Effectiveness of Animal Images in Advertising

By Barbara Keller and Heribert Gierl

While there are many studies on the effectiveness of human models in advertising, little is known about the effectiveness of animals' images. This paper presents a series of studies indicating that animal images mostly result in more favorable attitudes toward the promoted brand than depictions of human models. In particular, the studies provide evidence for the presumption that consumer biophilia and attitude toward pets amplify the effectiveness of animal models. The studies show the characteristics of the depicted animals that influence feelings of entertainment due to advertising and perceptions of a company's message credibility. The studies also show that infantile animals are perceived as cute, which elicits pleasant emotions resulting in feelings of entertainment due to advertising. Furthermore, the studies indicate that contact with animals of species that are found to be cute is perceived as highly entertaining. Depictions of animals with high suitability as pets cause perceptions of trust in the animal, which spills over to the company's message credibility. When animals are shown in the role of the targeted consumers, a negative effect on brand attitudes was observed.

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1. Introduction

1.1. Ubiquity of animals in human life

Animals accompany people throughout their lives. Babies' first best friends are often stuffed animals in the shape of teddy bears, sheep, or horses given to them by loved ones. As their children grow, parents begin to read them bedtime stories including fairy tales about bears, caterpillars, cats, foxes, frogs, snakes, or wolves that act like humans or live as enchanted princes waiting for salvation. Later, when children begin painting, they will likely paint animals. From fables and fairy tales, children learn that foxes are clever, dogs are loyal, horses are strong, lions are powerful, pigeons are helpful, and owls are wise. Visits with their parents to zoos and wild parks allow children to discover wildlife and even interact directly with animals in petting zoos. When they go to school, children hear of the Trojan horse, Noah's ark, and the dragon that was defeated by Siegfried. Animals play further important roles in adults' lives. Animal names appear in sayings, nicknames, and swear words. European car drivers know the meaning of serpentine and zebra crossings. Animal imagery is painted on ceramic pottery and incorporated in fabric designs such as in leopard prints. There is hardly any area of human life in which animals do not play a role.

The interest in animals is not a new trend; animals have been at the center of human interest since the earliest stages of human evolution. The "lion man," a sculpture with human body and lion's head, which was found in Western Germany, is approximately 35,000 to 41,000 years old. Approximately 17,000 years ago, people living in the Lascaux caves (France) painted animals of their time on the walls.

1.2. Usage of animals in advertisements

Due to people's interest in animals, marketers often use images and names of animals as marketing tools. Many advertisements, brand names, brand logos, brand key visuals, brand slogans, packaging designs, and product shapes refer to animals. Animals have been ubiquitous from the earliest marketing of product brands until now (Lloyd and Woodside 2013).

We focus on the use of animal images in advertisements. Animals have been depicted in advertisements since the beginning of product brands advertising. In the 1880s,

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Pear's soap (a brand in the UK) promoted its soap with the depiction of Frederick Morgan's painting entitled "The bath, his turn next." It shows a young girl and a young boy; the boy is sitting in the washtub. The girl hands over a little dog to the boy – the doggy obviously needs to take a bath as well. At the transition of the 19th to the 20th century, Théophile Steinlen created advertisements that incorporated animals such as cats to promote the Chat Noir cabaret and a dairy product brand. Numerous jungle animal spokespersons were included in commercials promoting the launch of the Toyota Corolla in Germany in 1985. The commercials stated "Nichts ist unmöglich" [Nothing is impossible]; this slogan, which was spoken by the animals, was the most remembered slogan in Germany, even two decades later (Innofact 2013).

Some researchers have conducted content analyses to estimate the frequency of advertisements that contain animal images. Golan and Zaidner (2008) analyzed the content of 360 commercials that were frequently shared on the Internet. A total of 17.8 % of these commercials contained images of animals. Tomkovick et al. (2001) analyzed Super Bowl commercials and found that 23.5 % showed animals. Other researchers have investigated how frequently different types of species are depicted in ads (Spears et al. 1996; Feldhamer et al. 2002; Brown 2010; Stone 2014), how often they are used to promote different types of products (Spears et al. 1996), and whether such relationships change over time (Spears and Germain 2007; Kennedy and McGarvey 2008; Mayo et al. 2009). These authors have found that domesticated mammals such as pets (dogs and cats), horses, and lovable animals such as special species of birds are mostly used. Domesticated animals are often depicted in their natural form (Lerner and Kalof 1999; Stone 2014) and presented as loved ones, companions, human-like family members (e.g., pets such as dogs or cats playing with family members), or actors in narratives (e.g., Budweiser Clydesdale horses). Undomesticated animals such as lions, bears, and geckos are more often presented as a cartoon in an anthropomorphized manner (e.g., Charmin bear or Coca-Cola polar bears; see Phillips and Gyoerick 1999; Connell 2013).

1.3. Contribution of this research

The question of whether companies should use animal images in advertising instead of images of human models has been frequently addressed in the context of practice; however, to date, few studies in the academic research have done so (Tomkovick et al. 2001; Yelkur et al. 2013). Therefore, we ask:

RQ1: Are animal characters more effective in advertising than human characters? Under what conditions are animal characters advantageous?

Attitudes toward a category of entities likely affect attitudes toward a particular entity from this category (e.g., the attitudes toward a country affect the evaluations of brands originated in that country or attitudes toward organic food influence evaluations of a particular brand offering that type of food). Thus, we investigate whether consumer attitudes toward nature in general and toward pets in particular spill over to ad and brand attitudes when animals are depicted. Such information could be used to target special consumer segments in marketing. We therefore intend to provide an answer to the following question:

RQ2: Do higher levels of general biophilia and attitude toward pets lead to higher effectiveness of ads showing animals in general or pets in particular?

Moreover, we ask the question of whether marketers who use animal images show the "right" animals. We focus on the age of the animals, the cuteness of the species, and the animals' suitability as pets. We surmise that perception of animal cuteness, which might result from animal juvenility or the appearance of special species, has an impact on consumer entertainment. Moreover, we presume that a high suitability of an animal as pet has a positive impact on message credibility. Entertainment due to advertising and message credibility are important factors for ad effectiveness. Thus, we ask the following question:

RQ3: What roles do animal age (infantile or adult), animal species (cute or non-cute), and type of animal (pet or undomesticated animal) play in the effectiveness of animals in advertising?

Our research regarding RQ1 will be exploratory because there is no systematic research in this area. With respect to RQ2 and RQ3, we will derive hypotheses based on a theoretical framework.

2. Prior knowledge about the effectiveness of animals depicted in advertisements

2.1. Evidence from practice

There is anecdotal evidence in favor of the effectiveness of animals in advertising. Daniel P. Amos, one of the former CEOs of Aflac, an insurance company located in the USA, stated that the mascot of the company, the Aflac duck (first shown on New Year's Day 2000 on CNN), has been very important for the company's economic success in the US and in Japan (Amos 2010). He explicated that the duck has been helpful to reach a high level of brand awareness; the duck's screaming "Aflac – Aflac – Aflac" in the commercials sounded like duck speech. He reported that in commercial tests, the usage of the duck additionally resulted in more favorable ad attitudes than depictions of human models and celebrities. The duck shown in the commercials became so popular that many people have followed the social communities around the duck created by the company (e.g., https://www.facebook.com/aflacduck/; https://twitter.com/aflacduck?lang=de) and evoked the desire in many consumers

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to acquire a stuffed toy version of the duck. This anecdote indicates that using animals could be a rather beneficial strategy to promote brands.

2.2. Evidence of previous scientific research

Despite the widespread usage of animals in advertisements, the effectiveness of this practice has rarely been investigated. Few studies have examined attitudes toward ads depicting animals. Tomkovick et al. (2001) and Yelkur et al. (2013) conducted cross-sectional analyses based on Super Bowl commercials (N = 445 commercials between 1990 and 1999; N = 438 commercials between 2000 and 2009). They classified the commercials according to the type of pictures shown (human character, animal character, other) and investigated the effect of commercial type on attitudes toward the commercials. For the commercials broadcasted in the 1990s, they found the highest evaluations for videos showing animals and the lowest evaluations for videos showing neither animals nor human models. For the commercials in the 2000s, they also reported the highest evaluations for videos showing animals, whereas there was no longer a difference between videos showing human models and videos refraining from showing either animals or human models. However, cross-sectional research does not control for the effects induced by many different important factors that cause biases (e.g., ad style, story, and brand).

Lancendorfer et al. (2008) created two versions of an ad promoting MasterCard. In one version, a dog was prominently shown in a living room that had obviously been devastated by the dog; in the other version, a carefully cleaned living room without a dog was depicted. The authors did not find an effect of the different versions on attitudes toward the ad.

Moreover, some studies have focused on rather specific issues of animals in advertising. Connell (2013) asked test persons to evaluate mascots showing an animal (either lion or bear) depending on whether the animal was anthropomorphized (looked human-like) or not (shown as a silhouette of its natural appearance). He reported mixed results. Using Budweiser beer as test object, Dessart (2018) compared an emotional commercial that told the story of friendship between a horse and a dog (”Puppy Love,” Super Bowl Commercial 2014) to an informative commercial that explained aspects of the production and sale of beer and showed human characters such as company employees, bar keepers, and consumers drinking beer (”This Bud is for you,” 2016). She found higher feelings of narrative transportation for the first commercial. However, this study’s design did not allow for the separation of the effect of the type of character (animal or human) from the effect of the ad format (narrative or informative). Amyx (2017) created versions of an ad promoting a real estate agency. One version showed a dog laying in a living room; in the other version, the dog was replaced by a cat. The researcher split the sample of study participants into dog lovers and cat lovers. For the dog lovers, he found that the image of the dog (as compared to the cat) resulted in more favorable attitudes toward the ad, toward the promoted brand, and purchase intent if feelings of security due to the dog were additionally emphasized by a verbal statement. For the cat lovers, the image of the cat (compared to the dog image) elicited more favorable attitudes if the individualism of cats was verbally emphasized.

In summary, based on the few studies that have been published in the prior research, we conclude that there is no clear knowledge about the effectiveness of ads showing animals, and thus, further studies are needed.

3. Theoretical considerations

In this section, we describe the factors that could be used to explain the effectiveness of advertisements showing animals: first, consumer biophilia and attitude toward pets; second, animal cuteness; and third, the animal’s suitability as a pet.

3.1. Consumer biophilia and attitude toward pets

According to Wilson (1984, p. 1), people have an “innate tendency to focus on life and life-like processes.” This characteristic is denoted as biophilia (Kellert 1993), which describes people’s desire to turn to and appreciate nature. Animals are an essential part of nature; thus, people have a general interest in animals and their behaviors. Wilson (1984; 1993) and Kellert (1993) argue that there are many reasons why people appreciate nature in general. Moreover, people differ regarding the level of biophilia meaning that biophilia could range from low to high. In the following, we provide arguments for the presumption that the level of biophilia varies across consumers.

Some adults enjoy visiting zoos. Many studies have examined the motivations for this popular leisure activity (Reade and Waran 1996; Morgan and Hodgkinson 1999; Myers et al. 2004; Bruni et al. 2008; Clayton et al. 2009; Marseille et al. 2012; Luebke and Matiasek 2013; Powell and Bullock 2014; Luebke et al. 2016). When we summarized the results of these studies, we found the following predominant motivations. Some zoo visitors want to learn something about rare animals; contact with such animals is associated with affective states such as curiosity, fascination, admiration, interest, and excitement. Other visitors are interested in zoo animals as the means of fulfilling a need for recreation and relaxation. These experiences are associated with affective states such as happiness. Finally, some people like to view animals for fun, entertainment, pleasure, and amusement. People with a strong need to experience such affective states are high in biophilia.

In a survey conducted by the Institut für Demoskopie Allensbach (2018), a sample of 23,389 people living in Germany were asked to indicate the degree to which they

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like to view TV programs showing animals and nature. In total, 63.8 % stated that they like such programs to a very high or high extent. In this sense, animals could be seen as a source of inspiration, entertainment, and learning. Movies such as Flipper (1963), Jaws (1975), Beethoven (1992), and The Sheep Pig (1995) count to the most popular movies featuring animals. The Internet is a platform where animals take on roles in which they act like human social media stars. For instance, "Crusoe the celebrity dachshund" received 2.5 million likes on Facebook. Visitors to Crusoe's website (www.celebritydachshund.com/) can watch episodes from his life (e.g., going to school, having a date with a female dog, and going to the dentist). "Mister Pokee," a hedgehog, has been an Instagram star with 14 million followers (www.instagram.com/mr.pokee/?hl=de). When he died in February 2019, even newspapers such as Süddeutsche in Germany reported the sad news. Biophilia could also be expressed by strong interest in TV programs and movies showing animals, by strong interest in what the animals do in their daily lives, and by experiencing joy when visiting online sites featuring animal Internet stars.

In summary, these observations result in the presumption that biophilia can be considered to be a variable state that differs across consumers. In an advertising context, consumers with high biophilia will likely respond favorably to animals and positively evaluate advertisements that feature animals. We thus hypothesize the following:

H1a: The higher the level of biophilia, the more favorable the attitude toward ads depicting animals. In particular, a) biophilia positively affects feelings of entertainment and b) message credibility.

A limitation that should be mentioned is that some types of animals such as snakes, spiders, or vermin are mostly disliked. Such images might not lead to positive responses, even in consumers with high biophilia (Ulrich 1993). In addition to the above-described biophilia factors, there is also a special aspect of biophilia: attitude toward pets.

Many people live together with animals within their families, which indicates a favorable attitude toward pets. In Germany, 53 % of households are pet owners (GfK 2016). In the USA, this portion equals 70 %. Across 22 countries, 57 % out of a sample of more than 27,000 consumers indicated that they live together with at least one pet in their household (GfK 2016). Many researchers have explored the motives of pet ownership (Sanders 1990; Hirschman 1994; Belk 1996; Aylesworth et al. 1999; Holbrook et al. 2001; Jyrinki and Leipamaa-Leskinen 2005; Beverland et al. 2008; Mosteller 2008; Jyrinki 2012) and have found manifold reasons, which are classified as follows. First, pets elicit experiences of being loved (by the animal) or act as companions. Second, animals can be considered to be a hobby. Some people might enjoy training a dog, horse, or parrot, and then experience success or feel proud of the animal's abilities. Third, some pet owners use pets as self-extensions and as the means to communicate their self-identity to others. For instance, masculinity could be emphasized by possessing a combat dog. Pets may serve as the means of expressing highly valued human characteristics such as good taste and thereby provide a means of attaining social recognition. Having expensive animals could signal status and wealth to others. Pets can be a means of facilitating contact with other people. Fourth, possessing a pet provides opportunities to take responsibility for other beings. Taking care of an old or less beautiful animal could be an opportunity to behave in an altruistic manner. Furthermore, Holbrook et al. (2001) state that some people simply value animals because they are "God's creatures." Cavanaugh et al. (2008) and Holbrook and Woodside (2008) add the notion that pets may be beneficial for their owners' well-being and health. People may appreciate special dogs or parrots due to their aesthetic appearance. All these conditions indicate a favorable attitude toward pets. Other people might merely tolerate animals in their households because another member of the household likes the pet (Belk 1996; Boya et al. 2012) indicating a moderate level of attitude toward pets. Others may predominantly perceive the negative aspects of pets such as the required expense and time-effort as well as the limitations imposed on personal freedom (Boya et al. 2012), indicating a negative attitude toward pets. People who have had negative experiences with dogs due to dog bites will likely exhibit signs of pet-related biophobia. We thus hypothesize the following:

H1b: The more positive the attitude toward pets, the more favorable the attitude toward ads depicting pets. In particular, a) attitude toward pets positively affects feelings of entertainment and b) message credibility.

