The power of consumption-imagery in communicating retail-store deals

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Abstract

We show that subtle differences in textual marketing communications can impact the evocation of consumption-imagery, implicitly subsuming all the senses, which consequently affects consumer attitudes toward the communication and the product. Specifically, we demonstrate, through four experiments, that retail-store deals which communicate stronger association between products (“get matching shirt free”) are more imagery-evocative compared to those with weaker association (“get second item free”), thereby impacting consumer evaluations. We use literature on imagery, sensory perception, and information processing, specifically relational and item-specific processing, to build our hypotheses. We also provide evidence for how working memory capacity limitations disrupt imagery processing. Our results on effective communication of retail-store deals are even more crucial in today’s digital marketplace where imagery is especially important.

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Keywords: Consumption-imagery; Verbal communications; Price promotions; Associative cues; Cognitive load.

Introduction

Verbal (written) marketing communications unaccompanied by pictures are abundant. These can be in the form of texts, emails, or pop-ups on cell phones and computers, or banners on television and outdoor monitors; and can contain advertising or promotions for retail products and services. Clearly, managers want these communications to be persuasive. How does one increase their persuasiveness, especially alongside countless competing visual and other sensory cues? One manner in which they could do so is through evoking mental imagery.

We argue that subtle differences in verbal communications, in terms of suggestive associations between components of the same retail experience, affect how much consumption-imagery (multi-sensory imagery related to a single consumption instance) is generated by the consumer. The consumption-imagery generated then impacts the effectiveness of the communication. Suggestive associations can be made in a myriad of ways. Within the context of retail-store price promotions, for example, multiple restaurants advertise “buy one adult meal and get one child’s meal for free” (linking the consumer to another person and associating their meals) while many others have a “50% off” deal (not having such an association). Some clothing stores offer “free gloves with purchase of winter hats” (connecting products); still others offer a straightforward “$10 off each item” (not making any associations).

Table 1 depicts various examples of retail-store deals from the marketplace where some deals suggest stronger associations between products (e.g., “70% off on reclining sofas when you buy the matching loveseat or chair”) and others suggest weaker or no association between products (e.g., “buy 1, get 50% off your second item;” “10% off dinner buffet”). We argue that promotions qualified on stronger associations between multiple products are also more effective in inducing consumption-imagery compared to deals with weaker associations, even in verbal communications and even when they offer comparatively identical or lower objective savings.

More specifically, we propose that communications with a stronger suggestive association between components of the same consumption experience, such as the first restaurant deal described above (“buy one adult meal and get one child’s meal for free”), may conjure greater mental imagery, for example, a vision of a family-evening with the consumer and her child eating out along with related associations in the other senses,
whereas the straight 50% off deal may be less imagery evocative. Similarly, the first winter clothing deal on items that can
be potentially worn together (“free gloves with purchase of winter hats”) may activate a more elaborate mental experience
compared to a conventional price-off deal on individual items, or compared to an offer of a “second winter hat free with pur-
chase of one,” which cannot be part of the same ensemble. The
greater consumption-imagery generated through such suggestive
associations will then increase the persuasiveness of the com-

communication.

MacInnis and Price (1987, p. 473) describe imagery as a “pro-
cess by which sensory information is represented in working
memory”. Greater imagery has been shown to improve criti-
cal consumer responses like memory, attitude, and preference
(Bone and Ellen 1992; Wyer and Adaval 2003). Several factors
have been identified that moderate the effectiveness of imagery
in impacting consumer perception and behavior, including
the type of information that the imagery is based on (e.g., narratives
vs. lists, Adaval and Wyer 1998), the extent to which one incor-
porates oneself into the imagery (Aydinoglu and Cian 2014),
the perspective one takes in the generation of these images (i.e.,
actor vs. observer, Hung and Wyer 2009; Jiang and Wyer 2009),
and the goals one might have when engaged in imagery pro-
cessing (e.g., information search vs. story creation, Jiang et al.
2014). Still, many researchers indicate the need for development
of the conceptual and applied aspects of imagery theory (Hung
and Wyer 2011).

We try to respond to Hung and Wyer’s (2011) call for more
subtle techniques of evoking imagery as part of the every-
day retailing landscape, as opposed to the more typical use
of imposed visuals or explicit instructions to imagine (see
also Petrova and Cialdini 2005). We show that subtle differ-
ences in the communication of everyday verbal retail-store
deals can result in differences in (spontaneous) consumption-
imagery. We build on previous imagery research from consumer
behavior and cognitive psychology, in relation to the type of
processing and working memory operations, to highlight the
facilitative influence of associative cues for activating additive
effects of relational and item-specific processes as part of
imagery generation. Since generation of imagery is activated
through associations between its components, it more readily
depicts an integrated and holistic instance, hence improving its
effectiveness (Alessandrinig and Sheikh 1983; Bone and Ellen
1992). Also, since the imagery is self-generated as opposed
to advertiser-imposed, it is likely to evoke personally relevant
imagery – drawing from the individual’s own experience – and
hence be more meaningful and persuasive (Jiang et al. 2014).

Our conceptualization also highlights the holistic and multi-
sensory nature of the imagery experience. Earlier research
on imagery and sensory perception has focused more heavily on
the generation of visual mental imagery or imagery depicted in other
single sensory modalities (e.g., Babin and Burns 1997; Rossiter
1982). Later work has advanced our understanding of mental
imagery processes in multi-sensory modalities and interactive
effects of different sensory stimuli (e.g., Biswas et al. 2014;
Cornil and Chandon 2016; Elder and Krishna 2012). We add
to this body of work with our focus on evocation of mental
imagery, inherently spanning across multiple senses, through
verbal stimuli.

