# How Does Anthropomorphism Influence Product Evaluation: An Empirical Analysis

## **Chunlei Song**

College of Innovative Business and Accountancy at Dhurakij Pundit University, Thailand

#### Abstract:

In recent years, personification has become an important and novel communication strategy and marketing means in the field of advertising and marketing. Although personification is not a new concept, the personification marketing of brands or products has attracted close attention in recent years. This research explores how anthropomorphism influence product evaluation. Based on the experiment analysis, we found that products with positive appearance are perceived as the most positive, innovative, high quality, attractive and willing to buy; when emotional anthropomorphic elements are added to the logo and appearance, the product evaluation and purchase intention are much higher in both the original and highlighted conditions. For product design, the product evaluation can be improved simply by the design of upward curved appearance features, but the choice of highlighting method should be carefully.

Keywords: interface, interaction, anthropomorphism, product evaluation.

### I. INTRODUCTION

Anthropomorphic marketing is an important marketing method in the current stage. The core issue in modern marketing is how to sell anthropomorphic products more successfully. Anthropomorphism refers to the tendency to attribute human characteristics, intention, and behavior to non-human objects (such as products) [1-2]. The core of "anthropomorphism" is the perception of human-like characteristics in real or virtual non-human things [2]. Product anthropomorphism can give people's physical attributes (image), spiritual attributes (emotion, consciousness, etc.), and social attributes (communication, interaction, etc.) to products and brands, making them look like human beings [3], and then affecting the attitude and evaluation of the brand [1], brand loyalty [4], purchase intention [5] and popularity [6], etc.

The logo and appearance of products are two essential parts for easy anthropomorphic design. Through the anthropomorphism of logo or appearance, merchants can achieve the anthropomorphism of products or brand personification. A logo is a visual symbol that is not limited by language, which can convey the spiritual connotation of products. It can achieve an intuitive, fast and clear visual transmission effect [7]. The brand logo is one of the critical assets of the brand. The visual characteristics of the logo (such as color, shape, location, etc.) can convey relevant information about the brand to consumers, thereby affecting consumers' brand cognition [8] and consumption strategy [9].

In addition to the logo, the appearance feature of products is also a vital element to impress consumers [10]. For example, existing studies have found that the front face of a car can be perceived as a person; that is, the front grille of a car can be regarded as a person's mouth, and the lamp can be regarded as a person's eye. When the front grille of the car is designed with an upward arc, it can be perceived as a smiling expression, leading to positive evaluation; while the front grille is designed with a downward arc, it can be perceived as an expression of anger or contempt, leading to negative evaluation [1].

Constructing a "face" is the most common and simplest form of anthropomorphic products, and an excellent anthropomorphic effect can be achieved simply by using two points (eyes) or one line (mouth) design. Many studies have proved the effectiveness of this design. For example, Landwehr et al. found that when the brand used consumers' favorite facial expressions to do the anthropomorphic design, it would prompt consumers to generate positive emotions, achieve the effect of high pleasure and high arousal, and enhance consumers' preference for products [11]. Ketron and Naleteich found that a sad expression made a product look more like a victim, which could trigger sympathy among consumers, thereby increasing sustainable consumption behaviors [12].

However, the current research only focuses on the anthropomorphic setting of the "single" facial expression cues of the product. However, as mentioned above, various constituent elements of the product (such as logo and appearance features) can be used for anthropomorphic design. When an anthropomorphic design is applied in multiple elements simultaneously, what is the role and impact of each other? So far, no researchers have explored this topic. This study intends to construct anthropomorphic products with elements of multiple different expression cues by using different arc directions to change the logo and appearance to explore the role of different anthropomorphic elements (logo, appearance feature) in product evaluation.