3.2. Animal age

Human age as well as animal age can be estimated, most likely based on facial appearance. We argue that animal age affects consumers' perceptions of cuteness, which causes feelings of entertainment – a pleasant emotion.

The facial appearance of people as well as animal characters is an important factor when people respond to other human and animal beings. On a rather general level, there are three types of facial appearance: (1) the being's biological age is rather low, and thus, the face shows signs of baby-facedness; (2) the being's biological age is higher, and the face is perceived as mature; and (3) the being's biological age is higher although there are still signs of baby-facedness. The third case is denoted neoteny. According to Beck (2014, p. 32), neoteny is the "retention of juvenile physical attributes through maturity." For the German language, Konrad Lorenz (1943) created the term "Kindchenschema" to express baby-facedness (i.e., cases 1 und 3). Zebrowitz and Montepare (2008) state that a baby-faced physiognomy consists of a circular (vs. a pointed) head shape, a round (vs. a squared) face shape, localization of all parts of the face in 1/8 (vs.

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1/2) of the entire head volume, large and distant (vs. small and near) eyes, high and fine (vs. low and big) eyebrows, chubby (vs. bony) cheeks, a pug, small and concave (vs. a large, narrow, and convex) nose, and full (vs. thin) lips. People as well as animals can possess these attributes (Guido and Peluso 2009).

Animals possess neoteny characteristics even when they are fully grown if they belong to certain species that maintain a childlike facial appearance. Beck (2014) reports that there is a trend in the history of breeding to select animals such as dogs with juvenile attributes, playfulness, and less aggressiveness. Moreover, he posits that people prefer dogs with wide eyes and short snouts, which are infantile or juvenile attributes. Thus, one might expect that we could compare the advertising effectiveness of the depiction of an adult animal with neoteny (e.g., an older dog belonging to a species such as French bulldog, pug, or Chihuahua) with an adult animal with less neoteny (e.g., an older dog belonging to a breed such as German Shepard). However, our pilot studies on this issue indicated that people cannot easily judge the age of baby-faced animal species, i.e., they cannot distinguish among infantile animals and adult animals of the same species with neoteny. Thus, we focus on the aspect of animal age and consider the following conditions: obviously infantile animals with a baby-face and evidently adult animals without a baby-face. However, the aspect of neoteny is important because it suggests that people like animals with a juvenile appearance.

Obviously infantile animals are perceived as cute and clumsy and are more liked for this reason than obviously grown-up animals without signs of neoteny. Verbal expressions of cute animals are even used when talking to loved human partners (e.g., "my little pet" or "little mouse"). Contact with young animals could elicit two effects. First, according to Lorenz (1943) and Morreall (1991), a cute appearance is a releaser of nurturing behavior. People like to feed such animals and to take care of them. Beck (2014) states that these human behavioral tendencies are unconsciously triggered, i.e., are a result of the evolutionary origins of the humans because young animals (typically associated with a baby-faced physiognomy) look similar to little human children. People want to pick up such animals and stroke them – a behavior that also exists toward young children. Second, clumsy ("childish") animal behaviors can make people laugh (Beck 1999). In this sense, watching young animals that behave like children is a kind of entertainment. Belk (1996, p. 124 f.) surmises that "perhaps there is too much sense in our lives and we need a little nonsense in order to lighten our otherwise serious, ordered, and tedious existence." He argues that, similar to children, young pets "are seen as making life interesting. They are regarded as source of entertainment and amusement." Belk (1996) reported that pet owners talk to their pets as if they were young children. Adults who use "motherese" (baby talk) when they talk to young human children and to old people similarly use this type of communication when they verbally interact with their cute pets. Archer (1997, p. 241) states that "there is convincing evidence that people usually view their relationship with pets as similar to those they have with children." Similar arguments are provided by Albert and Bulcroft (1988), Hirschman (1994), and Boya et al. (2012). Myers et al. (2004) investigated the response of zoo visitors to animals and found that watching gorillas (including baby gorillas) evoked desires in the zoo visitors to take care of them – a need that can be explained by the youth of the baby gorillas. Thus, we consider infantile and adult animals and postulate the following hypothesis:

H2: Contact with images of infantile animals (in contrast to images of adult animals of the same species) in advertisements will evoke perceptions of cuteness that elicit feelings of entertainment.

3.3. Cuteness of animal species *per se*

In the preceding section, we argued that animal age affects perceptions of animal cuteness, which evokes feelings of entertainment in the observer. To provide further evidence for the hypothesis that feelings of cuteness are accompanied by entertainment, we consider animal species that are cute or non-cute. For instance, even adult penguins might be judged as cute, whereas adult ostriches are likely to be perceived as non-cute. Thus, we additionally test the following:

H3: Contacts with adult animals of species that are cute per se (in contrast to adult animals of species that lose cuteness in adulthood) elicit feelings of entertainment.

3.4. Suitability of an animal as a pet

In the following, we argue that pets' behavior is believed to be more predictable and controllable than the behavior of undomesticated species and, as a consequence, consumers trust pets. We then posit that the audiences of advertisements depicting animals mentally simulate trust in animals. Trust in turn might be accompanied by pleasant feelings, and advertising messages that are combined with pets might therefore be found to be more credible.

3.4.1. Human beliefs in the predictability of pet behavior

There are some reasons why people presume that animals' behavior, especially pets' behavior, is predictable and highly controllable.

Animal predictability due to unconditional trust of pets in their human owners: In the attachment theory developed by Bowlby (1958; 1982a; 1982b) and Ainsworth (1963; 1967), the term attachment is used to describe a characteristic of babies and children (Bretherton 1992; Dotson and Hyatt 2008). Attachment is defined as trust-based connectedness with or "unconditional trust" of a baby in its parents. A child uses the primary caregiver (i.e., its parents) as a "secure base from which to explore

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and, when necessary, as a haven of safety and a source of comfort" (Benoit 2004, p. 541) [1]. This approach has been transferred to other types of relationships among humans; when people are older, they develop trust-based connectedness with other humans. For instance, Ainsworth et al. (1978) and Ainsworth (1989) state that people develop trust-based connectedness with their siblings. The aspect of unconditional trust is also seen as a characteristic of animals, especially of pets, in human-animal relationships. Like the behavior of babies with respect to their parents, domesticated animals' behavior indicates that they do not "believe" that human owners would harm them or leave them alone. Belk (1996) reports that dog owners in particular report the experience that their pet's trust in the benevolent behavior of owners is high. Topál et al. (1998) separated dogs from their owners, and after a short time, dogs and humans were reunited. The researchers found that the animals showed signs of trust such as waiting at the door while separated and after reunification, delighted barking and licking the owner. In summary, humans believe that pet behavior is predictable because pets show high signs of trust in humans, which is a trust-based animal behavior.

Animal predictability due to the "animals cannot lie" stereotype: This stereotype might result from the biological fact that animals are not able to lie and cannot behave in a strongly deceptive manner. Researchers generally state that the capability of lying is a skill that only humans are able to learn. To be able to lie, the human must be capable of changing perspective and "read[ing] the mind of others." A "theory of mind network" (Ripoll et al. 2013) is necessary to enable "us to make predictions regarding what others are intending or will feel if I do this" (Casebeer and Churchland 2003, p. 178). Children acquire this skill at the age between three and five years (Talwar and Lee 2008; Goldman 2012). Animals do not acquire this skill and thus are unable to lie (Griffin and Speck 2004). Researchers state that a reason for this difference between human beings (who are older than five years) and animals is the capability to take the perspective of the other, i.e., to think about what the other thinks and feels if one were to behave in a certain way, which is a prerequisite of the ability to lie. Only humans have enough capacity in the neocortex, a part of the brain, which provides sufficient neural processing capacity (Dunbar 2000; Spence et al. 2001), which allows humans to take the perspectives of others in such a complex manner. Animals do not have the neural capacity to develop an extended "theory of mind network" (Premack and Woodruff 1978; Call and Tomassello 2008), which is the reason why they are unable to lie, cheat, or behave in a strongly deceptive manner. Bell (2003, p. 244) defines deception as a "conscious, planned intrusion of an illusion seeking to alter a target's perception of reality, replacing objective reality with perceived reality." Contrary to pets, some undomesticated animals are able to behave in a weakly deceptive manner. For instance, ravens can create the illusion of fleeing when they receive food although they do not in fact flee (Bugnyar and Kotrschal 2002). In summary, people believe that animals, especially pets, are unable to act in a deceptive way. They believe that animals' "messages" are true. We can transfer these thoughts to the advertising context. For instance, it likely does not make any sense for people that Bruno, the dog in the Voltaren pain killer commercials, lies about the fact that its peace is disturbed due to the positive effects of the pain killer for its female owner.

Animal predictability due to the absence of certain negative human characteristics in pets: Furthermore, people might develop trust in animals' behavior due to the stereotype that animals' behavior toward humans is not affected by factors such as striving for higher social status, jealousy, envy, elitism, strong opportunistic behavior, and materialism (Hirschman 1994; Mosteller 2008). Contrarily, in relationship to humans, factors might be present that cause perceptions of unpredictable behaviors and human disloyalty.

Animal predictability due to collected experiences: Especially for dogs, cats and other domesticated animals such as horses or parrots, people have collected experiences that the behavior of such animals is highly predictable, controllable, and open to influence.

In summary, we presume that people regard pets in particular and domesticated animals such as horses as predictable and controllable.

3.4.2. Humans' trust in animals with predictable behavior

There are reasons in favor of the presumption that people respond to the predictability and controllability of animal's behavior with trust in the animal, i.e., perceive animals with predictable behaviors as honest, reliable, sincere, loyal, and good companions.

Reciprocity principle: Stereotypes such as "An animal is a human's best friend," "Animals are better partners than humans," and "The loyalty of animals is greater than the loyalty of humans" commonly express mutual trust-based bonds. Beck and Madresh (2008) asked pet owners to agree or disagree with statements such as "I usually share my problems and concerns with my pet (partner)," "I feel comfortable sharing my private thoughts and feelings with my pet (partner)," and "It helps to turn to my pet (partner) in times of need." They found that the survey participants on average indicated a higher intent to talk about personal problems and concerns to their pets than to their human partners. These findings indicate that people have a higher willingness to reveal their true thoughts and feelings to their pets than to their human partners. Kurdek (2008) examined data from the owners of pet dogs and found that these animals are seen as a secure aspect in their owners' lives. Hirschman (1994) asked the pet owners to list their thoughts about their pets. She found that "animal friends often serve their owners better than human friends." Blind persons devel-

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Study	Stimuli	Shown characters				Tested factors			
		Characters absent	Human characters	Pets	Undomesticated animals	Biophilia and attitude toward pets	Animal age	Cuteness of the species	Suitability of the animal as pet
1	Commercials and print ads	x	x	x	x	H1a			
2	Commercials		x	x		H1b			
3	Mock ads		x	x		H1b	H2		
4	Chatbot		x		x	H1a		H3	
5	Mock ads		x	x	x	H1b			H4

Tab. 1: Overview of the studies

op trust-based connectedness with their guide dogs. These findings indicate the possibility of strong trust-based relationships of humans with their pets.

Multiple occasions to develop trust in pets: We surmise that consumers experience higher familiarity with pets than with undomesticated animals. Pets frequently live like members of the family (Albert and Bulcroft 1988; Sanders 1990; Hirschman 1994; Belk 1996; Holbrook et al. 2001; Mosteller 2008; Boya et al. 2012). According to Albert and Bulcroft (1988) and Hirschman (1994), approximately 80 % of pets are part of their family with human-like attributes. Pets are given special places and beds (Mosteller 2008). Pets are given names such as those of other family members (Belk 1996). They travel with the family to vacations (Mosteller 2008), and they eat, sleep, and play with the family. Thus, pet owners learn to trust in the honest behavior of pets.

Anthropomorphizing pets: Aggarwal and McGill (2012) argue that the possibility of having a successful social interaction is one reason why anthropomorphized entities have a positive effect on human behavior. With pets, people can socially interact more easily than with wild animals, and thus there will be a tendency to assign human characteristics to the pet including viewing pets as trustworthy beings. Hirschman (1994) found that the likelihood that a human will perceive an animal as a possible pet increases with the anthropomorphism of that animal. If an animal is actually owned as pet, people likely anthropomorphize the pet to an even higher extent, i.e., assign to the pet more human characteristics than exist in reality (e.g., Waytz et al. 2010). Animal anthropomorphizing means that animals are strongly associated with human-like characteristics such as extraordinary intelligence, empathy, abilities, or beauty. People value particular animals for these personality traits (Albert and Bulcroft 1988; Belk 1996; Beverland et al. 2008; Jyrinki 2012) and thus likely enjoy the trust in humans expressed by animals to a higher extent if the animal is a pet, and they will respond to them with trust as if they were humans.

Empirical evidence for human attachment to animals: In an experiment, Nagasawa et al. (2015) considered a sample of 30 dog owners who played with their dogs (among them, eight persons who looked intensely at their pet while playing, and 22 who did not look intensely at their pet while playing) and a sample of eleven other persons who played with an unknown tame wolf for 30 minutes. Right before and 30 minutes after the interaction, the level of oxytocin in the person and the dog/wolf was assessed. The authors found that the oxytocin level increased in the sample of humans who intensely looked at their dog while playing with the dog. The level of oxytocin is generally assumed to indicate the current level of trust in human beings (Kosfeld et al. 2005), and this is likely also the case in animal beings.

Based on these arguments and findings, we conclude that people trust in the sincere and honest behavior of pets.

3.4.3. Mental simulations

We presume that depictions of animals in advertisements that elicit associations of the predictability of the animal and one's own trust in animals cause mental simulations of particular situations. People likely envision possessing such an animal, living together with that animal, experiencing its unconditional trust, and they develop trust in the animal. These thoughts are favorable and likely cause pleasant feelings, e.g., feelings of entertainment. Moreover, trustworthy animals are expected to provide truthful messages. Thus, we presume the following:

H4: Contacts with images of pets (in contrast to images of undomesticated animals) in advertisements evoke perceptions of animal trustworthiness. Perceptions of animal trustworthiness a) elicit feelings of entertainment and b) spill over to perceptions of the credibility of ad messages.

4. Overview of the studies

We conducted five studies to provide answers to the research questions (see Section 1.3). In all studies, we *explore* the conditions under which either human or animal characters lead to more favorable attitudes toward an ad

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and a brand. Thus, we include the human-character condition in all studies and, in Study 1, additionally the condition in which neither human models nor animal images are shown. Moreover, in each study, we *statistically test* one or two of our four hypotheses that contain factors that are expected to influence the ad's effectiveness due to animal depictions. In *Tab. 1*, we provide an overview of the details of the studies.

5. First study

As described above, in addition to animal characters we included a human-character and a character-absent condition in Study 1 to explore the superiority of type of images. Moreover, we examined the effect of consumer biophilia on the attitude toward advertisements containing animal images and brand attitude.

