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ANTHROPOMORPHISM IN ACTION: HOW CONSUMERS FORM RELATIONSHIPS WITH HUMANIZED BRANDS

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Abstract:
Brand personification is a vital concept in marketing communication, wherein brands are endowed with human attributes to create a relatable, living persona. This practice, spanning various aspects of human characteristics, enables brands to establish a deeper connection with consumers. This paper delves into the intricate world of brand personification, shedding light on its diverse manifestations and its significance in marketing strategy.

Keywords: Brand personification, marketing communication, human attributes, brand persona, consumer connection.

Introduction

In marketing communication, *brand personification* refers to the process of applying a rhetorical figure with human attributes to a brand and presenting it as if it were a living person (Brown, 2011; Cohen, 2014). Human or humanlike characteristics used in brand personification can be any aspects, ranging from those of physicality to personality, that constitute human beings (Aaker, 1997; Landwehr, McGill, & Herrmann, 2011). As cases in point, ads for several wristwatches (e.g., Rolex) that set the time at 10:10 or the designs of cars' front grilles and headlights (e.g., Volkswagen Beetle) both exhibit humanlike faces with emotionality. As other examples, Coca-Cola's iconic hobble skirt bottle suggests a human contour similar to women dressed in tight skirts, while Tony the Tiger for Kellogg's Frosted Flakes and the Pillsbury Doughboy clearly enliven those brands based on the characters' humanlike behaviors and vivid personality that even allow the characters to act as representatives of the brands.

Delbaere, McQuarrie, and Phillips (2011) have contrasted brand personification from anthropomorphism by positing that the former "is a message characteristic—an option that can be added to a message, while anthropomorphism is an inherent audience characteristic—one that allows this particular message option to be effective" (p. 121). By some contrast, Epley, Waytz, and Cacioppo (2007) have defined *anthropomorphism*as an individual's tendency to "imbue the real or imagined behavior of nonhuman agents with humanlike characteristics, motivations, intentions, or emotions" (p. 864).

In other words, anthropomorphism refers to a process of inductive inferences similar to basic cognitive operations, in which highly available and accessible knowledge structures are elicited to serve as an anchor for judgment. By extension, *agent knowledge*—that is, knowledge concerning human agency, including knowledge of the self or other humans at large—is conceived as the primary knowledge structure for making anthropomorphic inferences (Epley et al., 2007).

Because agent knowledge is acquired from both consumers' multitudinous experiences with being human and ample observations of others in their daily lives, it is both richly detailed and readily accessible to trigger anthropomorphic

thinking when consumers encounter messages with brand personification (Epley et al., 2007). At the same time, consumers elicit alternative (i.e., nonhuman-agent-related) knowledge structures that can affect their application of agent knowledge to a given target. *Alternative knowledge* is the situational information acquired from given stimuli (e.g., utilitarian attributes or values of the brand) that can be integrated with agent knowledge in order to moderate how anthropomorphic thinking is engendered (Trope &Gaunt, 2000). However, Epleyet al. (2007) have contended that the integration process is not enough to adjust anthropomorphism as a cognitive phenomenon due to the high availability, accessibility, and applicability of agent knowledge. In turn, consumers' final judgments remain affected by anthropomorphism.

Given the pervasiveness of brand personification, previous research has sought to demonstrate anthropomorphism as an antecedent of consumers' attitude formation (Aggarwal & McGill, 2007; Landwehr al., 2011), product replacement intention (Chandler & Schwarz, 2010), automatic behavior (Aggarwal & McGill, 2012), and perceived risk (Kim & McGill, 2011). Other research has theorized that anthropomorphism facilitates the perception of brand personality (Aaker, 1997), consumer–brand relationships (Fournier, 1998), and brands as intentional agents (Fournier & Alvarez, 2012). Although these strands of research have emphasized the occurrence of anthropomorphism in consumer psychology, scant research has been conducted to demystify the underlying mechanism bywhich anthropomorphism is constructed and the ways in which anthropomorphism exerts influences on consumers' decision-making process.

Building upon the literature, therefore, the present research has two purposes: to examine the psychologicalprocess of anthropomorphism and toinvestigate how anthropomorphism affectsconsumer responses to given adsand advertised brandswithin the context of brand personification. By integrating literature across fields, this research contributes to both the theoretical framework of brand personification in marketing and the theory of anthropomorphism in sociopsychology. Itsfindings specify relationships between constructs that prompt consumers' anthropomorphic inferences and the degree to which anthropomorphism colors their judgments. The research also sheds light on the branding strategies in marketing communication that utilize brand personification to generate positive advertising and brand outcomes. Ina broad scope, an empirical investigation of the universal psychological mechanism of anthropomorphism offers feasible suggestions for marketers to establish and maintain consumer– brand relationships.

