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Abstract - This investigation focused on providing a more nuanced understanding of the message retention-attitude (cognition-affect) relationship in new product introductions. Using advertising and publicity as independent and combined promotional tools, this investigation focused on determining an effective approach to boost the strength of the retention-attitude relationship as well as the level of new product information retention and, through it, the attitude toward the product. To that end, a two-phase experiment was conducted involving 423 participants. The results revealed that in general publicity, compared to advertising, was a more effective strategy in boosting retention and that the publicity-publicity sequence strategy was the most effective in boosting the attitude toward the product as its consistent message content and format produced both direct and mediated effects of message retention on the product attitude.

Keywords - Publicity, Advertising, Message sequencing, Retention, Attitude, New product introduction
Relevance to Marketing Educators, Researchers and/or Practitioners – This study shows the significance of message retention in attitude formation. It further illustrates the impact of different message sequencing strategies on the amount of new product information retained and attitude formed.

Introduction

Understanding and improving the success of the new product introduction process is of significant importance to companies. One critical factor in this process is the level of new product information retention generated by promotional message(s), which directly impact(s) the formation of the attitude toward the product (Barry and Howard, 1990). Harris (1997) has credited the combination of using advertising and public relations (or publicity) as an effective strategy when introducing new products into the marketplace. The purpose of this study was to provide a better understanding of the relationship between new product information retention and the attitude toward the product as impacted by the promotional tools of advertising and publicity. More specifically, this study explored independent and cumulative effects of advertising and publicity strategies to discover a useful means of boosting the level of new product information retention and, through it, the attitude toward the product.

Examining the Retention-Attitude Relationship and Message Sequencing

Single Promotional Message Effects

The hierarchy of effects models suggest the simplified steps that consumers may go through during their purchase decision making process: cognition, affect, and conation. “While there is little disagreement among researchers regarding the importance of the three stages in the hierarchy, there has been significant disagreement regarding the order of the three stages” (Barry and Howard, 1990: 126). For example, Krugman (1965) proposed a cognition-conation-affect sequence as a model in low involvement situations. Meanwhile, Zajonc and Markus (1982) argued that cognition is not necessary in forming preferences, but instead it may be used to justify the preference. Thus, they favored the affect-conation-cognition sequence. In addition to the two alternatives, four other sequences have been suggested in the literature: conation-affect-cognition; conation-cognition-affect; affect-cognition-conation; and cognition affect conation (see Barry and Howard, 1990 for a detailed summary and discussion of all models).

Despite the variations of the hierarchy of effects model, the cognition-affect-conation sequence is considered to be the most traditional one (Barry and Howard, 1990). Proponents of the cognition-affect-conation sequence suggest that audiences respond to promotional communication messages in an orderly fashion by first thinking (cognition), then feeling (affect), and subsequently acting (conation) as a result of message stimuli (Barry, 2002; Barry and Howard, 1990;
Vakratsas and Ambler, 1999; Weibacher, 2001). The likelihood that a person would engage in a purchase as result of being exposed to a promotional message is thus dependent upon one’s retention of the message (Barry and Howard, 1990). The effect of message retention on the purchase process is even more pronounced when the product is new to the market and unfamiliar to potential customers, thus this sequence may be most appropriate in explaining the new product purchasing process. As promotional messages in new product introductions primarily focus on the positive aspects of the new product, an increase in new product information retention should result in the creation of more positive attitude toward the product.

We believe that this relationship should not be conditioned by the specific type of marketing communications (e.g., advertising, publicity, personal selling), because traditional hierarchy of effects models have been used to explain the purchasing process stimulated by a variety of promotional messages such as advertising (e.g., Awareness-Comprehension-Conviction-Action [ACCA] model; Colley, 1961) and personal selling (e.g., Attention-Interest-Desire-Action [AIDA] model, Strong, 1925), for example. Consequently, regardless of whether the promotional message is presented in the form of an advertisement or publicity (i.e., news story), an increase in the product information retention should lead to a favorable attitude toward the product, when the positive information is presented. An empirical confirmation of the above relationship in the present study should place the focus on information retention, thus inspiring the ensuing questions: How can new product information retention be increased? Also, can the relationship between retention and product attitude be strengthened (i.e., can retention explain more of the variance in the product attitude)?

Selecting and combining appropriate promotional tools is of great importance for practitioners to boost the retention rate and strengthen the relationship between retention and product attitude. As demonstrated by Cameron (1994), publicity messages in the form of third-party endorsed news stories can generate greater product information retention compared to advertising messages due to the advantage of third-party endorsement (also see Michaelson and Stacks, 2007). Hence, consistent with Cameron’s (1994) findings, it could be expected that:

H1: Promotional messages for a new product presented in the form of publicity, compared with advertising, should generate greater levels of new product information retention when the new product information is positive.

In addition, as a consequence of greater levels of new product information retention (see Cacioppo et al., 1994), it could be expected that:

H2: Promotional messages for a new product presented in the form of publicity, compared with advertising, should generate more favorable attitudes toward the product when the new product information is positive.
To summarize, it could be expected that promotional messages in the form of publicity would generate greater retention of new product information which would lead to greater (or more positive) attitude toward the product.

The above discussion and hypotheses focused on the comparative effectiveness of advertising and publicity, arguably the two most popular traditional forms of new product promotion. However, with the focus of promotional messages having shifted from strategies that rely on using a single promotion tool (i.e., advertising, publicity, personal selling, etc.) to strategies that favor integration of multiple promotional tools (Harris, 1991, 1997; Schultz et al., 1992), the question becomes: how would a combination of these tools affect the process of new product information retention and consequently the attitude toward the product? Can the multiple promotional messages strengthen the relationship between retention and product attitude? Even more specifically, how should these multiple promotional tools (i.e., publicity, advertising, etc.) be sequenced to maximize the effectiveness of the promotional message?