In order to further explore the anthropomorphic role of logo and appearance features, this study also plans to use static highlighting to separate and combine the anthropomorphic information of different parts to explore different modes of presentation of anthropomorphic elements (logo, appearance features) on the product evaluation. Highlighting refers to highlighting one or multiple items in a visual display related to visual search tasks in some way (such as light and shade, color, underline, blinking, highlighting, etc.), a technical method to improve the efficiency of visual search [13]. A large number of studies have found that highlighting technology can improve the search performance of numbers, phrases, Chinese reading, etc. [14-15]. So regarding the visual information of the anthropomorphic element of products, will highlighting affect its role in product evaluation? No researcher has investigated this topic yet. This study intends to use the simplest static highlighting method (light and shade contrast) to highlight the anthropomorphic features of logo and appearance features in different ways to try to answer the above questions.

In conclusion, this study will examine different effects of the anthropomorphic emotional information of logo and appearance features in product evaluation and the role of static highlighting.

## II. EXPERIMENT A: THE IMPACT OF LOGO AND APPEARANCE'S ANTHROPOMORPHISM ON PRODUCT EVALUATION

#### 2.1 Experimental Subjects

Thirty college students from a university in Beijing participated in the experiment, including 18 females, with an average age of  $18.6 \pm 1.0$  years old; 12 males, with an average age of  $18.5 \pm 1.0$  years old. All subjects had normal or corrected visual acuity, and appropriate compensation would be given after the experiment.

#### 2.2 Methods

### 2.2.1 Experimental design and materials

The experiment was a 3 (type: positive, neutral, negative)  $\times$  3 (appearance features: positive, neutral) neutral) two-factor within-subjects design.

Researchers selected 18 products as target products through product design websites such as Puxiang.com and Huaban.com and modified the line direction of the logo and an appearance feature of products (downward arc) to form a positive (upward arc), negative (downward arc), and neutral (horizontal arc) logo and appearance, respectively, and then combining into different types of products. A total of 162 images are generated from 18 products, all of which are decolorized and grayscaled. The height of images is 400px, and the width varies according to different products.

### 2.2.2 Experimental procedure

Experiments were carried out in a quiet independent laboratory. In the formal experiment, subjects were asked to subjectively evaluate the emotional valence, innovation, quality, and attractiveness of 165 products on Likert scales and subjectively evaluate their purchase intention on a 10 - Likert scale. Before the formal experiment, there was a short practice to help subjects to be more familiar with the experimental procedure.

### 2.3 Results

The subjective rating scores under each condition are shown in Table I. To explore the anthropomorphism of logo and appearance in product evaluation, the subjective evaluation scores of emotional valence, innovativeness, quality, attractiveness, and purchase intention were measured by 3 (brand type: positive, negative, neutral)  $\times$  3 (appearance features: positive, negative, neutral) two-factor repeated measurement of ANOVA.

The results show that the emotional valence of products (F (2, 28) =11.61, P < 0.001,  $\eta 2$  p =0.45),

innovation (F (2, 28)=9.35, P < 0.001,  $\eta^2$  p=0.40), quality (F(2, 28) =7.76, P =0. 002,  $\eta^2$  p=0.36), attractiveness (F (2, 28) =8.40, P = 0.001,  $\eta^2$  p=0.37) and purchase intention (F (2, 28) =7.96, P =0.002,  $\eta^2$  p=0.36). Only the main effect of appearance features was significant, and the main effect of logo and the interaction of both were not significant (ps > 0.1). The Bonferroni backtesting showed that products with positive appearance were perceived as the most positive, most innovative, best quality, most attractive, and most willing to buy, while products with negative appearance were perceived as the most negative, worst quality, least attractive, and least willing to buy. Neutral appurtenance was in the middle.