Theoretical Background

Theory of anthropomorphism

Anthropomorphism permeates information processingprecisely because it helps people to make sense of the world, aids their efficiency in learning unfamiliar objects, and satisfies their basic need for social relationships(Guthrie, 1995). In various cultures, people sculpt gods and spirits with human contours, for example, as well as identify faces in clouds and interact with their pets as if they were family members (Dotson & Hyatt, 2008; Newton, Newton, & Wong, 2017). Inthe marketing context, consumers nickname their cars, blame their mobile phones for malfunctioning, and even develop and maintainrelationships with brands. Guthrie (1995) haspointed outtwo reasons for the universal tendency to anthropomorphize nonhuman agents. First, familiarity explanation refers to the use of knowledge about the self as the basic criterion for understanding nonhuman agents or the world at large, chiefly because peoplehave good knowledge about themselves. Second, since peopleare generally "mistrustful of what is nonhuman but reassured by what is human," emotional motives compelthem to seek comfort and companionship through anthropomorphism
(p. 54).

In the same vein, Eskine and Locander (2014) have suggested that anthropomorphism is fueledby people'sdeep motivation to accurately perceive the world viaachievingfamiliarity andgaining comfort with nonhuman objects and thereby reducing their uncertainty about them.

Epleyet al.'s (2007) theory of anthropomorphism delves into the psychological process of anthropomorphism which involves the availability, accessibility, and applicability of agent knowledge asa dominant form of knowledge about

human experiences. Earlier, Higgins (1996) definedsuchavailability as the existence of agent knowledge in memories andaccessibility as the elicitation potential of thatknowledge. Because agent knowledge is amplydetailed and itsessence stored in the memory, accessibility determines whether such knowledge will be brought to mind for application. According to Taylor and Fiske (1978), properties of stimulus information (e.g., feature similarity) andproperties of perceivers (e.g., psychological traits) determine the accessibility of agent knowledge at the time of judgment. When people access agent knowledge, they evaluate the applicability (i.e., the overlap between agent knowledge and the attempted features of brand personification) as the final step inmaking inferences. In the process, yet, alternative knowledge—that is, knowledge other than that of human experiences in general—can be coactivated to reduce the application of elicited agent knowledge (Epleyet al., 2007). It can moreoverbe integrated with elicited agent knowledge and, with it, influence the extent to which people makeanthropomorphic inferences. Notably, elicited alternative knowledge cannot completely override elicited agent knowledge insofar as any final judgment still prioritizes anthropomorphism (Waytzet al., 2010).

To put it another way, consumers' agent knowledge would positively contribute to the exhibition of anthropomorphism, whereas alternative knowledge wouldnegatively influence it, which give rise to the following hypotheses.

H1:When consumers process brand personification, agent knowledge will positively influence anthropomorphism.

H2:When consumers process brand personification, alternative knowledge will negatively influence anthropomorphism

Anthropomorphism and ad engagement

Prior research has identified some effects of anthropomorphism, once induced,on consumers' engagement with brand-related information in advertising(Aggarwal & McGill, 2012; Chandler & Schwarz, 2010). For one, Wang (2006) has definedsuch engagement as ad engagement, or "the contextual relevance in which a brand's messages are framed and presented based on its surrounding context" in terms of utility, involvement, and emotional bonding in howconsumers processadvertising messages (p. 355). Later, Kim, Ahn, and Kwon(2014) further identified three dimensions of ad engagement—affective captivation, resonance, and cognizance—to depict the state of the mind when consumers engage with advertising messages. By definition, affective captivation refers to the extent to which an ad grabs and maintains consumers' attention during ad exposure (Greenwald & Leavitt, 1984), resonancerefers to the specific advertising context in which a consumer experiences a sense of presence in the ad as if he or she was the character (Escalas, 2004), and cognizance relates to consumers'comprehension of the ad's content (Cacioppo & Petty, 1984). In processing brand personification, consumers would easily relate humanlike cues in ads to predominant agent knowledge, rather than alternative knowledge, to help them to rationalize the personified brand by way of anthropomorphism.The rationalization based on immediate knowledge about the self mightmake consumers perceive the adto be pertinent to themselves andthus devote cognitive efforts to it. In another sense, contextual relevance resulting from anthropomorphism could make consumers sense the ad's authenticity and stay focused on the ad duringthe entire courseof information processing. Consumers might then follow the narrative story line and design of the adas if they played a role or were present in the ad. Based on the conceptualization, the hypothesis is postulated.

H3: Anthropomorphism will positively influence ad engagement.

Anthropomorphism and consumer responses

In light of the involvement of anthropomorphism in information processing, itcaninfluence how consumers form attitudes, including those toward the ad and toward the brand.Fleck, Michel, and Zeitoun(2014) have added that anthropomorphism can not only yield consumer engagement, but also result in affective association in response to brand personification. Indeed, when consumers are exposed to any stimulus that provides brand-related information, they will instantly generate message-related responses (Batra & Stephens, 1994; Kempf, 1999; Kim, Baek, & Choi, 2012).

MacKenzie, Lutz, and Belch (1986) have defined such responses to a particular advertising stimulus as attitudes toward the ad, or the "predisposition to respond in a favorable or unfavorable manner to a particular advertising stimulus during a particular exposure occasion" (p. 130).