5.1. Experimental design

We used the Coca-Cola brand and the Oreo brand as test objects and three versions of advertisements for each brand as test stimuli. We used an experimental 3 (ad version: human character present, animal character present, characters absent) levels between-subjects design. The brand factor (within-subject factor) merely served as a replication factor that enables us to check the stability of the findings resulting for the different levels of the experimental ad factor.

5.2. Test stimuli

For the Coca-Cola brand, we used print advertisements. In the characters-absent condition, the ad showed a can on which the word "Friends" was printed. In the human-character condition, the ad version showed two female persons, obviously friends, lying on a blanket watching the moon together. This motif was adopted from an original Coca-Cola advertisement and slightly modified; e.g., the location of the logo within the ad was changed. In the animal-character condition, the motif was also adopted from a real campaign of this brand; two polar bears were watching the moon.

We also wanted to use TV commercials for our investigations. We visited the YouTube website, inserted the keywords "animal" and "commercial" (in English and German language), and sorted the results according to the number of downloads and the time of publication of the commercial on the Internet. We thereby received a sample of 255 commercials after excluding duplicates. For each of these commercials, we explored whether we could find a similar commercial (same brand, same story, same length, same message) in which the animal was replaced by a human character. Based on the results of this procedure, we decided to choose commercials of the Oreo brand. Oreo had promoted its cookies with a commercial in which a young boy was shown explaining to his dog how to properly eat the cookies ("Einzigartig [Matchless]," which was shown in Germany in 2011). We found a highly similar video, in which a young girl tells her father how to enjoy Oreo cookies ("So isst man Oreos [That's the way to eat Oreos]," which was shown in Germany in 2013). In the characters-absent condition, a video entitled "Wunder.Voll [Wonderfilled]" without images of persons or animals was used. We chose the version of this video in German language; it was broadcasted in Germany in 2015. The length of each of the commercials was approximately 30 seconds. The print ad versions for Coca-Cola and screen shots of the commercials promoting Oreo cookies are shown in *Fig. 1*.

5.3. Sample

In total, 134 students (M_{age} = 25.26 years, SD = 5.76, 56 % female, 34 % pet owners) took part in a survey. Because each person evaluated both brands, we obtained 268 observations. We eliminated 21 observations, which resulted in 247 observations; cases were eliminated when the test subjects indicated that they never drink any cola beverage or that they avoid consuming cookies. We re-

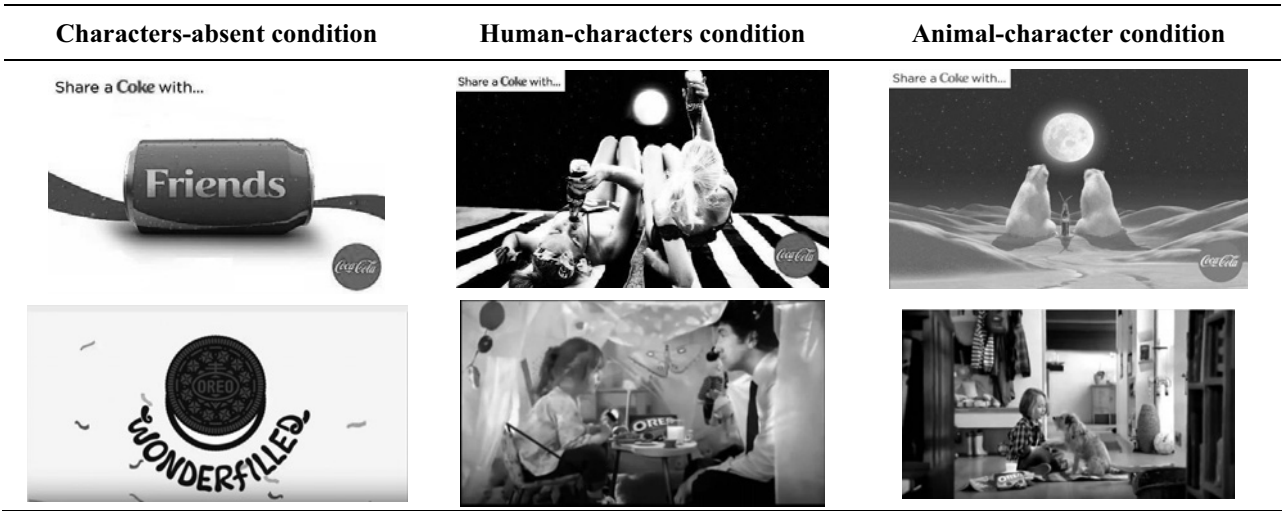

Fig. 1: Test stimuli used in Study 1

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moved those observations because people who are not interested in an issue likely do not mentally process the stimulus material, may not read questions well, may select answers without deliberation, or may answer randomly (Krosnick 1991; Oppenheimer et al. 2009) and inclusion of such cases likely attenuates statistical effects.

5.4. Procedure

The data collection was conducted through an online survey. The link to the questionnaire was provided on social platforms such as Facebook. The persons were randomly assigned to one of the three experimental conditions. Initially, the persons reported their biophilia. Then, they were exposed to one version of the Coca-Cola ad and provided data; subsequently, they could watch one version of the Oreo video and again provided data. This study was conducted in Germany in 2016 and 2017. In the survey, we measured attitudes toward the brand prior to assessing attitudes toward the ad. The persons were asked to guess the aim of the study. Probably because the test persons were in the same experimental condition for both brands, none of them was able to recognize the objective of the study.

5.5. Measures

Biophilia was assessed by agreement with the statements, "I am very interested in nature," "Harmony with nature is very important for me," "In the past, I have had more positive experiences with animals than humans," "In the past, I have always had very favorable experiences with animals," "I am very interested in animals," and "I like animals very much" (α = .829). These statements were adopted from Kals et al. (1999). For this construct and all other constructs assessed in the studies reported in this paper, a seven-point scale was used anchored from 1 = totally disagree to 7 = totally agree.

To assess brand attitudes, we used two types of measures. First, we measured two components of attitudes toward the brand: brand trustworthiness and brand-self connectedness. We included brand trustworthiness because pets might elicit feelings of trustworthiness that are likely transferred to the brand. We used the following statements to measure brand trustworthiness: "The brand is very sincere," "The brand always has my best interests at heart," and "The brand is very trustworthy" (α = .895; similar statements are used by Aaker 1997). Feelings of brand-self connectedness were measured by agreement with the following statements: "I feel very deep affection for the brand" and "I have a very close connection with the brand" (r = .923; similar statements are used by Stokburger-Sauer et al. 2012). Second, we measured overall brand attitude by asking the test persons to agree with the following: "This brand is appealing", "likeable," and "attractive" (α = .850).

We also assessed attitudes toward the ad. We measured attitudes in terms of two components: elicited feelings of entertainment and message credibility. We considered these components because, as described in the Theory section, we developed hypotheses for these components. We assessed feelings of entertainment by asking the test persons to agree or disagree with the following: "I feel very amused by the advertisement," "This advertisement is not at all boring," and "The advertisement is very interesting" (α = .889). In the Coca-Cola test advertisements, the experience of friendship when consuming the beverage is highlighted (in the characters-absent condition, the word "friends" promises this experience; in the human-character condition, two females watching the moon together and drinking the beverage is depicted; in the animal-character condition, a couple of polar bears seem to experience a sense of belongingness). Thus, we could ask whether the promise of experiencing friendship in connection with Cola-Cola is credible. In the case of Oreo, the tastiness of the cookies is emphasized in all video versions. Hence, we asked whether Coca-Cola and Oreo, respectively, keep these promises. Perceptions of message credibility were assessed by agreement with the following: "The promise of experiencing friendship (tastiness) is very convincing," "This promise is very credible," and "This promise is formulated very honestly" (α = .889). Additionally, the test participants indicated whether they owned a pet and the number of owned pets. Moreover, brand awareness ("I know the brand ... very well"), consumption frequency of cookies and cola beverages, and demographic data were assessed.

5.6. Description of results

Brand familiarity was rather high (M = 5.08 for Coca-Cola and M = 4.67 for Oreo) and did not significantly vary across the experimental conditions. In *Tab. 2*, we report the effect of the ad version on the attitudes toward the ad (feelings of entertainment, message credibility) and the attitudes toward the brand (brand trustworthiness, brand-self connectedness, and overall attitude).

The findings indicate that the attitudes toward the ad and brand are highest in the animal-character condition. In this respect, there were no differences across the test objects.

5.7. Test of H1a

We expected that the attitude toward the ad would increase with consumer biophilia. We selected only data obtained for the animal-character condition and correlated biophilia with each of the dependent variables. The correlations ranged between .33 and .40 and were significant at the .01 level. Next, we split the subjects according to biophilia into tertiles (low: 1 – 4.6, moderate: 4.6 – 5.6, high: 5.6 – 7) and conducted ANOVAs. The findings shown in *Tab. 3* support H1a and suggest a positive influence of biophilia on the attitude toward the ad (all ps < .05).

5.8. Interpretation

Our results are in line with the findings from the cross-sectional analyses of Tomkovick et al. (2001) and Yelkur et al. (2013) who found that commercials with animal

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Brand	Response variable	Characters-absent condition	Human-character condition	Animal-character condition	ANOVA
Coca-Cola	Feelings of entertainment	3.29 (1.29)$_a$	3.05 (1.30)$_a$	4.43 (1.42)$_b$	$F_{2;113} = 11.026^{***}$
	Message credibility	3.45 (1.17)$_b$	2.80 (1.28)$_a$	4.19 (1.11)$_c$	$F_{2;113} = 12.845^{***}$
	Brand trustworthiness	3.36 (1.14)$_a$	2.92 (1.37)$_a$	4.47 (1.05)$_b$	$F_{2;113} = 15.720^{***}$
	Brand-self connectedness	2.89 (1.57)$_a$	2.84 (1.78)$_a$	3.95 (1.35)$_b$	$F_{2;113} = 5.330^{**}$
	Brand attitude	3.96 (1.02)$_a$	3.81 (1.55)$_a$	4.69 (1.28)$_b$	$F_{2;113} = 4.489^{*}$
Oreo cookies	Feelings of entertainment	3.82 (1.54)$_a$	4.07 (1.45)$_a$	4.82 (1.69)$_b$	$F_{2;128} = 4.645^{*}$
	Message credibility	3.26 (1.39)$_a$	4.00 (1.33)$_b$	4.69 (1.42)$_c$	$F_{2;128} = 11.136^{***}$
	Brand trustworthiness	3.53 (1.16)$_a$	3.63 (1.34)$_a$	4.71 (1.26)$_b$	$F_{2;128} = 11.501^{***}$
	Brand-self connectedness	2.12 (1.20)$_a$	2.47 (1.49)$_a$	4.40 (1.73)$_b$	$F_{2;128} = 28.872^{***}$
	Brand attitude	4.36 (1.51)$_a$	4.31 (1.54)$_a$	5.06 (1.44)$_b$	$F_{2;128} = 3{,}391^{*}$
Overall	Feelings of entertainment	3.57 (1.44)$_a$	3.56 (1.46)$_a$	4.65 (1.58)$_b$	$F_{2;244} = 13.667^{***}$
	Message credibility	3.35 (1.29)$_a$	3.40 (1.44)$_a$	4.47 (1.31)$_b$	$F_{2;244} = 16.965^{***}$
	Brand trustworthiness	3.45 (1.15)$_a$	3.27 (1.39)$_a$	4.60 (1.17)$_b$	$F_{2;244} = 26.230^{***}$
	Brand-self connectedness	2.48 (1.43)$_a$	2.66 (1.65)$_a$	4.21 (1.58)$_b$	$F_{2;244} = 28.585^{***}$
	Brand attitude	4.17 (1.31)$_a$	4.06 (1.56)$_a$	4.90 (1.37)$_a$	$F_{2;244} = 8.056^{***}$

Notes: Scale ranges from 1 (low) to 7 (high). Standard deviations in parentheses.
Mean values with different subscripts are different at the .05 level (Scheffé test).
$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$ (two-tailed test).

Tab. 2: Effect of the ad version on the attitudes toward the ad and the brand (Study 1)

depictions lead to more favorable attitudes toward ads than commercials with depictions of human characters or commercials that show neither animal characters nor human characters. We found the degree to which attitudes were higher in the animal-character compared to the human-character conditions to be surprising because we had used familiar brands, and the mean differences were at least one point on the seven-point scale. Even if the studied consumers were *low* in biophilia, the depiction of animals resulted in equal or higher ad attitudes compared to the characters-absent condition (feelings of entertainment: 3.97 > 3.57, t_{101}= 1.32, *ns*; message credibility: 3.88 > 3.35, t_{101}= 2.383, $p < .01$; brand trustworthiness: 4.04 > 3.45, t_{101}= 2.211; $p < .05$, brand-self connectedness: 3.46 > 2.48, t_{101}= 3.009, $p < .01$).

We found a positive effect of biophilia on feelings of entertainment (r = .392) and on message credibility (r = .330). However, the strength of this effect might be biased because we used the same method for assessing biophilia on the one hand and for assessing entertainment and message credibility on the other: the self-reported

Dependent variable	Correlations with biophilia	Splitting the sample in three levels of biophilia			
		Low biophilia	Moderate biophilia	High biophilia	ANOVA
Feelings of entertainment	$.392^{***}$	3.97 (1.42)$_a$	4.80 (1.14)$_b$	5.21 (1.86)$_b$	$F_{2;71} = 4.457^{*}$
Message credibility	$.330^{**}$	3.88 (1.39)$_a$	4.60 (1.02)$_b$	4.80 (1.45)$_b$	$F_{2;71} = 3.089^{*}$
Brand trustworthiness	$.397^{***}$	4.04 (1.25)$_a$	4.78 (.94)$_b$	5.03 (1.08)$_b$	$F_{2;71} = 5.567^{**}$
Brand-self connectedness	$.395^{***}$	3.46 (1.46)$_a$	4.30 (1.48)$_b$	4.90 (1.50)$_b$	$F_{2;71} = 6.096^{**}$
Brand attitude	$.455^{***}$	4.12 (1.55)$_a$	5.01 (1.02)$_b$	5.40 (1.36)$_b$	$F_{2;71} = 5.630^{**}$

Notes: Scale ranges from 1 (low) to 7 (high). Standard deviations in parentheses.
Mean values with different subscripts are different at the .05 level (Scheffé test).
Effect sizes η^2 are .147 (feelings of entertainment), .080 (message credibility), .119 (brand trustworthiness), .123 (brand-self-connectedness), and .137 (brand attitude).
$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$ (two-tailed test).

Tab. 3: Effect of biophilia on the attitudes toward the ad and the brand (Study 1)

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data were assessed on a seven-point scale. Attitudes toward an ad, especially feelings of entertainment, are primarily the result of affective states. People are likely entertained when they experience the emotion of enjoyment or pleasant surprise. These emotional states are generally considered to be the basic emotional states (e.g., Izard 1977; Plutchik 1980; Friesen and Ekman 1983). Morales et al. (2017, p. 470) recommend that self-reported attitudinal data should be accompanied by "behavioral measures such as facial expression." Thus, in the next study, we assessed facial movements in response to advertisements to infer affective states in the consumers.