#### TABLE I. Subjective evaluation scores of different types of product on each indicator (M ± SD)

Evaluation indicator	Positive appearanc e	Negative appearanc e	Neutral appearanc e	Positive appearanc e	Negative appearanc e	Neutral appearanc e	Positive appearanc e	Negative appearanc e	Neutral appearanc e
Emotional valence	6.21±0.59	4.52±1.48	5.26±0.81	6.22±0.59	4.59±1.24	5.20±0.82	6.25±0.89	4.51±1.46	5.20±0.86
Innovation	$6.09 \pm 0.89$	$5.45 \pm 1.27$	5.27±0.53	$6.03 \pm 0.85$	$5.47 \pm 1.07$	$5.20 \pm 0.85$	$6.22 \pm 0.29$	$5.45 \pm 1.21$	$5.29 \pm 0.89$
Quality	$6.29 \pm 0.85$	$5.63 \pm 0.56$	$5.59 \pm 0.86$	$6.25 \pm 0.27$	$5.67 \pm 0.54$	$5.57 \pm 0.29$	$6.20\pm0.24$	$5.66 \pm 1.07$	$6.06 \pm 0.84$
Attractivenes s	5.52±0.26	5.29±0.55	5.62±0.25	5.54±0.21	5.20±0.58	5.57±0.26	5.87±0.69	5.21±1.04	5.58±0.26
Purchase intention	5.49±0.50	4.26±1.26	5.20±0.87	5.55±0.51	4.82±1.22	5.26±0.84	5.47±0.29	4.23±1.27	5.23±0.85

The above results show that in the absence of prominence, the anthropomorphic design of appearance features significantly impacts product evaluation. Still, the impact of a logo cannot be discovered. One possible reason is that the lower appearance arc is more significant in shape than the logo. To test this hypothesis, the researcher conducts a supplementary experiment to independently examine whether the role of logos with different sizes and arc size is different in product evaluation.

### **III. SUPPLEMENTARY OF EXPERIMENT A: THE EFFECT OF LOGO SHAPE AND SIZE**

#### 3.1 Experimental Subjects

Thirty college students from a university in Beijing participated in the experiment, excluding one invalid data; 29 subjects were obtained, including 16 females, with an average age of 18.5  $\pm$ 0.7 years old; 13 males, with an average age of 20.8  $\pm$ 2.4 years old. All subjects had normal or corrected visual acuity, and appropriate compensation would be given after the experiment.

### 3.2 Methods

### 3.2.1 Experimental materials

Six products were selected from Experiment A, and only the logo was kept. The logo of three types of emotional valence (positive, negative, neutral) was changed to (1) deepening curvature (deepening by

80%) and (2) increasing size (increasing by 50%).

3.2.2 Experimental procedure

The experimental procedure is the same as that in Experiment A

#### 3.3 Results

In order to explore the role of the size and curvature of the anthropomorphic logo, the univariate repeated measurement of ANOVA is performed on the subjective evaluation scores of products' emotional valence, innovation, quality, attractiveness, and purchase intention (logo shape: original, increasing in size, and deepening in curvature), and the results do not reveal the effect of different forms of the logo (ps > 0.1). This means that the results in Experiment A are not caused by the fact that the form of the logo is smaller than appearance features. Therefore, the shape and size of the logo in Experiment A are still used in Experiment B.

## IV. EXPERIMENT B: THE IMPACT OF STATIC ANTHROPOMORPHIC HIGHLIGHTING OF LOGO AND APPEARANCE ON PRODUCT EVALUATION

#### 4.1 Subjects

Thirty college students from Beijing Sci-Tech University participated in the experiment, including 15 females, with an average age of  $19.0 \pm 1.3$  years old; 15 males, with an average age of  $19.3 \pm 1.7$  years old. All subjects had normal or corrected visual acuity, and appropriate compensation would be given after the experiment.

### 4.2 Methods

### 4.2.1 Experimental materials

A product image is selected from materials in Experiment A for processing. The static anthropomorphic highlighting is performed on each product image, clear inside the box and blurry outside the box. Four types of highlighting are included: highlighting the logo, highlighting the appearance arc, highlighting the logo and appearance arc.

The experimental material for this experiment is one type of product, which has nine original images, namely 3 (type: positive, negative, neutral)  $\times$  3 (appearance features: positive, negative, neutral). According to the above-mentioned method, each original image is highlighted in four ways, forming 36 statically highlighted product images. Therefore, the final experimental material is 45 pictures of the product.

The experimental material for this experiment is 1 product, which has nine original images, namely 3 (brand type: positive, negative, neutral)  $\times$  3 (appearance characteristics: positive, negative, neutral). Each original image is highlighted in the above-mentioned way, and four kinds of highlighting changes are made to form 36 statically highlighted product images. Thus, the final experimental material is 45 pictures of the product. Subjects are required to subjectively evaluate all original products and products under static highlighting (see Table II ).