We additionally show a new domain (retail-store deals) where
imagery research can be applied. Prior imagery research has
focused on the domains of textual and radio advertising (Miller
and Marks 1997; Unnava and Burnkrant 1991), new products
(Dahl, Chattopadhyay, and Gorn 1999; Zhao, Hoefler and Dahl
2009), and virtual shopping environments (Schlosser 2006).
Recent work has also highlighted the role of imagery in com-

Table 1
Retail-store deal Examples from the marketplace.

<table>
<thead>
<tr>
<th>Stronger Suggested Association</th>
<th>Weaker or No Suggested Association</th>
</tr>
</thead>
<tbody>
<tr>
<td>between Multiple Products</td>
<td>between Multiple Products</td>
</tr>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
<tr>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
<tr>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
</tr>
</tbody>
</table>

In a set of four experiments, we demonstrate that communications of retail-store deals that result in higher
consumption-imagery (through associating components of a single consumption instance) are evaluated more favorably; also,
consumption-imagery mediates the effect of deal communica-


tions on consumer attitudes. Furthermore, we show evidence for a boundary condition of our proposed effects where limitations in working memory capacity (through cognitive load) mitigate the effectiveness of consumption-imagery generation corroborating our conceptualization of how imagery processing works.

Conceptual development

In this section, we discuss the generation of mental imagery, the different types of processing that affect imagery generation through associations, what imagery does for the persuasive appeal of the promotion, and how working memory capacity limitations might disrupt imagery processing.

Generation of mental imagery – the holistic nature of the experience

Besides MacInnis and Price’s (1987) definition of mental imagery discussed earlier, other separate but synergistic views for mental imagery have been offered. Oliver, Robertson, and Mitchell (1993; see also Holbrook 1983, and Childers and Houston 1984), for instance, suggest that mental imagery is a conceptually distinct and more holistic way of processing and representing information in working memory compared to discursive processing, where language and symbols are stored more as individual pieces of information. Holbrook (1983, p. 65) similarly suggests that “...discursive thought processes refer to a type of experience in which elements are dealt with separately... by contrast, presentational experience involves the simultaneous apprehension of a whole pattern so that the various components are presented all at once, as a totality, and we can perceive this as one configuration of elements”.

Based on these conceptualizations of mental imagery, a room may be stored as a mental image (the visual three-dimensional image of the room with its contents along with how it smells and sounds) or in a discursive fashion (as piecemeal information about the room – it was large, it had three people in it, it had a sofa, etc.). Further, mental imagery facilitates relationships between objects compared to discursive processing (How far was person 1 from person 2? How far was person 1 from the door? Who was speaking to who?).

Given the holistic nature of mental imagery with simultaneous apprehension of the components of a specific experience, one would think that the reverse would also be true – that is, stimuli that suggest relationships (associations) between objects, and that facilitate such apprehension of a whole pattern would also facilitate greater imagery. There is also extensive research on imagery which would support this proposition. We discuss this next.

Effectiveness of imagery eliciting strategies

Many triggers have been proposed for eliciting imagery and the effectiveness of these triggers has also been studied.

Triggers for eliciting imagery: Many different elements of a communication may trigger imagery processing. These include concrete words and sentences with high imagery value (e.g., concrete word “dog” vs. abstract word “justice,” Babin, Burns, and Biswas 1992), external pictorial stimuli (e.g., photograph of an automobile negotiating a curve in the road; Babin and Burns 1997), and instructions to imagine (e.g., “take a moment and imagine...”; Gregory, Cialdini and Carpenter 1982). We add associative cues in verbal communication (specifically retail-store deals) to this list.

Criteria for judging the effectiveness of an imagery eliciting strategy (i.e., How good is the imagery?): To assess the effectiveness of imagery-eliciting strategies, prior researchers have considered (at least) four dimensions of imagery – vividness and clarity of imagery, extent, and ease of imagery, and links experienced (Anderson 1983; Ellen and Bone 1991; Jia et al. 2017; Kisielius and Sternthal 1986). Vividness and clarity are jointly identified as a major dimension of imagery, where vividness is more closely associated with the intensity of imagery, and clarity refers to the detail of these images (Ellen and Bone 1991). While vividness and clarity tap into the qualitative aspects of mental imagery, Smith, Houston, and Childers (1983) stress quantitative differences in imagery processing – the quantity (extent) and number of evoked scenes and sensations – which may or may not be related to the vividness of the images, and are considered as a separate dimension by some researchers (e.g., McGill and Anand 1989). Ease of imagining has been suggested as another important aspect of imagery processing (Anderson 1983). For instance, much of the demonstrated effects of concrete (vs. abstract) words on recall are attributed to the ease with which associated images can be generated (Ellen and Bone 1991). The final noted dimension of imagery is imagery links which relates to connections to and activation of other information in long-term memory (Kisielius and Sternthal 1986). Such links have been suggested to ultimately result in greater elaboration and therefore greater availability of the information at judgment or decision-making time (Ellen and Bone 1991). Next, we examine how the strength of associative cues can impact these dimensions of imagery.

Why are more associative cues more imagery evocative?

We have proposed that more associative cues are more imagery evocative based on a reverse-holistic processing argument – since imagery processing is more holistic and relational, more relational processing is more likely to result in greater imagery. We now review some other literature for the same argument.