In a study that demonstrates that process, Aggarwal and McGill (2007) used a first-person narrative in a promotional cover letter to prime consumers with a human schema (i.e., a facelift for a newly designed car) before showing the ad for evaluation. In turn,the strategy triggered consumers' anthropomorphism of the car and led to more positive attitudes whenanad for the car was presented with humanlike features (i.e., a smile on its front grille and headlights) congruent with the primed human schema (i.e., a facelift) than when it exhibited an incongruent condition (i.e., a frown on its front grille and headlights). In another study, Landwehr et al.(2011) used upturned (i.e., friendly) and slanted (i.e., aggressive) designs in cars' grilles and headlights to denote humanlike faces withemotions. Their results indicated that consumers anthropomorphized the cars and perceived the attempted emotions correctly as if they were perceiving emotions from people's faces. Regardless of the perceived emotions, more importantly, consumers reported positive responses (i.e., liking) to the ads that induced anthropomorphism.

To explain those results, McQuarrie and Phillips (2005) have suggested that consumers are rewarded with pleasure when they precisely comprehend brand personification in advertising. Such pleasure comes from the release of cognitive efforts towardfiguring out the metaphorical expression in the messages.Given that anthropomorphism would increase ad engagement, the engaging behaviormight also result in the formation of sustainable attitudes toward the ad(Cacioppo & Petty, 1984). Along the lines ofthat logic, the following hypothesis is suggested.

H4: Ad engagement will positively influence attitudes toward the ad.

Similarly, consumers would form attitudes toward the brand that is defined as the subjective favorable or unfavorable responses to a given brand (MacKenzie et al., 1986),after processing and comprehending messages of personification in an ad. Because consumers are familiar with using knowledge about humans (i.e., agent knowledge) to account for nonhuman agents (i.e., brands), they would experience favorable feelings from the ease in information processing that draws on anthropomorphism (Aggarwal & McGill, 2007; Delbaere et al., 2011; Epley et al., 2007). Anthropomorphism moreover satisfies consumers' motives for social relationships and generates positive perceptions of the anthropomorphized brand (Wang et al., 2007). Taken together, consumers' ad engagement could prompt the formation of strong attitudes toward the target brandsin positive ways (Cacioppo & Petty, 1984; Kim et al., 2014). The hypothesis isposited.

H5:Ad engagement will positively influence attitudes toward the brand.

Using empirical evidence, MacKenzie et al. (1986) Furthermoreconstructedfour models to demonstrate that consumers' message-related responses are crucial determinants of their attitudes toward the ad and are consequently transferred to attitudes toward the brand as part ofan overall brand evaluation. Further along in the process, consumers' positive attitudes toward the ad resulting from anthropomorphism could be proportionately transferred to their attitudes toward the brand. In consequence, Dodds, Monroe, and Grewal (1991) have suggested that consumers' positive perceptions (i.e., attitudes) about brands increase their willingness to buythem (i.e., purchase intention).By extension, Brown and Stayman(1992) have suggested that attitudes toward the ad precedes attitudes toward the brand and mediates the relationships between constructs of elaboration (i.e., anthropomorphism and ad engagement) and ultimate brand outcomes (i.e., attitudes toward the brand and purchase intention). Therefore, two morehypotheses suggest therelationships between sequential consumer responses arisefrom anthropomorphism.

H6: Attitudes toward the ad will positively influence attitudes toward the brand.

H7: Attitudes toward the brand will positively influence purchase intention.

In sum, if consumers are exposed to brand personification in advertising, then the humanlike cues in the advertising messages could elicit both their agent knowledge and alternative knowledge. Elicited agent knowledge would thus exert a positive influence on anthropomorphism (H1), whereas elicited alternative knowledge would exert a negative influence on it (H2). Due to the predominant availability, accessibility, and applicability of agent knowledge,

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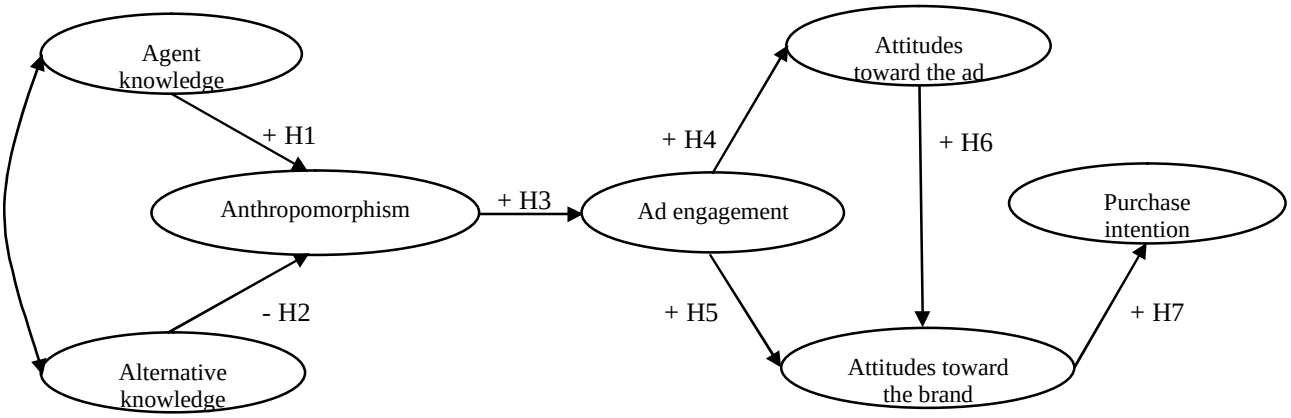
however, its influences might outweigh the influences of alternative knowledge, thereby resulting in the exerciseof anthropomorphism. For response outcomes, anthropomorphism would thusresult in consumers' ad engagement (H3), which could positively influence consumers' posthoc evaluation, including attitudes toward the ad (H4) and attitudes toward the brand (H5).
Because attitudes toward the ad is the immediate response generated afterconsumers process given messages ofpersonification, their attitudes toward the ad would precede and positively influence their attitudes toward the brand (H6). Ultimately, consumers' attitudes toward the brand would increase their purchase intention of the advertised brand (H7). Figure 1 illustrates the overall relationships between constructs that informthe psychological process of anthropomorphism.