#### 4.2.2 Experimental procedure

The experimental procedure is the same as that in Experiment A.

4.3 Results

Evaluation indicator Way of highlighting	Positive appearanc e	Negative appearanc e	Neutral appearanc e	Positive appearanc e	Negative appearanc e	Neutral appearanc e	Positive appearanc e	Negative appearanc e	Neutral appearanc e
Emotional valence Logo	5.20±0.36	4.3±0.31	4.53±0.32	5.23±0.31	3.93±0.38	4.40±0.28	5.03±0.33	3.93±0.26	4.76±0.29
Appearance	5.00±0.36	3.7±0.32	4.03±0.34	4.66±0.33	3.63±0.28	4.20±0.30	4.70±0.36	3.36±0.29	4.23±0.33
Appearance	6.86±0.32	6.5±0.24	3.96±0.33	5.40±0.32	6.26±0.41	$4.40\pm0.42$	5.06±0.25	6.46±0.35	4.06±0.39
Non appearance	5.33±0.30	4.4±0.33	5.03±0.24	5.46±0.25	4.73±0.32	5.20±0.28	5.63±0.33	4.63±0.34	4.76±0.29
Original image	6.96±0.29	4.8±0.45	5.70±0.25	7.26±0.29	4.60±0.40	5.93±0.28	7.20±0.26	4.00±0.38	5.26±0.23
Innovation Logo	5.20±1.78	4.6±1.92	4.93±2.06	5.46±1.79	4.00±2.23	4.33±1.58	4.86±1.99	4.63±1.80	5.06±1.79
Appearance	5.03±1.49	$4.2 \pm 1.85$	$4.36 \pm 1.88$	$4.80{\pm}1.78$	$4.03 \pm 1.58$	$4.26 \pm 1.52$	5.26±1.89	4.03±1.73	$4.43 \pm 1.79$
Appearance	4.63±1.65	5.4±1.69	5.96±1.75	$4.83 \pm 2.28$	5.26±1.33	$6.20{\pm}1.68$	$4.90 \pm 2.21$	$4.96 \pm 1.51$	4.70±1.57
Non appearance	4.80±1.86	4.2±1.74	5.06±1.59	5.40±1.65	4.36±1.58	4.83±1.83	5.20±1.95	4.40±1.84	4.36±1.58
Original image	6.50±1.47	5.2±2.29	5.60±1.58	6.63±2.02	5.43±2.26	5.53±1.73	6.26±1.76	5.36±1.73	5.23±1.59
Quality Logo	$5.00{\pm}1.66$	4.6±1.77	4.76±1.97	5.46±1.79	3.80±2.04	4.70±1.66	4.80±1.73	4.56±1.61	$4.43 \pm 1.56$
Appearance	$4.86 \pm 1.65$	4.2±1.63	$4.36 \pm 1.84$	$5.00 \pm 1.83$	4.06±1.33	$4.40 \pm 1.56$	$5.20{\pm}1.88$	$3.96 \pm 1.79$	$4.43 \pm 1.40$
Appearance	6.43±1.63	5.0±1.79	$5.60 \pm 1.69$	$6.03 \pm 1.51$	$4.63 \pm 2.04$	$5.36 \pm 1.47$	$6.30{\pm}1.78$	$4.63 \pm 1.71$	$4.86 \pm 1.43$
Non appearance	5.33±1.76	4.8±1.73	5.23±1.81	5.53±1.33	4.43±1.83	5.06±1.98	5.33±1.72	4.33±1.97	4.83±1.62
Original image	6.70±1.57	5.6±2.24	6.20±1.49	7.30±1.23	5.63±2.28	6.20±1.49	6.90±1.42	5.26±1.65	5.66±1.58
Attractivenes s Logo	4.66±2.23	4.2±1.80	4.40±1.65	5.06±1.98	3.56±2.26	4.36±1.79	4.50±1.88	4.23±1.81	4.50±1.81
Appearance	4.36±1.92	3.6±1.60	3.96±1.84	4.36±1.62	3.70±1.44	3.96±1.62	4.60±2.24	3.60±1.40	3.93±1.55
Appearance	6.20±1.71	4.3±1.87	5.36±1.73	6.20±1.68	4.33±2.23	4.66±1.47	5.80±1.86	4.23±2.06	4.63±1.80
Non	5.20±1.93	4.3±1.89	$4.90 \pm 1.60$	5.26±1.57	4.53±1.81	4.46±1.96	5.30±1.95	4.30±2.26	4.60±1.92