Item-specific and relational processing and associative cues: There are (at least) two different types of encoding and elaboration that facilitate comprehension (Einstein and Hunt 1980; Tversky 1977): Item-specific processing focuses on the specific characteristics and unique properties of individual items while relational processing focuses on similarities or shared themes among pieces of information (Eysenck 1979; Meyers-Levi 1991). But, if stimuli already has a relational quality built into its structure (Hoffman 1990), relational processing may be induced automatically, even if further attention is not drawn
to similarities among the stimuli (Bousefield 1953; Hoffman 1990).

Hunt and Marschark (1987) assert that imagery processes may be better understood in terms of item-specific and relational information. Since item-specific processing emphasizes distinctiveness, it likely improves the imagery value of individual concrete items by facilitating the encoding of their specific characteristics. This would be most influential on the vividness and ease dimensions of the imagery generated. Relational processing, on the other hand, emphasizes similarities and links between items, and promotes organization of stimuli in a holistic fashion. Therefore, it would facilitate the generation of interactive imagery (Lutz and Lutz 1977) with stronger semantic or spatial relationships between items, enhancing the extent/quantity dimension of imagery and links with long-term memory. In fact, previous work on false memory and imagery encoding has shown that after listening to an experimenter read lists of thematically related items (e.g., table, couch, lamp, desk), study participants often falsely reported other items, related to those presented (e.g., chair), in retrieval tasks (Foley et al. 2006).

Additive effects of item-specific and relational processing through associative cues: Item-specific and relational types of processing are usually treated as distinct. Numerous studies, however, have demonstrated the additive effects of these two types of information processing (e.g., Einstein and Hunt 1980; Hoffman 1990; Marschark and Hunt 1989). For instance, Einstein and Hunt (1980) show that when the same list of 36 concrete nouns are processed with instructions that direct attention either to relational aspects of the items (i.e., taxonomic organization) or to the individual items themselves (i.e., pleasantness ratings) or to both, incidental learning performance is superior with combined processing over that of either task alone. The authors suggest that relational processing enhances the formation of retrieval schemes, whereas item-specific processing facilitates discriminative processes. Furthermore, Marschark and Hunt (1989) demonstrate, through paired associate learning experiments, that concreteness (i.e., distinctiveness) effects are diminished by impeding relational information, and conclude that relational information also acts as “higher order” distinctive information, differentiating each associated pair from other pairs in the list. Thus, relational information seems to further strengthen the distinctiveness effects of item-specific processing.

Accordingly, we propose that communications which present consumers with stronger associations between components of a specific consumption experience should be naturally more prone to relational processing, which, in turn, should also improve distinctiveness of associated individual components, leading to enhanced overall imagery. Consumers are likely to imagine consumption episodes (e.g., having dinner with a friend, wearing nice clothes on a date) when purchasing products for consumption rather than, say, imagining their cupboard or a store, and this consumption-imagery should be meaningful in driving consumer attitudes to the deal. Extensive research has demonstrated that greater imagery increases communication effectiveness. Better imagery has been shown to enhance learning and memory (Elliott 1973), facilitate brand recall (Childers and Houston 1984), improve consumer attitudes and purchase intentions (Aydinoglu and Krishna 2012; McGill and Anand 1989), and enhance persuasion (Escalas 2004; Keller and McGill 1994). Thus, we propose that:

- **H1 (Suggestive associations and consumption-imagery):** Verbal deal communications with stronger suggestive associations between multiple components belonging to the same retail consumption experience will evoke more mental imagery about the experience (consumption-imagery) than communications with weaker associations.

- **H2 (Suggestive associations and communication effectiveness):** Verbal deal communications with stronger suggestive associations between multiple components belonging to the same retail consumption experience will result in improved evaluation of the deal (and the target product) than communications with weaker associations.

- **H3 (Consumption-imagery mediation):** Consumption-imagery will mediate the effects of deal communications on consumer evaluations.

Disruption of mental imagery

By definition (MacInnis and Price 1987), mental imagery requires representation of sensory information in working memory. Working memory is an assembly of structures and processes that is used for temporarily storing and manipulating information in memory (Baddeley 1986), and since the capacity of working memory is limited, different activities compete over its resources (Van Dillen and Koole 2007).

While we propose a spontaneous triggering of the processes of imagery generation for the consumption experience through associations between its components, the generation of such imagery should depend on the situational availability of cognitive resources in working memory. Previous research also highlights the role of working memory capacity limitations on the generation of imagery across different modalities (Baddeley and Hitch 1974; Logie 2014). Accordingly, an external task that imposes limitations on working memory capacity might disrupt imagery generation and mitigate the proposed effects of deal communications on attitudes. Thus, we expect cognitive load to act as a boundary condition for our proposed model:

- **H4 (Mitigation of consumption-imagery generation through cognitive load):** The effect of deal communications on consumption-imagery and, in turn on consumer evaluations, will be mitigated under cognitive load.

Next, we test our hypotheses in a set of four studies. Table 2 provides an overview of these studies.
Table 2
Overview of studies.

<table>
<thead>
<tr>
<th>Study/retail product category</th>
<th>Type of retail-store deal</th>
<th>Dependent variable</th>
<th>Predominant individual study objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study 1 (clothing)</td>
<td>Any second item 50% off with purchase of jeans</td>
<td>Matching shirt 50% off with purchase of jeans</td>
<td>Deal attractiveness</td>
</tr>
<tr>
<td>Study 2 (clothing)</td>
<td>Second pair of jeans 50% off with purchase of first pair</td>
<td>Matching shirt 50% off with purchase of jeans</td>
<td>Attitudes</td>
</tr>
<tr>
<td>Study 3 (furniture)</td>
<td>70% off on reclining sofas and loveseats</td>
<td>70% off on reclining sofas when you buy matching loveseat</td>
<td>Attitudes</td>
</tr>
<tr>
<td>Study 4 (winter accessories)</td>
<td>Second hat 50% off with purchase of a winter hat</td>
<td>Matching gloves 50% off with purchase of winter hat</td>
<td>Attitudes</td>
</tr>
</tbody>
</table>

Study 1 – clothing deals: matching shirt versus any second item with purchase of jeans

Methodology

**Design:** We used a one-way (verbal deal communication: more associative vs. less associative) between-subjects design in this study. 135 undergraduate students (52% female) from a Midwestern university participated in the experiment for extra credit.