6. Second study

The objective of Study 2 was to replicate the findings of Study 1. However, instead of relying only on self-reported data, we applied the EmFACS technique, which is an apparatus-assisted method, to infer emotions. Moreover, we examined the effects of attitudes toward pets.

6.1. Experimental design

We used an experimental 2 (commercial version: human characters present, animal characters present) level between-subjects design. Both commercials promoted the Schwäbisch Hall brand. Schwäbisch Hall is a financial service brand in Germany that is a specialized financial institution and targets consumers who want to save money for the purchase of private housing, home improvements, and new construction and that offers additional loans for that purpose.

6.2. Test stimuli

Again, we used professionally created video material. In the human-characters version, we adopted the video and music from the "Sarah & Juan" commercial that originally promoted Wrighley's chewing gum. We cut out all images that indicated chewing gum and the brand (Wrighley's). At the end of the commercial, we substituted the Wrighley's logo with an image that promoted Schwäbisch Hall financial services. In the animal-characters version, we used the commercial entitled "Harvey & Harmony" that promoted Thinkbox, a British media and marketing agency. Like the Sarah & Juan commercial, which tells the story of a human couple falling in love, the Harvey & Harmony video shows two dogs falling in love. The story ends with pictures indicating the need to enlarge their owner's home. We replaced the background music contained in the original Harvey & Harmony commercial with the music contained in the Sarah & Juan commercial. At the end of the commercial, the image promoting Schwäbisch Hall was included. Thus, the human-characters and the animal-characters commercials showed rather similar romantic stories (either a human couple or an animal couple falling in love), contained the same background music, promoted the same brand, and the audience could easily understand the need for an appropriate home for the couple that could be financed by Schwäbisch Hall. Each of the commercials lasted 1:22 minutes [2].

6.3. Sample

Initially, 128 students took part in this experiment. If they answered the question in the confirmative with regard to knowing the original Sarah & Juan commercial or the original Harvey & Harmony commercial, respectively, at the beginning or during the experiment (which was the case for two people who saw the Sarah & Juan version), they were thanked for their willingness to participate in the experiment and not included in the sample providing data. The final sample consisted of 126 students (M_{age} = 22.59 years, SD = 3.79; 52.4 % females, 34.9 % pet owners). The experiment was conducted in Germany in Winter 2017 and Spring 2018.

6.4. Procedure

We invited students who were found in a university building to take part in the experiment. At the beginning of the experiment, the subjects' attitude toward pets was assessed. Then, the persons were guided to a table on which a laptop computer was placed. The persons were asked to sit down and watch one version of the advertisement videos. A camera was integrated into the frame of the laptop computer that recorded their face; the test participants had knowledge of and agreed to that procedure. After reporting "all their thoughts and feelings that were elicited by the video," the test persons reported brand attitude, indicated feelings of entertainment, and judged message credibility. The test persons could infer from the videos the obvious promise of Schwäbisch Hall – that of enabling all young couples to finance their home. Thus, we could check whether this message was perceived as credible. Finally, the persons provided answers to some control variables (e.g., brand awareness, interest in the category of financial services, age, and gender). None of the test subjects articulated any doubt that the viewed commercial video was real advertising, which ensures a high external validity of the data. Finally, the test persons received information about the objective of the experiment and were thanked.

6.5. Self-reported data

To assess attitude toward pets, we adopted the statements from the "pet attitude scale" developed by Templer et al. (1981). We asked the test subjects to indicate agreement with the following: "My pet means more to me than any of my friends (or would if I had one)," "I (would) like a pet in my home," "Housepets add happiness to my life (or would if I had one)," "I have occasionally communicated with a pet and understood what it was trying to express," "I love pets," "I frequently talk to my pet (or would if I had one)," and "You should treat your housepets with as much respect as you would a human member

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of your family (or I would if I had one)" (α = .909). We assessed brand attitude by asking the test persons to agree or disagree with the following: "The activities of this company are very positive," "A financial investment with this company is very attractive," and "The offers of this company are very appealing" (α = .712). Message credibility was assessed by agreement with the following: "The promise to finance homes for young couples is very convincing," "This message is very credible," and "This message is very honest" (α = .933). Similar statements were used by Beltramini (1982). To assess feelings of entertainment, the test persons responded to the following: "I felt very entertained by the advertisement," "This advertisement is not at all boring," and "The advertisement is very enjoyable" (α = .841). The adjectives "entertaining" and "enjoyable" were adopted from Olney et al. (1991).

6.6. Measures of facial movements to infer emotions

Ekman et al. (1969), Ekman and Friesen (1971), and Ekman et al. (1971) state that across cultures, people are able to infer other people's emotions by looking at their facial expressions. They argue that these emotions are understood cross-culturally because facial expressions are universal (Ekman et al. 1987). Ekman and colleagues developed a method for how to assess facial movements and subsequently a technique for how to infer emotions. Ekman and Friesen (1971 and 1976) and Ekman and Rosenberg (1997) began by developing the FACS (facial action coding system) method. They suggested looking at the movement of a large set of muscles of the human face, described a subset of 40 muscles, reported their anatomical nomenclature (e.g., "Orbicularis oculi, pars orbitalis"), and assigned numbers to each muscle that they denoted "action units" (AUs). In subsequent publications, Ekman and co-authors (e.g., Ekman et al. 2002a, 2002b) developed a detailed verbal and visual description of how to identify the movement of each of the facial muscles. iMotions (2017), an institute in the field of psychological research created three-second videos demonstrating the movement of each of the facial muscles. To develop EmFACS, Friesen and Ekman (1983) and Ekman (1992, 2000) assumed that there are six basic human emotions: anger, disgust, fear, happiness/joy, sadness, and surprise or seven including contempt (e.g., Ekman et al. 1980, p. 1131). In further publications, Ekman and his co-authors provided information about how to infer these basic emotions from particular muscle movements and movements of combinations of muscles. Note that these assignments were revised over time. An assignment of Ekman et al. (2002b) was made available to other researchers by Kanade et al. (2000). It contains information for users of EmFACS about the facial muscle movements and combinations that should be observed to infer the presence of each of the basic emotional states. A short version of this assignment was also suggested by iMotions (2017). This procedure allows only for the inference of emotions at a particular point in time. In case of a video, emotions are time-contingent, i.e., they depend on the video episode. Thus, emotions must be assessed repeatedly, after which the user can calculate the frequency of how often a test subject expresses signs of a particular emotion. By doing so, the researcher follows the recommendations of Cohn and Ekman (2005, p. 35) who suggest that EmFACS is used properly when "a frequency count is taken." We should note that this procedure aims to assess the presence of particular emotions and the frequency of their occurrence but does not capture the strength of the emotions.

We used the judgments of two coders to assess the movements of 19 facial muscles of the test participants (these 19 muscles are denoted as relevant in the muscle overview of Ekman et al. 2002b). Each of the coders was instructed to become familiar with the movement of the first muscle (action unit 1) by watching the corresponding "gif file" on the iMotions website. This enabled the coders to provide a yes/no measure (for a particular test person and for a particular commercial episode). Then, each coder studied the movement of the second muscle (action unit 2) on the iMotions web site and then judged each test person's face for each selected commercial episode. These steps were continued for all relevant facial muscles. As the stimulus material was a commercial, the coders had to assess the movement of the 19 muscles repeatedly. We selected three episodes from each of the videos (falling in love; showing signs of love; and proposal of marriage/female dog moves into the male dog's home). Thus, the coders viewed the 19 facial muscles three times. If the coders provided different results (which was the case in approximately 2 % of the judgments), they had to resolve the discrepancy together; if they did not find a joint result, a third coder was consulted. By doing so, we coded the changes in facial expressions resulting in 19 binary values, e.g., AU1 = yes, AU2 = yes, AU3 = no, for each test subject and for each of the three selected commercial episodes. Next, the presence or absence of a particular emotion was "calculated" with the help of the EmFACS assignment. We aggregated each set of the 19 binary variables (for each test person and for each selected commercial episode) to infer the presence or absence of seven basic emotions resulting in sets of seven binary variables, e.g., surprise = yes, fear = no, for each test participant and each commercial episode. Finally, we aggregated the latter sets of binary variables by counting the frequency of the presence of each emotion. This step resulted in seven variables that range from zero to three and represent the frequency of seven emotions exhibited by the test person in the selected three video episodes. A typical result could be as follows: happiness/joy = 2 times, surprise = 1 time, anger = 0 times, etc. [3].

6.7. Description of results

In *Tab. 4*, we present the results of the EmFACS measures and the test participants' self-reported data for the attitudes toward the ad and the brand.

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Dependent variable	Human-characters condition	Animal-characters condition	ANOVA
EmFACS measures[1]			
Happiness/joy	.57 (.82)	1.86 (1.00)	$F_{1;\,124} = 62.601^{***}$
Pleasant surprise	.08 (.37)	.73 (1.08)	$F_{1;\,124} = 20.420^{***}$
Anger	.05 (.28)	.02 (.13)	$F_{1;\,124} = .674$
Disgust	.24 (.62)	.02 (.13)	$F_{1;\,124} = 7.901^{**}$
Contempt	.25 (.62)	.00 (.00)	$F_{1;\,124} = 10.525^{**}$
Sadness	.00 (.00)	.00 (.00)	-
Fear	.08 (.37)	.00 (.00)	$F_{1;\,124} = 2.860$
Self-reported data[2]			
Brand attitude	3.97 (.92)	4.47 (.79)	$F_{1;\,124} = 10.572^{***}$
Feelings of entertainment	4.55 (1.44)	5.24 (1.44)	$F_{1;\,124} = 7.171^{**}$
Message credibility	4.24 (1.06)	5.06 (1.22)	$F_{1;\,124} = 6.082^{***}$

Notes: [1] Scale ranges from 0 (no signs of this emotion in the three selected video episodes) to 3 (signs of this emotion in all three selected video episodes). [2] Scale ranges from 1 (low) to 7 (high).
Standard deviations in parentheses. $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$ (two-tailed test).

Tab. 4: Effect of the ad version on EmFACS measures and self-reported data (Study 2)

We found that the use of animal characters resulted in a more favorable brand attitude, higher feelings of entertainment and more positive perceptions of message credibility. The EmFACS procedure showed that happiness/joy was experienced more frequently in the animal-characters condition than in the human-characters condition ($M_{animal} = 1.86$, $M_{human} = .57$, $p < .001$). A similar pattern of results was observed for the emotion of pleasant surprise ($M_{animal} = .73$, $M_{human} = .08$, $p < .001$). The frequency of other emotions was rather low.

To gain insights into the relationships, we calculated the parameters of a mediation model with Hayes' procedure (2012, model 4) and used the type of character (1 = animals, 0 = humans) as the independent variable, happiness/joy and pleasant surprise as the mediating variables, and feelings of entertainment as the dependent variable. The results contained in *Fig. 2* show that the emotion of happiness/joy mediates the relationship between the type of character and self-reported feelings of entertainment ($1.286 \times .474 = .609$; 95 % CI = (.211; 1.035)). Thus, animal depictions do not only affect self-reported feelings of entertainment. They cause emotions of happiness/joy (a mental state not predominantly cognitively controlled), which are experienced and reported as a feeling of entertainment (a cognitively controlled mental state). In this mediation analysis, the mediating effect of pleasant surprise was non-significant, probably due to the strong correlation between happiness/joy and pleasant surprise ($r = .529$).

6.8. Test of H1b

To test the effect of attitude toward pets on the dependent variables, we selected the data obtained for the animal-characters condition and calculated the correlations between attitude toward pets and these variables. Moreover, we split attitude toward pets into tertiles (low = 1 to

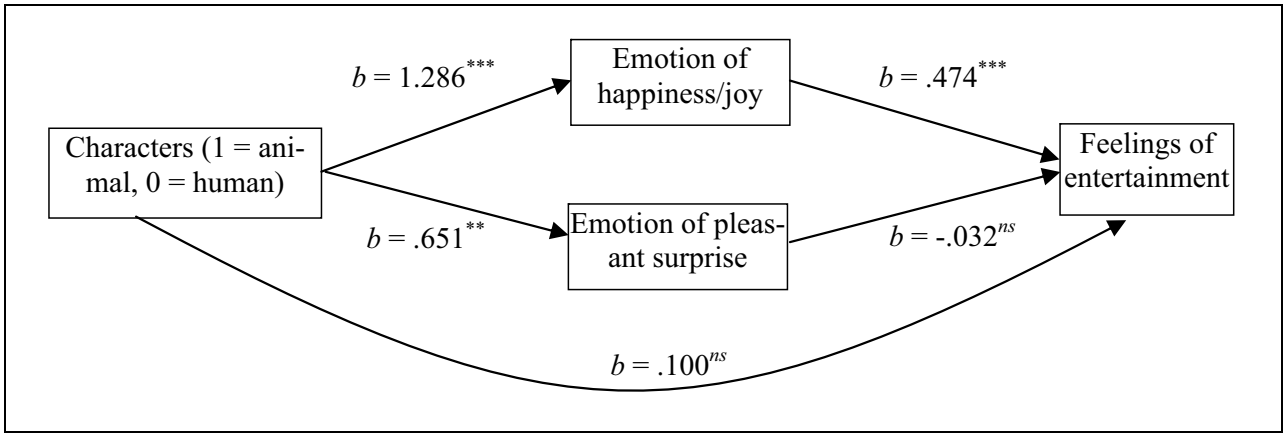

Fig. 2: Mediation effect of positive emotions in the relationship between character (animal or human) and feelings of entertainment

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4.15; moderate = 4.16 to 5.30, and high = 5.31 to 7) and calculated the mean values of each dependent variable for these levels. The findings shown in *Tab. 5* indicate a strong relationship between attitude toward pets and happiness/joy. Because happiness/joy affects feelings of entertainment, this study provides evidence in support of H1b.

6.9. Interpretation

This study's findings are also in line with the results of Tomkovick et al. (2001) and Yelkur et al. (2013) who found that animal depictions lead to more favorable ad attitudes than depictions of human models. Only for people with a low level of attitude toward pets were brand attitudes the same in the human-characters and the animal-characters conditions (M_{human} = 3.97, $M_{animal,\ low\ att\ toward\ pets}$ = 4.11). However, for people with a moderate level of attitude toward pets, brand attitudes were more positive in the animal-characters than in the human-characters condition (M_{human} = 3.97, $M_{animal,\ moderate\ att\ toward\ pets}$ = 4.54, $F_{1;79}$ = 5.282, $p < .05$). The same effect appeared for people with a high level of attitude toward pets (M_{human} = 3.97, $M_{animal,\ high\ att\ toward\ pets}$ = 4.72, $F_{1;79}$ = 12.294, $p < .001$). Thus, if attitude toward pets exceeds a certain level, animal images are more effective than images of human models. In many conditions, the promoted products themselves (such as services of financial institutions in our case) are unlikely to trigger emotions. When using images of animals, even advertising for such products can evoke pleasant emotions (as our research demonstrates). Attitude toward pets is surprisingly strongly related to the emotion of happiness/joy (r = .522, η^2 = .554) when viewing commercials that show pets. This emotion spills over to feelings of entertainment.

7. Third Study

As in the previous studies, the objectives of Study 3 were twofold. We wanted to gain further knowledge about the conditions under which animal images are more effective than human images in advertising. Moreover, we wanted to repeatedly test H1b and additionally test H2; the latter hypothesis states that animals' age influences perceptions of animal cuteness, which affect feelings of entertainment.

