Big Star Undercover: The Eclipsing Effect of Celebrity Endorsers' Faces on Consumer's Brand Recall

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Abstract:

Evidence from neuroscience and psychology suggests that faces are supernormal stimuli that attract instant automatic attention. While numerous studies have focused on the positive effects of using celebrities' faces in advertising, little is known regarding whether such could negatively impact exposure of the brand. The present research proposes that, as compared with a blurred or partially-covered face, a clear celebrity endorser's face will impair consumers' brand recall. Focusing on celebrities' faces as the visual attention magnet, the present study demonstrates that a clear celebrity endorser's face adversely affects the level of consumer engagement with brand name. Results from two experiments and one eye-tracking experiment offer empirical support for this hypothesis. These findings suggest that the inclusion of a celebrity's face is a double-edged sword in advertisement design and should be done with caution.

Keywords: celebrity endorsement, brand recall, face perception

Track: Advertising & Marketing Communications

1. Introduction

The use of celebrity endorsers has been a widely adopted marketing communications strategy since the late 19th century (Erdogan, 1999). Longitudinal analyses have shown that the fascination with celebrities has increased progressively over the years (Erdogan, 1999; Pringle & Binet, 2005). Hence, many studies have been conducted to test the effectiveness of celebrity endorsers. Most research in the endorsement domain has focused on source characteristics (Ohanian, 1991), matchiness between a product and the endorser (Misra & Beatty, 1990), or the economic value of celebrity endorsements (Chung, Derdenger, and Srinivasan, 2012). However, little is known about the role of celebrities' faces in attracting consumers' attention and how their use may affect consumers' cognitive behaviours. Although marketing researchers generally believe that celebrities serve to attract attention and achieve high recall rates for marketing communications messages in today's highly cluttered environments (Erdogan, 1999), little empirical evidence is available at this time to support this assertion. As revealed by a recent meta-analysis, brand recall is one of the most important understudied variables in celebrity endorsement research (Knoll & Matthes, 2017).

Investigators have already found the eclipsing effect of celebrities overshadowing the brand and thus impairing brand recall (Keel & Nataraajan, 2012). Researchers have also used empirical evidence to show that, as compared with an unknown but equally attractive endorser, a celebrity endorser can lead to a decrease in brand recall for an advertising stimulus (Erfgen, Zenker, and Sattler, 2015). The present study, therefore, aims to address the question believed to be important for both researchers and practitioners: "Do celebrities' faces themselves affect how a viewer reacts to other important elements (such as a brand's name) in an advertisement with regard to brand recall?" To answer this question, we focused on celebrities' faces and their eclipsing effect on viewer attention and brand recall. Specifically, this research explores the possibility that the effect of celebrity endorsement on brand recall varies according to the condition of the face in the advertisement (e.g., clear or blurry).

2. Theoretic development

The results of celebrity endorsement and brand recall are mixed even now. Traditionally, it is a general belief that using a celebrity to endorse a brand will result in an increase in consumer recall of the brand (Friedman & Friedman, 1979; Ohanian, 1991). However, other studies have also supported the claim that celebrity endorsement often does not enhance the brand recall. For example, Knoll and Matthes (2017) analysed the relationship between

celebrity endorsements and brand recall by applying multilevel meta-analysis. Their findings suggested either no impact or only a moderated impact of celebrity endorsements, and they reasoned this was due to the fact that consumers tend to focus their attention on the celebrity and fail to notice the brand being promoted (Erdogan, 1999). Recently, researchers have begun to examine the overshadowing/eclipsing effect, in which the celebrity eclipses the brand (Ilicic & Webster, 2014). Keel and Nataraajan (2012) argued that the current research examining under what conditions eclipsing occurs is fairly sparse. They suggested that future research in the celebrity endorsement domain should involve comparing the brand recall of the celebrity brand to that of the focal brand, which may help to identify whether eclipsing occurs. Erfgen et al. (2015) analysed the existence of the celebrity eclipsing effect in four experiments, involving a total of 4,970 respondents. Their results provided evidence that celebrities might indeed overshadow an endorsed object.