**Stimuli, procedure and pre-test:** The context of the study was communication of price promotions for the retail category of clothing. The imagery-eliciting strategy tested in the study was motivated by the examples noted in the introduction around ‘matching’ clothing item. In the more associative communication condition, the deal emphasized the matching of jeans and shirts focusing on an association between multiple products directly. In the less associative condition, the consumer could take advantage of the discount on any second item, with no specifications made on whether the two products were matching or not. Participants were presented with the following instructions: “There is a clothing store that you regularly shop from selling jeans, jackets, sweaters, shirts, and accessories. The store has issued the following promotional campaign on jeans and shirts. Please carefully review the deal and answer the following questions accordingly.” Participants then saw the deal communication in line with their assigned condition:

**Less Associative Deal:** “Great Deal on Selected Jeans and Shirts! Buy one item and get the second item of equal or less value for 50% off.” (*Footnote: Regularly, both jeans and shirts are priced between $19.99 and $39.99. Matching jeans and shirts have the same price.)*

**More Associative Deal:** “Great Deal on Selected Jeans and Shirts! Buy any one of the selected pair of jeans and get the matching shirt for 50% off.” (*Footnote: Regularly, both jeans and shirts are priced between $19.99 and $39.99. Matching jeans and shirts have the same price.)* Note that the price promotion in the more associative condition was more restrictive since participants were limited to choosing a ‘matching’ product for the discount. We ran a pre-test to ensure that the manipulation reflected differential levels of association strength between the promoted products across different deal communication conditions. 52 undergraduate students with similar demographics to the main study reviewed the promotion and rated their agreement to three statements on seven-point scales (“The two products can be worn together;” “The promotional message reflects relation between the products;” “The products are associated;” Cronbach’s Alpha = .89). The more associative deal condition was rated as reflecting greater connection between the products compared to the less associative condition (Mmore-associative = 5.77; Mless-associative = 4.68; F(1,51) = 7.80, p < .01). The two deals were equivalent on novelty (p > .2), and were then used in the main study as the deal communication stimuli.

**Measures:** The dependent variable – evaluation of the communication – was operationalized using the five-item scale of ‘perceived deal attractiveness’ developed by Berkowitz and Walton (1980). The scale consisted of seven-point semantic differential questions on perceived worth, price acceptability, perceived savings, value for money, and willingness to buy (Cronbach’s Alpha = .84). Consumption-imagery was operationalized using a three-item scale that we developed for the specific consumption experience in the scenario, aiming to capture interactive imagery of the holistic experience. Participants rated their agreement to three statements on seven-point scales anchored at ‘strongly agree’ and ‘strongly disagree’ (“I visually imagined the possible products I could buy”; “I pictured myself actually shopping in the store”; “I visually imagined possible outfits with the products I could buy”; Cronbach’s Alpha = .71). Last, we measured gender.
Results and discussion

Gender effects were not significant (ps > .2), and are not reported any further. Two analysis of variance tests were conducted with deal communication as the independent variable, and consumption-imagery and deal attractiveness as the dependent variables respectively. As expected, participants exposed to the imagery-eliciting deal with the more associative condition reported higher consumption-imagery compared to the participants exposed to the less associative deal ($M_{\text{more-associative}} = 4.67; M_{\text{less-associative}} = 3.81; F(1,131) = 13.72; p < .001$), in accordance with hypothesis 1. Further, consistent with hypothesis 2, participants in the more associative condition evaluated the deal significantly more favorably than the participants in the less associative condition ($M_{\text{more-associative}} = 4.80; M_{\text{less-associative}} = 4.45; F(1,131) = 5.03; p < .005$).

Imagery mediation: Analyses conducted through Hayes’ (2012; model 4) macro with 10,000 bootstrapped samples indicated indirect-only mediation, supporting hypothesis 3. Deal communication had a significant effect on consumption-imagery as shown earlier ($\beta = -.86$, $t = -3.79$, $p < .01$). Controlling for deal communication, the proposed mediator, consumption-imagery, had a significant and positive effect on deal attractiveness ($\beta = .12$, $t = 1.98$, $p < .05$). Controlling for consumption-imagery, deal communication no longer had a significant impact on deal evaluations ($p > .1$). The indirect path of the effect of deal communication on evaluations through consumption-imagery was also significant, with the 95% confidence interval excluding zero ($-.26, -.02$).

Accordingly, study 1 showed support for hypotheses 1 through 3. It could be argued that the communication of the deals across the more versus less associative conditions could differ on the inherent concreteness and specificity of the stimuli (matching shirt vs. any second item). We address this issue in study 2 with a similar design, but with equivalent concreteness across the deal communication stimuli using specific products for both conditions.

Study 2 – clothing deals: matching shirt versus second pair with purchase of jeans

Methodology

Design and procedure: Study 2 used a similar design and procedure to study 1 (verbal deal communication: more associative vs. less associative), and an identical deal for the more associative condition with a discount on matching shirt with the purchase of a pair of jeans. In the less associative condition, the deal was on another specific (and concrete) product – a second pair of jeans. 233 people participated in the study from an online panel. Since this study utilized online participation, attention check questions were administered, and final sample size was 201 participants (58% female).