**Multiple Promotional Messages Effects**

To date, a limited number of message sequencing studies have systematically assessed the independent and cumulative effects of publicity and advertising as promotional tools on the product purchase process (Kim et al., 2010; Loda et al., 2005, 2007; Smith and Vogt, 1995; Stammerjohan et al., 2005). Stammerjohan et al. (2005), assessing the effects of using advertising-only and publicity-advertising strategies, discovered the latter to be more effective; thus evidencing the cumulative effect of a combined strategy. Kim et al. (2010) as well as Loda et al. (2005, 2007) also found evidence for the superiority of combined strategies as they discovered the combination of publicity and advertising to be more effective than advertising alone.² Collectively, the prior studies suggest that combined advertising and publicity strategies are more effective than using them as independent strategies.

Anderson’s (1971) Information Integration Theory (IIT) provides good theoretical basis for why combined sequence strategies should be expected to be superior to using single messages. According to the IIT, attitudes (or beliefs) are shaped, reshaped, and confirmed as individuals are faced with new attitude-relevant information. How the new information is integrated into the knowledge base shaping the attitude is still inconclusive. The averaging model suggested that the new piece of information is *averaged* with the previously integrated information and the impact of the new information may depend on its given weight or importance (Kim et al., 2010). The adding model, however, suggests that the new piece of information, in this case provided by the second message in the sequence, is simply *added* to, rather than *averaged* with, the current knowledge base (Kim et al., 2010). Regardless of whether the *averaging or adding model* was applied, previous sequencing studies found evidence that the information
provided by the second message is relevant and significant in shaping (or reshaping) the attitude.

Yet, some questions remain unanswered, because the prior studies have presented conflicting results. Kim et al. (2010) found evidence for the superiority of the advertising-publicity sequence over its reverse sequence, and explained the results in the framework of confirmation effects (Deighton, 1984). More specifically, they suggested that advertising messages are evaluative in nature and as such are more prone to confirmation, while publicity messages are factual, thus less in need of confirmation. As Kim et al. (2010) argued, advertising messages preceding the publicity ones would necessitate confirmation, thus leading to greater processing of the publicity message by audience members, which would in turn lead to greater cumulative effect on the attitude compared to the reverse sequence in which publicity messages precede advertising ones. In the reverse scenario, the factual publicity message does not need confirmation, thus the advertising message does not significantly contribute to the effectiveness of the combined promotional effort. Revisiting the IIT, these findings would suggest that the information weights provided to each piece of information is indeed determined by the sequence position of the message source. Thus, Kim et al. (2010) findings would suggest that advertising information receives greater weight when preceding, rather than following, publicity in the message sequence. However, Loda et al. (2005, 2007) did not find attitudinal differences between the two sequences, thus finding no evidence of confirmation effect or position-dependent (or interdependent) sequence weighting. Instead, they found evidence for the independence of the weight given to each information source.

Complicating sequencing prediction may be due to the fact that neither Loda et al. (2007) nor Kim et al. (2010) directly examined the relationship between information retention and the attitude toward the product, especially in the context of new product introductions. Thus, what still remains unclear is whether the second message provides any additional contribution to the information retained via the first message and, if so, in what way? Also, is there a mediated (or indirect) effect of the first message on the attitude via the second message in the promotional message sequence?

Consequently, this study attempts to provide a better understanding of the impact of message sequencing on the relationships between new product information retention and product attitude. To do so, it is important to replicate the experimental designs featured in some previous studies (Kim et al., 2010; Loda et al., 2005, 2007). While there were conflicting results regarding the effectiveness of the publicity-only conditions in comparison with the advertising and publicity sequence conditions, there were consistent results in regard to the advertising-only condition, which was inferior to the rest. Yet, a fair question to ask would be whether the weakness of the advertising-only strategy could be attributed to the study designs in which advertising-only messages were presented once?
Advertising effectiveness increases with repeated exposure (McDonald, 1971; Tellis, 1988; Vakratsas and Ambler, 1999), so the effectiveness of a single advertisement exposure may be more limited as it may take as many as two to three presentations of the advertising message for its effectiveness to be maximized (Krugman, 1965; McDonald, 1971; Tellis, 1988). Hence was the advertising-only condition hindered by the design? In addition, while the advertising-publicity and publicity-advertising sequence conditions enjoyed the presentation of two messages (one advertising and one publicity); the advertising-only and the publicity-only conditions received a single message. Thus, the condition designs lacked equivalence as some participants received multiple messages and others a single one. For the effectiveness of the sequencing strategies to be fully judged as well as their independent and cumulative impact on the new product purchase decision process, a design is warranted in which all participants are subjected to equivalent number of messages (advertising-advertising, advertising-publicity, publicity-advertising, and publicity-publicity). An examination of the relationships with this new design allows for the advancement of the first question in this investigation.

RQ1: Does the second promotional message in the messaging sequence of a new product introduction, consonant with the predictions of IIT, contribute to the level of information retained from the initial promotional message in the message sequence when the new product information is positive?

Should there indeed be a significant impact of the second set of messages in the sequences on the level of product retention, a second question is warranted asking the following:

RQ2: In a new product introduction, is there a direct relationship (or influence) of the initial level of message-induced retention on the subsequent level of retention induced by the second promotional message in the sequence when the new product information is positive?

Discovering the presence of such a relationship should be important to practitioners, but mostly if the retention induced by the second message in the sequence has a significant impact on the attitude toward the product. Consistent with the prior research (e.g., Cacioppo et al., 1994), the following can be proposed:

H3: In a new product introduction, there is a significant positive relationship between new product information retention assessed after the presentation of the second sequence message and the product attitude when the new product information is positive.