Overall, previous research has laid an important basis for the relationship between a celebrity endorser and brand recall. However, there is still no definitive conclusion that has been realized yet. To our knowledge, previous studies seem to have treated celebrities' faces as only a special kind of brand in the advertisement, yet have ignored the fact that human faces are supernormal stimuli themselves (Xiao & Ding, 2014). As revealed in the neuroscience domain, faces are probably the most biologically and socially significant visual stimuli in the human environment (Palermo & Rhodes, 2007). In addition, although several researchers have mentioned the important role of attention in celebrity endorsement study (Keel & Nataraajan, 2012; Knoll & Matthes, 2017), none of the abovementioned studies are able to offer empirical evidence to support their argument. Thus, the present study aims to address these issues. In the present study, we argue that, although celebrities' faces help endorsed brands in attention competition by cutting through excess noise, they also have a negative impact on the endorsed brands regarding the attention competition within the advertisement. Specifically, we propose that:

Hypothesis 1 (H1): Brand recall is lower when the endorsement advertisement contains a clear face than when it contains an attenuated (blurred or partially covered) face of the same endorser.

3. Study 1: A basketball star with a blurred face

3.1 Methods

The existence of the eclipsing effect of a celebrity's face was tested in the first study. Specifically, this study used a professionally designed advertisement showing Yao Ming, a retired Chinese professional basketball player, as the celebrity endorser for a health care brand. In the blur face condition, Ming's face was manipulated by changing the visual resolution of the face area using the Gaussian blur filter in Adobe Photoshop version 6.2. In the clear face condition, Ming's face was shown in its original form. The advertisement was placed in the lower-left corner of the stimulus in each condition, embedded in the article to be read by the respondents (Figure 1).

Blur face condition   Clear face condition

Figure 1. Stimuli used in study 1

Study 1 involved the conduction of an online survey in late 2017 on a popular online survey platform in China (Sojump), using its paid sample service. The survey platform possesses more than 2.6 million sample resources from different cities in China including those with diverse demographic backgrounds. Each valid respondent was to be rewarded with points, which they can redeem for money in their online payment account (e.g., Wechat or Alipay). In this study, the cover story informed participants that they needed to carefully read an article about how to improve math skills for children and be able to provide advice on the subject afterwards. The stimulus was embedded in the lower-left corner of the article. Participants were not specifically instructed to view the stimulus. Ultimately, 160 participants completed the online survey (64 males, Mage = 30.5 years, 85.7% had a bachelor's degree or higher). We assigned participants randomly to one of the two experimental conditions (i.e., clear face or blur face). After reading the article, participants were instructed to respond to a surprise recall task. They were asked to write down the endorser's name if they could. They

were then instructed to complete the task of brand recall, which required them to write down the brand's name correctly (Erfgen et al., 2015). Finally, they were asked about brand familiarity as well as some general demographic items.

3.2 Results and discussion

A confounding check was performed. In both conditions, 77.5% (χ^2 (1, 160) = 0, p = 1.00) of participants can clearly recall that Yao Ming was the celebrity endorser, a finding which implies that our manipulation did not influence endorser recognition. However, the brand recall in the clear face condition (45.0%) was significantly lower than that in the blur face condition (61.3%; χ^2 (1, 160) = 4.24, p < 0.04). Thus, H1 was supported.

4. Study 2: A beauty under a fan

4.1 Study 2a

Methods. In this study, a two-condition between-subjects design (face condition: clear face vs. partially-covered face) was used to assess the occurrence of a face-eclipsing effect (H1). Yifei Liu was chosen as the celebrity endorser to be considered because of her status as one of the most famous actresses in China. A professionally designed advertisement for a skin care product (Garnier) was used that showed her as the celebrity endorser. In this instance, to make the face manipulation appear more realistic than that done in the previous two studies, a context-relevant object was applied to the advertisement image to partially cover Liu's face—specifically, a Chinese fan was added as a mask to block the lower part of her face in the partially-covered face condition.

