

Effects of Facial Expressions on Willingness to Purchase

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ABSTRACT: In static advertisements, images instead of videos are used to promote products, and it is most often the faces of the models that get the consumers' attention. How facial expressions transfer emotions from the producer to the consumer has been explained by the emotional contagion theory, which suggests the recipient replicates the emitter through motor mimicry which changes the recipient's emotional state. This paper investigates the effects of facial expressions in advertisements on adolescents in comparison to adults. It was hypothesized that participants would give a higher product evaluation if the model displayed a real smile, versus a fake smile or neutral facial expression. It was also hypothesized that adolescents would be more susceptible to facial expressions and therefore pay more for the same product than adults. High school and adult participants completed a survey in which they evaluated a product (a white t-shirt) when the model displayed a neutral face, fake smile, and real smile. The results showed that participants gave higher product evaluation scores and were willing to pay more when the model displayed a genuine smile over the other facial expressions. In addition, adolescents were less influenced by the model's expressions than adults which may be due to their lack of experience in spending. To extend this study, the effects of emotional contagion theory on other factors including how the product attracts attention or lasts in the consumers' memory could be tested.

KEYWORDS: Behavioral and Social Science; Sociology and Social Psychology; Adolescence; Facial Expressions; Purchasing; Emotional Contagion.

■ Introduction

Every day, American consumers spend \$29.3 billion on average.¹ Annually, \$296.4 billion US dollars are spent on advertising for these products.² Human faces are oftentimes at the center of these marketing campaigns. Adolescents are one of the key targets of advertising perhaps due to their susceptibility to influence.³ This paper investigates the effects of facial expressions in advertisements on adolescents. For the purpose of this paper, the following definitions will be adopted. First, facial expressions display a person's discrete emotional state. Second, the effect of advertisements can be assessed through the willingness to purchase. The willingness to purchase, as defined in behavioral economics, is the highest price a consumer is willing to pay for a product. Third, adolescents are defined biologically as individuals in the 10 - 19 years age group in a transitional phase of growth and maturation through puberty to adulthood. Adolescence marks a time of substantial change in physical maturation, cognitive abilities, and social interactions.

In static advertisements, images, instead of videos, are used to promote the product. A variety of facial expressions and postures are emphasized by models in order to convey the appropriate message. It is most often the faces of the models that get the consumers' attention.⁴ How facial expressions transfer emotions from the producer to the consumer has been explained by the emotional contagion theory.⁵ This theory has two steps: at first, the recipient replicates the emitter through motor mimicry. Second, mimicry changes the recipient's emotional state. The emotional contagion theory has, in

marketing, been used in face-to-face interaction. This research has supported the idea that product evaluation increases with a genuine smile.⁶ How a smile's intensity affects perception of competence in static ads have also been studied but this did not address product evaluation.⁷ While different types of smiles have been studied, this paper investigates the effects of a fake smile compared to a genuine smile and a neutral facial expression on product evaluation.

In this study, a smile is defined as when a person exemplifies a positive emotion in which the corners of their mouths are typically turned up. A Duchenne, or real, smile involves displaying a smile which accurately displays what the person feels. This often includes scrunching the eyes, known as smiling. On the other hand, a fake smile only uses the zygomatic major muscle. For example, a Duchenne smile is the smile of a championship winner while the runner up typically displays a fake smile.⁸ Based on these variances, a consumer should notice the difference between genuine and fake smiles.

This paper expands on recent findings by Isabella and Vieira who investigated emotional contagion effects in advertisements.⁸ This denotes the process in which emotions and related behavior are spread from sender to receiver. One of their experiments tested the influence of neutral, fake, and genuine smiles of a model on the product evaluation. The experiments did in fact prove that the facial expressions influenced the product evaluation. They showed that genuine smiles tend to increase product evaluation over false smiles because of the mimicry response.

The brain is not fully developed until 25. Pechmann studied how adolescents are more impulsive and self-conscious

than adults and are therefore more susceptible to fall for advertisements.³ Especially with the growing prevalence of social media and technology on youth, it is important to see how the behavior of the new generation is affected, if at all, by facial expressions.