Consequently, should there be a significant impact of the initial level of message-induced retention on the subsequent level of retention induced by the second promotional message, which itself should impact the product attitude, the following research question is proposed:
RQ3: In a new product introduction, is there a mediated effect of initial message (in the sequence) retention on the product attitude when the new product information is positive?

The above hypothesis and research questions explore the direct and indirect (or mediated) relationships among message-induced retention, using two separate messages in the message-sequence, and the attitude toward the product; yet, of primary interest in this investigation is the answer to the following question:

RQ4: In a new product introduction, what role does the second promotional message play in the cognition-affect (retention-attitude) portion of the hierarchy in all of the message sequence permutations (i.e., publicity-publicity, publicity-advertising, advertising-publicity, and advertising-advertising) when the new product information is positive?

Finally, in addition to attempting to provide an understanding regarding the relationships among the variables of interest, this investigation attempts to discover the answers to the following two pertinent questions:

RQ5: In a new product introduction, which message sequencing strategy generates the highest level of new product information retention when the new product information is positive?

RQ6: In a new product introduction, which message sequencing strategy generates the most favorable attitude toward the product when the new product information is positive?

Method

Pretests: Experimental Stimuli Selecting

In the first pretest, 50 college students were asked to provide ideas for products that would be specifically suitable and useful for college students, which resulted in 25 potential ideas for the products (or services) that would be of interest. A subsequent student sample (N = 74) was asked to rate each idea on a seven-point scale based on perceived relevance to college students. Based on this rating the top two ranked product ideas—the Study Buddy and the Super Filter—were selected. Both of these product ideas were designed to enhance student learning. The Super Filter was presented as a new personal digital assistant (PDA) designed to help students filter out irrelevant information shared in class lectures, while the Study Buddy was presented as a new device designed to help students retain the information acquired during class lectures. After the two products were selected, yet another pretest using students (N = 97) was conducted to select the companies that may be perceived by students as likely producers of the two selected products. From a larger list of electronics manufacturers, three corporations (Sony, Sanyo, and Xion) were selected. The product and manufacturing corporation were randomly assigned to study participants.3
Message Construction

This study employed a total of twelve messages, six for each product type. Half of the messages for each product type were advertising and the other half were publicity in the form of news stories (see Appendix for message samples). For the Super Filter, each of the three publicity messages numbered 312 words and only differed in respect to the corporate name highlighted (Sony, Sanyo, and Xion). Equivalent design was used with the Study Buddy. Each of the three messages numbered 307 words with only differences reflecting the corporate names used. The publicity messages across the products were also equivalent with only changes reflecting the different benefits of the two products.

The design procedure for the advertising messages closely followed that of the publicity messages. A set of three advertisements was designed for each product only differing in respect to the corporate name featured in the advertisements. Across the two products, the message differences only pertained to the different features associated with the products. Each advertisement presented the product in the middle of the advertisement featuring the corporate name; the product benefits in the body; and the corporate logo at the bottom on the advertisement. The layout of the advertisement remained unchanged for each message. All stimuli were presented in a quarter-page format.

Participants

Student participants (N = 423) enrolled in business courses at a Midwestern university were recruited for this study. According to Hawkins, Albaum, and Best (1977: 222), “for purposes of modeling underlying behavioral processes, students may serve as useful surrogates”. When they are a part of the target audience for the particular product at hand, student samples may be appropriate (Johansson, 1993; Liefeld, 1993). This study introduced products specifically tailored to students, thus making the students the most relevant target audience.

Procedures

A two-phase experiment, where participants received one message in each phase, was utilized. In Phase 1, participants were provided a two-page publication, The Informer, which featured multiple stories and advertisements pertaining to college students. The stimulus advertisements and stories were randomly embedded in this publication. Each participant received exactly one publicity or advertising message. Avoiding potential message presentation order-effects (Jones and Goethals, 1971; Kruglanski and Freund, 1983; Miller and Campbell, 1959), each message was randomly placed either on the first or second page.

Participants were told that the purpose of the experiment was to learn more about the potential for success of a new pilot college publication, The Informer. They were further informed that their input would be taken into consideration when judging the content and potential success of the new publication. After the instruction, the participants were provided with the two-page publication and
asked to return it to the researcher upon reading completion at which time they were provided with a short questionnaire. This design prevented the participants from referring back to the publication to inform their questionnaire input. The questions in this phase were primarily testing content retention of the publication including the stimulus-message, which furthered the illusion that the participants were evaluating the publication.

Phase 2 occurred in a time period of three to ten days after the conclusion of Phase 1. The design of Phase 2 was equivalent to that of Phase 1 except the Phase 2 questionnaire which included a measure for the attitude toward the product. In Phase 2, a new two-page pilot college publication, *The Dispatch*, was presented with new articles and advertisements. The content of the stimulus messages were unchanged from Phase 1; however, while each participant was once again randomly assigned to a publicity or advertising stimulus message in this phase, the product type (e.g., Super Filter) and corporation (e.g., Sanyo) matched the ones provided in Phase 1. To illustrate, a person who randomly received a publicity message stimulus about the Super Filter featuring Sanyo in Phase 1 was randomly assigned to receive another publicity or advertising stimulus for the same product, Super Filter, featuring the same corporation, Sanyo, in Phase 2. This design kept the product type and corporation constant at the individual level, but manipulated the message sequence where an individual could have received any of four message stimulus combinations (publicity-publicity, publicity-advertising, advertising-publicity, and advertising-advertising) over the span of both phases. As aforementioned, this more message equivalent design somewhat differed from the one offered by Loda et al. (2005, 2007) and Kim et al. (2010).