7.1. Experimental design

We used an experimental 3 (character shown in the ad: human character, dog image, cat image) × 2 (age of the character: infantile or adult) factorial between-subjects design and considered two brands (Mrs. Sporty gym, Kondrauer mineral water) as between-subjects factor. For each of the twelve conditions, a print ad was created. The brand factor served only as a replication factor to enable us to check the generalizability of the results. The use of two animal species (dog and cat) served the same purpose. We used the comparison of the infantile-animal conditions to the adult-animal conditions to test H2.

7.2. Test stimuli

The ad versions were held constant across the conditions for each brand except the depicted character. There were some pieces of information in the ads. Mrs. Sporty was promoted by the following: "The fitness studio for sporty and smart girls." The ads promised that "after four weeks' training in the yoga class, fitness increases by fifty percent." In the Kondrauer ads, the phrase "refreshing Bavarian" was inserted, and the company promised "free of nitrates and nitrites." The versions for the gym are shown in *Fig. 3*. For the mineral water, a person, dog, or

Dependent variable	Correlations with attitude toward pets	Splitting the sample in three levels of attitude toward pets			
		Low level	Moderate level	High level	ANOVA
EmFACS measures[1]					
Happiness/joy	.522**	.85 (.75)$_a$	1.94 (.80)$_b$	2.60 (.50)$_c$	$F_{2;\ 60}$ = 37.338***
Pleasant surprise	.307*	.56 (1.04)$_a$	.73 (1.08)$_a$	1.16 (1.04)$_b$	$F_{2;\ 60}$ = 3.757*
Self-reported data[2]					
Brand attitude	.284*	4.11 (.45)$_a$	4.54 (.93)$_{ab}$	4.72 (.81)$_b$	$F_{2;\ 60}$ = 3.801*
Feelings of entertainment	.321**	4.84 (1.60)$_a$	5.11 (1.52)$_{ab}$	5.68 (1.15)$_b$	$F_{2;\ 60}$ = 3.779*
Message credibility	.277*	4.60 (1.20)$_a$	5.08 (1.30)$_{ab}$	5.54 (.96)$_b$	$F_{2;\ 60}$ = 4.586*

Notes: [1] Scale ranges from 0 (no signs of this emotion) to 3 (signs of this emotion in all three selected episodes).
[2] Scale ranges from 1 (low) to 7 (high). Standard deviation in parentheses.
Mean values with different subscripts are different at the .05 level (Scheffé test).
Effect sizes η^2 are .554 (happiness/joy), .111 (pleasant surprise), .112 (feelings of entertainment), .133 (message credibility), and .112 (brand attitude). * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed test).

Tab. 5: Effect of attitude toward pets on EmFACS measures and self-reported data (Study 2)

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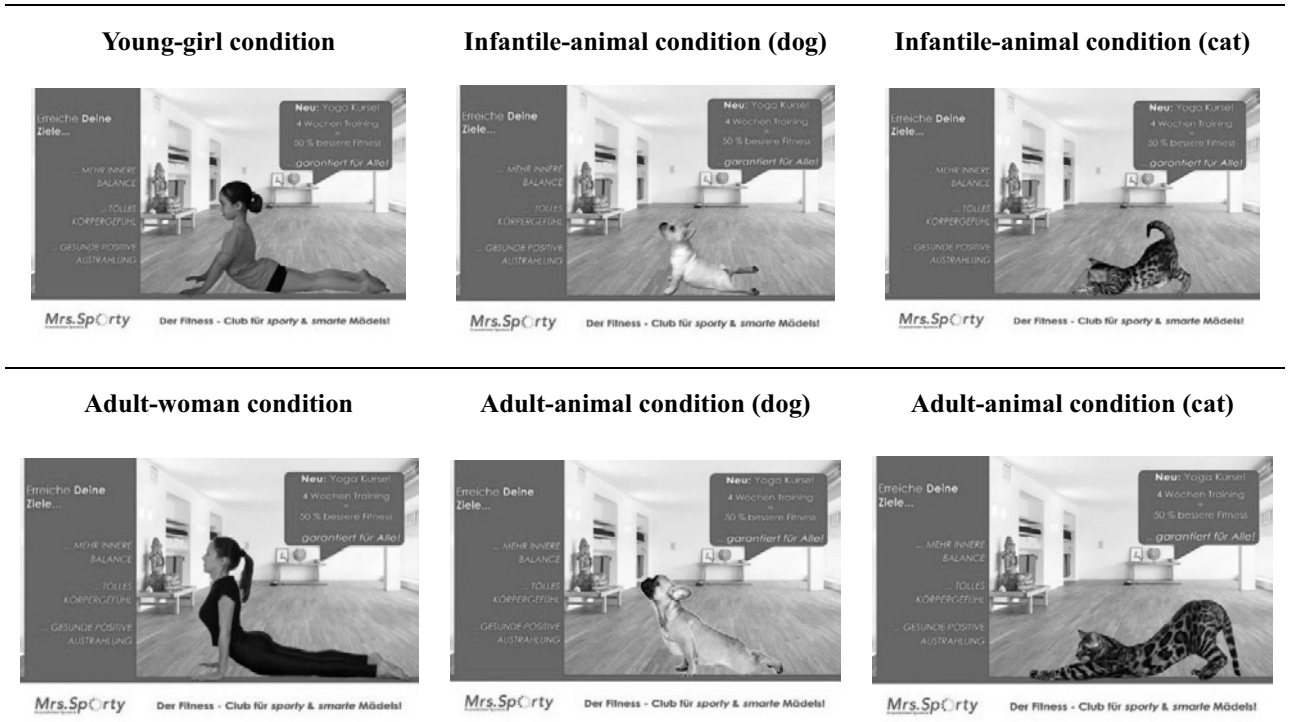

Fig. 3: Test stimuli promoting Mrs. Sporty used in Study 3

cat (all either infantile or adult) was shown consuming the water by a drinking straw.

7.3. Sample

We decided to focus on female test persons because Mrs. Sporty accepts only female club members and, in the human-character ad condition, a female adult person or girl was shown. In total, 461 female students (M_{age} = 22.30 years, *SD* = 3.19, 44.9 % pet owners) participated in the experiment.

7.4. Procedure

The test participants were recruited in the libraries of three universities located in Germany. Female students received a lollipop; attached to the side of the lollipop was a paper promoting the study and providing the link to the online survey. They did not receive any information about the study's objective except for text communicating that they would be able to contribute to a scientific experiment. Approximately half of the contacted persons actually participated in the online survey. First, the test participants reported their attitude toward pets. Then, they were randomly assigned to one of the twelve conditions. While completing the questionnaire, they were always able to view the ad version, i.e., the picture was present for each evaluation. The participants began by "reporting all thoughts and feelings evoked by the ad." Subsequently, attitude toward the brand, attitude toward the ad, and perceptions of cuteness were measured. Finally, control variables were assessed, e.g., interest in fitness or mineral water, respectively, perceptions of fit between the depicted character and the product, estimated age of the depicted character (ranging from rather young to rather old), pet ownership, and demographic data.

7.5. Measures

We used the same scale as in Study 2 to assess attitude toward pets (α = .895). The attitude toward the brand was measured by agreement with the following: "The idea of visiting this gym (drinking this water) is very attractive," "very positive," "very desirable," "very interesting," and "very appealing" (α = .915). Cuteness was measured by agreement with the following: "This person (animal) looks sweet," "twee," "lovely," "cute," and "clumsy" (α = .884). Other studies have also included adjectives such as "infantile" (Nittono et al. 2012; Parsons 2014). We did not adopt such adjectives because they do not seem to be appropriate to describe a female adult person. Borgi et al. (2014) stated that "sweet" and "lovely" are common terms for describing "cuteness." Prior to applying this scale, we asked a sample of female students whether the chosen adjectives are applicable to judge a female adult person; they did not indicate any concerns with the adjectives. As in Study 1 and Study 2, we considered two components of the attitudes toward the ad. The subjects indicated message credibility by agreement with the following: "The promise of increasing one's fitness (that the water is free of nitrates and nitrites) is credible," "convincing," "true," "honest," "trustworthy," and "conclusive" (α = .929). Feelings of entertainment were indicated by agreement with the following: "The ad is very entertaining," "This ad is highly

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Brand	Dependent variable	Young girl	Adult female person	Infantile dog (puppy)	Adult dog	Infantile cat (kitten)	Adult cat	ANOVA
Mrs. Sporty	Brand attitude	3.29 (1.51)	3.10 (1.49)	3.31 (1.40)	3.22 (1.56)	3.19 (1.31)	2.81 (1.49)	$F_{5;221} = .636$
	Message credibility	3.83 (1.20)	3.76 (1.32)	3.75 (1.78)	3.99 (1.29)	3.70 (1.07)	3.69 (1.09)	$F_{5;221} = .353$
	Feelings of entertainment	5.00 (.98)	4.33 (1.07)	5.29 (1.29)	4.69 (1.79)	5.49 (1.42)	4.20 (1.40)	$F_{5;221} = 5.581^{***}$
	Cuteness	4.88 (.84)	4.01 (.99)	5.58 (1.04)	4.85 (1.40)	5.56 (1.24)	4.11 (1.48)	$F_{5;221} = 11.878^{***}$
Kondrauer	Brand attitude	3.58 (1.36)	4.49 (1.33)	4.19 (1.18)	4.06 (1.33)	4.32 (1.35)	4.47 (1.47)	$F_{5;228} = .636$
	Message credibility	2.63 (.98)	3.00 (1.22)	2.91 (1.23)	2.72 (1.22)	2.88 (.92)	2.98 (1.39)	$F_{5;228} = .610$
	Feelings of entertainment	3.99 (1.03)	4.62 (1.09)	3.88 (1.70)	3.57 (1.56)	4.55 (1.35)	4.59 (1.57)	$F_{5;228} = 3.943^{**}$
	Cuteness	3.97 (1.18)	3.09 (1.04)	4.27 (1.68)	3.97 (1.51)	4.87 (1.03)	4.02 (1.27)	$F_{5;228} = 7.956^{***}$
Total	Brand attitude	3.43 (1.43)	3.87 (1.56)	3.78 (1.35)	3.62 (1.50)	3.74 (1.44)	3.62 (1.69)	$F_{5;455} = .773$
	Message credibility	3.22 (1.24)	3.34 (1.31)	3.31 (1.27)	3.38 (1.40)	3.30 (1.08)	3.34 (1.29)	$F_{5;455} = .133$
	Feelings of entertainment	4.49 (1.12)	4.49 (1.08)	4.54 (1.67)	4.15 (1.76)	5.03 (1.46)	4.39 (1.49)	$F_{5;455} = 3.085^{**}$
	Cuteness	4.42 (1.12)	3.50 (1.11)	4.88 (1.56)	4.43 (1.51)	5.23 (1.19)	4.07 (1.37)	$F_{5;455} = 16.272^{***}$

Notes: Scale ranges from 1 (low) to 7 (high). Standard deviations in parentheses.
$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$ (two-tailed test).

Tab. 6: Effect of the ad version on the attitudes toward the brand, attitudes toward the ad, and perceptions of cuteness (Study 3)

fun to watch," and "This ad is appealing" (α = .845). Moreover, we assessed the degree to which the depicted character seems to be young or a grown-up; the scale ranged from 1 ("The person (animal) is very young" to 7 ("The person is an adult person/The animal is a grown-up animal").

7.6. Description of results

We found that the infantile characters were perceived "as young" and that the adult characters were perceived "as grown-ups" ($M_{\text{young character}} = 2.03$, $M_{\text{grown-up character}} = 5.10$, $t_{459} = 24.167$, $p < .001$). In *Tab. 6*, we provide the findings for brand attitude, ad attitudes (message credibility and feelings of entertainment), and perceptions of cuteness of the depicted characters depending on the experimental condition. We found that infantile characters resulted in higher perceptions of cuteness than adult characters. The same pattern of results was found for feelings of entertainment when an animal was depicted. However, we observed no effect of the ad version on either message credibility or on brand attitude.

7.7. Test of H1b and H2

To test the effect of attitude toward pets on the dependent variables, we excluded the data obtained for the human-character conditions. Attitude toward pets positively cor-

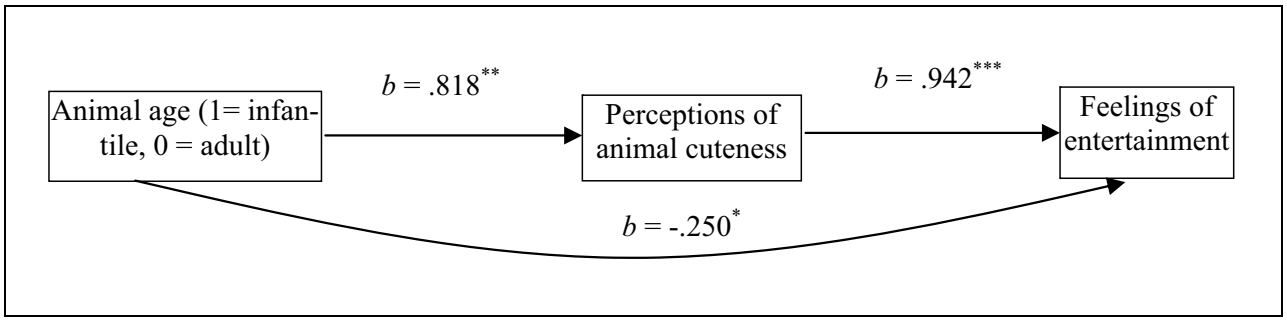

Fig. 4: Mediating effect of animal cuteness in the relationship between animal age and feelings of entertainment

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relates with perceptions of animal cuteness ($r = .282$, $p < .001$) and feelings of entertainment ($r = .309$, $p < .001$) but does not significantly correlate with message credibility ($r = .086$) or with brand attitude ($r = .019$). Thus, H1b is supported for the entertainment component of ad attitudes but not for the message credibility component.

In H2, we presumed that animal age affects perceptions of animal cuteness that spills over to feelings of entertainment. We estimated the mediating effect of animal cuteness with the means of Hayes' procedure (2012, model 4). For the purpose of this analysis, we aggregated the data across the brands because we did not find remarkable differences depending on the brand. The effects are as expected (*Fig. 4*). The indirect effect is also significant (.818 × .942 = .770; 95 % CI = (.45; 1.08)). Thus, H2 is supported.

7.8. Interpretation

When we considered brand attitude and compared the infantile-animal conditions to the young-girl condition, the animal depictions proved to be superior ($M_{\text{infantile animal}} = 3.76$, $M_{\text{young girl}} = 3.43$, $t_{222} = 1.653$, $p < .10$). When we compared the adult-animal conditions to the adult-female conditions, we found no significant difference ($M_{\text{adult animal}} = 3.62$, $M_{\text{adult female}} = 3.87$, $t_{235} = -1.130$, $p = .26$). We conclude that only for infantile characters do animals lead to more favorable brand attitudes. However, the effects are rather weak, and the ANOVAs that included non-aggregated conditions did not provide a significant effect.

Moreover, we found evidence of a positive impact of attitude toward pets on feelings of entertainment. This indicates that people react strongly to animals as a component of nature. When we consider the mediating processes, we see for animals that infantile animals cause higher perceptions of cuteness than adult animals; cuteness perceptions favorably influence feelings of entertainment. For human models, young girls are also associated with higher perceptions of cuteness than adult females; however, in this human-characters condition, the perception of cuteness has no effect on feelings of entertainment.