Pre-test: We ran a pre-test to ensure that the manipulation reflected differential levels of association between promoted products across the deal communication conditions (similar to pre-test for study 1), and to test for their equivalence on concreteness and specificity. 97 online panel participants reviewed the promotions in a between-subject design. The manipulation check scale was modified to reflect the change in the stimuli (as the two pairs of jeans cannot be worn together). Pre-test participants rated their agreements to four statements on seven-point scales (“The two clothing items are associated to one another;” “The promotional message reflects relation between the two products;” “I can think of the two clothing items together;” and “These two products are coupled.” Cronbach’s Alpha = .88).

The more associative deal condition was rated as reflecting stronger connection between the products compared to the less associative condition ($M_{\text{more-associative}} = 5.70; M_{\text{less-associative}} = 5.21; F(1,96) = 4.55, p < .05$). The two deals were rated as equivalent on the combined measure of concreteness and specificity ($p > .2$; $r = .65, p < .1$), and also novelty ($p > .4$), and were used in the main study as the deal communication stimuli.

Measures: Communication effectiveness was operationalized with overall product attitudes in this study with five seven-point semantic differential items (“What would be your overall impressions of (attitudes toward) these items of clothing on sale?” – extremely negative to extremely positive; “How would you rate these specific products?” – very unfavorable to very favorable; “How likely would you be to make a purchase?” – extremely unlikely to extremely likely; “What would your overall attitudes toward this brand?” – extremely negative to extremely positive; “Would you be likely to visit the store again in the future?” – extremely unlikely to extremely likely; Cronbach’s Alpha = .90).

Consumption-imagery scale was expanded to reflect the multi-sensory nature of the experience (“I imagined myself walking through the store and seeing the deal;” “I pictured myself actually shopping in the store;” “I visually imagined what style the products could be;” “I imagined myself picking up the clothes, holding them and feeling them;” “I imagined myself with racks of clothes around me;” and “I pictured myself with the products on me”). These customized six items were also augmented with the three-item Imagery Index (Unnava and Burnkrant 1991) where participants rated the deal description on seven-point scales (“dull–vivid;” “boring–interesting;” “not imagery provoking–imagery provoking;” Cronbach’s Alpha for the nine-item composite = .89).

Results and discussion

Gender effects were not significant (ps > .3), and are not reported any further. The first analysis of variance test with the consumption-imagery scale as the dependent variable demonstrated the more associative deal as the superior imagery-eliciting communication compared to the less associative deal ($M_{\text{more-associative}} = 5.20; M_{\text{less-associative}} = 4.79; F(1,199) = 7.09; p < .01$), supporting hypothesis 1. The more associative deal communication also led to higher overall attitudes compared to the less associative condition in line with hypothesis 2 ($M_{\text{more-associative}} = 5.38; M_{\text{less-associative}} = 5.10; F(1,199) = 4.50; p < .05$).
Imagery mediation: Analyses conducted through Hayes’ (2012; model 4) macro with 10,000 bootstrapped samples indicated indirect-only mediation, in support of hypothesis 3. Deal communication had a significant effect on consumption-imagery, replicating the analysis of variance test ($\beta = .41$, $t = 17.80$, $p < .01$). Consumption-imagery, the proposed mediator, had a significant and positive effect on overall attitudes ($\beta = .39$, $t = 6.75$, $p < .01$), controlling for the now insignificant effect of deal communication ($p > .3$). The indirect path of the effect of deal communication on evaluations through consumption-imagery was also significant, with the 95% confidence interval excluding zero (.05, .30).

Next, we focus on a different retail category and explore the effectiveness of furniture deals. Study 3 also uses identical sets of products across the more versus less associative deal communications, and aims to provide additional evidence for their comparative imagery value using established scales on multiple dimensions of imagery with an expanded pre-test.

**Study 3 – furniture deals: discount on matching product versus both products**

**Methodology**

**Design and stimuli:** We again used a one-way (verbal deal communication: more associative vs. less associative) between-subjects design, this time focusing on furniture products. 251 people from an online panel participated in the study, 6 of whom were removed due to failing the attention check questions, leaving us with a final sample of 245 participants (54% female). The imagery-eliciting strategy in deal communication again rested on matching products, but the underlying discount format was changed to a 70% off deal on both products versus on the matching product with purchase of one (motivated by one of the marketplace retail-store deal examples presented in Table 1). Accordingly, the less associative condition had more potential objective savings, and the multiple products were identical across the two conditions. Participants were presented with the following deal communications in line with their assigned conditions:

**Less associative deal:** “Great Deal on Furniture! Get 70% off on our ticket price on reclining sofas and loveseats.”

**More associative deal:** “Great Deal on Furniture! Get 70% off on our ticket price on reclining sofas when you buy the matching loveseat at our ticket price.”

**Pre-test:** We ran a pre-test on the study stimuli with three objectives: i) to ensure that the manipulation reflected different levels of association strength between the two products across the deal communication conditions; ii) to show that the two conditions were otherwise equivalent on concreteness, specificity, and other relevant measures; and iii) to test for the differential imagery value of the deals using established scales on multiple dimensions of imagery. 124 people participated in the pre-test and reviewed the promotions according to their assigned conditions. Once again, the more associative deal condition was rated as suggesting stronger connection between the two products compared to the less associative condition ($M_{\text{more-associative}} = 6.05$; $M_{\text{less-associative}} = 5.82$; $F(1,123) = 4.31$, $p < .05$) using a similar manipulation check scale with the study 2 pre-test, but reflecting the change in the category (Cronbach’s Alpha = .83).