Figure 1 Proposed conceptual model



Methods

Questionnaire and procedure

In Order to induce anthropomorphic thinking for consumers' information-processing, color ads with a brand personification message were constructed as the stimuli for the survey. Energy drinkswas chosen as the target product because they are usually advertised to a wide range of consumer groups. Additionally, a known brand and a fictitious brand were included to increase the robustness and generalizability of the current study. Red Bull was selected as the known brand, as it is the top-selling energy drink brand, while a fictitious brand, Dynamo, was created as the fictitious brand. A version of the energy drink ad was then created for each brand. Brand personification was presented in both the product designs and the ad headline. The adsincluded three bottles of the energy drink brand identical in size, but each had different designs that indicated them dressing in costumes resembling humanlike characters (i.e., superheroes). Also, the ad headline,"Red Bull/Dynamo energy drink helps your performance,"suggested a humanlike behavior assisting consumers. To increase the authenticity of the ad, pictures featuring extreme activities (e.g., skydiving and car racing) were placed at the bottom of the ad. A pretest (N = 111) ensured thatparticipants perceived Red Bull as more familiar than Dynamo ($M_{\text{Red Bull}}$ = 5.78, SD = 1.13 vs. M_{Dynamo} = 4.21, SD= 1.76; F(1, 109) = 31.89, p< .001).
Aself-administered online survey was conducted for the main study.The participants were recruited from Amazon Mechanical Turk (MTurk) with monetary compensation as an incentive. In the survey, participants were first randomly assigned to a scenario with either the known or fictitious brand in which they were instructed that "Red Bull/Dynamo is a functional beverage providing refreshments for mind and body." They were asked to indicate their opinion on the assigned brand, including "I am familiar with the brand name," "The brand name implies high quality," and "I like the brand name," on a seven-point Likert scale, anchored by "Strongly disagree/Strongly agree."As follows,

they were directed to view the ad of the assigned brand. Participants were asked to answer questions measuring agent knowledge, alternative knowledge, and anthropomorphism. They were asked to rate on the scale of ad engagement, attitudes toward the ad, attitudes toward the brand, and purchase intention. All measurement items for the constructs were adopted from previous research and modified to fit in the current research context, as described later.Participants were asked to provide their demographic information before they were debriefed and thanked.

Measures

Agent/Alternative Knowledge. Jeong's (2008) items measuring cognitive elaboration were adopted and modified to measure agent knowledge and alternative knowledge, respectively. Participants were asked to indicate their opinion on the ad they viewed. The items were measured on a seven-point Likert scale, anchored by "Strongly disagree/Strongly agree." Agent knowledge was measured by two items, including "I had many thoughts related to humans when I saw the ad" and "The ad I saw elicited lots of thoughts related to humans." Cronbach's alpha was .92. Alternative knowledge was measured by two items, including "I had many thoughts unrelated to humans when I saw the ad" and "The ad I saw elicited lots of thoughts unrelated to humans." Cronbach's alpha was .92.

*Anthropomorphism.*Aggarwal and McGill's (2007) and Puzakova, Kwak, and Rocereto's (2013) items were adopted and modified to measure anthropomorphism. Participants were asked to indicate their opinion on the ad they viewed. The items were measured on a seven-point Likert scale, anchored by "Strongly disagree/Strongly agree." The items included: "The brand had a mind of its own and its own beliefs and desires," "The brand had come alive," "The brand is like a person," "It's as if the product was alive," and "It suggests the product is like a person." Cronbach's alpha was .92.

Ad Engagement. Kim et al.'s (2014)instruments were adopted and modified to measure ad engagement. Participants were asked to rate their experience with the given ad on a seven-point Likert scale, anchored by "Strongly disagree/Strongly agree." Eight items included: "I felt as though I was right there in the ad," "While experiencing the ad, I felt as if I was part of the action," "I experienced the ad as if it were real," "After I experienced the ad, I still felt as if I was experiencing the ad," "The ad made me feel connected to the product," "I was interested in the design of the ad," "The ad was so vivid that it held my attention as a good painting or photograph does," and "Some elements of the ad drew my attention." Cronbach's alpha was .92.

