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## The Strength of a Smile: Duchenne Smiles Improve Advertisement and Product Evaluations

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# The Strength of a Smile: Duchenne Smiles Improve Advertisement and Product Evaluations

## **Abstract**

Consumer research recognizes the well-established effect of positive emotions on consumers, i.e. consumers in positive moods tend to give positive evaluations of products and advertisements. Recently, researchers have investigated the use of Duchenne smiles (genuine smiles) in advertisements to evoke positive emotions and lead to positive evaluations. Duchenne smiles are identified by the activation of both the zygomaticus major muscle (which pulls up the corners of the mouth) and the orbicularis oculi muscles (which surround the eye and result in the crow's feet wrinkles). Peace, Miles, and Johnston (2006) demonstrated that including Duchenne smiles in mock print advertisements affects viewers' perceptions of the ad and featured product, resulting in more positive evaluations as compared to neutral and non-Duchenne advertisements. The current research expands on Peace et al. and examines the effects of type of smile displayed in mock print advertisements that feature inexpensive and expensive products alike. Participants rated pairs of advertisements created by the researchers. Participants significantly preferred Duchenne smiling advertisements over non Duchenne and also showed significant preference in their likelihood to purchase products in Duchenne advertisements. A potential mimicry association mechanism is discussed, as well as practical implications for advertisers.

## **Keywords**

Duchenne smiles, consumer attitudes, advertising

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## INTRODUCTION

Consumer research has long recognized the influence of mood on consumer attitudes. This effect is generally seen as mood-congruent fashion, i.e. the more positive the mood, the more positive the attitude and vice versa (Gorn, Goldberg, & Basu, 1993). Research has shown that consumers in good moods tend to rate advertisements more positively than those in negative or neutral moods (Batra & Stephens, 1994). Further, evaluations of products tend to be more positive when the individual evaluating the product is in a good mood (Gorn et al., 1993; Batra & Ray, 1986). The conclusions in these studies beg the question: how does one evoke a positive mood in a consumer? Chang (2001) found an advertisement itself has the potential to evoke a particular mood, and that this advertisement-evoked mood influences attitudes toward the advertisement and its target (i.e. product). The current research investigates the possibility that smiles (specifically Duchenne smiles) incorporated into an advertisement could evoke a positive emotional state, which in turn could influence potential consumers.

Duchenne smiles are named after French anatomist Duchenne du Bologne, who observed that certain smiles involved activation of not only the zygomaticus major muscle (the cheek muscle that pulls up the corners of the mouth) but the orbicularis oculi muscles as well (the muscles surrounding the eye that raise the cheek and result in the crow's feet wrinkles in the eye region). Non-Duchenne smiles involve activation of the zygomaticus major muscle only and can be more easily feigned (Soussignan, 2002; Peace, Miles, & Johnston, 2006); therefore, Duchenne smiles have been considered genuine smiles. Since Duchenne smiles are categorized by a particular pattern of observable muscle

activations, they can be defined by the facial action coding system (Ekman & Friesen, 1978) as consisting of both Action Unit (AU) 12 (lips corner pulling in facial action coding terminology) and AU 6 (cheek raising in facial action coding terminology).

Research on Duchenne smiles has demonstrated these smiles to be rather unique in their effect on individuals' emotional experience when displaying the smile and when viewing it. Soussignan (2002) found individuals who were manipulated to engage in the smile without being aware self-reported a significantly more positive emotional experience than those engaged in non-Duchenne or neutral expressions, and Surakka and Hietanan (1998) found that those who viewed a series of Duchenne smiling photos experienced significantly more positive emotions than those that viewed non-Duchenne or neutral expressions. Furthermore, Surakka and Hietanan found that activation in both the smiling muscle region and eye muscle region of the viewer was significantly higher when viewing Duchenne smiles than neutral and non-Duchenne expressions, which indicates some mimicry of the smile. The activation of these muscles via mimicry is further associated with increased activation in the limbic system, where emotional perception is believed to take place (Maringer, Krumhuber, Fischer, & Niedenthal, 2011). These studies suggest that Duchenne smiles can elicit a positive emotional response both directly (through inducing the participant to engage in a genuine smile) and indirectly (from viewing it) that consequently improves mood.