Pre-test participants also rated the imagery value of the deal communications on vividness, extent (quantity), and ease of consumption-imagery across the 17.80, pre-test: the levels of communication; again, the savings, and the condition of the minds while evaluating the deal (“very clear;” “vivid;” “intense;” “sharp,” and “well-defined;” Cronbach’s Alpha = .94). Extent of imagery was measured with three seven-point semantic differential questions (“As you evaluated the deal, to what extent did any images come to mind? – to a very small extent – to a very large extent;” “While evaluating the deal, I experienced: – few or no images-lots of images;” “All sort of pictures, sounds, smells, and feelings of touch came to my mind while I reviewed the scenario and the deal – strongly agree-strongly disagree;” Cronbach’s Alpha = .82). Ease of imagery was measured with another three-item scale (“How difficult or easy were the images to create?” “How quickly were the images aroused?” “Rate your agreement with the statement—I had no difficulty imagining the scene in my head;” Cronbach’s Alpha = .85).

The pre-tests results demonstrated that the more associative deal communication resulted in more vivid imagery ($M_{\text{more-associative}} = 4.67$; $M_{\text{less-associative}} = 3.81$; $F(1,123) = 13.72$, $p < .01$). The resulting imagery was also easier to generate ($M_{\text{more-associative}} = 5.74$; $M_{\text{less-associative}} = 5.26$; $F(1,123) = 5.24$, $p < .05$) and marginally more extensive ($M_{\text{more-associative}} = 5.11$; $M_{\text{less-associative}} = 4.74$; $F(1,123) = 2.83$, $p < .1$). The two deals were rated as equivalent on the combined measure of concreteness and specificity ($p > .6$; $r = .62$, $p < .01$), as well as on measures of novelty ($p > .1$), believability ($p > .1$), relevance ($p > .8$), appropriateness ($p > .9$), and complexity ($p > .2$), and were used in the main study as the deal communication stimuli.

**Measures for the main study:** Communication effectiveness was measured as overall product attitudes with the same items as in the previous study (Cronbach’s Alpha = .93). Consumption-imagery scale again included the three-item Imagery Index (Unnava and Burnkrant 1991) and a similar six-item customized component, with slight modifications to reflect the change in category (Cronbach’s Alpha for the nine-item scale = .88).

**Results and discussion**

Gender had a significant main effect on imagery generation and overall attitudes with females reporting higher values, but its interaction effects with deal communication were not significant ($ps > .8$). Two separate analysis of variance tests on consumption-imagery and overall attitudes showed that, as expected, participants exposed to the imagery-eliciting deal with the more associative condition reported higher consumption-imagery compared to
the participants exposed to the less associative condition ($M_{\text{more-associative}} = 5.32$; $M_{\text{less-associative}} = 5.06$; $F(1,241) = 4.73$; $p < 0.05$), in accordance with hypothesis 1. Consistent with hypothesis 2, participants in the more associative condition also evaluated the deal significantly more favorably than the participants in the less associative condition ($M_{\text{more-associative}} = 5.77$; $M_{\text{less-associative}} = 5.38$; $F(1,241) = 10.11$; $p < 0.01$).

Analyses conducted through Hayes’ (2012; model 4) macro with 10,000 bootstrap samples indicated support for partial mediation through consumption-imagery for the effect of deal communication on overall attitudes (H3). Deal communication had a significant effect on consumption-imagery ($\beta = .28$, $t = 2.2$, $p < .05$). Consumption-imagery, the proposed mediator, had a significant and positive effect on overall attitudes ($\beta = .48$, $t = 8.08$, $p < .01$), controlling for the direct effect of deal communication ($\beta = .29$, $t = 2.42$, $p < .05$). The indirect path of the effect of deal communication on evaluations through consumption-imagery was also significant, with the 95% confidence interval excluding zero (-.02, .27).

In the next and final study, we explore a boundary condition for the proposed effects of deal communications on consumption-imagery and overall attitudes, with an external cognitive load task imposing limitations on working memory capacity. Study 4 also focuses on a new retail category – winter accessories.

**Study 4 – deals on winter accessories: disruption through external cognitive load**

**Methodology**

**Design:** Hypothesis 4 proposes a mitigation of the effect of associative cues on consumption-imagery and attitudes when working memory capacity is insufficient for imagery generation. To test this hypothesis, a 2 (verbal deal communication: more associative vs. less associative) × 2 (availability of cognitive resources: load vs. no load) between-subjects design was used in this study, focusing on the retail category of winter accessories. 260 people from an online panel participated in the study. Nineteen were removed since they failed the attention check questions. 28 more people were also excluded from the study (from both load conditions) since they admitted to taking notes in the cognitive load manipulation task (see below), leaving us with 213 participants (46% female) for the study.

**Manipulation of cognitive load:** Before the main study, the participants under the cognitive load condition were given a separate task. In this task, they were presented with a page listing the contact information for 16 children in a fifth grade class. They were told that the study was a memory test, and were asked to try and remember which name goes with which family name. Additionally, they were told that in order to make the task more difficult (but also more realistic), they also needed to do a second task – a consumer behavior survey evaluating a price promotion campaign. After they completed this second task they would be given a memory test on the children’s names. Similar types of secondary memory tasks have been shown to be cognitively taxing on working memory capacity in earlier work (see Conway et al. 2005 for a review of working memory span tasks). To keep the procedure identical, the participants in the no load condition were provided with only a single name and surname (which was easier to retain – Mary Brown), and were instructed to remember this name throughout the study; they were not specifically told that the study was a memory test.