**Measures**

*Message-Induced Information Retention for the New Product*

The design for message-induced information retention for the product was equivalent in both phases. In each phase, participants were presented with 5 questions specific to the content of the stimulus message (Cameron, 1994). Following Cameron’s design, questions were presented in a true/false (e.g., “The Super-Filter is simply an on-the-go, up-to-the-minute resource that can be utilized by anyone, anywhere.” Response options: Did not appear in the reading material/Appeared in the reading material) format and multiple choice (e.g., “The Super-Filter organizes all of the information by using ______.” Response options: voice recognition software/optical scanning technology/memory based processing) format. Message-induced information retention was measured by counting the number of correct responses provided to the message-stimulus specific questions; thus providing a scale of 0 to 5.

*Attitude toward the Product*

The attitude toward the product scale employed a 16-item, seven-point semantic differential scale constructed by combining items from multiple existing and reliable scales. The items included in this investigation were: bad/good,
like/dislike, pleasant/unpleasant, high quality/poor quality, positive/negative, useful/useless, beneficial/not beneficial, valuable/worthless (Batra and Stayman, 1990), beneficial/harmful, likable/dislikeable, nice/awful, important/unimportant (Keller, 1991), desirable/undesirable (Bello et al., 1983), needed/not needed (Miller and Marks, 1992), interesting/boring (Kelleris et al., 1993), and appealing/unappealing (Miniard et al., 1992). The reliability level of the items used in this investigation was Cronbach’s \( \alpha = .95 \).

**Results**

**Manipulation Checks**

The first manipulation check was performed to test the presence of a positive linear relationship between new product retention and product attitude when the information shared in the promotional message is positive (or favorable) toward the product. A linear regression analysis was conducted with the Phase 1 (initial message in the sequence induced) new product information retention as a predictor variable and the attitude toward the product as an outcome variable. The model was significant and the relationship was supported, \( F(1, 421) = 126.12, p < .01, \) standardized \( \beta = .48, SE = .05, \) adjusted \( R^2 = 23\% \).

The next two manipulation checks were performed to test whether the above relationship would be moderated by the type of promotional tool used (advertising or publicity). The two linear regression analyses conducted produced once again statistically significant models, thus supporting the notion that the cognition-affect relationship in the hierarchy of effects model would not be moderated by the type of promotional message used (i.e., advertising: \( F(1, 209) = 57.16, p < .01, \) standardized \( \beta = .46, SE = .06, \) adjusted \( R^2 = 21\% \); publicity: \( F(1, 210) = 44.30, p < .01, \) standardized \( \beta = .42, SE = .09, \) adjusted \( R^2 = 17\% \)).

**Hypotheses and Research Questions**

Independent sample t-tests were performed in order to test the first two hypotheses and whether promotional messages presented in a form of publicity, as compared to advertising, would generate higher levels of new product information retention (H1) and more positive product attitudes (H2), provided the product information content was favorable. The results provided support for both hypotheses (see Tables 1 and 2).
Table 1
Independent and Paired Sample T-Test Results

<table>
<thead>
<tr>
<th>Outcome Variables</th>
<th>t</th>
<th>df</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Sample t-test (publicity vs. advertising)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H1: Phase 1 New Product Information Retention</td>
<td>6.37*</td>
<td>421</td>
<td>.09</td>
</tr>
<tr>
<td>H2: Attitude toward the New Product</td>
<td>5.50*</td>
<td>421</td>
<td>.07</td>
</tr>
<tr>
<td>Paired Sample t-test (phase 1 vs. phase 2 retention)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RQ1: Publicity-Publicity Sequence</td>
<td>2.93*</td>
<td>109</td>
<td>.07</td>
</tr>
<tr>
<td>RQ1: Publicity-Advertising Sequence</td>
<td>1.73</td>
<td>101</td>
<td>^</td>
</tr>
<tr>
<td>RQ1: Advertising-Publicity Sequence</td>
<td>5.42*</td>
<td>101</td>
<td>.23</td>
</tr>
<tr>
<td>RQ1: Advertising-Advertising Sequence</td>
<td>6.09*</td>
<td>108</td>
<td>.25</td>
</tr>
</tbody>
</table>

*Statistically significant at the p < .01 level.

^ Not statistically significant, p = .09.

The first research question inquired about the dynamic between the two promotional messages in the sequence relative to all four publicity and advertising permutations (publicity-publicity, publicity-advertising, advertising-publicity, and advertising-advertising). RQ1 specifically asked whether the subsequent message in the message sequence has any additional impact on the level of information retained via the first message. To answer this question a paired sample t-test was performed for each of the four sequences. No statistically significant change was discovered in the level of new product information retention between the two phases in the publicity-advertising sequence (see Tables 2 and 3). In the rest of the sequences, the level of new product information retention was significantly greater after the presentation of the subsequent message in the sequence compared to that of the initial one (see Tables 1 and 2).
Table 2

*Independent and Paired Sample T-Test Mean Comparisons*

<table>
<thead>
<tr>
<th>Outcome Variables</th>
<th>Group 1</th>
<th>n (SD)</th>
<th>Group 2</th>
<th>n (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Independent Sample t-test Comparisons</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H1: Phase 1 Product Information Retention</td>
<td>4.58*</td>
<td>212 (.62)</td>
<td>4.04*</td>
<td>211 (1.06)</td>
</tr>
<tr>
<td>H2: Attitude toward the New Product</td>
<td>5.51*</td>
<td>212 (.92)</td>
<td>5.00*</td>
<td>211 (1.01)</td>
</tr>
<tr>
<td><strong>Paired Sample t-test Comparisons</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RQ1: Publicity-Publicity</td>
<td>4.58*</td>
<td>110 (.58)</td>
<td>4.77*</td>
<td>110 (.50)</td>
</tr>
<tr>
<td>RQ1: Publicity-Advertising</td>
<td>4.57^</td>
<td>102 (.65)</td>
<td>4.39^</td>
<td>102 (.83)</td>
</tr>
<tr>
<td>RQ1: Advertising-Publicity</td>
<td>4.16*</td>
<td>102 (1.06)</td>
<td>4.78*</td>
<td>102 (.50)</td>
</tr>
<tr>
<td>RQ1: Advertising-Advertising</td>
<td>3.93*</td>
<td>109 (1.06)</td>
<td>4.54*</td>
<td>109 (.76)</td>
</tr>
</tbody>
</table>

*Statistically significant at the $p < .01$ level.