Based on the previous research of facial expressions on advertisements outlined above, the hypotheses for the present study are the following:

Hypothesis 1: All participants will be most susceptible to a genuine smile over a fake smile and a fake smile over a neutral facial expression.

Hypothesis 2: Adolescents will be more susceptible to advertisements and therefore will be more willing to pay a higher price for the same product compared to adults.

Hypothesis 3: Adolescents will be more susceptible to facial expressions and therefore a genuine smile will produce an even more positive influence in product evaluation for adolescents than adults.

■ Methods

In this study, the participants were separated into two groups: adults [$n = 30$] and adolescents [$n = 20$]. The survey was administered to an online panel of adults older than 19 in the fall of 2021. 99 responses were received, and 30 were randomly selected for the analysis so that the sample of adolescents and adults had balanced numbers. The same survey was distributed at a high school in New Jersey.

The procedure of the present study replicated that of Isabella and Viera.⁸ A survey was conducted that showed pictures of a female face with a neutral expression, fake smiling, and genuinely smiling (Figure 1) in a static advertisement. In this survey, the product being sold was a plain white t-shirt. Before measuring the willingness to purchase, a control measure was included in the survey to check for congruence between the model's facial expression and the participant's interpretation of it. This control was used to eliminate participants. Twenty-nine (29) adults and 3 adolescents were not included in the results because they did not accurately perceive the model's facial expression. Participants then rated their appeal and judgment of the product based on questions from the Beren's Product evaluation scale, which asks participants to rate the favorability, their likelihood of purchasing the product, and the preferred pricing of the product on a 7-point Likert scale.⁹ The XLMiner Analysis ToolPak was then used to conduct ANOVA and t-tests on these results.



Figure 3: Neutral, fake, and genuine facial expressions, respectively

■ Methods

In total, the survey responses from 30 adult participants were randomly selected and analyzed. Of these, 26.67% were female and 73.33% were male. 73.33% of participants iden-

tified as Caucasian, 10% identified as African American, and 23.33% identified as Asian American or Pacific Islander.

In total, 20 adolescent participants answered the survey. Of these, 75% were female, 20% were male, and 5% preferred not to disclose their gender. 50% of participants identified as Caucasian, 5% identified as African American, 45% identified as Asian American or Pacific Islander, and 5% identified as Hispanic. The survey was an online survey sent to a high school and participants were included in an optional raffle as an incentive for participation.

The two main aspects of the survey that were analyzed were the adult and adolescent participants' price evaluation and judgment on the quality of the product. The participants were asked to consider both the product and advertiser to determine what price, in dollars, they would pay for the product. To judge quality, the participants were asked how favorable their judgment was of this product and were asked to consider the quality of the white shirt in comparison to similar products on a scale from 1 to 7.

ANOVA Results:

Single factor ANOVAs were conducted to compare the responses of both adults and adolescents for both quality and preferred pricing across the three faces: neutral, fake smile, real smile. On average, there was a statistically significant difference in adults' rating of product quality across a neutral face ($M = 2.53$, $SD = 1.48$), fake smile ($M = 4.37$, $SD = 1.47$), and real smile ($M = 4.2$, $SD = 2.02$); $F(2, 87) = 10.94$, $p < 0.0001$ (Figure 2.1). In addition, there was a statistically significant difference in adults' ratings for preferred pricing across a neutral face ($M = 6.67$, $SD = 5.55$), fake smile ($M = 9.6$, $SD = 6.67$), and real smile ($M = 11.13$, $SD = 8.61$); $F(2, 87) = 3.1$, $p < 0.05$ (Figure 2.2). On average, there was a statistically significant difference in adolescents' ratings of product quality across the neutral face ($M = 2.55$, $SD = 1.50$), fake smile ($M = 3.8$, $SD = 1.48$), and real smile ($M = 3.9$, $SD = 2.02$) conditions; $F(2, 57) = 3.98$, $p < 0.025$ (Figure 2.3). Lastly, there was a statistically significant difference in adolescents' ratings for preferred pricing across a neutral face ($M = 6.92$, $SD = 2.89$), fake smile ($M = 9.32$, $SD = 3.91$), and real smile ($M = 10.17$, $SD = 3.96$); $F(2, 57) = 4.33$, $p < 0.018$ (Figure 2.4).