Figure 2. stimuli used in study 2a

Similar to in the previous two studies, this study used the same online survey approach. A total of 171 participants completed the online survey (58 males, M_{age} = 28.9 years, 75.4% had a bachelor's degree or higher) in early 2018. These individuals were randomly assigned to one of the two experimental conditions (i.e., clear face or partially-covered face). In this study, the cover story informed participants that they were participating in a test of new advertisements. The advertising stimulus was available on the screen for five seconds. The participants were not explicitly instructed to look at the advertisement for the whole five seconds. Participants were subsequently asked to solve four mental math exercises involving basic arithmetic operations to distract from the advertisement. After that, they were asked whether they were able to recognize the celebrity endorser. Then, they were instructed to respond to a surprise brand name recall task. Finally, they were asked about brand familiarity and some general demographic items.

Results and discussion. A chi-square test of independence was performed to examine the relation between face condition and brand recall. The relation between the two variables was found to be marginally significant ($\chi^2(1, 171) = 3.58$, $p < .06$). Two separate chi-square tests were further performed based on celebrity identification. It was found that, if the participants recognized the celebrity, they were less likely to remember the brand's name in the clear face condition (46.2%) than in the partially-covered face condition (67.6%; $\chi^2 (1, 99) = 4.17$, $p < .05$), which supports H1. In contrast, if the participants did not recognize the celebrity, no significant difference was able to be found between the two conditions (47.8% vs. 30.8%; $\chi^2 (1, 72) = 1.99$, $p = .16$).

Together, these results further show the eclipsing effect of celebrity faces on brand recall. The results of study 2a reveal that the clear appearance of a celebrity's face does eclipse the brand elements in the endorsement advertisement, while covering the face seems to mitigate such a negative effect, though this is only effective when the participants can still recognize the celebrity after the face is attenuated. In study 2b, we used eye-tracking data to confirm the previous findings.

4.2 Study 2b

Methods. Study 2b used the same two-condition between-subjects design (face condition: clear face vs. partially-covered face) as that used in study 2a. A total of 30 undergraduate students from a leading university in Macau completed study 2b in early 2018 in exchange for course credit. They were randomly assigned to either the clear face condition or partially-

covered face condition. Participants were told that they would be viewing advertisements using an eye tracker. A screen-based aSee Pro eye tracker (aSee Pro F90; 7Invensun Technology, Beijing, China) was used to collect the data. Participants were not required to wear any additional devices to use the eye tracker. Instead, they simply had to look at the screen to complete the experiment. The eye tracker was discretely mounted below the screen and used infrared cameras to record the participant's gaze on the screen with a frequency of 60 Hz and an accuracy of 0.5 degrees of visual angle.

Stimuli and other filler materials were presented on a 17-inch liquid-crystal display monitor with a 1,280 pixel × 1,024 pixel resolution. Participants were accompanied by an experimenter to a room in the university's laboratory and seated in front of the monitor. Each participant needed to perform a calibration task first to ensure both of their eyes could be correctly recognized by the eye tracker. Next, they were informed that they would see a series of pictures and could advance on their own by clicking the mouse. To comply with ethical requirements, all participants were informed that their eye movements would be recorded during the experiment.

Participants viewed five pictures in the following order on the screen: two landscape photos, two filler advertisements (car and watch), and the target stimuli (an advertisement with a clear face or one with a partially-covered face). The study used the same stimuli as that used in study 2a, which featured Yifei Liu as the celebrity endorser for a skin care product from Garnier (Mayenne, France). After finishing the viewing task, the participants were asked whether they were able to recognize the endorser in the stimuli, and all of them were able to correctly identify Liu as the celebrity endorser.

Results and discussion. To analyse the data from the eye tracker, specific areas of interest (AOI) were established around the celebrity's face, the brand, and the product. An identical AOI was applied to the target stimulus in both conditions (Cian, Krishna, and Elder, 2014). The study focused on the total time of viewing (i.e., the overall time of viewing the stimulus), the number of fixations (defined by a gaze lasting longer than 60 milliseconds within the area of interest), and the duration of fixations (i.e., the overall time of fixating within the area of interest).