^ Not statistically significant, $p = .09$.

The second research question inquired about the direct effect of the first sequence message on the second in each of the four message sequence conditions. The answer to RQ1 showed no increase in message retention as a result of the second message in the publicity-advertising sequence, but increase in all of the other sequence conditions. To generate a more nuanced understanding of the relationship between the two variables (Phase 1 and 2 retention), linear regression analysis was performed for each of the message sequencing conditions in which the initial sequence message-induced retention (i.e., Phase 1 retention) was used as the predictor variable and the subsequent one (i.e., Phase 2 retention) as an outcome variable. The results were equivocal. No model support was discovered for the promotional conditions using mismatching tools, (i.e., publicity-advertising and advertising-publicity); however statistically significant support was discovered for conditions featuring matching promotional tools (i.e., publicity-publicity and advertising-advertising (see Table 3).

Next, a linear regression analysis for each sequence permutation was used to test the relationship between Phase 2 (subsequent message in the sequence induced) new product information retention as a predictor variable and the attitude toward the product as an outcome variable. The model was significant for each sequence; thus, H3 was supported (See Table 3).
The third question in this investigation asked whether the initial level of information retention (i.e., Phase 1 retention), in addition to its direct effect exemplified in the manipulation check results, exerts an indirect effect on the attitude toward the product (via Phase 2 retention). Since the direct paths from Phase 1 to Phase 2 retention for the two mismatching conditions (i.e., publicity-advertising and advertising-publicity) were not significant, mediation analyses were performed only for the two matching tool conditions (i.e., publicity-publicity and advertising-advertising). The Sobel test statistic, \( t = 2.13, p < .05 \), standardized \( \beta = .11 \), indicated a significant indirect effect for the publicity-publicity condition as well as a significant indirect effect for the advertising-advertising condition, \( t = 3.74, p < .01 \), standardized \( \beta = .20 \). Hence evidence of mediation was discovered in both conditions (i.e., publicity-publicity and advertising-advertising) where Phase 1 retention had an indirect effect on the attitude toward the product (via Phase 2 retention).

The fourth research question inquired about the joint impact of both Phase 1 and Phase 2 retention on the attitude toward the product for each message sequence. To answer this question for each sequence condition a hierarchical linear regression analysis was performed with Phase 1 retention entering the analysis in the first block and Phase 2 retention in the second. Attitude toward the product was used as the outcome variable. Retention was entered in the analysis in two separate blocks to preserve the time line in which the messages were presented and consequently the level of new product information retention.
attained. The final model was statistically significant for each of the message sequences with a considerable portion of the variance in the dependent variable explained (see Table 4).

Table 4
Regression Results

<table>
<thead>
<tr>
<th>Relationships Tested</th>
<th>Conditions or Sequences</th>
<th>F</th>
<th>p</th>
<th>df</th>
<th>std. β</th>
<th>SE</th>
<th>adj. R²</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Block 1 – Phase 1 Retention</strong></td>
<td>RQ4: Publicity-Publicity Sequence</td>
<td>26.86</td>
<td>*</td>
<td>(1, 108)</td>
<td>.45</td>
<td>.12</td>
<td>19%</td>
</tr>
<tr>
<td></td>
<td>RQ4: Publicity-Advertising Sequence</td>
<td>21.57</td>
<td>*</td>
<td>(1, 100)</td>
<td>.42</td>
<td>.13</td>
<td>17%</td>
</tr>
<tr>
<td></td>
<td>RQ4: Advertising-Publicity Sequence</td>
<td>33.86</td>
<td>*</td>
<td>(1, 100)</td>
<td>.50</td>
<td>.08</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td>RQ4: Advertising -Advertising Sequence</td>
<td>21.85</td>
<td>*</td>
<td>(1, 107)</td>
<td>.41</td>
<td>.08</td>
<td>16%</td>
</tr>
<tr>
<td><strong>Block 2 – Phase 1 Retention</strong></td>
<td>RQ4: Publicity-Publicity Sequence</td>
<td>^</td>
<td>^</td>
<td>^</td>
<td>.36</td>
<td>.11</td>
<td>^</td>
</tr>
<tr>
<td></td>
<td>RQ4: Publicity-Advertising Sequence</td>
<td>^</td>
<td>^</td>
<td>^</td>
<td>.40</td>
<td>.12</td>
<td>^</td>
</tr>
<tr>
<td></td>
<td>RQ4: Advertising-Publicity Sequence</td>
<td>^</td>
<td>^</td>
<td>^</td>
<td>.50</td>
<td>.07</td>
<td>^</td>
</tr>
<tr>
<td></td>
<td>RQ4: Advertising -Advertising Sequence</td>
<td>^</td>
<td>^</td>
<td>^</td>
<td>.25</td>
<td>.08</td>
<td>^</td>
</tr>
<tr>
<td><strong>Block 2 – Phase 2 Retention (Final Model)</strong></td>
<td>RQ4: Publicity-Publicity Sequence</td>
<td>32.71</td>
<td>*</td>
<td>(2, 107)</td>
<td>.43</td>
<td>.13</td>
<td>37%</td>
</tr>
<tr>
<td></td>
<td>RQ4: Publicity-Advertising Sequence</td>
<td>27.35</td>
<td>*</td>
<td>(2, 99)</td>
<td>.42</td>
<td>.09</td>
<td>34%</td>
</tr>
<tr>
<td></td>
<td>RQ4: Advertising-Publicity Sequence</td>
<td>40.62</td>
<td>*</td>
<td>(2, 99)</td>
<td>.45</td>
<td>.14</td>
<td>44%</td>
</tr>
<tr>
<td></td>
<td>RQ4: Advertising -Advertising Sequence</td>
<td>27.14</td>
<td>*</td>
<td>(2, 106)</td>
<td>.44</td>
<td>.11</td>
<td>33%</td>
</tr>
</tbody>
</table>

*Note.* *Depicts statistical significance at* *p* *< .001. ^Depicts same as the Final Model.