Surprisingly, feelings of entertainment (which are higher for infantile animals than for adult animals) did not affect brand attitudes. To explain this finding, we considered the comments of the test participants, i.e., their verbally written thoughts and feelings. Note that the ad images showed cats and dogs drinking mineral water or doing gymnastics. In the infantile-animal conditions, we found a large number of comments indicating that little cats and dogs are seen in terms of belittlement of the women targeted by the ads (e.g., "I do not want be equated with a little dog"). In the adult-animal conditions, are large portion of test persons provided comments indicating that they disliked the substitution of the addressed consumers by animals (e.g., "Sorry, but I am no dog"). On the one hand, women found infantile cats and dogs as cute resulting in increased feelings of entertainment. On the other hand, women tended to see the depicted characters as a possible role model, but they did not interpret the animals as a suitable role model, which resulted in a disrupted identification process. Thus, there are two different effects of infantile animals: (a) perceptions of cuteness with a positive effect on feelings of entertainment and (b) concerns that the marketer wants to equate women with animals and expresses a form of belittlement of women. The phenomenon that female persons dislike being compared to animals has also been reported by Van Stipriaan and Kearns (2009). These researchers considered a billboard campaign in New Zealand in 1998 that showed a dog in the clothes of a female human person combined with the slogan "De-sex your bitch – contact your vet before it is too late." The motif recommended to dog owners that female dogs should be sterilized early to avoid undesired puppies. The authors report that many people articulated complaints to the "Advertising Standards Complaints Board" in New Zealand because a comparison of dogs and women was used. We learnt from this study that infantile animals elicit perceptions of cuteness that elicit feelings of entertainment. However, there is a counterbalancing process if animals could be (mis-) interpreted as being a role model and consumers do not like to be equated with animals.

8. Fourth study

In Study 3, we had manipulated the age of the characters depicted in ads to induce perceptions of cuteness. However, one might criticize that animal age has an influence on additional perceptions such as animal loyalty or animal power that additionally affect feelings of entertainment and brand attitudes. We cannot control all additional perceptions based on animal age in an experimental setting. Thus, to provide further evidence for the presumption that perceptions of cuteness influence feelings of entertainment, in Study 4, we used a different approach to induce feelings of cuteness: we varied the species of the depicted animal. We conducted this study to test H1a and H3. We created a chatbot as the medium to test these presumptions in the main experiment of this study. Chatbots are an upcoming trend in marketing to communicate with consumers and are thus an innovative tool in current advertising. Contrary to print ads and commercials, chatbots enable real conversations with consumers in their natural language (Hill et al. 2015).

8.1. Pretest

For the pretest, we created four versions of print advertisements promoting KLM, which is a Dutch airline company. All ad versions contained the image of a plane, the verbal claim "There isn't a place we don't go. There isn't a time you can't reach us," the brand logo, and the image of a character. The versions differed with respect to the depicted character: penguin, ostrich, swan, or goose. In total, 137 students (51.5 % females, $M_{\text{age}} = 23.00$ years, $SD = 2.33$, 57.6 % pet owners) were randomly assigned to the conditions. The test persons had to

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evaluate the beauty (”appealing,” “attractive,” “beautiful,” “nicely looking,” and “handsome”; α = .959), the cuteness (”sweet,” “twee,” “lovely,” “cute,” and “clumsy”; α = .946), the trustworthiness in the category of airlines (”credible,” “competent,” “convincing,” and “an expert”; α = .933), and intelligence (”wise,” “intelligent,” “knows a lot,” “clever,” and “ingenious”; α = .975) of the animal on a seven-point scale. Based on the findings for these species, we selected the penguin and the ostrich. These two animals differed with respect to perceptions of cuteness ($M_{penguin}$ = 5.18, $M_{ostrich}$ = 3.62, $F_{1;64}$ = 19.423, $p < .001$) but not regarding perceptions of beauty, competence, and intelligence.

8.2. Experimental design

We compared three experimental conditions. In one of the conditions, a female flight attendant was shown. In the other conditions, either a penguin or an ostrich were depicted. For this experiment, we used a special type of advertisement: a chatbot.

8.3. Test stimuli

We used the Google framework (https://dialogflow.com) to create a chatbot for KLM airlines. With respect to the chatbot’s knowledge base, we used the following implementations. First, the chatbot was trained to provide meaningful answers to typical small-talk questions from 26 issues denoted as “intents” in the Google framework (1. about its mood, 2. about its name, 3. age, 4. agreeing/disagreeing with something, 5. best friend, 6. compliments, 7. current location, 8. default fallback intent (ask-back questions if the user’s input was not understood), 9. favorite color, 10. favorite food, 11. favorite football team, 12. favorite holiday destination, 13. favorite music, 14. flying experience, 15. hobby, 16. job, 17. jokes, 18. origin, 19. saying good-bye, 20. saying hello, 21. shaming, 22. evening activity, 23. weather, 24. what it is doing here, 25. why it is stupid/intelligent, and 26. zodiac). For each issue, approximately six training phrases were initially trained (for instance for evening activity: “How is your evening going?”, “What are your plans for this evening?”, “What are you doing after work?”, “Do you have plans today after work?” “What’s going on this evening?” and “What’s going on tonight?”). Overall, approximately 20 hours were spent creating the chatbots’ knowledge base (with the help of three trainers). This procedure enables consumers to do the following: If a user of the chatbot inserts a sentence containing a keyword such as “evening” within her or his input, the trained chatbot linked this input to possible text responses (e.g., “Why are you so curious? I will tell you. My secret passion is IT ...”). The AI-based software enabled the chatbot to enlarge its vocabulary use-by-use during the training phase (but not during the experiment itself to hold the test conditions constant). If the user asked questions that were outside the scope of the pre-defined knowledge base, the chatbot switched to ask-back question mode (e.g., “Thanks for your question. Unfortunately, I didn’t understand you. Please give me another chance.”). Moreover, the chatbot was additionally trained to assist consumers’ concrete booking tasks for KLM flights. By doing so, the chatbot was able to communicate to consumers who asked for assistance booking a flight from Munich via Amsterdam to Palma (Mallorca). This part consisted of ten issues (1. introduction as personal booking assistant, 2. travel start, 3. length of stay in Amsterdam, 4. date of flight back, 5. direct flight or multi-stop flight, 6. preferred landing time, 7. providing an offer, 8. luggage, 9. services, and 10. finalizing the booking process).

The chatbot enabled the consumers to interact with its knowledge base via an input/output window (also denoted as chat window, interface, or frontend) in natural German language. The chatbot provided verbal questions and/or answers to which the consumers could respond with verbal questions and answers followed by immediate chatbot responses. The chat window that was embedded in a real website showed an airplane, the claims of KLM, its logo, and a visual character who was seemingly the partner with whom the consumers (in our case: the test participants) were interacting. For the experiment, we created three versions of the chat window that showed a penguin, an ostrich, or a female flight attendant. The versions of the image of the chat window are depicted in *Fig. 5*.

8.4. Sample, procedure, and measures

In total, 113 students participated in this experiment (50.4 % females, M_{age} = 22.54 years, SD = 2.35, 35.4 %

Fig. 5: Images of the chat window of the chatbot used in Study 4

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pet owners). The data were collected in 2019 on the campus of a university located in Germany.

At the beginning of each conversation, the chatbot began with the question: "I am Ping van der Fly [Struis van der Fly, Antje van der Fly]. What can I do for you?" (translated). At first, all test participants had the opportunity to engage in small-talk with the chatbot as long as they wished (the average time spent on small-talk was 2:22 min in the female-flight-attendant condition, 1:08 min in the penguin condition, and 0:56 min in the ostrich condition). In the second step, the participants were instructed to use the chatbot for booking a flight from Munich via Amsterdam to Palma. In the third step, the test persons were requested to talk with the chatbot about the question of what happens if a suitcase is lost. The time spent for the latter two tasks was 4:53 min, 3:59 min, and 3:36 min, respectively. During the conversation between chatbot and test participant, an interviewer was present who provided the instructions ("Please book a flight from Munich via Amsterdam to Palma" and "Please find out what KLM does in the case of a lost suitcase"); however, that individual did not answer any of the participants' questions. Because the test persons received a list of issues (26 for the small talk and ten for booking a flight/service in the case of a lost suitcase) and the chatbot was trained on these issues, none of the participants stopped the conversation before the planned end. The questionnaire began with the instruction to verbally report all thoughts and feelings during the conversation with Antje van der Fly (or Ping van der Fly or Struis von der Fly). Then, the participants had to indicate their attitude toward KLM, their feelings of entertainment, the credibility of KLM's promises, and the trustworthiness of the depicted character. Finally, they had to judge the cuteness, attractiveness, and intelligence of the character with which they interacted.

Attitude toward the KLM airline (or flying with this airline) was assessed by agreement or disagreement with "attractive," "positive," "desirable," "interesting," and "appealing" (α = .938). Feelings of entertainment due to the interaction could be indicated by agreeing with "entertaining," "fun to interact," and "puts me in a good mood" (α = .818). The credibility of KLM's promises about its response if a suitcase is lost was measured by agreement with "trustworthy," "convincing," "true," and "credible" (α = .916). The depicted character's beauty, cuteness, trustworthiness, and intelligence were assessed by the items that were also used in the pretest (beauty: α = .947, cuteness: α = .895, trustworthiness: α = .918, and intelligence: α = .929). Subsequently, biophilia was assessed using the items adopted from Study 1 (α = .904). Finally, a multitude of control variables was assessed: the suitability of the character as a chatbot visualization, the impression that one had talked with a real being, general attitudes toward booking flights online, general attitudes toward technology, and daily hours spent with technical devices such as computers and mobile phones. There were no significant differences of these control variables across the test conditions.

In addition, we would like to provide information on the perceived quality of the chatbot. For this purpose, the "Turing test" is often applied. In this test, one sample of the participants talks with a real person via computer and another sample with a chatbot. If both samples indicate that they talked with a real human person, the chatbot passed this test. In our study, the participants knew that they communicated with a chatbot. Thus, to check its quality, we analyzed the verbally reported thoughts and feelings of the 113 test participants. A total of 34 test persons reported surprise at how fast the chatbot provided answers; 22 indicated that the conversion was fun; 14 stated that they were impressed with the eloquence, complexity, and/or comprehensibility of the chatbot's questions and answers; and 16 indicated surprise about the intelligence of the underlying software. With regard to negative comments, ten people stated that the chatbot was not able to understand all questions. Thus, the large majority of the test persons evaluated the chatbot's quality as high.

8.5. Description of results

In *Tab. 7*, we summarize the main findings of Study 4. The findings indicate that, like the pretest results, the penguin and the ostrich did not differ regarding trustwor-

	Female flight attendant (N = 51)	**Penguin (N = 32)**	**Ostrich (N =30)**	**ANOVA**
Brand attitude	4.47 (.96)$_a$	5.23 (.97)$_b$	4.57 (.63)$_a$	$F_{2;\,110} = 7.764^{***}$
Feelings of entertainment	4.35 (1.23)$_a$	5.15 (.84)$_b$	4.31 (1.11)$_a$	$F_{2;\,110} = 6.429^{**}$
Message credibility	4.59 (1.01)$_a$	4.80 (.97)$_a$	4.51 (.98)$_a$	$F_{2;\,110} = .767^{ns}$
Character cuteness	3.91 (1.08)$_a$	5.27 (1.21)$_b$	4.24 (1.15)$_a$	$F_{2;\,110} = 14.285^{***}$
Character trustworthiness	5.13 (1.06)$_a$	4.83 (1.11)$_a$	5.04 (1.08)$_a$	$F_{2;\,110} = .448^{ns}$
Character intelligence	4.62 (1.31)$_a$	4.80 (1.01)$_a$	4.67 (1.08)$_a$	$F_{2;\,110} = .246^{ns}$
Character beauty	4.83 (1.25)$_a$	5.15 (1.17)$_a$	4.79 (1.03)$_a$	$F_{2;\,110} = .961^{ns}$

Notes: Scale ranges from 1 (low) to 7 (high). Standard deviations in parentheses. * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed test). Mean values with different subscripts are different at the .05 level (Scheffé test).

Tab. 7: Effect of the character on the attitude toward the brand, feelings of entertainment, message credibility, and human/animal characteristics (Study 4)

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thiness, intelligence, and beauty but differed with respect to cuteness. The penguin version resulted in the highest brand attitude and feelings of entertainment.

8.6. Test of H1a and H3

The data collected in this study provide further evidence for the presumption that biophilia affects the attitude toward ads (in this study: the interface of a chatbot) depicting animals. If we focus on the data provided by persons who interacted with the penguin or ostrich ($N = 62$), we find that the correlation between biophilia and feelings of entertainment is significant ($r = .424$, $p < .001$). Moreover, there is a positive correlation between biophilia and message credibility ($r = .287$, $p < .05$). Thus, H1a is supported. Moreover, we found a positive correlation between biophilia and brand attitude ($r = .446$, $p < .001$).

In H3, we predicted a positive effect of the cuteness of animal species on feelings of entertainment. We compare the penguin-condition (cute species) to the ostrich-condition (less cute species) and find higher feelings of entertainment in the penguin-condition ($M_{penguin} = 5.15$, $M_{ostrich} = 4.31$, $t_{60} = 3.396$, $p < .001$ in a one-tailed test) which supports H3.

8.7. Interpretation

This study was conducted to manipulate animal cuteness in a different way. In Study 3, animal cuteness was affected by animal age. In this study, we varied the cuteness of the species. Our findings show that animal cuteness has an effect on feelings of entertainment independent of animal age because, in this study, we focused on adult animals.

9. Fifth study

In the final study, we again compared animal-character to human-character conditions and additionally tested H1b and H4. The latter hypothesis postulates that pets are more trustworthy than undomesticated animals and thus message credibility will be higher in the pet condition.

9.1. Pretest

We aimed to select pets and undomesticated animals that are similar with respect to different aspects. Hirschman (1994) and Belk (1996) report that animals are frequently chosen as pets due to their intelligence (i.e., humanistic features) and/or their beauty (i.e., esthetic aspects) and that pets are bred with regard to these characteristics. Thus, we selected two pets (parrot and Weimaraner dog) in the first step and subsequently, for each of these animals, sought species of undomesticated animals that do not differ significantly in terms of these two characteristics. Based on the results from a number of interviews with students in which we discussed the intelligence and beauty of species of undomesticated animals, we decided to choose a seal and a Koala bear. Obviously, neither seals nor Koala bears are suitable as pets. Evidently, parrots also live as wild animals in nature; however, none of the participants of the interviews articulated doubts that parrots can also be pets. In the next step, 30 students were exposed to the images of four animals (parrot, seal, dog, and Koala bear) in random sequence and evaluated each animal with respect to beauty and intelligence. Perceptions of beauty were assessed by agreement with "appealing," "attractive," "nice looking," "pleasant," and "beautiful" ($\alpha = .875$). Perceptions of intelligence were measured by agreement with "smart," "clever," "intelligent," "wise," and "knows a lot" ($\alpha = .910$). The pretest results showed that parrots do not significantly differ from seals with respect to perceived beauty and intelligence. The same finding resulted when we compared Weimaraner dogs to Koala bears (*Tab. 8*).

