates that (a) increasing the number of related feature claims increases the familiarity of the general benefit, $t(48) = 9.4$, $p < .001$, and the belief ratings for the general benefits, $t(49) = 6.2$, $p < .001$; (b) increasing familiarity of the general benefit increases belief in that general benefit, $t(48) = 8.7$, $p < .001$; (c) both the number of related claims and the familiarity of the general benefit are significantly related to the belief in the general benefit, $t(49) = 3.5$, $p < .001$, and $t(48) = 8.0$, $p < .001$; and (d) the impact of the number of related feature claims on the belief in the general benefit is significantly reduced when the familiarity of the general benefits is included in the model, $t(49) = 4.3$, $p < .001$. Thus, although the familiarity of the general benefit partially mediates the relation between number of related feature claims and belief in the general benefit, it does not completely capture the vertical spillover from exposure of multiple related feature claims to belief in the general benefits. Increasing the number of related feature claims still has an independent influence on the general benefit beliefs.

Apparently, increasing the number of related feature claims has some other consequence that influences belief in the general benefit. The resolution of this issue is suggested by one of the results reported earlier. Notice that when the number of related feature claims is increased, the likelihood of any single claim in that set of claims being exposed at least once increases. Thus, in the one related claim condition, each claim has only a 25% chance of actually being exposed, whereas in the three related claims condition each claim has a 75% chance of having been exposed. As indicated in Table 2, moving from zero to one exact repetition increases belief in that feature claim. Thus, as the number of related feature claims increases, the average belief in those feature claims also increases because more of the feature claims would have been exposed at least once (i.e., increasing the number of related claims increases the number of feature claims in the set that will show a truth effect).

To better understand this process, for each of the 20 sets of claims we calculated a new variable: the average belief in the four feature claims within each set. When no feature claim in a set has been exposed, the average belief is 4.04, and it increases to 4.35, 4.37, and 4.60 with one, two, and three related feature claims, respectively. Indeed, Figure 4 confirms that increasing the number of related feature claims actually has two consequences that influence belief in the general benefit. First, prior exposure to multiple subordinate feature claims increases the familiarity of the general benefit, $t(48) = 9.4$, $p < .001$. Second, it increases the average level of belief in the set of feature claims, $t(49) = 4.8$, $p < .001$. When the number of related feature claims, the familiarity of the general benefits, and the average belief in the feature claims all are included in the model, only the familiarity of the general benefits, $t(48) = 8.4$, $p < .001$, and the average belief in the feature claims, $t(49) = 8.1$, $p < .001$, are significant predictors of belief in the general benefit claims. Thus, increasing the number of feature claims seems to increase belief in the general benefit by enhancing the familiarity of the general benefit and increasing the perceived validity of related feature claims.

We can only speculate about the dual mediation that appears in Figure 4. One possibility is that there are both lower and higher order cognitive processes that affect belief in the superordinate general benefits (Greenwald, 1992; Roediger, 1990). At the less-conscious level, implicit memory pro-

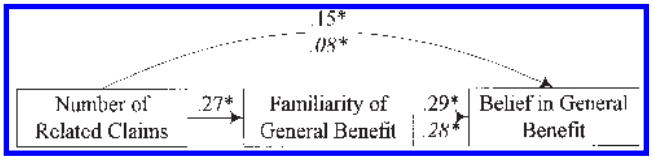

FIGURE 3 Path analysis showing relations among number of related claims, familiarity of general benefit claims, and belief ratings for general benefit claims. Numbers are unstandardized simple regression coefficients, and numbers in italics are unstandardized multiple regression coefficients. An asterisk (*) represents that the coefficient is significantly different from zero, $p < .05$.

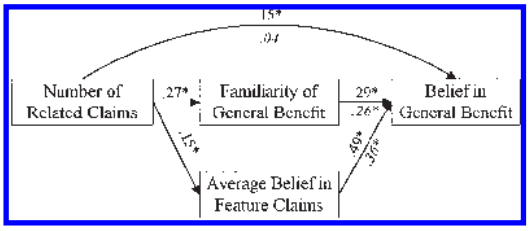

FIGURE 4 Path analysis showing relations among number of related claims, familiarity of general benefit claims, average belief ratings for feature claims, and belief ratings for general benefit claims. Numbers are unstandardized simple regression coefficients, and numbers in italics are unstandardized multiple regression coefficients. An asterisk (*) represents that the coefficient is significantly different from zero, $p < .05$.

cesses may operate in which participants' beliefs are influenced by repetition-induced increases in familiarity of the superordinate benefit. This reliance on the familiarity of a benefit claim to judge its validity is similar to the pattern of results reported for belief in a single feature claim (Hawkins & Hoch, 1992). However, in this case, the familiarity of the benefit claim is induced not by exact repetition of the general benefit claim, but by exposure to a number of related feature claims that imply the superordinate benefit. The fact that increasing the number of related feature claims increases the familiarity of the general benefit claim suggests that participants may be spontaneously engaging in relational processing (i.e., they are noticing and encoding the similar, common aspects of the feature claims).

At a more conscious level, participants may consider the level of coherence in their beliefs about the truth of the subordinate claims. Here, they use their assessments of the truth of the multiple feature claims as a cue to the general superordinate claim that the individual claims imply. It is important to note that a separate mediation test was performed to determine whether the impact of number of related feature claims on belief in the general benefit claim could be explained solely by the increase in average belief for the feature claims. It could not. That analysis indicated that the number of related feature claims remained a significant predictor of belief in the general benefits ($M = .09$), $t(49) = 3.8$, $p < .001$, even when the average belief in the feature claims was included in the model. Thus, the increase in belief for the general benefit claim that results from increasing the number of related claims is not simply due to an increasing belief in the related feature claims. It is also due to the increasing familiarity of the general benefit that can be induced by exposing related feature claims. When we talk about vertical spillover, it may be necessary to recognize that the spillover results from both implicit and explicit memorial processes. This sort of process dissociation, whereby intentional and unintentional memory processes influence subsequent beliefs, is similar to the results of Begg, Anas, and Farinacci (1992), who found that the impact of intentional recollection of the source could be impaired, whereas the independent contribution of message familiarity continued unaffected by dividing attention. These issues represent an exciting area for future research.