The results of previous research on advertising and mood indicate that if advertisements are created to induce a positive mood, participants will likely evaluate the advertisement and the target of the advertisement more positively. If positive emotional states are evoked by

Duchenne smiles in print advertisements, then it is possible that they will directly (or indirectly) result in positive attitudes toward the advertisement and positive evaluations of the product featured in the advertisement. Advertising researchers have recently turned their attention to the possibility that incorporating Duchenne smiles into advertisements could influence consumers. Peace et al. (2006) investigated whether T-shirts featured in advertisements with models displaying Duchenne, non-Duchenne, or neutral expressions would be differentially evaluated. They found T-shirts that were paired with Duchenne smiling models were more positively evaluated than those whose models displayed non-Duchenne or neutral expressions.

The present research focuses on whether products in advertisements that feature a Duchenne smiling model will be more favorably received than those displaying non-Duchenne smiles. This study expands on Peace et al. (2006) by testing whether the preference for items featured in Duchenne smiles advertisements will extend to other products. Instead of using just one product (like the T-shirt used in Peace et al. (2006)), this experiment involved four products ranging in price from a low cost sandwich to a more expensive laptop computer. The authors hypothesize the effect of the Duchenne smile on consumers' evaluations will persist to influence advertisement and product evaluations of both high and low cost items, thus demonstrating the strength of the smile's influence.

## **METHOD**

### ***Participants***

Sixteen undergraduate psychology students volunteered to participate in the

experiment. Participants did not receive compensation for their participation.

### ***Design***

The experiment was a single-factor within-participants design. The within-participants independent variable was Duchenne vs. non-Duchenne smiles portrayed in the advertisements. The dependent variables were the ratings given to the advertisements.

### ***Materials***

Twelve pairs of advertisements created by the researchers were presented to participants. Of these pairs, four represented the smiling manipulation and the remaining eight were fillers. In each smiling advertisement, a product was featured (bicycle, cell phone, laptop computer, and sandwich); no name brands were visible in the advertisements. The same female and male models were used in both pictures of each advertisement pair. The only difference between the target advertisements (see Figure 1) was the smile depicted by the model (Duchenne or non-Duchenne). Smile advertisements were rated by two certified Facial Action Coding System coders to ensure that the expressions met the qualifications necessary to be considered valid Duchenne/non-Duchenne smiles. Filler advertisements reflected changes other than smiling (for example, mirror images of advertisements or a close up shot versus one zoomed out). The placement of Duchenne smiling advertisements was counterbalanced so that Duchenne and non-Duchenne appeared equally on the right and left sides. The Duchenne advertisements were shown in a fixed order, with the specific product randomly assigned to a particular order in the series (first advertisement: sandwich, fourth advertisement: cell



Figure 1. Advertisements featuring the smiling manipulation. Featured products: (a) sandwich; (b) laptop; (c) cell phone; (d) bicycle.

phone, sixth advertisement: laptop computer, tenth advertisement: bicycle).

### *Procedure*

Participants were told the purpose of the study was to determine effective ways to advertise. Participants viewed pairs of advertisements and evaluated them using a questionnaire that asked them to choose which advertisement they preferred to look at (left/right), to rate on a seven point scale (-3 to 3) how much more they preferred it (equally preferred (0), slightly preferred left/right (-1/1), somewhat preferred left/right (-2/2), strongly preferred left/right (-3/3)), which advertisement would make them more likely to buy the featured product (left/right), and how much more likely they were to buy the chosen product on a seven point scale (equally likely to purchase (0), slightly more likely to purchase left/right (-1/1), somewhat more likely to purchase left/right (-2/2), much more likely to purchase left/right (-3/3)). Only the labels, not the numerical anchors, were used in the questionnaire. Participants were run in one group in a media equipped classroom. Participants sat in the front of the classroom while advertisements were projected on a large screen using Microsoft PowerPoint presentation software. Each advertisement pair was projected for 30 seconds, during which time participants rated their preferences for each pair. At the end of the session, participants were debriefed and informed of the smiling manipulation. No participants expressed awareness of the true purpose of the study.