We began our analysis by conducting a one-way analysis of variance (ANOVA) with face condition (either clear or partially-covered) as the independent variable and the overall time of viewing as the dependent variable. As anticipated, a significant difference was found

between the face conditions with regard to the total time of viewing (M_{clear} = 6.72 s, $M_{partially-covered}$ = 10.75 s; F (1, 28) = 14.18, p < .001), with the clear face condition leading to a lesser total time of viewing than the partially-covered face condition.

A one-way ANOVA was carried out with face condition (clear/partially-covered) as the independent variable and the number of fixations within the AOI of face, brand, and product as the dependent variable. As predicted by H1, a significant difference was found between the brand AOI with regard to the number of fixations (M_{clear} = 5.87, $M_{partially-covered}$ = 14.87; $F(1, 28)$ = 8.0 , p < .01), with the clear face condition resulting in less fixations than the partially-covered face condition. No significant difference was found between the AOIs of face and product in terms of the number of fixations.

A similar analysis was performed with fixation duration within the AOI of face, brand, and product as the dependent variable. The results illustrated a significant impact of the clear face condition on the duration fixation on brand AOI (M_{clear} = 0.98 s, $M_{partially-covered}$ = 2.82 s; $F(1, 28)$ = 6.54 , p < .02) and product AOI (M_{clear} = 2.17 s, $M_{partially-covered}$ = 3.97 s; $F(1, 28)$ = 5.64 , p < .03), with the clear face condition leading to reduced fixation duration on brand and product as compared with the partially-covered face condition. No significant difference was found between the AOI of face in terms of the duration of fixations.

The Heat Map analysis tool was employed to visually illustrate the difference in the distribution of gaze data over the stimuli (Figure 3) (Berger, Wagner, and Schwand, 2012). It summarizes the gaze data by using colour patterns to indicate the areas that attract attention. The presence of a red colour indicates that the area attracts more visual attention, whereas that of a green colour signifies lesser amounts of attention. Figure 3 visually illustrates the face-eclipsing effect. In the partially-covered face condition, the focal points of the red zones were clearly situated on or around the brand and product, whereas, in the clear face condition, the gaze data were principally focused on the face, which led to a considerable smaller proportion of visual attention going to the product and the brand.

Partially-covered face   Clear face

Figure 3. Heat map in study 2b

5. Conclusion

In the present research, across a series of three studies, we show that the presence of a clear celebrity endorser's face can have a negative impact on audiences' recall of the endorsed brand. Prior research heavily suggests that celebrity endorsement can benefit brands in multiple ways. Companies, therefore, continue to spend a substantial amount of money on using celebrities in marketing activities. While both academic research and the popular press view famous faces as an effective tool of attention-grabbing, little is known about the possible overshadowing effect of a clear celebrity face on other (and arguably more important) marketing communication information. Our research therefore offers two main contributions.

First, it contributes to the literature concerning how celebrities' faces on printed advertisements are processed by viewers. The current study revealed that a high rather than low saliency of a celebrity's face had a more significant overshadowing effect on viewers' recall of the brand being presented. We defined this effect as a face-eclipsing effect of the celebrity, which contributes to the recent consumer behaviour literature pool on eclipsing (Ilicic & Webster, 2014; Keel & Nataraajan, 2012) by highlighting the consequences of celebrities' faces on brand recall.

Second, this study offers new insight for the long-lasting debate regarding whether celebrity endorsements enhance consumers' recall of the brand being advertised. Previous research used source credibility/attractiveness models and match-up hypotheses to study the effects of celebrity endorsement on brand recall, but the results obtained were mixed (Erdogan, 1999). The current study, however, suggests that selective visual attention also plays an important role in the relationship between celebrity endorsement advertisements and consumers' brand recall, which may provide explanations for the discrepancy among findings from previous research. For example, if a study was carried out in a laboratory environment wherein participants have abundant time and perceptual resources to process the endorsement advertisement, they would be more likely to process all of the information on the advertisement. In this case, celebrity endorsement may enhance the brand recall due to the fact that celebrities are generally liked and so consumers tend to be more motivated to assess what kind of object a celebrity is endorsing (Petty et al. 1983). Conversely, if participants have limited time and perceptual resources in the study, the celebrity endorser may overshadow the brand and thus impair brand recall (Erfgen et al., 2015).

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