DISCUSSION

In summary, we found that there are diminishing marginal returns to repetition-induced increases in belief. The biggest boost comes from one prior exposure. This appears to happen because feature claim familiarity also gets its biggest boost with a single repetition. In addition, we found little evidence of horizontal spillover in belief or familiarity from one related subordinate claim to another (the only exception is that increasing the number of other feature claims does increase belief in the target feature claim when the target has been exposed only once). We would caution against any strong generalization from these results because the existence of horizontal spillover may depend on factors not examined in this study. For example, horizontal spillover may be observed with less specific or obscure feature claims. This speculation is based on our finding that, on average, the feature claims received higher familiarity ratings (see Table 3) than the general benefit claims (see Table 5), suggesting that the feature claims were more distinctive and therefore less likely to be confused with one another.

Despite the fact that we did not find strong evidence for repetition-induced horizontal spillover, we did observe a substantial amount of vertical spillover from the subordinate feature claims to the superordinate general benefit claims. This result extends previous findings (e.g., Petty & Cacioppo, 1984) that indicated that the number of arguments can serve as a peripheral cue to persuasion. Whereas previous work focused on the impact of the number of arguments on overall attitudes toward a conclusion, this study demonstrates that the number of arguments (feature claims) can influence belief in a general product benefit. Of course, a belief that a product has a general benefit may contribute to the overall attitude toward the product. Another unique aspect of this study was that participants were explicitly told that some of the arguments (feature claims) were true and some were false. Even when participants are aware that prior exposure to a feature claim is not diagnostic of its validity, they seem to draw conclusions based on that prior exposure (see also Jacoby et al., 1989). Furthermore, it seems clear that the increase in belief in the general benefit is not simply a result of the repeated exposure to the brand name because that occurs in both the number of related repetitions and the number of exact repetitions conditions.

Our dual mediation analysis suggests that the spillover occurs at two different levels: one through the effect of repeated feature claims on the familiarity of the general benefit claim and another through an increase in the coherence of the beliefs that participants hold about the subordinate and supporting feature claims. As far as we are aware, this study represents the first empirical evidence that individuals seem to rely on both familiarity and coherence heuristics in judging the validity of statements rather than assessing the correspondence between a belief and an external cue as suggested by an objectivist epistemology (Hastie & Rasinski, 1988). Thus, the increased familiarity of general benefits due to exposure of multiple feature claims and the increased coherence due to the consistent implications of the feature claims seem to have independent and additive effects on perceptions of the validity of general product benefits.

The purpose of this research was to better understand the influence of different patterns of repetition on the memory for, and belief in, subordinate and superordinate product claims. Although the experimental task was only a scaled-down caricature of an advertising environment, we believe that it captures some critical elements of the fast-paced marketing information environments that clutter up our daily existence. Salient characteristics of the task in-

clude (a) lots of claims, (b) brief exposures, (c) variations on a theme, (d) potential for interference from similar claims, and (e) low-involvement processing instructions. Although each of these characteristics have been investigated previously using the dominant cognitive response persuasion paradigm, we think it is safe to say that most persuasion research has concentrated on factors influencing the believability of fewer, more expansive messages viewed at a much slower pace and under higher-involvement processing conditions (Greenwald & Banaji, 1995).

Managerial Implications

One of the most important implications of these results is that advertising may be more effective when it employs closely related claims about product features rather than simply repeatedly exposing the same claims. The advantage of variations-on-a-theme advertising is due, in part, to the relatively small increases in familiarity and belief that occur with exposures beyond the first one. In addition, the finding of vertical spillover in familiarity and belief from feature claims to more general benefit claims suggests that marketers can induce a belief that a product provides a benefit without explicitly making such a claim. Thus, it is important for marketers to measure the memory for, and belief in, the general benefits associated with a product rather than just measuring the specific claims made in an advertising campaign. Failure to measure the indirect consequences (e.g., vertical spillover) of an ad campaign that highlights product features may underestimate the impact of advertising.[1]

The finding of significant vertical spillover suggests that the practice of identifying means–end chains in developing advertising strategies (e.g., Reynolds & Guttman, 1987) may have a psychological correlate in the spontaneous inferences generated by relatively uninvolved consumers when exposed to sets of related features. Consumers may draw general conclusions about product benefits based on exposure to related feature claims without the advertiser having to explicitly make the general benefit claim. Thus, it is important for marketers to carefully construct a series of coherent product claims in their advertising campaigns to encourage consumers to draw inferences about product benefits that are consistent with their values.

CONCLUSIONS

Over thirty years ago, Krugman (1965) claimed (probably with a bit of tongue-in-cheek) that learning of advertising messages was much more like an Ebbinghaus nonsense syllable memory task than an exercise in rhetoric. If anything, he seems even more right today in a media environment that includes many more 10- and 15-sec television and radio spots than in the 1960s, hundreds of satellite and cable channels, and the potential for a crushing onslaught of brief product mentions and logos on the World Wide Web—all of this compared to the mid 1960s when color television was a rarity, and there were only three networks that broadcast way too much boxing, wrestling, and roller derby each and every week.

[1]We thank a reviewer for suggesting this implication.

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