9.2. Experimental design

The study considered three experimental conditions (ad version: human character, image of a pet, image of an undomesticated animal) and a replication factor (promoted brand: Hawaiian Tropic sun protection, HRS online platform for booking hotel rooms) in a between-subjects design. The brand factor was included only to check the generalizability of the results across product categories.

9.3. Test stimuli

We created print advertisements and varied the character while holding all other factors constant. The print ad for sun protection showed a female model, a parrot, or a seal. To promote the hotel booking platform, the ad depicted a male person, a dog, or a Koala bear. In addition to the model, the ads included a product-related image (sun protection or hotel room), the brand logo, and a claim ("The sun cream that combines protection and care"; "As an expert, I use HRS because there I can find a large number of suitable hotels"). The test stimuli are shown in *Fig. 6*.

	Comparison of parrot with seal			**Comparison of dog with Koala bear**		
	Pet (parrot)	Undomesticated animal (seal)	Paired *t*-test	Pet (Weimaraner dog)	Undomesticated animal (Koala bear)	Paired *t*-test
Beauty	4.48 (.55)	4.09 (1.22)	$t_{29} = 1.554$, *ns*	4.57 (1.23)	5.15 (1.18)	$t_{29} = -1.350$, *ns*
Intelligence	5.06 (1.10)	4.82 (1.25)	$t_{29} = .933$, *ns*	4.78 (1.29)	4.27 (1.36)	$t_{29} = 1.234$, *ns*

Notes: Scale is ranging from 1 (low) to 7 (high). Standard deviations in parentheses. *ns*: $p > .05$

Tab. 8: Perceptions of beauty and intelligence of four animal species (pretest of Study 5)

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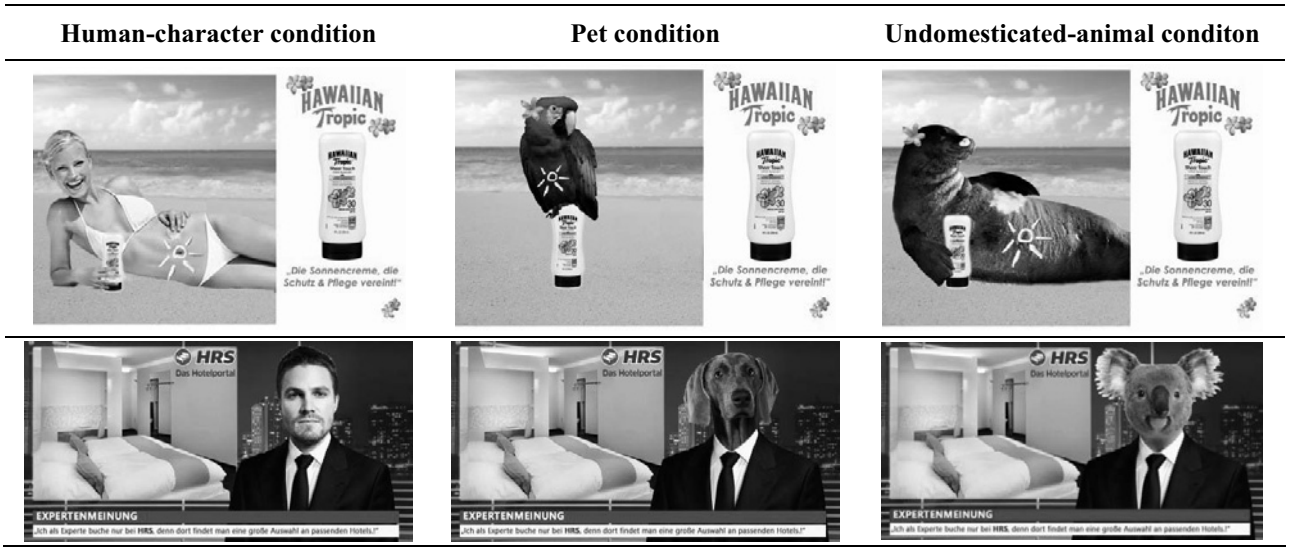

Fig. 6: Test stimuli used in Study 5

9.4. Procedure, measures, and sample

The data were collected in Germany in 2017 with the use of an online survey. We began by assessing attitude toward pets and used the same scale as in Study 2 and Study 3 (α = .887). We assessed brand attitude by agreement with "positive," "attractive," "appealing," and "desirable" (α = .932). The measures used to assess feelings of entertainment (α = .857) and message credibility (α = .893) were adopted from Study 1. The trustworthiness of the depicted characters was assessed by agreement with the following: "The person (animal) is very trustworthy," "The person (animal) is very competent," "The person (animal) is very skilled," and "The person (animal) has a lot of knowledge" (α = .926). In total, 214 female students (M_{age} = 24.10 years, SD = 5.00, 36.4 % pet owners) were randomly assigned to the six conditions and provided data. We used female test subjects because the sun protection brand mainly targets female consumers; Hawaiian sun protection contains glitter and intense perfume.

9.5. Description of results

Tab. 9 contains the description of the results. The findings show that the use of pets result in more favorable brand attitudes, feelings of entertainment, and message credibility compared to the images of human characters and undomesticated animal characters. With respect to animal trustworthiness, the pets are perceived as superior to undomesticated animals. In this study, the brand factor was significant. For HRS, the human character was perceived as more trustworthy than the undomesticated animal; for Hawaiian Tropic sun protection, this difference was absent. We cannot provide a clear explanation for this difference. It may be the result of different product categories or the result of an opposite-sex effect because, for HRS, a male human model was shown, and for Hawaiian Tropic, a female human model was shown.

9.6. Test of H1b and H4

To test the effect of attitude toward pets on attitudes toward the ad, we selected the data obtained for conditions in which pets were shown. Attitude toward pets was correlated with feelings of entertainment (r = .221, p < .10), message credibility (r = .295, p < .05), and brand attitude (r = .283, p < .05). The positive effect of attitude toward pets on attitude toward the ad (i.e., feelings of entertainment and message credibility) again supports H1b.

In H4, we postulated that images of pets will result in higher perceptions of animal trustworthiness that positively influence feelings of entertainment and message credibility. Compared to images of undomesticated animals, images of pets resulted in higher perceptions of animal trustworthiness (M_{pet} = 3.11, M_{undom} = 2.50, t_{139} = 2.776, p < .01), more pleasant feelings of entertainment (M_{pet} = 3.99, M_{undom} = 3.29, t_{139} = 2.718, p < .01), and more positive beliefs in message credibility (M_{pet} = 3.84, M_{undom} = 2.84, t_{139} = 4.955, p < .001). To further test the mediation effect of animal trustworthiness, we used the type of animal (X, 1 = pet, 0 = undomesticated animal) as the binary independent variable, animal trustworthiness as the first mediating variable (M1), message credibility as the second mediating variable (M2) [or alternatively, feelings of entertainment], and brand attitude as the dependent variable (Y). Thus, we developed a statistical model that uses two mediating variables operating in serial (X → M1 → M2 → Y) and estimated the coefficients with the help of the statistical procedures developed by Hayes (2012, model 6). The results are shown in *Fig. 7*. The findings show that the type of animal (pet vs. undomesticated animal) affects animal trustworthiness, which subsequently positively affects feelings of entertainment and message credibility. The indirect effect of animal type via animal trustworthiness on feelings of entertainment is significant (.606 × .538 = .326; 95 % CI = (.083; .646)). The indirect effect of animal type via ani-

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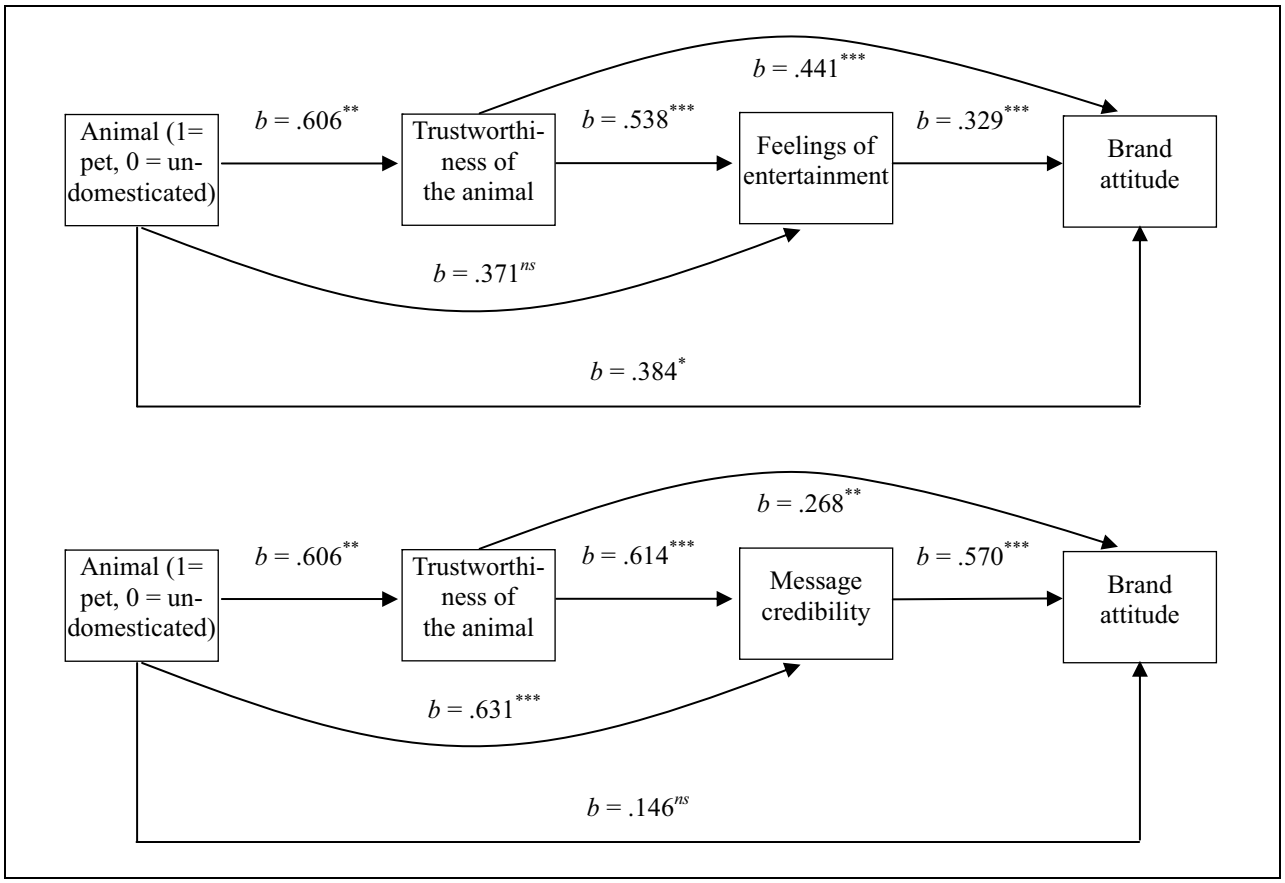
	Brand	Human-character condition	Undomesticated-animal condition	Pet condition	ANOVA
Brand attitude	Hawaiian	$3.41\ (1.08)_a$	$3.42\ (1.32)_a$	$4.14\ (1.15)_b$	$F_{2;\,99} = 4.199^{*}$
	HRS	$3.08\ (1.36)_a$	$2.98\ (1.40)_a$	$3.92\ (1.65)_b$	$F_{2;\,109} = 4.435^{*}$
	Total	$3.26\ (1.22)_a$	$3.15\ (1.38)_a$	$4.03\ (1.41)_b$	$F_{2;\,211} = 8.790^{***}$
Feelings of entertainment	Hawaiian	$2.98\ (1.20)_a$	$3.23\ (1.54)_a$	$4.05\ (1.51)_b$	$F_{2;\,99} = 5.504^{**}$
	HRS	$1.88\ (1.12)_a$	$3.33\ (1.30)_b$	$3.93\ (1.81)_b$	$F_{2;\,109} = 18.376^{***}$
	Total	$2.48\ (1.28)_a$	$3.29\ (1.39)_b$	$3.99\ (1.65)_c$	$F_{2;\,211} = 19.008^{***}$
Message credibility	Hawaiian	$3.10\ (.98)_a$	$3.16\ (1.01)_a$	$3.98\ (1.21)_b$	$F_{2;\,99} = 7.159^{***}$
	HRS	$3.35\ (1.31)_b$	$2.64\ (1.14)_a$	$3.71\ (1.37)_b$	$F_{2;\,109} = 7.415^{***}$
	Total	$3.21\ (1.14)_a$	$2.84\ (1.12)_a$	$3.84\ (1.29)_b$	$F_{2;\,211} = 12.831^{***}$
Trustworthiness of the depicted character	Hawaiian	$2.73\ (1.10)_{ab}$	$2.69\ (1.02)_a$	$3.32\ (1.22)_b$	$F_{2;\,99} = 3.304^{*}$
	HRS	$3.16\ (1.38)_b$	$2.38\ (1.23)_a$	$2.89\ (1.61)_b$	$F_{2;\,109} = 3.206^{*}$
	Total	$2.92\ (1.24)_{ab}$	$2.50\ (1.15)_a$	$3.11\ (1.44)_b$	$F_{2;\,211} = 4.232^{*}$

Notes: Scale ranges from 1 (low) to 7 high. Standard deviations in parentheses.
Mean values with different subscripts are different at the .05 level (Scheffé test).
Effect sizes η^2 in the total sample are .153 (feelings of entertainment), .108 (message credibility), .076 (brand attitude), .039 (trustworthiness of the depicted character).
$^{*}\,p < .05$, $^{**}\,p < .01$, $^{***}\,p < .001$ (two-tailed test).

Tab. 9: Effect of the ad version on the attitude toward the ad, attitude toward the brand, and character trustworthiness (Study 5)



Note: $^{*}\,p < .05$, $^{**}\,p < .01$, $^{***}\,p < .001$, $^{ns}\,p > .05$ (two-tailed test).

Fig. 7: Mediation effects of animal trustworthiness in the relationship between animal suitability as a pet and components of the attitude toward the ad

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	Conditions compared	Attitude toward the ad			Attitude toward the brand
		Feelings of entertainment	Message credibility	Positive emotions (EmFACS)	
Study 1	Human vs. pet (dog) as a passive character in narrative commercials	Pet is superior if biophilia is moderate or high	Pet is superior	n.a.	Pet is superior
Study 2	Narrative showing a couple of humans vs. a couple of pets (dogs) falling in love	Pets are superior if attitude toward pets is moderate or high	Pets are superior	Pets are superior	Pets are superior if attitude toward pets is moderate or high
Study 3	Infantile or adult humans vs. infantile or adult pets (dog, cat) who/which are shown in the role of consumers (and could be interpreted as role models)	Infantile cat is superior to infantile girl	No difference	n.a.	No difference
Study 4	Human condition and animal species that differ regarding cuteness	Cute species is superior to non-cute species and humans	No difference	n.a.	Cute species are superior
Study 5	Human character vs. pet (dog, parrot) or undomesticated animal (seal, Koala bear) shown as decorative model	Pets as well as undomesticated animals are superior	Pets are superior	n.a.	Pets are superior

Tab. 10: Exploring conditions under which animal or human characters are advantageous

mal trustworthiness on message credibility is also significant (.606 × .614 = .372; 95 % CI = (.115; .665)).