*Attitudes toward the Ad.*MacKenzie et al.'s (1986) items were adopted and modified to measure attitudes toward the ad. Participants were asked to rate how they feel about the given ad. Four items were measured on a seven-point bipolar scale, anchored by "Negative/Positive," "Unfavorable/Favorable," "Good/Bad," and "Don't like it at all/Like it a lot." Cronbach's alpha was .97.

*Attitudes toward the Brand.*MacKenzie et al.'s (1986) items were adopted and modified to measure attitudes toward the brand. Participants were asked to rate how they feel about the advertised brand in the given ad. Four items were measured on a seven-point bipolar scale, anchored by "Negative/Positive," "Unfavorable/Favorable," "Good/Bad," and "Don't like it at all/Like it a lot." Cronbach's alpha was .97.

*Purchase Intention.*Dodds et al.'s (1991) items were adopted and modified to measure purchase intention. Participants were asked to rate their intention of purchasing the advertised brand on a seven-point Likert scale, anchored by "Strongly disagree/Strongly agree." Three items included "The likelihood of purchasing the product of this brand is high," "I would consider buying the product of this brand," and "My willingness to buy the product of this brand is high." Cronbach's alpha was .98.

Results

Descriptive statistics

The survey research method collected a total number of 352 responses. After eliminating incomplete responsesand respondents who failed to answer the two attention check questions correctly, the final sample of 338 responses was considered valid and used for further analyses. The final sample consisted of 43.8% males and 56.2% females. Participants ranged in age from 18 to 79 with a mean age of 37.44 (*SD* = 13.58). The ethnicity composition of the

sample was 76.9% Caucasian, 8.6% African-American, 6.2% Hispanic, 4.7% Asian, and 3.6% indicated they were either multiracial or chose "other." The education composition of the sample was 55.0% college degree, 31.7% high school degree, 9.2% masters' degree, 1.5% doctoral degree, 1.8% professional degree, and .9% indicated they had less than high school degree. Other sample characteristics are shown in Table 1.

Table 1 Sample demographic information

Demographic variables	*Frequency (*N*)*	*Percentage (%)*
Gender		
Male	148	43.8
Female *Age*	190	56.2
18-30	145	42.9
31-40	77	22.8
41-50	43	12.8
51-60	53	15.6
Over 60	20	5.9
Ethnicity		
Caucasian	260	76.9
African-American	29	8.6
Hispanic	21	6.2
Asian	16	4.7
Multiracial	8	2.4
Other	4	1.2
Education		
Less than high school	3	.9
High school degree	107	31.7
College degree	186	55.0
Masters' degree	31	9.2
Doctoral degree	5	1.5
Professional degree	6	1.8
Marital status		
Single	140	41.4
Married	114	33.7
Divorced	26	7.7
Living with someone	46	13.6
Separated	3	.9
Widowed	5	1.5
Other	4	1.2
Annual household income		
Under $10,000	29	8.6
$10,000 - $19,999	43	12.7
$20,000 - $29,999	61	18.0
$30,000 - $39,999	36	10.7
$40,000 - $49,999	45	13.3

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$50,000 - $59,999	39	11.5
$60,000 - $69,999	27	8.0
Over $70,000	58	17.2
Total	338	100

N = 338

Further, analysis of variance (ANOVA) tests showed that participants regarded Red Bull as a name of energy drink brand with higher familiarity ($M_{\text{Red Bull}}$ = 6.43, $SD_{\text{Red Bull}}$ = .70 vs. M_{Dynamo} = 1.55, SD_{Dynamo} = .99; $F(1, 336) = 2708.83$, $p < .001$), higher implication of product quality ($M_{\text{Red Bull}}$ = 4.62, $SD_{\text{Red Bull}}$ = 1.65 vs. M_{Dynamo} = 3.64, SD_{Dynamo} = 1.45; $F(1, 336) = 33.60$, $p < .001$), and higher liking ($M_{\text{Red Bull}}$ = 5.05, $SD_{\text{Red Bull}}$ = 1.60 vs. M_{Dynamo} = 4.07, SD_{Dynamo} = 1.67; $F(1, 336) = 29.93$, $p < .001$), compared to Dynamo as a name of energy drink brand. Considering this, an ANOVA was conducted to check whether participants exhibited different degree of anthropomorphism between the known and fictitious brand scenarios. The results yielded no significant differences ($M_{\text{Red Bull}}$ = 3.38, *SD* = 1.51 vs. M_{Dynamo} = 3.31, *SD* = 1.56, $F(1, 336) = .17$, $p = .68$). Following analyses were thus performed using combined responses (*N* = 338) from both scenarios.