Average Pricing for Adolescents

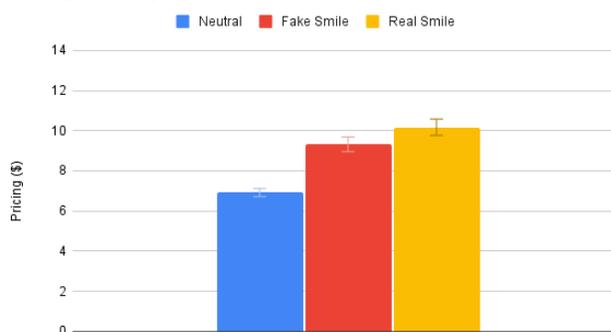


Figure 2.1: Average quality rating on Beren's scale for adults across three facial expressions.

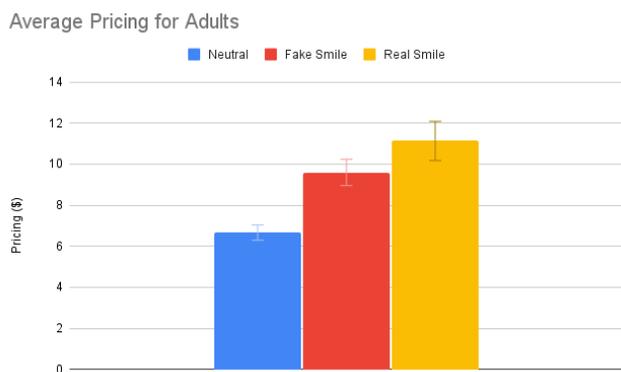


Figure 2.2: Average product pricing for adults across the three facial expressions.

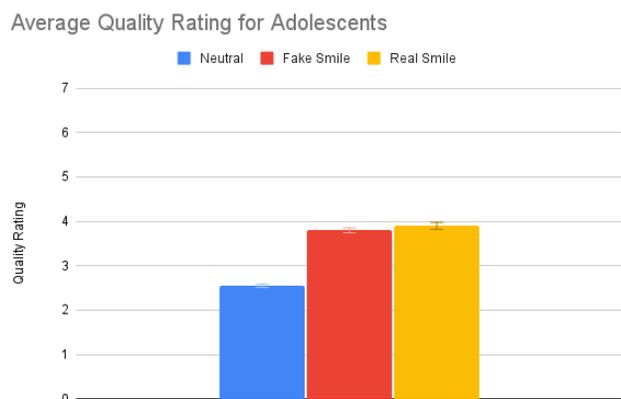


Figure 2.3: Average quality rating on Beren's scale for adolescents across three facial expressions.

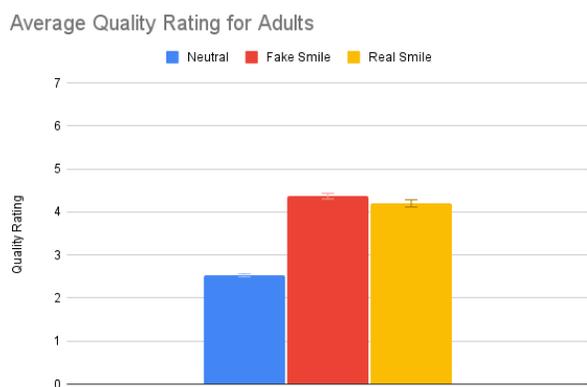


Figure 2.4: Average product pricing for adolescents across three facial expressions.

Paired Sample T-Tests

Adults:

To further explore the results from the ANOVA analysis, paired sample t-tests were used to determine which facial expression conditions were in fact statistically different. According to the results of the Paired Sample T-Test, adults' ratings of quality across a neutral face and fake smile ($p < 0.00001$) as well as across a neutral face and real smile ($p < 0.001$) were both statistically significant. On the other hand, adults' ratings across a fake smile and real smile were not statistically significant ($p = 0.54$).

The adults' ratings of product pricing across a neutral face and fake smile ($p < 0.002$), neutral face and real smile ($p < 0.003$), and fake smile and real smile ($p < 0.03$) were all statistically significant.