**Stimuli and procedure:** The participants were given as much time as they needed to study the memory information in the beginning of the study, and were told to proceed to the second task when they felt ready. Since ensuring the proper administration of cognitive load manipulations through memory tasks over online participation might be a concern, specific instructions were included to highlight that participant compensation did not depend on performance on the memory task. (Additionally, an honor-code question was included at the end of the survey where participants could truthfully indicate whether or not they took notes or photographs during the task, with reminders that responses would not affect their compensation.)

Next, the main task presented the participants with the deal communication stimuli based on their randomly assigned conditions. The deal stimuli was similar to study 2, with a discount on a matching versus a second identical item with purchase, this time focusing on the retail category of winter clothing. Accordingly, the more associative deal offered a 50% discount on matching gloves with purchase of a winter hat, while the less associative deal offered the 50% discount on a second winter hat.

**Pre-test:** We ran a pre-test on the study stimuli using a similar method and measures to the study 3 pre-test. 104 people participated in the pre-test. The more associative deal communication was rated as having stronger connection between the two products compared to the less associative condition ($M_{\text{more-associative}} = 6.03$; $M_{\text{less-associative}} = 5.45$; $F(1,102) = 7.90$, $p < 0.05$; Cronbach’s Alpha = .89). Participants also rated the comparative imagery value of the deal communications on vividness, extent (quantity), and ease dimensions of imagery with the same multi-item scales by Ellen and Bone (1991). The more associative deal communication resulted in more vivid imagery ($M_{\text{more-associative}} = 4.90$; $M_{\text{less-associative}} = 4.20$; $F(1,102) = 5.83$, $p < 0.05$; Cronbach’s Alpha = .95). The generated imagery was also more extensive ($M_{\text{more-associative}} = 4.80$; $M_{\text{less-associative}} = 4.07$; $F(1,102) = 6.47$, $p < 0.05$; Cronbach’s Alpha = .87), but did not differ on the ease with which it was generated for this study ($p > .1$; Cronbach’s Alpha = .91). We did not have specific hypotheses in relation to the different dimensions of imagery, and believe that adequate imagery superiority is established for the associative deal communication stimuli across the multiple studies. The two deals were rated as equivalent on the combined measure of concreteness and specificity ($p > .4$; $r = .58$, $p < 0.1$), as well as on measures of novelty ($p > .1$), believability ($p > .3$), relevance ($p > .2$), appropriateness ($p > .3$), and complexity ($p > .6$), and were used in the main study as the deal communication stimuli.

**Measures for the main study:** Communication effectiveness was measured as overall product attitudes with the same items as in the previous studies (Cronbach’s Alpha = .92). Consumption-imagery scale again included the three-item Imagery Index (Unnava and Burnkrant 1991) and a six-item customized com-
ponents analogous to Study 2 with its similar product category (Cronbach’s Alpha for the nine-item scale = .91).

Results and discussion

Gender effects were not significant (ps > .1), and are not reported any further. We first ran an ANOVA with consumption-imagery as the dependent variable, and deal communication and cognitive load as the independent variables. Deal communication had a significant main effect with the more associative deal generating greater imagery (M_{more-associative} = 5.18; M_{less-associative} = 4.75; F(1,209) = 8.90; p < 0.01). The main effect of cognitive load was not significant (p > .5). More importantly, there was a significant interaction between deal communication and cognitive load (F(1,209) = 6.95; p < 0.01). Follow-up contrasts corroborated our expectations that the significant effect of the deal communication within the no load condition (M_{more-associative} = 5.43; M_{less-associative} = 4.60; F(1,209) = 15.56; p < 0.01) was attenuated within the load condition (p > .8).

A second ANOVA test with attitudes as the dependent variable yielded a marginally significant interaction between deal communication and cognitive load (F(1,209) = 3.26; p < 0.1) with their main effects not being significant (respectively: p > .1; p > .5). As expected, follow-up contrasts showed that the more associative deal led to higher attitudes compared to the less associative deal within the no load condition (M_{more-associative} = 5.33; M_{less-associative} = 4.84; F(1,209) = 5.24; p < 0.05), while this effect was mitigated under cognitive load (p > .8).

Moderated mediation: We tested for the predicted moderated mediation (hypothesis 4) using Hayes’ (2012; Model 7) PROCESS macro with 10,000 bootstrapped samples (Preacher, Rucker, and Hayes 2017). Our proposed model suggested a moderating effect of cognitive load on the first path in the mediation (from deal communication to consumption-imagery) with attitudes as the ultimate dependent variable.

There was a significant effect of deal communication on consumption-imagery (β = 1.62, t = 3.43, p < .01) consistent with the previous analyses. However, as predicted, cognitive load moderated the effect of deal communication on consumption-imagery (β = −1.78, t = −2.64, p < .01). Consumption-imagery had a positive and significant effect on product evaluations (β = .48, t = 8.03, p < .01). Controlling for imagery, the direct effect of deal communication on product evaluations was not significant (p > .9). We also probed the moderation of the indirect effect. We found a significant indirect effect of deal communication on product evaluations through consumption-imagery only under no cognitive load (Effect: .40; CI: .201, .665), and not under load (Effect: .03; CI: −.184, .222), consistent with H4.

The overall results of Study 4 present support for our expectation that limitations on working memory capacity through an external task will disrupt the generation of mental imagery by communication of retail-store deals, and ultimately mitigate the positive influence of more associative deals on consumer attitudes.