### **RESULTS**

Preference scores for the picture on the right/left were recoded so that preferences for Duchenne smile advertisements were given positive scores,

and preferences for the non-Duchenne smile advertisements were given negative scores. A One-Way ANOVA was used to determine whether there were any differences in ratings between the four target products. The results show no difference in the patterns found across the four different products for any of the dependent measures: “prefer” question ( $F(3, 58) = .172, p > .05$ ), “buy” question ( $F(3, 54) = .388, p > .05$ ), “how much preferred” question ( $F(3, 60) = 1.274, p > .05$ ), or “how likely to buy” question ( $F(3, 59) = 2.39, p > .05$ ); therefore, results are collapsed across product type. For the two dichotomous variables (prefer and buy), the preferences (-1 or 1) across the four products were summed, positive scores indicating a preference for Duchenne smiles (maximum is four), negative scores indicating a preference for non-Duchenne advertisements (maximum is negative four), a zero score would suggest indifference. The mean preference score for the advertisements ( $M = 1.44; SD = 2.06$ ) was significantly different from zero using a one sample t-test ( $t(15) = 2.79, p = .014, r^2 = .34, d = .70$ ) indicating a significant preference for advertisements containing Duchenne smiles. Participants also indicated they were more likely to buy the product that was featured in the Duchenne smile advertisement ( $M = 1.56; SD = 1.55; t(15) = 4.04, p = .001, r^2 = .52, d = 1.00$ ). When considering the results on the Likert scale questions, the rating scores were also recoded so that positive scores indicate a preference for Duchenne smile advertisements and negative scores indicate a preference for non-Duchenne smile advertisements. If a participant was indifferent to the smile manipulation, the sum of the preference scores would be expected to equal zero. Again, the individual ratings (-3 to 3) were summed across the four products with a possible sum range of -12 to +12. One sample t-tests

again revealed significant preferences for advertisements containing Duchenne smiles ( $M = 3.13; SD = 3.86; t(15) = 3.236, p = .006, r^2 = .51, d = .81$ ) and an increased likelihood to buy products featured in Duchenne advertisements ( $M = 2.07; SD = 3.67; t(14) = 2.18, p = .047, r^2 = .24, d = .56$ ).

## DISCUSSION

The results demonstrated that advertisements containing Duchenne smiles were more positively evaluated by viewers than advertisements containing non-Duchenne smiles. In addition, participants indicated an increased likelihood of purchasing the advertised product when the advertisement contained a Duchenne versus non-Duchenne smile. These positive evaluations of Duchenne advertisements and their products were not limited by price; indeed, evaluations of both inexpensive and expensive products appeared to be influenced by the Duchenne smile. Previous research has shown that Duchenne smiles evoke positive moods (Soussignan, 2002; Surakka & Hietanan, 1998) which may have influenced consumer evaluations of the advertisements and featured products in this experiment. Although not specifically tested in the current experiment, it is possible that viewing a Duchenne smile served as an unconditioned stimulus that triggered a positive emotional response. According to learning theory, the elevated emotional state will become associated with the featured product as a conditioned stimulus leading to positive evaluations of the product. On the other hand, the Duchenne smile may have directly impacted the mood of the participant if the viewer saw the natural smile and mimicked the muscle movements (Surakka & Hietanan, 1998), resulting in the experience of positive emotions (Maringer et al., 2011). Future research should clarify

the mechanism underlying the influence of Duchenne smiles on product preference.

Although the study did have a small sample size, the effects were large and robust enough to result in statistically significant differences between the two conditions. Future research should include samples with varying demographics to see if the effect will generalize. A limitation of this study is that participants' expressed intentions to purchase an item may not result in changes in actual purchasing behaviors. Although this study found that participants claimed they would be more likely to purchase a product featured in Duchenne advertisements, future research would need to examine whether intentions to purchase do in fact alter buying behaviors. Future studies could also investigate the power of the Duchenne smile through testing brand loyalty. It is possible that positive evaluations derived from Duchenne smiles in advertisements could influence a consumer's previously established attitude toward a brand. Considering the ease with which Duchenne smiles could be incorporated into advertisements, the results of the current study suggest that advertisers would likely benefit from the inclusion of Duchenne smiles in their advertisements.

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