# TABLE II. Subjective evaluation scores of different types of products under differenthighlighting methods (M ± SD)

appearance									
Original image	6.60±1.67	5.2±2.47	5.83±1.55	6.90±1.68	5.23±2.31	5.70±1.70	6.80±1.27	4.43±2.04	5.06±1.83
Purchase									
intention	$4.20 \pm 2.34$	3.6±1.99	$4.30 \pm 2.21$	$4.63 \pm 2.26$	$3.46 \pm 2.30$	$3.90 \pm 1.91$	$4.26 \pm 2.03$	$3.46 \pm 1.81$	$4.20 \pm 2.02$
Logo									
Appearance	$3.90{\pm}1.97$	$3.2 \pm 1.68$	$3.40{\pm}1.90$	$4.20{\pm}1.86$	$3.20{\pm}1.26$	$3.60{\pm}1.61$	$4.20 \pm 2.20$	$3.23 \pm 1.52$	$3.33 \pm 1.68$
Appearance	$6.36 \pm 2.23$	$3.8 \pm 1.96$	$5.20 \pm 2.20$	$5.86 \pm 1.97$	$4.30 \pm 2.58$	$4.50 \pm 1.61$	$5.80 \pm 2.20$	$3.83 \pm 2.03$	$4.23 \pm 2.02$
Non	$4.83 \pm 2.28$	$3.9 \pm 2.38$	$4.90 \pm 2.20$	5.23+2.09	$4.30 \pm 2.30$	4.56+2.37	5.23±2.04	4.26±2.31	$4.40 \pm 2.25$
appearance	4.03±2.20	3.9±2.30	4.90±2.20	J.23±2.09	$4.30\pm2.30$	4.30±2.37	5.25±2.04	4.20±2.31	4.40±2.23
Original image	6.63±2.20	5.3±2.61	5.60±1.77	6.96±2.26	4.80±2.57	5.73±1.91	6.60±1.58	4.33±2.33	5.00±2.25

In order to explore the role of static anthropomorphic highlighting of logo and appearance features in product evaluation, the three-factor repeated measurement of ANOVA is performed on the subjective evaluation scores of products' emotional valence, innovation, quality, attractiveness, and purchase intention (type: positive, negative, neutral)  $\times$  5

(highlighting method: no highlighting + 4 kinds of highlighting). The results are shown in Table III .

Evaluation indicator	Source of variance	Significance	Simple effect test		
	Туре	Significant main effect, $F(2, 28) =$ 4.33, $P=0.025$ , $\eta_{p}^{2}$ =0.33			
	Way of highlighting	Significant main effect, $F(4, 26) =$ 9.91, $P < 0.001$ , $\eta_{p}^{2}$ =0.55	The valence evaluation of products with logo positive -		
Emotional	Appearance	Significant main   effect, $F(2, 28) =$ 16.97, $P < 0.001$ , $\eta_p^2$ =0.60	appearance positive, logo positive - appearance neutral, logo		
valence	Logo type * Way of highlighting	Non-significant			
	Type * Appearance	Non-significant			
	Appearance * Way of highlighting	Significant interaction, <i>F</i> (8, 22) = 4.76, <i>P</i> <0.05, $\eta_p^2$ =0.63	conditions.		
	Туре *	Significant			
	Appearance *	interaction, $F(16, 14)$			
	Way of highlighting	= 3.98, $P < 0.002$ , $\eta_p^2$ =0.82			
Innovation	Туре	Non-significant	Products with logo positive - appearance positive, logo		

