

The Effect of Multimodal Compositions in Social Media Brand Posts on Purchase Intentions

Abstract

Determining which images to use in social media brand posts, to engage consumers and boost purchase, in combination with textual information (e.g., caption), remains challenging for marketers; they might gain relevant insights from research on visual semiotics that explicates the influences of multimodal compositions. Study 1 shows that narrative images generate higher purchase intention compared to conceptual images, due to the greater degree of consumer mental involvement. When the caption is also narrative (vs. informative), the effect of narrative images on purchase intention is boosted further. Study 2 examines an ad context in which conceptual instead of narrative images can enhance social media content effectiveness. Our findings establish some basic heuristics that content managers can use to design effective, multimodal brand messages in different contexts.

Keywords: multimodality, narrative images, social media, mental involvement, purchase intention

Images in brand social media posts do not appear in isolation but generally are accompanied by a caption, which implies vast arrays of multimodal text–image relationships (Visme 2019), as well as challenges for managers to combine text principles (e.g., language style) with appealing pictorial elements.

Existing research in the social media advertising literature tends to focus on text (Rietveld et al. 2020), or image properties (Grigsby, Jewell and Zamudio 2022) separately, neglecting the joint effect that images and text can exert on consumer responses toward social media brand content. We turn to scholarship on visual semiotics (Kress and Van Leeuwen 2006), to offer a theoretical explanation and an empirical assessment of how combining images and text in social media brand posts jointly affects consumer intention to purchase the depicted product or service. We consider the degree to which images portray story characters performing directed actions (i.e., *narrative images* – Kress and Van Leeuwen 2006) and their combination with narrative (cf. informative) text. We expect that the verbal ad appeals (narrative vs. informative) will interact with visual depiction (narrative vs. conceptual) to influence consumer responses toward an ad.

We aim at contributing to the social media literature in several ways. First, we extend research on social media advertising effectiveness (e.g., Ahmadi, Waltenrath and Janze 2022) by examining how matching image type and text affects consumer intention to purchase. Second, we offer evidence that mental involvement is the underlying mechanism that can explain these differential effects across image type and consumer intention to purchase. Third, we provide evidence that, for relaxing products, conceptual images are more effective in determining higher consumer intention to purchase compared to narrative ones. We next present our theoretical background and hypotheses.

THEORETICAL BACKGROUND AND HYPOTHESES

Narrative and Conceptual Images

Depending on the representation of the pictorial elements, images can vary in their ability to tell a story. As Kress and van Leeuwen (2006) show, narrative images arise in the presence of a real or imaginary vector (e.g., body limbs pointing) that engenders some sort of directionality within the image; the absence of such vectors engenders conceptual representations, which are static in nature.

According to empirical evidence in marketing literature pertaining to brand logos for example, representing pictorials in a way that they engender a sense of directionality leads to more positive outcomes, such as enhanced attitudes toward the brand and willingness to pay (e.g., Cian, Elder and Krishna 2014). In social media contexts, viewers exposed to a photo that depicts some directed action are more likely to comment than if they see photos portraying an undirected or no action (Farace et al. 2017). Thus, substantial evidence in marketing literature indicates that messages presented in a narrative (cf. conceptual) format generate more positive consumer reactions (Chiu, Hsieh, and Kuo 2012).

Text–Image Relationships and Mental Involvement

Pictorial elements tend to be predominant when it comes to engaging consumers in brand messages (Houston, Childers, and Heckler 1987). But posts on social media also include textual information. Some questions remain about precisely how

narrative verbal and visual elements in ads jointly affect consumer responses for social media brand messages. Prior research suggests that congruence between the verbal information and the visual image tends to enhance consumer evaluations (Farace et al. 2020).