Structural equation modeling for testing the conceptual model

The structural equation modeling was performed using all responses to examine the overall relationships (H1 – H7) hypothesized in the conceptual model.A two-step modeling approach with maximum likelihood estimation (Anderson &Gerbing,1988) was employed. Firstly, a confirmatory factor analysis (CFA) assessed the measurement model in terms of construct reliability, convergent validity, and discriminant validity. Secondly, a path analysis evaluated the relationships suggested in the hypotheses.

A CFA of the measurement model with seven constructs included in the conceptual model was conducted. All items were allowed to only load on the constructs they were intended to measure, and no item errors were correlated. The initial results (χ^2 = 1196.10, *df* = 329, $p < .001$, χ^2/dfratio = 3.64, Root Mean SquareError of Approximation (RMSEA) = .088, StandardizedRoot Mean Residual (SRMR) = .082, Normed Fit Index (NFI) = .900, Comparative Fit Index (CFI) = .925, Tucker-Lewis Index (TLI) = .914)showed that the measurement model reachedmoderateoverall fit for the data. However, the unsatisfactory χ^2/dfratio, RMSEA, and SRMR suggested that the measurement model might need some modifications for improvement. After the investigation of factor loadings for the measurement model, three items of ad engagement (i.e., "I was interested in the design of the ad," "The ad was so vivid that it held my attention as a good painting or photograph does," and "Some elements of the ad drew my attention.") had inadequate loading size (< .70). These items were removed from the model even if they significantly loaded on the construct of ad engagement (the αcoefficient of the ad engagement scale increased to .95 from .92after removing the items). Upon the modifications, the goodness-of-fit indices upheld the seven-construct measurement model (χ^2 = 687.08, *df* = 254, $p < .001$, χ^2/df ratio = 2.71, RMSEA = .071, SRMR = .044, NFI = .938, CFI = .960, TLI = .953). The constructs(Table 2) had good composite reliability (> .90). Factor loadings of the construct items were all above .70 with significant *t* values, indicating good convergent validity for each of the construct items (Nunnally & Bernstein, 1994). Based on Fornell and Larcker's (1981) criteria, the results achieved satisfactory discriminant validity, since the average variance extracted (AVE) for each factor was above .50 and greater than the squared correlations between each pair of constructs (Table 3). The model was considered statistically plausible and stable.

Table 2Constructs and measurement items

Items	Mean	*SD*	Factor loading	Composite reliability	AVE
Agent knowledge				.93	.86
I had many thoughts related to humans when I saw the ad.	3.95	1.69	.93***		
The ad I saw elicited lots of thoughts related to humans.	4.02	1.68	.93***		

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Alternative knowledge				.92	.86
I had many thoughts unrelated to humans when I saw the ad.	3.49	1.52	.96***		
The ad I saw elicited lots of thoughts unrelated to humans.	3.44	1.51	.89***		
Anthropomorphism				.93	.72
The brand had a mind of its own and its own beliefs and desires.	3.70	1.75	.72***		
The brand had come alive.	3.58	1.81	.84***		
The brand is like a person.	3.03	1.72	.92***		
It's as if the product was alive.	3.12	1.73	.92***		
It suggests the product is like a person.	3.30	1.74	.80***		
Ad engagement				.95	.79
I felt as though I was right there in the ad.	2.94	1.58	.93***		
While experiencing the ad, I felt as if I was part of the action.	2.96	1.66	.94***		
I experienced the ad as if it were real.	2.94	1.68	.89***		
After I experienced the ad, I still felt as if I was experiencing the ad.	2.73	1.61	.87***		
The ad made me feel connected to the product.	3.40	1.78	.78***		
Attitudes toward the ad				.98	.91
Negative/ Positive	4.70	1.52	.95***		
Unfavorable/Favorable	4.64	1.54	.97***		
Good/Bad	4.69	1.54	.96***		
Don't like it at all/Like it a lot	4.49	1.60	.93***		
Attitudes toward the brand				.97	.90
Negative/ Positive	4.23	1.78	.94***		
Unfavorable/Favorable	4.16	1.77	.97***		
Good/Bad	4.21	1.78	.96***		
Don't like it at all/Like it a lot	4.03	1.86	.91***		
Purchase intention				.98	.95
The likelihood of purchasing the product of this brand is high.	2.85	1.92	.96***		
I would consider buying the product of this brand.	3.02	2.03	.99***		
My willingness to buy the product of this brand is high.	3.02	1.99	.98***		

*** $p < .001$

Table 3 Correlation matrix of theconstructs

	M	SD	1	2	3	4	5	6	7
1. Agent knowledge	3.99	1.63	1						
2. Alternative knowledge	3.46	1.46	-.14	1					
3. Anthropomorphis	3.35	1.53	.53	.16	1				
4. Ad engagement	2.99	1.51	.36	.20	.72	1			
5. Attitudes toward the ad	4.63	1.49	.36	.13	.51	.55	1		
6. Attitudes toward the brand	4.16	1.72	.19	.24	.37	.54	.59	1	