The final two question, asked which sequencing strategy produces highest levels of Phase 2 retention (RQ5) and consequently most favorable attitude toward the product (RQ6). To provide an answer to these questions two one-way ANOVA tests were used with Phase 2 retention and product attitude serving as dependent variables in each, and message sequencing as the independent one in both analyses. Univariate results showed significant differences for both Phase 2 retention, *F*(3, 419) = 8.48, *p* < .001, η² = .06, and product attitude, *F*(3, 419) = 25.37, *p* < .001, η² = .15. Simple comparisons showed the sequences that featured publicity as the subsequent message promotional tool, although not significantly different from each other, did generate greater levels of retention compared to the strategies featuring advertising as the second promotional tool in the sequence, which were also not significantly different from each other (see Tables 5 and 6).
### Table 5
Research Questions 5 and 6 Post Hoc Results

<table>
<thead>
<tr>
<th>Sequencing strategy comparisons</th>
<th>Dependent variables</th>
<th>Phase 2 retention</th>
<th>Attitude toward the product</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>t (df)</td>
<td>p</td>
</tr>
<tr>
<td>PUB – PUB vs. PUB – ADV</td>
<td></td>
<td>4.06 (210)</td>
<td>*</td>
</tr>
<tr>
<td>PUB – PUB vs. ADV – PUB</td>
<td></td>
<td>.17 (210)</td>
<td>.87</td>
</tr>
<tr>
<td>PUB – PUB vs. ADV – ADV</td>
<td></td>
<td>2.65 (217)</td>
<td>*</td>
</tr>
<tr>
<td>PUB – ADV vs. ADV – PUB</td>
<td></td>
<td>4.07 (202)</td>
<td>*</td>
</tr>
<tr>
<td>PUB – ADV vs. ADV – ADV</td>
<td></td>
<td>1.36 (209)</td>
<td>.18</td>
</tr>
<tr>
<td>ADV – PUB vs. ADV – ADV</td>
<td></td>
<td>2.71 (209)</td>
<td>*</td>
</tr>
</tbody>
</table>

* Depicts statistical significance at p < .01. ^ Effect sizes were not calculated for statistically insignificant results.

Regarding the attitude toward the product, simple comparisons showed the publicity-publicity sequence to generate the most positive product attitude, while the advertising-advertising sequence to generate the least positive attitude (see Tables 5 and 6). The sequences featuring the combination of the two tools were not significantly different from each other (see Tables 5 and 6).

## Discussion

This investigation focused on the relationships within the cognition-affect (retention-attitude) portion of the traditional cognition-affect-conation hierarchy of the effect models. The results, taken together, provide some better understanding of this relationship. Consistent with previous findings (Cameron, 1994), this study provided additional support for this linear relationship (both for Phase 1 and Phase 2 retention) irrespective of the promotional tools used (i.e., advertising or publicity). At the same time, also congruent with previous findings, this study discovered evidence that publicity, compared to advertising, (Phase 1) messages are more effective in generating both greater levels of retention and more positive attitudes toward the product (Cameron, 1994). Hence, this study provides further support that using promotional messages in the form of publicity may be more effective in both boosting retention and attitudes as publicity-sourced information is weighted heavier (or as more important) than advertising-sourced information.
Yet, of greater interest and import in this investigation is the cumulative impact of a second promotional message on the retention-attitude relationship. What kind of impact would it ultimately exert on the attitude, if any? The results of this study show a considerable cumulative impact of the second message in the attitude formation process. Stated differently, as a result of the introduction of a second promotional message, and consequently its impact on new product information retention, the percentage of the product attitude’s variance explained by retention approximately doubled. This was the case regardless of the combination of promotional message tool (i.e., advertising or publicity) used in the first and second stimulus-presentation (see Tables 3 and 4). As IIT suggests, and the results of this investigation clearly show, introduction of a second promotional message has a significant impact on the attitude formation process. For as long as the new product information is positive, using a combination of two promotional
messages increases the strength of the retention-attitude relationship, thus increasing the positive impact on the attitude. Still, does the message sequence permutation have an impact on the overall levels of retention and attitude favorability?

The results of this investigation show that the sequencing strategy used is relevant. At first glance, it might appear that this study provides additional support for the theorizing and findings of Kim et al. (2010) who suggested that advertising messages would not be optimized when following publicity messages in the promotional sequence due to the confirmation effect previously discussed. Some of the findings of this study seem to provide support for this view. As the results of this study show, retention levels were not boosted by the presentation of the second message in the publicity-advertising sequence strategy. Yet, in each of the other three conditions, retention increased as a result of the subsequent message. Thus, the advertising-publicity condition, again congruent with Kim et al.’ (2010) expectations, provided greater levels of new product retention, ostensibly as a result of the publicity message providing needed confirmation.