Narrative advertising involves promoting the intangible benefits of products or services by communicating a slice-of-life where story characters perform actions to achieve goals (van Laer et al. 2014). While narrative images visually showcase story characters performing directed actions (Kress and van Leeuwen 2006), narrative text verbally describes the sequence of events of who did what, where, when, and why (van Laer et al. 2019). Substantial evidence in marketing literature indicates that ad elements, whether images or texts, presented in a narrative (cf. conceptual, informative) format generate more positive brand associations, cognitive responses (Escalas 2004), brand attitudes, and purchase intentions (Chiu, Hsieh, and Kuo 2012). Since narrative images tell a visual story, we predict that accompanying narrative captions will enhance further consumer purchase intention. On the contrary, conceptual images, which do not portray unfolding narratives, but are static in nature, will be less effective when combined with unfolding visual stories. We hypothesize:

H₁: When the caption in social media posts is narrative, using narrative images generates higher purchase intention than conceptual images.

Narrative images inherently showcase motion and/or dynamism, and because viewers are hardwired to detect action or movement, their selective attention can be captured more effectively by narrative scenes than by conceptual, static ones (Boyce and Pollatsek 1992). In fact, narrative images trigger viewers to think about the sequence of which the focal image might be a part. Due to the perceived dynamism that characterizes narrative images but not conceptual ones, viewers become engaged in processing what might happen soon or has just happened (Escalas 2004). Thus, narrative images should mentally involve consumers more than conceptual images do, which in turn should increase purchase intention of the portrayed brand. Formally,

H₂: Narrative images increase mental involvement more than conceptual images.

H₃: Mental involvement mediates the impact of narrative images on purchase intention.

Figure 1 offers an overview of the hypotheses, reflecting the approach we adopt to investigate the joint effect of image type and caption language on purchase intention (H₁) and mental involvement (H₂) along with the mediating role of mental involvement (H₃). We then report an additional experiment (Study 2) that shows the attenuating effect of ad context.

Study 1: Main, Moderating and Mediating Effects

With this study, we pursue three main objectives: (1) to corroborate the superior effect of narrative (vs. conceptual) images on consumer intention to purchase, (2) to provide support for the moderating role of caption and 3) to test the proposed theoretical mechanism (mental involvement).

Method

Participants and Design. Two-hundred and three participants voluntarily participated to the study. To exclude any bots or non-human participants, participants had to

complete a visual Captcha prior to participating, but this step did not exclude anyone. However, five participants did not pass the attention check which left a final sample of 199 consumers ($M_{\text{age}} = 31.45$ years, 62.3% women). Participants completed a 2 (image type: narrative, conceptual) \times 2 (caption: narrative, informative) between-subject design.

Stimuli and Procedure. We chose a hotel for the experimental stimuli, thus considering a service rather than the promotion of a consumer product. For the narrative image manipulation, we show a woman walking down the stairs of the promoted hotel, while for the conceptual image we show the woman posing, in a static fashion, at the bottom of the same hotel stairs. The facial expression and hotel background is the same across conditions to minimize any potential confounding. For the **narrative** caption manipulation, we used:

“For an unforgettable holiday, Sara and her friends decided to spend a weekend in the heart of Rome, at the Ottaviano hotel. The group will be welcomed by highly qualified staff, modern rooms equipped with every comfort and the restaurant with typical Roman specialties will delight everyone's palate. To make their stay even more unforgettable, Sara and her group of friends can take advantage of the relaxation area and the taxi service that will allow them to admire the monuments and beauties of the Eternal City.”

For the **informative** caption manipulation, we used the text:

“For an unforgettable holiday, you can spend a weekend in the heart of Rome with a group of friends, at the Ottaviano hotel. The group will be welcomed by highly qualified staff, spacious and well-organized rooms and the restaurant with typical Roman specialties will satisfy everyone's appetite. To make your stay even more unforgettable, you can take advantage of the relaxation area and the taxi service that will allow you to move quickly between the various places of interest in the historic city.”

[Please Insert Figure 2]

After viewing the assigned post, participants reported their mental involvement ($\alpha=.94$), intention to book the hotel ($\alpha=.96$), perceived narrative measures of the image ($r=.91$, $p<.001$) and the caption text ($\alpha=.93$), and attention checks. Finally, we collected demographic measures, asked for comments, and thanked the participants for their time.