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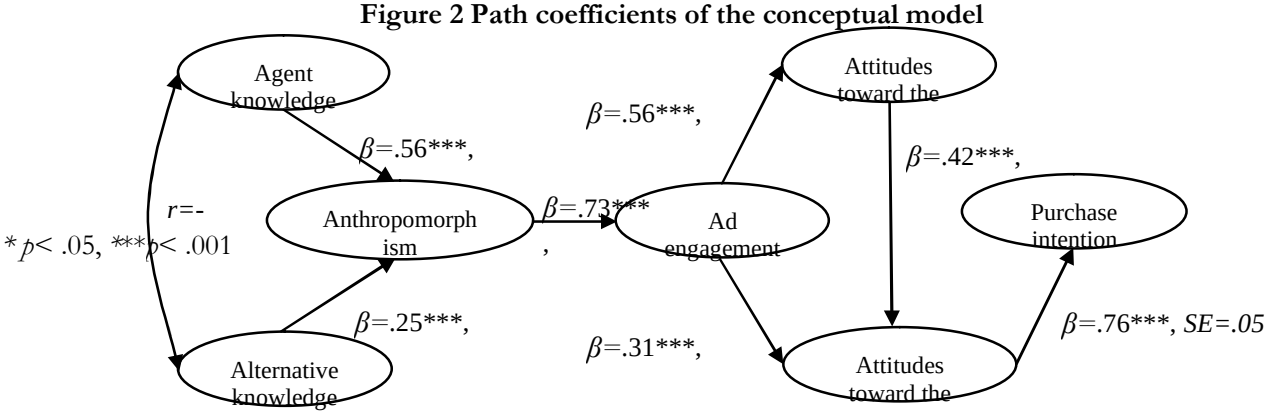
7. Purchase intention	2.96	1.95	.23	.21	.37	.51	.42	.75	1

As follows, factor scores were used to compute the path model in order to test each hypothesis. The path analysis showed excellent goodness-of-fit indices (χ^2 = 740.44, *df* = 267, *p* < .001, χ^2/df ratio = 2.77, RMSEA = .073, SRMR = .069, NFI = .933, CFI = .956, TLI = .951) for the conceptual model, indicating the conceptual model was valid and substantive. Specific to the relationships between constructs in the psychological process of anthropomorphism, the results indicated that the elicitation of agent knowledge significantly resulted in anthropomorphism and the path coefficient was positive (β = .56, *p*< .001). H1 was supported. While the elicitation of alternative knowledge significantly influenced anthropomorphism, the path coefficient was positive as well(β = .25, *p*< .001). The results did not support H2. Anthropomorphism significantly influenced ad engagement and the path coefficient was positive (β = .73, *p*< .001), which supported H3. Next, the results showed that ad engagement significantly and positively influenced attitudes toward the ad (β = .56, *p*< .001). H4 was supported. Ad engagement also significantly influenced attitudes toward the brand and the path coefficient was positive (β = .31, *p*< .001). H5 was supported. Moreover, the results showed that attitudes toward the ad preceded and significantly influenced attitudes toward the brand. The positive path coefficient (β = .42, *p*< .001) supported H6.
Lastly, attitudes toward the brand significantly influenced purchase intention and the path coefficient was positive (β = .76, *p*< .001). H7 was supported. Figure 2 shows the path coefficients of the conceptual model.

Figure 2 Path coefficients of the conceptual model



Discussion

Theoretical implications

This research is the first to investigate consumers'psychological process of anthropomorphism and specifically delineate ways in which itleads to consumer responses. The validated conceptual model points out agent knowledge and alternative knowledge as in-process outputs thatcontribute to the exhibition of anthropomorphism when consumers process brand personification in advertising. The elicitation of agent knowledge positively influences anthropomorphism, yet so does the elicitation of alternative knowledge, which contradicts the second hypothesis. However, evidence also shows a significant negative correlation (Figure 2) between those knowledge structures. Suchresults could be explained by the idea that elicited agent knowledge encompasses exhaustive experience about the self or general human agents and thatits induction help consumers to easilydiscerna brand's characteristics in humanlike terms.
Although elicited alternative knowledge might drive consumers to consider other non-humanlike features of a brand, it would undergo a corrective process before it could be applied (Epley et al., 2007; Higgins, 1996). Consumers would spontaneously assess whether elicited alternative knowledge is applicableto the personified brand. As such,

it is likely that only the corrected portion of the elicited alternative knowledge would be reserved for application and positively influence anthropomorphism.