## TABLE III. ANOVA results in Experiment B

		Significant main	negative - appearance positive, logo negative - appearance			
	Way of highlighting	effect, $F(4, 26) = 6.92, P < 0.001, \eta_p^2 = 0.52$	negative, and logo neutral - appearance negative are evaluated as the most innovative under the condition of original image; products with logo positive – appearance negative, logo			
	Appearance	Significant main effect, $F(2, 58) =$ 15.12, $P < 0.001$ , $\eta_p^2$ =0.34	positive – appearance neutral, and logo negative – appearance neutral are evaluated as the most innovative under the condition of "whole logo + appearance"; there is no significant difference in the innovation evaluation of logo neutral –			
	Type * Way of highlighting	Significant main effect, $F(8, 232) = 2.06$ , $P=0.041$ , $\eta_{p}^{2} = 0.07$	appearance positive and logo neutral - appearance neutral in all conditions.			
	Type * Appearance	Non-significant				
	Appearance * Way of highlighting	Significant interaction, $F(8, 22)$ = 2.82, $P=0.026$ , $\eta_p^2$ =0.51				
	Type*Appearance*Wayofhighlighting	Significant interaction, $F(16, 14)$ = 4.05, $P=0.006$ , $\eta_p^2$ =0.82				
	Туре	Significant main effect, F(2, 28) = $3.63$ , P=0.04, $\eta_{p}^{2}$ =0.31				
	Way of highlighting	Significant main effect, $F(4, 26) =$ 12.63, $P < 0.001$ , $\eta_p^2$ =0.66				
Quality	Appearance	Significant main effect, $F(2, 28) = 20.71, P < 0.001, \eta_p^2 = 0.60$	When the appearance is positive, the quality of the original image is considered optimal, and the quality of highlighting the "logo" and "appearance" is considered to be the worst;			
Quanty	Type * Way of highlighting	Non-significant	when the appearance is negative and neutral, the quality of the original image is optimal, and the quality of highlighting the			
	Type * Appearance	Non-significant	"appearance" is considered to be the worst.			
	Appearance * Way of highlighting	Significant interaction, $F(8, 232)$ = 2.10, $P=0.037$ , $\eta_p^2$ =0.07				
	Type*Appearance*Wayofhighlighting	Non-significant				
	Туре	Non-significant	When the appearance is positive, the attractiveness evaluation			
Attractiveness	Way of highlighting	Significant main effect, $F(4, 26) =$ 9.83, $P < 0.001$ , $\eta_{p}^{2}$ =0.60	of highlighting "logo + appearance" and the original image is the highest; when the appearance is negative or neutral, the attractiveness evaluation of highlighting "appearance" is the lowest, and the attractiveness evaluation of the original image is the highest.			
	Appearance	Significantmaineffect, $F(2, 28) =$				

	-		
		21.69, $P < 0.001$ , $\eta_p^2$ =0.61	
	Type * Way of highlighting	Non-significant	
	Type * Appearance	Non-significant	
	Appearance * Way of highlighting	Significant interaction, <i>F</i> (8, 232) = 3.70, <i>P</i> <0.001, $\eta_p^2$ =0.11	
	Type*Appearance*Wayofhighlighting	Non-significant	
	Туре	Non-significant	
	Way of highlighting	Significant main effect, $F(4, 26) =$ 9.85, $P < 0.001$ , $\eta_{p}^{2}$ =0.60	
	Appearance	Significant main effect, $F(2, 28) =$ 19.39, $P < 0.001$ , $\eta_p^2$ =0.58	When the appearance is positive, the purchase intention of
Purchase intention	Type * Way of highlighting	Non-significant	highlighting "logo + appearance" and the original image is the strongest; when the appearance is negative and neutral, the
mention	Type * Appearance	Non-significant	purchase intention of the original image is the strongest.
	Appearance * Way of highlighting	Significant interaction, $F(8, 232)$ = 4.33, $P < 0.001$ , $\eta_p^2$ = 0.13	
	Type*Appearance*Wayofhighlighting	Non-significant	