Results

Manipulation check. As predicted, participants rated the caption in the narrative form as more narrative ($M=4.86$, $SD=1.82$), while the informative caption was rated less narrative ($M=3.23$, $SD=1.59$; $F_{(193)}=3.18$, $p<.001$). Also, participants rated the image with the narrative scene as such ($M=6.65$, $SD=2.16$) compared to the image where the story character was standing still ($M=2.48$, $SD=1.66$; $F_{(182,06)}=7.24$, $p<.001$).

Main and interaction effect. We performed an ANOVA, with image type and caption style as between-subject factors, on intention to book the hotel. We find a significant main effect for image type ($F_{(1,195)}=32.74$, $p<.001$) and caption style ($F_{(1,195)}=15.50$, $p<.001$). The relevant predicted contrasts reveal that when the caption is narrative, participants express more intention to book the hotel with a narrative image ($M=5.66$, $SD=1.39$) compared to a conceptual one ($M=4.35$, $SD=1.45$) ($F_{(1,195)}=24.16$, $p<.001$). These results support H_1 . Despite weaker, we find a similar pattern when the caption is informative. Respondents reported higher intention to book the hotel when the

image was narrative ($M=4.69$, $SD=1.02$) compared to when the image is conceptual ($M=3.84$, $SD=1.39$) ($F_{(1,195)}=10.12$, $p<.01$).

Mediation. To determine if mental involvement drives the relationship between the image type as the independent variable (1=narrative, 0=conceptual) and the dependent variable of intention to book, we conduct a mediation analysis using Model 4 (10,000 bootstrap samples) in the SPSS PROCESS macro (Hayes and Preacher 2014). The bootstrapping technique for conditional indirect effects indicates mediation, because the 95% confidence interval (CI) for mental involvement does not include zero when we consider the difference between narrative and informative captions (conditional indirect effect=.87, Boot SE=.17; 95% CI: .54, 1.23). When including mental involvement as a mediator, the direct effect of caption style becomes non-significant (direct effect of X on Y=.20, $p=.10$), indicating full mediation (and supporting H_2).

Study 2: Images and Captions for Relaxing Products

Certain types of advertisement might not produce the expected effect where narrative images generate better consumer responses compared to conceptual images. What about products that are meant to induce relaxation? Would consumers still prefer visuals that depict narrative, dynamic scenes or would static, conceptual portrayals be favored? In Study 2 we test a boundary condition for products that are triggering relaxation and calmness (i.e., sleeping pills).

Method

Participants and Design. Two-hundred participants ($M_{age} = 28.65$ years, 50.3% women) were recruited on Prolific for a compensation of \$.40. To exclude any bots or non-human participants, participants had to complete a visual Captcha prior to participating, but this step did not exclude anyone. Participants completed a 2 (image type: narrative, conceptual) \times 2 (caption: narrative, informative) between-subject design.

Stimuli and Procedure. We chose sleeping pills for the experimental stimuli, thus considering a consumer product that is related to concepts such as relaxation and calmness. For the narrative image manipulation, we show the box of pills and an active woman, while for the conceptual image we show the same box of pills with the woman lying still on a pillow. The facial expression, clothes worn by the young woman, and accessories (i.e., pillow) are the same across conditions to minimize any potential confounding. For the **narrative** caption manipulation, we used:

“Sara suffered from sleep deprivation. Since she takes these pills, she has regained the charge of a restful sleep. Taking one pill half an hour before going to bed is enough to feel an immediate sense of calmness. Falling asleep has never been so pleasant.”

For the **informative** caption manipulation, we used:

“Taking one pill 30 minutes before going to bed helps you fall asleep quickly. The formula enriched with the maximum melatonin allowed by the Ministry of Health (1mg) stimulates an immediate sense of calmness. Formulation is approved by specialized institutions.”

After viewing the assigned post, participants reported their mental involvement which was measured with the same items as in Study 1 ($\alpha = .90$), intention to purchase the

drug which ($r = .82, p < .01$), perceived narrative measures of the image ($r = .87, p < .01$) and the caption text ($\alpha = .93$), and attention checks. Finally, we collected demographic measures, asked for comments, and thanked the participants for their time.