Adolescents:

According to the results of the Paired Sample T-Test, adolescents' ratings of quality across a neutral face and fake smile ($p < 0.006$) as well as across a neutral face and real smile ($p < 0.02$) were both statistically significant. On the other hand, adolescents' ratings across a fake smile and real smile were not statistically significant ($p > 0.05$).

Adolescents' ratings of product pricing across a neutral face and fake smile ($p < 0.0002$), neutral face and real smile ($p < 0.0002$), and fake smile and real smile ($p < 0.04$) were all statistically significant.

The findings support previous research on emotional contagion in which happiness exemplified by the advertiser evokes that same emotion in the participants. In all cases, adolescents and adults were on average willing to pay more and had a significantly higher evaluation of the quality of the product when the advertiser was smiling rather than displaying a neutral facial expression.

The results show that participants placed higher evaluation scores of product pricing when presented with an advertiser with a genuine smile, supporting hypothesis 1. To explain these results, previous studies can be examined, which have revealed that the muscular contractions involved in smiling and fake smiling can actually underlie how a viewer regards the expression and how positive emotions are transferred.^{10,11} With a genuine smile, the *zygomatic major* and *orbicularis oculi* muscles in the face are contracted. As a consequence, people tend to intuitively evaluate a smiling facial expression as authentic, genuine, and trustworthy.¹² In the present study, it is possible that the advertisers' genuine smile inspired a sense of trust and positivity in the participants viewing the product, leading to higher product quality ratings in the smiling condition. On the other hand, a fake smile only involves the *zygomatic major* muscle.¹³ The data shows that consumers can subconsciously observe the difference between a genuine and false smile and be affected differently. In the present study, it appears that participants responded differently to a genuine versus fake smile as their product quality ratings and price ratings differed.

It was hypothesized that adolescents would pay a greater amount than adults for the same product due to their lack of experience earning and spending money. The results of this study surprisingly showed that adolescents overall had a lower evaluation of the product, negating hypothesis 2. For both product quality and preferred pricing for all three facial expressions, adolescents, on average, gave a lower rating or pricing for each category (see figure 2 to compare these averages) compared to adults. For adolescents, the greater the susceptibility to interpersonal influence, the greater the tendency to buy on impulse.¹⁴ Therefore, when shown a model with a genuine smile, adolescents were more willing to pay a higher price and give the product a better evaluation, which is also demonstrated by the results. However, adolescents were significantly less influenced by a false versus a real smile, opposing hypothesis

3, when pricing the product compared to adults. On average, adults were willing to pay about 14.6% more when the model had a real smile while adolescents were willing to pay about 9.12% more. This can be attributed to the lack of exposure of adolescents to spending, which results in an unformed understanding of the value of money. This could be explained since adolescents will typically have less money leading to cheaper spending tendencies. Part of this study involved having participants imagine that this was a real product being sold. In other words, they had to envision that this still face on the screen was associated with selling this white t-shirt. Perhaps adults were better able to envision this scenario, while adolescents struggled to make this link.

■ Conclusion

In conclusion, consumers are willing to pay more and tend to have a higher evaluation of the quality of a product when a model in an advertisement displays a real smile, instead of a fake smile or a neutral facial expression in marketing material. Adults have a better evaluation and are willing to pay more than adolescents for the same product. Lastly, adults are more susceptible to facial expressions since their price evaluation when presented with a fake smile to a real smile changed more dramatically than that of adolescents. These implications suggest marketing managers would benefit from advertising with genuine smiles since they will evoke positive emotions in the consumer via emotional contagion, making them more likely to purchase.

The study could have benefitted from a larger sample size to increase the amount of data collected. This would improve the validity and generalizability of the data. Future investigations could explore the effects of emotional contagion on other factors including how the product attracts attention or lasts in the consumers' memory. A more detailed survey could allow researchers to determine what specific emotions are elicited from different facial expressions. Different stimuli such as the race or gender of the advertiser instead of facial expression could be used to measure product evaluation. In addition, this study had varied gender distributions between adolescents and adults which could have impacted the results. This study could be replicated with a more even sampling in order to test within group differences. This study researched the effects of facial expressions in static advertisements, and future research could also replicate this with dynamic advertisements (i.e., moving images for instance).

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