However, an examination of the direct relationship between Phase 1 and 2 retention for each of the four sequence strategies shows it to be significant only for the matching tool conditions (i.e., publicity-publicity and advertising-advertising). In the mismatching tool sequences (i.e., publicity-advertising and advertising-publicity), the relationship between Phase 1 and 2 retention was not significant. Hence, it appears that the first message in the mismatching sequence and its corresponding retention level did not have a significant impact on the second one. Stated differently, the two messages in the advertising-publicity and publicity-advertising sequences had an independent effect on retention and the attitude toward the product. Thus, contrary to the suggestions of Kim et al. (2010), this finding seems to suggest that the two messages in the sequence were processed independently of one another, which seems to suggest that the second message in the sequences was not used by participants as a confirmation tool of the initial message content. A plausible explanation for the independence on the two messages may actually reside in the different format of promotional message presentation. Given that the messages were presented via different promotional tools in each phase (i.e., as publicity in one and advertising in the other), it may be reasonable to assume that they were processed as separate messages; or stated differently, that their content congruence was overshadowed by the format difference.

Further evidence for the relevance of the promotional message tool congruence in the strategic sequence is provided by the relationship between Phase 1 and 2 retention in the matching sequences. In both of these sequences (i.e., advertising-advertising and publicity-publicity), the direct relationship between Phase 1 and 2 retention was significant. In addition, for both matching sequences, mediation analyses uncovered an indirect (or mediated) effect of Phase 1 retention of the product attitude (via Phase 2 retention). Hence, it does seem
that in the sequences where the messages were not only consistent in content, but also in presentation format, the messages were not processed independently from one another. Instead, it is plausible that the messages in the second presentation phase were recognized as the same from the initial one, thus biasing the subsequent message processing, retention, and ultimately the product attitude. As a result of the empirical evidence in this study, it may be concluded that keeping the format consistent in sequencing strategies may enhance the effectiveness of the initial message in the traditional hierarchy of effects.

Finally, what is the ultimate impact of the four promotional message sequences on the overall new product information (Phase 2) retention and attitude toward the product? The results of this study show different effects on these two variables as a result of the promotional tool permutations. However, some consistencies did emerge. Overall Phase 2 new information retention was higher in the sequences which featured publicity as the second sequence message (i.e., advertising-publicity and publicity-publicity) compared to those featuring advertising (i.e., advertising-advertising and publicity-advertising). In addition, no differences were discovered between the sequences with identical second message tool (i.e., advertising-publicity vs. publicity-publicity; and advertising-advertising vs. publicity-advertising) in regard to retention. This finding seems to suggest a recency effect. Phase 2 retention was higher when publicity was the most recent message tool used, which is not surprising given the results of the current and previous (Cameron, 1994) studies.

Regarding the attitude, the publicity-publicity message sequence created the most positive attitude toward the product, while the advertising-advertising sequence generated the least positive product attitude. The other two (mismatched) sequences generated attitudes that were undifferentiated from one another, but more positive than the advertising-advertising sequence and less positive than publicity-publicity sequence. Once again, at first glance, one may point to an apparent inconsistency in the mismatched sequences regarding the Phase 2 retention level and the product attitude. More specifically, while the advertising-publicity sequence generated greater Phase 2 retention (perhaps due to recency effect) compared to the publicity-advertising sequence, the two sequences did not produce significant differences on the product attitude. Hence, a quick conclusion might emerge that no connection exists between the level of retention and attitude. Yet, a deeper look at the findings does suggest consistency in this study’s findings. To remind, in the mismatched sequences, the evidence points to no connection between Phase 1 and 2 retention and no mediating effect of Phase 1 retention on the attitude. Thus, the effect on the attitude in these two mismatched sequences is direct from Phase 1 and 2 retention. So, while Phase 2 retention was higher in the advertising-publicity sequence, Phase 1 retention was higher in the publicity-advertising condition. Given that the processing of the two messages in the sequence was independent, the impact of the two message
sequences on the attitude should have been equivalent, which was indeed the case in this study and consistent with the findings of Loda et al. (2007).

The matched sequences had the advantage of producing, in addition to the direct effects from Phase 1 and 2 retention on the attitude, an indirect (or mediated) effect on the attitude (i.e., Phase 1 retention to product attitude via Phase 2 retention). Yet, it appears that the added indirect effect in the advertising-advertising sequence was not enough to compensate for the lower effectiveness of the advertising messages compared to the publicity ones in generating product retention. Consequently, the advertising-advertising sequence generated the least favorable attitudes toward the product. On the other hand, the publicity-publicity sequence was the superior strategy in creating the most positive attitudes toward the product. This strategy likely benefited not only from the sequencing congruency, which added a mediated effect between Phase 1 retention and the product attitude in addition to the direct ones, but especially from using publicity in each sequence as a strategy which created the highest levels of product retention in both phases.

**Conclusion**

This investigation provides some clarity and nuanced understanding of the cognition-affect (retention-attitude) portion of the traditional cognition-affect-conation hierarchy of effects model as it focused specifically on the retention-attitude relationship, which it confirmed, in the context of new product introductions. As this investigation showed, compared to advertising, publicity-based promotional messages generate greater levels of new product information retention and more positive product attitudes, when the information in the messages is favorable to the product.