Results

Manipulation check. As predicted, participants rated the caption in the narrative form as such ($M = 5.03, SD = 1.17$), while the informative caption was rated as such ($M = 2.41, SD = 1.11; t_{(183)} = 16.24, p < .001$). Also, participants rated the image with the narrative scene as such ($M = 4.82, SD = 1.13$) compared to the image where the story character was standing still ($M = 1.98, SD = .96; t_{(198)} = 19.30, p < .001$).

Main and interaction effect. We performed an ANOVA, with image type and caption style as between-subject factors, on intention to purchase. We find a marginally significant main effect for image type ($F_{(1,196)} = 3.18, p = .08$) and a non-significant effect for caption narrative ($F_{(1, 196)} = 2.25, p = .14$). The relevant predicted contrasts reveal that when the caption is narrative, participants express more intention to purchase if a conceptual image of the sleeping pills is used ($M = 5.66, SD = 1.39$), compared to a narrative one ($M = 4.35, SD = 1.45$) ($F_{(1,196)} = 6.93, p = .009$). When the caption is informative, there is no difference in using a narrative ($M = 5.03, SD = 1.32$) versus conceptual image ($M = 5.00, SD = 1.54$) ($F_{(1,196)} = .01, p = .91$). The combined use of narrative images and captions is less effective for products that are related to relaxation, such as sleeping pills. We do not find a significant difference in image type when informative captions are used.

General Discussion

Drawing on visual semiotics and text–image relationship research, we seek to advance understanding of how and why consumers react to multimodal brand content posted on social media. By addressing narrative images and captions, we establish three relevant contributions for extant research on social media content effectiveness.

First, we offer an answer to the question about *how* multimodal combinations are more likely to be effective for social media marketing. In Study 1, we find that when narrative captions are combined with narrative images (cf. conceptual) a stronger effect on purchase intention materializes. Second, we explain *why* combinations of narrative images affect purchase intention. Prior literature which analyzes verbal and visual ad elements separately suggests that ads which adopt a narrative style cause the viewer to feel more involved (Grigsby, Jewell and Zamudio 2022.). We find a similar process when we consider the combination of narrative images.

Third, we show *how* using narrative images in different ad contexts weakens consumer intention to purchase the portrayed product or service. When the context is related to relaxing products (Study 2), consumers prefer conceptual images, that is the depiction of still, static story characters, rather than active ones. These assessments of text–image relations thus demonstrate that image type decisions, even if simple to make, are extremely difficult to get right especially when different ad contexts are considered.

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Figure 1: Conceptual Framework

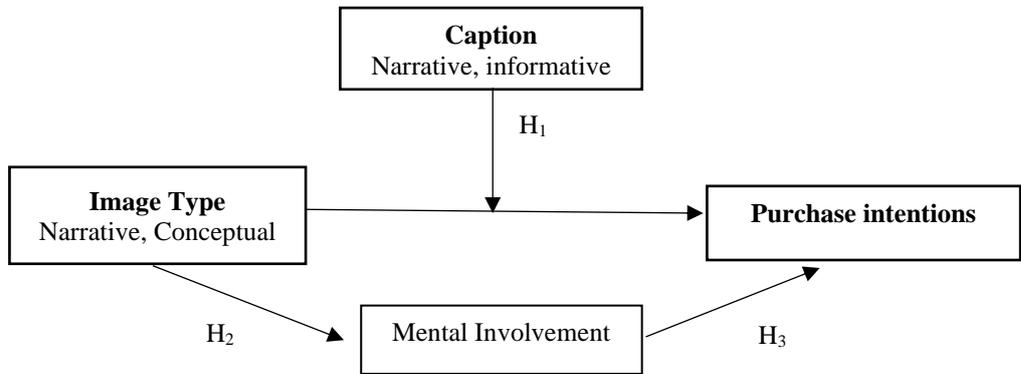


Figure 2: Stimuli in Study 1