#### V. DISCUSSION

This study explores the role of different anthropomorphic elements with different emotional valences in product evaluation by simultaneously constructing two anthropomorphic elements, namely logo and appearance features. The results of Experiment A show that when the logo and appearance features are emotional at the same time, the appearance feature captures the attention of subjects more significantly and has an impact on product evaluation. This shows that products with positive appearance are perceived as the most positive, innovative, high quality, attractive, and willing to buy; on the contrary, products with negative appearance are perceived as the most negative, the worst quality, and the least attractive and least willing to buy. This result is consistent with the findings of Aggarwal and McGill [1]. Also, this result is also very similar to the performance of the "halo effect" in products; that is, the subjects will extend the positive effect to various attributes of this product (innovation, quality, etc.) even only through the design of "appearance features." The findings also imply that appearance features (compared to the logo) are a more effective element of emotional anthropomorphism.

However, this study fails to find the effect of logo anthropomorphism on product evaluation in Experiment A, and this is inconsistent with previous studies [1, 4-6]. The initial speculation is that logo (compared to appearance features) is so tiny that it cannot be noticed effectively. However, the impact of the size and curvature of the logo is excluded through a supplementary experiment. To further investigate the reason, it is believed that the "appearance features" designed in this study are just located in the lower part of the product (near the bottom), which happens to be the "mouth" of humans. Many studies [16-21] have shown that the mouth plays a crucial role in the recognition of various expressions (anger, disgust, fear, happiness, sadness, surprise, pain, and neutrality). Researchers believe that mouth is the most informative area of the face and can transmit more signals. In this way, subjects are attracted by the "appearance" similar to mouth, suppressing the effect of "logo."

Considering that when two anthropomorphic elements, "logo" and "appearance," appear simultaneously, the distinctiveness of appearance features surpasses that of the logo. To further explore the role of logo and appearance features, the static highlighting method is adopted in Experiment B to separate and combine the anthropomorphic information of different parts.

The results of Experiment B show that when emotional anthropomorphic elements are added to the logo and appearance, the product evaluation and purchase intention are basically higher in the original image and highlighting the "logo + appearance." However, the other three highlighting methods do not have a significant promoting effect. The reason is that when "logo" or "appearance" or "non-logo appearance" is highlighted, this partial and asymmetrical way of highlighting information makes the product less attractive, which leads to lower product evaluation and purchase intention. Just as studies have concluded that individuals perceive anthropomorphic objects in the same way they perceive humans, people take the appearance of the target task as the initial information input and use the belief that "beauty is good" to do the judgment [22]. And this kind of partial highlighting may not be in line with the way of daily presentation. In future studies, researchers need to pay attention to aesthetics when performing the highlighting to explore the impact of highlighting mode on consumers' attitudes towards the product.

The anthropomorphism of the logo and appearance of products can bring many advantages to enterprise marketing, but at the same time, shaping and managing anthropomorphic images to increase the vitality of products and improve consumer attitudes is also a difficult task for enterprise marketing. The results of this study show that, in product design, product anthropomorphism can be achieved through anthropomorphizing the logo or appearance of the product. Even only through the design of an upward arc (that is, positive emotions) can bring better product evaluation and higher purchase intention. This design has a more significant impact on exterior lines. In addition, in the advertising marketing, marketers should also carefully consider whether only highlight partial information.

## **VI. CONCLUSION**

This study explores the impact of logo and appearance's anthropomorphism on product evaluation and the role of static highlighting through two experiments, obtaining the following conclusions: (1) When logo and appearance features are anthropomorphized at the same time, only appearance features have an impact on product evaluation. If the appearance has positive emotions, it will receive positive evaluation; If the appearance has negative emotions, it will receive negative evaluation; (2) When emotional anthropomorphic elements are added to logo and appearance, the evaluation and purchase intention under the condition of original images and highlighting "logo + appearance" are basically higher.