Of greater import in this investigation was to uncover an approach to strengthen the retention-attitude link as well as to boost the retention level, both of which should contribute to positive attitude creation in the context of new product introduction. The findings of this investigation showed that using a publicity, compared to an advertising, promotional message format boosts the level of retention. In addition, using a second promotional message significantly strengthens the relationship between the new product information retention and the product attitude. Moreover, using a consistent or matched tool (i.e., either advertising or publicity) in the promotional message sequences, further strengthens the relationship between retention and the attitude by creating additional direct (Phase 1 to Phase 2 retention) and indirect (Phase 1 retention to product attitude) links. Consequently, the publicity-publicity promotional message sequence emerged as the most effective promotional strategy as it provides the advantage of using publicity messages twice, which generate higher levels of retention compared to advertising messages. At the same time, given its congruency of both message and format, it also benefits from the creation of a mediated effect from Phase 1 retention to the product attitude.
Finally, it is relevant to mention that this study is not without limitations. Even though the products and publications used in the current studies were specifically designed to be suitable for the target audience, it is worth noting that both the products and the publications were fictitious and the college student audience was mostly homogeneous, thus potentially challenging the external validity of the study. In addition, the message sequencing effect on boosting retention (cognition) was only examined as it relates to its impact on the product attitude (affect), but not purchase intent or behavior (conation). Future studies should examine the impact of message sequencing on the entire traditional hierarchy of effects (cognition-affect-connation) and not only its first two components.

Endnotes

1. The products used in this investigation were moderate to high-involvement (Mrange = 4.2 - 4.5 on a seven point scale).

2. The single divergent finding was provided by Loda et al. (2005, 2007) who found publicity used as a single strategic tool to be superior to the advertising-publicity sequence and equivalent to the publicity-advertising sequence.

3. Three One-Way ANOVA tests were performed to check the equivalence among the six product/manufacturer conditions on the outcome variables: Phase 1 retention, Phase 2 retention, and product attitude. The results showed no significant differences among the conditions (Super Filter/Sony; Super Filter/Sanyo; Super Filter/Xion; Study Buddy/Sony; Study Buddy/Sanyo; and Study Buddy/Xion) on Phase 2 retention, F(5, 417) = 1.95, p = .08. However, significant differences were discovered on Phase 1 retention, F(5, 417) = 5.44, p < .01, η2 = .06, and product attitude, F(5, 417) = 7.33, p < .01, η2 = .08. The differences were a result of one condition, Study Buddy/Sony, which showed slightly higher levels of retention and attitudes. However, given the fact that this condition was randomly and relatively evenly distributed among the four sequence groups (condition sample range: 19-22) with no significant mean differences among the sequences on Phase 1 retention, F(3, 80) = 2.14, p = .10, and product attitude, F(3, 80) = 1.21, p = .31, all of the product/manufacturer conditions were combined in the analyses.
References


Appendix

Two groups go online to fight to change legal drinking age to 18

by Jesse Leak
Staff Writer

Congress passed the National Minimum Purchase Age Act in 1984, encouraging states to pass laws to require citizens to be 21 or older to buy alcohol. The act did not take away states’ rights to make their own laws about the legal purchase age—it took away the incentive. The act withholds a percentage of federal highway funding from the states that decide not to pass a legal age 21 law. However, alcohol is a reality for younger people across the country, whether they are older or younger than 21.

For this reason, nonprofit organizations Choose Responsibility and the National Youth Rights Association have formed. These groups have goals of a minimum purchase age of 18 and new alcohol education policies. But the organizations are only beginning to fight legal age 21 laws. “Our goal is to start a debate,” said Grace Ksenjenberg, assistant director of Choose Responsibility. Ksenjenberg said media attention has been helpful in starting this debate. “We’re trying to mobilize and motivate college and high school students to come together and start discussing it and debating it and getting bills introduced,” said Alex Kecoynay-Tallico, executive director of NYRA. “But we’re still in the early stages of this. It takes time to get people thinking and talking about it.” Both groups intend to eventually see change.

Note: A sample of Phase One advertisement for Sony and Study Buddy.
Appendix

**The Informer**

**Two groups go online to fight to change legal drinking age to 18**

by Jesse Leah

Staff Writer

Congress passed the National Minimum Purchase Age Act in 1984, encouraging states to pass laws to require citizens to be 21 or older to buy alcohol. The act did not take away states rights to make their own laws about the legal purchase age – it took away the incentive. The act withholding a percentage of federal highway funding from the states that decide not to pass a legal age 21 law. However, alcohol is a reality for young people across the country whether they are older or younger than 21. For this reason, nonprofit organizations such as the National Youth Rights and Responsibilities Association have formed. These groups have goals of a minimum purchase age of 18 and new alcohol education policies. But the organizations are only beginning to fight illegal age 21 laws.

“Our goal is to start a debate,” said Grace Kronenberg, assistant director of Choose Responsibly. Kronenberg said media attention has been helpful in starting this debate.

“We’re trying to mobilize and motivate college and high school students to come together and start discussing and debating it and getting bills introduced,” said Alex Kroon-Rikely, executive director of MYRA.

“But we’re still in the early stages of this. It takes time to get people thinking and talking about it.” Both groups intend to eventually work with Congress and the See DRINK

**Sony Educational Electronics announces Study-Buddy rollout**

Sony Educational Electronics today announced its new device to enhance student learning in America’s colleges and universities. The Study-Buddy, expected to be sold in stores soon, is designed to help students retain information they receive from class lectures. The Study-Buddy is an on-the-go, on-demand resource that can be utilized by anyone, anywhere, anytime. It can help students with assignments, tests, and lecture content.

“Before, I didn’t think [the Study-Buddy] would work, but I saved 30 minutes a night by using it,” stated Jason Brum, a Duke University senior. “I wish I had used it throughout my college career.” The new device can be programmed to send automatic emails or text messaging notices with short bullets of information, which mirrors a virtual on-line note-taking system to reinforce student learning and retention processes. In some cases, customization with school textbooks and class syllabi are offered. Sony invested $10 million in the product’s design and plans to allocate an additional $2 million to provide ongoing training and support to students who purchase the product. Dieter said Sony Educational Electronics was established by its parent company Sony Corporation of America in 2005. Sony Corporation of America is a leading manufacturer of audio, video, communications, and information technology products for the consumer and professional markets.

**Note:** A sample of Phase One publicity news story for Sony and Study Buddy.
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