Most importantly, the induced anthropomorphism gives rise to positive advertising (i.e., ad engagement and attitudes toward the ad) and brand (i.e., attitudes toward the brand and purchase intention) outcomes.Anthropomorphic thinkingencouragesconsumers to engage with anad, perhaps since the use of self-related agent knowledge accounts for messages ofpersonification in advertising. In that sense, the present findings correspond with previous research on self-expansion theory(Huang & Mitchell, 2014), which has shown that consumers tend to devote cognition to imagining a connection between themselves and brandsin order to generate a meaningful understanding of brand personification. Once consumers expand their self-concepts onto brands, they construct a perceptual reality thatcan redirect their attention to the ad narratives and deliver immersion experiences as if they were present in the ads (Escalas, 2004; Green & Brock, 2000). Consequently,ad engagement that depends on anthropomorphism precipitates the formation of favorable attitudestoward the ad as well as the brand. Because anthropomorphism offers consumers a parsimonious interpretation of brand personification, the ease of information processing—namely, perceptual fluency—would result in positive appraisals of target stimuli (Eskine & Locander, 2014; Winkielman & Cacioppo, 2001). It isbased on the fluency effects that reveal a positive bias when consumers project personal experience (i.e., agent knowledge) in order to accurately perceivepeculiar objects (i.e., personified brands). Another explanation could be that, as a particular form of metaphor, brand personification allows consumers to formself-generated inferences (i.e., anthropomorphism) along with multiple interpretations (McQuarrie &Phillips, 2005). Such self-generated inferences may aid consumers to make sense of messages ofpersonification and release cognitive tension, which gives thempleasure (McQuarrie & Mick, 2003). Lastly, as a result of anthropomorphic thinking, positive attitudes increase consumers' purchase intention. These findings supportknowledge of relationships between consumer responses, including attitudes toward the ad, attitudes toward the brand, and purchase intention, all of which have long been proposed in marketing literature (Dodds et al., 1991; MacKenzie et al., 1986).

Together, the findings suggest that anthropomorphism should be considered to be asimportant as other attitudinal outcomes in consumers' information processing, particularly given the common employment ofbrand personificationstrategies nowadays. The selection of both familiar and fictitious brands further suggests that anthropomorphism is a universal mechanism whichinfluencesthe decision-making process. Consumerswould bewilling to engage with and projecta mind-setof interpersonal relationshipsonto brands with the induction of anthropomorphic thinking. Consumers may deemthe humanlike characteristics in personified brands either familiar or friendly, if not both, which could in turn foster consumer–brand relationships(Fournier, 1998). The probable anthropomorphic interactions can encourage consumers to seek information about and even show concern forthe brand. In the same vein, consumers would then further forge self–brand connections and brand attachment that mayconsequentlyinvigorate the consumer–brand relationship with trust or even love(Batra, Ahuvia, & Bagozzi, 2012; Eskine & Locander, 2014).

Managerial implications

Last but not least, by drawing upon the visual format of advertising stimuli, the research offers findings that pose implications for implementing brand personification via other marketing communication outlets. For brands of all shapes and sizes, the vitality of presenting branded content vividly in social media (e.g., Facebook, YouTube, and Pinterest) allows brands to take advantage ofanthropomorphism in order to nurtureconsumer engagement (Gretry et al., 2017). For instance, the GEICO Gecko has itsown YouTube channel and Facebook page, whereit ostensibly posts videos and photosas any other social media user. By way of those interactive platforms, the GEICO Gecko is incarnated as a real person who can have intimate conversations with consumers. Such well-rounded brand personification strategiesdemonstratethe Gecko's knowledge about auto insurance, as well as itspersonal philosophy, both of which cansubtlyresonate with consumers' lifestyles. As the present research has shown, brand personification strategies can not only facilitate knowledge structures that guide consumers toward thinking of the

brands in anthropomorphic terms, but also increase their favorable feelings toward the brands' ads and, as a result, cultivate positive brand evaluation.

The quick and easy induction of anthropomorphic thinking, either directly with animated humanlike characters or indirectly in embedded humanlike characteristics in product designs, can help consumers to immediately relate to the brands and use the most intuitive and reasonable means possible to evaluate the brands.

Limitations and future research

Although this exploratory researchhas sought to explicate the psychological process of anthropomorphism and its influences on consumer responses, the results should be interpreted in light of some limitations. First, the artificial scenario of the survey might not resemble consumers' exposure to brand personification in advertising in daily situations. Namely, the performance of consumers' anthropomorphism could differ if there are distractions when consumers process personification messages, as is typical in today's media-rich advertising environments. Future research shouldhence consider adopting different research methods, such as naturalistic observation, to examine how consumers anthropomorphize brandsand interact with them in natural settings. Second, the selection of brands limits the generalizability of the findings to a specific product category. Future research could accordingly benefit from an incremental selection of brands across product categories with a consideration of the symbolic and utilitarian uses of brands.Although the developed research stimuli might be shown to consumers through media channels with an emphasis on visual presentation, research should nevertheless be conducted to assess whether there are contextual media effects that interact with anthropomorphism and affect consumer responses. Third and lastly, much research is needed to uncover consumers' dispositional differences, including cognitive and motivational factors that might influence the exhibition of anthropomorphism.

In conclusion, by elucidating the psychological process of anthropomorphism, this research contributes to current literature in the realm ofconsumer psychology and marketingbyidentifying the predictors and effects of anthropomorphism comprehensively.

It further consolidates the theoretical grounding in consumer behavior research byintegrating the psychological motives of anthropomorphism with the long-established cause-and-effect of consumer responses in the context of brand personification. The research therefore advances the understanding of leveraging personified branding strategies for efficient and effective consumer–brand communication.

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