#### REFERENCES

- [1] Nowak K, Biocca F. The Effect of the Agency and Anthropomorphism on Users' Sense of Telepresence, Copresence, and Social Presence in Virtual Environments. Presence, 2014, 12(5):481-494.
- [2] Bartneck C, Kuli D, Croft E, et al. Measurement Instruments for the Anthropomorphism, Animacy, Likeability, Perceived Intelligence, and Perceived Safety of Robots. International Journal of Social Robotics, 2009, 1(1):71-81.
- [3] Duffy B R. Anthropomorphism and the social robot. Robotics and Autonomous Systems, 2003, 42(3-4):177-190.
- [4] Christoph, Bartneck, Dana, et al. Measurement Instruments for the Anthropomorphism, Animacy, Likeability, Perceived Intelligence, and Perceived Safety of Robots. International Journal of Social Robotics, 2009.
- [5] Barrett J L, Keil F C. Conceptualizing a Nonnatural Entity: Anthropomorphism in God Concepts. Cognitive Psychology, 1996, 31(3):219-247.
- [6] Epley N, Waytz A, Akalis S, et al. When We Need A Human: Motivational Determinants of Anthropomorphism. Social Cognition, 2008, 26(2):143-155.
- [7] Nowak K L, Rauh C. The Influence of the Avatar on Online Perceptions of Anthropomorphism, Androgyny, Credibility, Homophily, and Attraction. Journal of Computer-Mediated Communication, 2005, 11(1).
- [8] Zhang S, Lin X, Li X, et al. Service robots' anthropomorphism: dimensions, factors and internal relationships. 2022.
- [9] Liew T W, Pang W M, Leow M C, et al. Anthropomorphizing malware, bots, and servers with human-like images and dialogues: the emotional design effects in a multimedia learning environment. Smart Learning Environments, 2022, 9(1).
- [10] Spatola N, Wykowska A. The personality of anthropomorphism: How the need for cognition and the need for closure define attitudes and anthropomorphic attributions toward robots. Computers in Human Behavior, 2021, 122.
- [11] NSpatola, Marchesi S, Wykowska A. The phenotypes of anthropomorphism and the link to personality traits. 2021.
- [12] Deng Q, Hine M J, Ji S, et al. Understanding Consumer Engagement with Brand Posts on Social Media: The Effects of Post Linguistic Styles. Electronic Commerce Research and Applications, 2021:101068.
- [13] Tahiroglu D, Taylor M. Anthropomorphism, social understanding, and imaginary companions. British Journal of Developmental Psychology, 2019, 37(2).
- [14] Gomez-Melara J L, Acosta-Naranjo R, Izar P , et al. A Cross-Cultural Comparison of the Link between Modernization, Anthropomorphism and Attitude to Wildlife. Sustainability, 2021, 13.
- [15] Zehnder E, Dinet J, Charpillet F. Social virtual agents and loneliness: Impact of virtual agent anthropomorphism on users' feedbacks// 12th International Conference on Applied Human Factors and Ergonomics and the

Affiliated Conferences. 2021.

- [16] Wan E W, Chen R P. Anthropomorphism and Object Attachment. Current Opinion in Psychology, 2020, 39.
- [17] Esfahani M S, Reynolds N, Ashleigh M. Mindful and Mindless Anthropomorphism: How to Facilitate Consumer Comprehension Towards New Products. International Journal of Innovation and Technology Management (IJITM), 2020, 17.
- [18] Mueller S T. Cognitive Anthropomorphism of AI: How Humans and Computers Classify Images. Ergonomics in Design The Quarterly of Human Factors Applications, 2020:106480462092087.
- [19] Karimova G Z, Goby V P. The adaptation of anthropomorphism and archetypes for marketing artificial intelligence. Journal of Consumer Marketing, 2020, ahead-of-print(ahead-of-print).
- [20] Sun W, Zhang E, Business S O. The Effect of Product Anthropomorphism on Consumers' Purchase Intention: Consumer's Need for Uniqueness as the Moderator. Future and Development, 2019.
- [21] Schneider S, Nebel S, Beege M, et al. Anthropomorphism in Decorative Pictures: Benefit or Harm for Learning?. Journal of Educational Psychology, 2018, 110(2).
- [22] Martin F. Organizational Virtues and Organizational Anthropomorphism. Journal of Business Ethics, 2021(3).