General discussion

In their conceptual paper exploring “The Future of Retailing,” Grewal, Roggeveen, and Nordfalt (2017) point to the changing nature of the retailing landscape with emerging technologies and a faster pace of life. They highlight the importance of finding new ways to make customers more engaged. Today’s customers are bombarded with stimuli and information. The problem then becomes one of designing and delivering offers and communications that stand out. Ample recent research demonstrates the effectiveness of visual and other sensory cues, and overall retail atmospherics toward this goal (Biswas et al. 2014, 2017; Liu, Batra, and Wang 2017; Loureiro and Roschik 2014; Wadhwa and Zhang 2016). However, with the worlds of online and offline retail converging, and with customers using different technologies for their pre-purchase activities (Biswas and Biswas 2004), importance of simulating sensory consumption experiences through mental imagery is now increased.

Within this current landscape, we use the power of mental imagery to increase the effectiveness of verbal retail-store deals. Four experiments illustrate the potential of various verbal stimuli to evoke increased consumption-imagery, inherently multi-sensory in nature, when the deal communication suggests stronger associations between components of the same retail experience (through linking on-sale product items). The consumption-imagery generated then impacts the effectiveness of the communication.

Our four studies focus on associations between multiple products suggested through deal communications for the retail categories of clothing, furniture, and winter accessories. The results of studies 1 through 3 extend prior findings on mental imagery and show that alternative communications of verbal price promotions can vary significantly in their imagery value, and, in turn, in the attractiveness of the deal for consumers and their overall evaluations. Since the imagery generation is activated through associations between its components, it more readily depicts an integrated and holistic instance of the consumption experience. Study 4 provides evidence for the mitigation of the demonstrated effects with external cognitive load imposing limitations on working memory capacity necessary for imagery generation.

Previous research on bundle pricing has studied consumer perceptions of savings through integrated prices of multiple products, building on mental accounting and related framing effects (e.g., Johnson, Herrmann, and Bauer 1999; Kamins, Folkes, and Fedorikhin 2009; Khan and Dhar 2010; Thaler 1985). We argue that promotions qualified on such associations between multiple products are also more effective in inducing consumption-imagery compared to deals with weaker associations, even when they offer comparatively identical or lower objective savings. Our results, across four studies (except for Study 3), provide evidence for indirect-only mediation of the effect of deal communications on attitudes toward the deal and the product through consumption-imagery. Therefore, complementarity alone cannot explain our full set of results.
Our work contributes to literatures on marketing communication effectiveness and imagery. We add to the conceptualization of consumption-imagery (imagery pertaining to a specific consumption experience) and show how such imagery can be subtly increased with verbal communications through suggesting stronger associations between consumption components within the context of price promotions. Future research should consider other contexts besides price promotions, other verbal communication cues, and other types of consumption-imagery. Our conceptualization and empirical evidence also highlights the holistic and multi-sensory nature of the imagery generated through verbal cues.

Our research is also of practical importance and is informative for managers in that we demonstrate the effectiveness of specific methods that can be used in the design of verbal communications – methods that enhance imagery subtly and thereby the evaluation of the communication. We show that linking multiple items for a single consumption experience (‘matching’ products) enhances consumer attitudes through increased imagery. The review of examples of marketplace retail-store deals, presented in Table 1, suggests that managers are already utilizing differential levels of associations between multiple products. Our work provides a systematic test of the effectiveness of association strength suggested through such deal communications, also with a demonstration of a boundary condition through cognitive load.

Future research should try to identify and classify other such subtle imagery-eliciting strategies in verbal and also visual communications. Exploring other situational or individual factors that might mitigate or exacerbate the effects of associative communications on attitudes, such as visual cognitive load (Jiang et al. 2015), hedonic versus utilitarian products (Kahn et al. 2004) or chronic individual differences in style of processing (Childers, Houston, and Heckler 1985; Jiang and Wyer 2009; Maclnnis and Price 1987) and construal level (Trope and Liberman 2000), can also be fruitful avenues for future research. This will both conceptually enrich the study of the antecedents of imagery and also provide more practical tools for marketers.

Executive summary

Verbal (written) marketing communications unaccompanied by pictures are abundant. These can be in the form of texts, emails, or pop-ups on cell phones and computers, or banners on television and outdoor monitors; and can contain advertising or promotions for retail products and services. Clearly, managers want these communications to be persuasive. How does one increase their persuasiveness, especially alongside countless competing visual and other sensory cues? One manner in which they could do so is through evoking mental imagery.

We argue and demonstrate, in a set of four experiments, that subtle differences in verbal communications of retail-store price promotions, in terms of suggestive associations between multiple products, affect how much consumption-imagery (multi-sensory imagery related to a single consumption instance) is generated by the consumer. The consumption-imagery generated then impacts the effectiveness of the communication. More specifically, a clothing store promotion such as “buy any of the selected pair of jeans and get the matching shirt for 50% off” (associating multiple products) may activate greater mental imagery compared to a straight “50% off” deal on individual items (not having such an association).

Our work contributes to literatures on marketing communication effectiveness and imagery. We add to the conceptualization of consumption-imagery and show how such imagery can be subtly increased with verbal communications through suggesting stronger associations between consumption components within the novel context of price promotions.

Our research is also of practical importance and is informative for managers in that we demonstrate the effectiveness of specific methods that can be used in the design of verbal communications – methods that enhance imagery subtly and thereby the evaluation of the communication. Specifically, we show that linking multiple items for a single consumption experience (‘matching’ products) enhances consumer attitudes, through increased imagery. Our results on effective communication of retail-store deals are even more crucial in today’s digital marketplace where imagery is especially important.

References


**Further reading**

R. Reed Hunt, Gilles O. Einstein. Relational and Item-Specific Information in Memory Journal of Verbal Learning and Verbal Behavior 1981; 20: 497-514