This study provided the finding that images of pets in ads result in more favorable attitudes toward the ad and the brand compared to images of human models. The images of undomesticated animals or human characters did not result in different brand attitudes. This finding could be explained by the observation that undomesticated animals are perceived as less trustworthy than pets. With respect to attitude toward pets, this study replicates the findings of Study 2 and Study 3. Finally, we provided evidence in support of the presumption that pets are perceived as more trustworthy than undomesticated animals and that animal trustworthiness spills over to the attitudes toward the ad.

10. Answers to the research questions

10.1. Effectiveness of animal vs. human characters

To the best of our knowledge, prior academic research has not yet experimentally investigated whether and under which conditions animals shown in advertising result in more favorable attitudes toward the ad and the brand than human characters. There are only the studies of Tomkovick et al. (2001) and Yelkur et al. (2013), who conducted cross-sectional examinations of Super-Bowl commercials. Thus, our research on these questions was explorative in nature, and thus, we refrained from developing hypotheses on this issue. We conducted five studies and summarize our findings in *Tab. 10*.

We found that the effectiveness of animal depictions in ads is advantageous compared to depictions of human models. However, there were some exceptions. First, for people with low biophilia or unfavorable attitude toward pets, depictions of pets did not result in more favorable or result in even less favorable attitudes toward the ad and the brand. Second, some animal species such as ostriches are considered to be non-cute and are not superior to depictions of human characters. Third, if images of pets can be misinterpreted as role models, i.e., if pets are shown in the role of the targeted consumers, pets do not provide advantages. Fourth, undomesticated animals do not result in better attitudes than human models. These exploratory findings could be used in future research to develop and test hypotheses.

10.2. Effects of consumer biophilia and attitude toward the pet

We considered two consumer characteristics, biophilia and attitude toward pets, to examine factors that affect the effectiveness of images of animals in advertising. In general, both variables turned out to strongly influence attitudes toward the ad and the brand if animals are depicted. We found a very strong effect size (η^2 = .554) for

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the effect of attitude toward pets on facial expressions indicating happiness/joy while the correlations of the attitude toward pets and consumer-reported feelings of entertainment were significant but relatively low. We surmise that, for people with moderate or high attitudes toward pets, animal images in ads have a very strong effect on automatically occurring affective responses (as indicated by the EmFACS measures) that are cognitively regulated to a certain extent (as shown by the lower self-reported data). It is likely that these people regulate their affective state by feelings rules (e.g., "I should not show strong signs of affect") resulting in less intense self-reported feelings of entertainment.

10.3. Effects of animal age, cuteness of species, and animal suitability as a pet

We found that animal age affects perceptions of animal cuteness, which elicits feelings of entertainment. However, marketers are advised not to use animals in general and infantile animals or pets in particular as role models. For infantile animals, the positive effect of cuteness is counterbalanced with concerns about the appropriate use of these animals as role models. Pets have positive effects on feelings of entertainment, message credibility, and brand attitudes. If adult animals are shown, cute species are advantageous with respect to feelings of entertainment. Images of undomesticated animals also have a positive impact on feelings of entertainment.

10.4. Comparison between the hypotheses and the empirical results

Finally, we compare the hypotheses with the empirical findings (*Tab. 11*).

Our studies provide evidence to all hypotheses with one exception. In Study 3, we did not find a significant effect of the attitude toward pets on the advertiser's message credibility. We surmise that, in this study, the test participants interpreted a depicted animal as a role model, what inhibited the postulated effect of attitude toward pets on message credibility.

11. Limitations

Obviously, our studies have several limitations. Such limitations result from focusing on special experimental factors, using special test objects, special test stimuli, special procedures, and special samples of consumers, which inhibit the generalizability of the findings. Clearly, from the findings from our five studies we hardly can make valid statements on the effectiveness of animals in adverting in general; we thus encourage researchers to interpret them as a starting point for future research. In Study 1 and Study 2, we used commercials broadcasted in practice. Thus, we were not able to obtain commercial versions that differ only with respect to the depicted character. For instance, in Study 1 in the human-charac-

Hypothesis	Study 1	Study 2	Study 3	Study 4	Study 5
H1a: The higher the level of biophilia, the more favorable the attitude toward ads depicting animals. In particular, a) biophilia positively affects feelings of entertainment and b) message credibility.	Both a) and b) are supported			Both a) and b) are supported	
H1b: The more positive the attitude toward pets, the more favorable the attitude toward ads depicting pets. In particular, a) attitude toward pets positively affects feelings of entertainment and b) message credibility.		Both a) and b) are supported	Only a) is supported		Both a) and b) are supported
H2: Contact with images of infantile animals (in contrast to images of adult animals of the same species) in advertisements will evoke perceptions of cuteness that elicit feelings of entertainment.			The mediation effect is supported		
H3: Contacts with adult animals of species that are cute *per se* (in contrast to adult animals of species that lose cuteness in adulthood) elicit feelings of entertainment.				The postulated effect is supported	
H4: Contacts with images of pets (in contrast to images of undomesticated animals) in advertisements evoke perceptions of animal trustworthiness. Perceptions of animal trustworthiness a) elicit feelings of entertainment and b) spill over to perceptions of the credibility of ad messages.					Both a) and b) are supported

Tab. 11: An overview of hypotheses and the results of the tests

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ter condition for Oreo, an interaction among a girl and her father was shown whereas in the animal-character condition, an interaction between a boy and a dog was presented. Although these commercials were rather similar, some aspects differed. For instance, the girl sits in her room, while the boy talks to the dog in a hall. All findings are based on student samples and thus cannot be transferred to older consumers. All brands considered in our experiments were real brand, and thus consumers might be familiar with them to varying degrees We did not include absolutely new brands. It would be interesting to test the effectiveness of animal images in real-world settings, i.e., when consumers do not know that they are participating in a study. Furthermore, when we presented print ads, the test participants could view them as long as they wished. It would be interesting to analyze whether the observed effects are stable if the contact time is rather short (which is typical in real-world settings for print advertisements).

12. Implications for practice

It is not necessary to alert advertising practitioners to the fact that animal depictions could be effective because the practice uses such ads to a large extent. Because we found for people with a low level of biophilia and unfavorable attitudes toward pets, that animal depictions are not advantageous, companies considering advertising with animals should not target such segments. Our studies do not provide answers to the question of what personal characteristics are associated with low biophilia and negative attitudes toward pets. We think that real pet owners have a favorable attitude toward pets. Because 53 % of the households in Germany and 70 % of the households in the USA are pet owners, we believe that the portion of consumes with negative attitudes toward nature, animals, and pets is rather low. Thus, the phenomenon that there are some consumers with biophobia should not keep companies from the use of animals to promote their products and brands.

Furthermore, we recommend preferring pets over undomesticated animals if message credibility is the most important advertising goal. If companies intend to create feelings of entertainment in consumers, infantile animals and cute animal species are advantageous. For instance, "Buster the boxer", a Christmas commercial promoting John Lewis, shows playful foxes jumping on a trampoline. In the Coca-Cola polar bear campaign, baby polar bears act in a cute way, e.g., a little polar bear offers a soft drink to dancing penguins. Especially for companies whose products hardly elicit pleasant feelings, we suggest considering animals that elicit feelings of entertainment. We surmise that, for instance, for Schwäbisch Hall, it is difficult to create credible and entertaining advertising – Study 2 showed that animals in advertising could evoke these mental processes.

We recommend being careful if animals are shown in the role of consumers. The results of Study 3 pointed to this problem. In practice, numerous companies show animals in this role. For instance, the German retailer Netto showed cats in the role of shoppers; in "Dog tested", Subaru presented a dog as product tester; and in a Samsung commercial entitled "Bear does laundry", a bear operated the promoted washing machine. Prior to the launch of such commercials, it should be determined whether consumers will misinterpret the animal as a role model.

13. Suggestions for future research

We only investigated three aspects of animals: animal age, species cuteness, and animals' suitability as pets. We did this because we wanted to test the effect of animal cuteness on feelings of entertainment on the one hand and the effect of pets on message credibility on the other. However, if researchers further investigate the effectiveness of animals, we recommend considering many additional aspects and manipulating them experimentally to infer the advantageous aspects of animals used for advertising purposes. Below, we present some ideas that might be inspirations for future research.

Animals as spokespersons vs. animals as decorative models: Researchers should test the effect of the use of animals as spokespersons or as decorative models. For instance, many companies present animals that talk like persons about the promoted product's benefits (e.g., grumpy cat or dog in commercials for Voltaren, chimpanzee recommending Trigema textiles, Capricorns recommending Graubünden as a tourist destination, diverse wild animals recommending a Toyota Corolla). Alternatively, these animals could be depicted as characters who do not talk about the product. What is the effect of this difference? Is the "animals cannot lie" stereotype valid for both types of animal presentations?

Animals performing human artistic or leisure activities vs. decorative animal models: Numerous companies show singing or music-making animals. For instance, singing wild animals promote Vio Bio lemonade. A gorilla plays Phil Collins' "In the Air Tonight" to promote Cadbury chocolate. A gorilla dances to Reel 2 Real's "I like to move it" to promote the charity organization Rynkeby. A Shetland pony dances to Fleetwood Mac's "Everywhere" to promote the communications company "Three". A polar bear dances to (part of) the first movement of Beethoven's fifth symphony to promote Coca-Cola. Wild animals dance to the Bee Gees' "Staying alive" to promote Mercedes. A cat dances in a discotheque to promote Bacardi alcoholic beverages. Moreover, there are football-playing animals (Squirrel promoting Carlsberg Sport) and gymnastics-performing animals (e.g., "Soul hamsters" promoting Kia, and a mouse promoting Nolan's Cheddar cheese). The alternative option would be depicting the same animals that are not engaged in such human-like activities. Is there a difference in the ad effectiveness, and would the perception of such ads as humorous play a role in this context?

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Animals showing signs of love toward humans vs. animals with a large distance to humans: Another interesting issue is the effect of the kind of relationship between animals and humans shown in the advertisements. Some pets, particularly dogs, can show high affection for their owners, and sometimes an intimate love-based relationship exists. "Maddie" and "Someone waits for you at home" are examples of commercials showing dogs with strong affection for their owners in videos promoting the Chevrolet brand and Budweiser beer. Others animals such as turtles, most bird species, or fish normally have a less emotional relationship with their owners. What would be the effect of emotional distance in the human-animal relationship? Would feelings of love in consumers mediate the effect?

Beautiful vs. less beautiful animals: Some companies show the beauty of animals. For instance, Pedigree dog food and Sinfinity communication service show the beauty of dogs in "Slow motion" videos. Is there a different ad effectiveness if the animals are shown in real-time videos? Would esthetic response be an important mediating variable? Do consumers use concrete animal characteristics (e.g., a peacock's feathers) to infer abstract connotations (e.g., beauty) that are used to create beliefs about the promoted product (e.g., beautifully designed product)? Mitchell and Olson (1981), Philips (1996), and Marseille et al. (2012) analyzed or discussed such inferential beliefs.

Animals showing human-like emotions and aspirations vs. animals showing animal-specific emotions and aspirations: In many commercials, animals exhibit emotions that are typical for humans (e.g., "Born a donkey" shows a donkey that intends to be a horse, "Buddy love" presents a dog falling in love with a horse, and "9/11 Tribute" shows Clydesdale horses remembering the 9/11 tragedy). These videos promoted Budweiser beer. In a commercial of Bridgestone tires, a male dog attempted to commit suicide due to disappointed love (to complete the story: the dog jumps on a heavy-traffic road, and the quality of the car tires saves its life). Dorito Chips were promoted by a dog showing human-like signs of anger in response to human mockery – now, from the dog's view "dies irae" has come. "Was immer dich inspiriert [Whatever inspires you]" showed a dog with strong empathy for a hamster to promote the eBay brand. In many other commercials, specific animal emotions and desires are shown. Such stereotypes are presented when "Dogs are awaiting the post man" (Swiss Post), "Elephants never forget" (Rolo sweets), or "Dog hunts cat" (Epson printer). What would be the result if this difference will be manipulated in an experimental setting, i.e., while holding the brand constant? Do consumers enjoy the humanization of animal emotions and aspirations? It is likely that the effect would be similar to that of fables.

Degree to which the animal's characteristics fit to the category of the promoted product: Many companies use animals to symbolize power (e.g., "Bull" promoting Audi), speed (e.g., "Cheetah" promoting Sketchers shoes), endangerment (e.g., "The lion sleeps tonight" promoting DEVK insurance), and other qualities such as fluffiness or coldness. Experiments could examine the effect of depicting animals that differ regarding their ability to communicate such special meanings. This means that experiments might test the effect of showing a cheetah vs. a rabbit to promote a sports car, both animals indicate speed, but rabbits are fast when fleeing. Experiments could test the effect of showing a horse vs. an elephant to promote an SUV; both animals indicate power, but elephants do not use their power to move forward. Experiments could test the effect of presenting a spider vs. a predator to promote insurance; both animals indicate danger, but danger due to predators is low in Western societies. Are there different fluency effects if an animal with high vs. low fit with the promoted product category is used? Will consumers in the high-fit condition focus more intensely on information that is in favor of the promoted product?

High vs. low familiarity with different species: Some animals appear quite often, and other species are rare and appear exotic to consumers. Thus, promoting a brand with a seldom seen animal or using such an animal as a key visual could lead to brand connotations such as exclusivity and uniqueness (e.g., see the use of cheetah babies promoting Cartier or "Release the beast" commercial promoting Magnum ice cream). Future research could examine the effect on brand positioning.

Degree of zoomorphism: Zoomorphism exists if a character is composed of two components: a human component and an animal component. If an obviously human being is to a large (vs. low) extent composed of animal parts, a high (vs. low) degree of zoomorphism exists. Numerous ads and commercials use the strategy of zoomorphism, e.g., ads promoting Peta, an animal rights organization, commercials promoting Bonprix fashion products, and commercials promoting Magnum brand ice cream. It would be interesting to determine if there is a critical limit of the portion of the human component (body and poses) that should exist to make advertising effective.

Animals serving as metaphors: Animals are often used as metaphors in advertisements. For instance, the French retailer Carrefour depicted a sales receipt as a snake and states "Don't let the bill scare you". Environmental organizations depict a "melting polar bear" to highlight climate change. In ads warning against AIDS, the danger is sometimes visualized as a spider. Future research could investigate whether the cognitive effort needed to understand such metaphors is too high.

Cute animals in natural form or Japanese kawaii style: There is a difference between the concept of cuteness in Western and Japanese cultures. Hello Kitty (an abstract but infantile image of a cat) and Pokémon (images of numerous animals in the same style) are famous examples of the Japanese version of cuteness, which is denoted as

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kawaii (Riessland 1998; Bainbridge 2014). It would be interesting to compare the advertising effectiveness of animal images in their natural form to images in this special style in cross-cultural studies.

Examples of many further aspects that could be manipulated in experiments are as follows: the degree to which the animal violates human social norms (see the "Trailer" commercial promoting VW Tiguan); the degree to which a pet is (or needs to be) integrated into the family as a family member (see "Lion dog" and "Little man" created to promote Amazon); and the degree to which an animal parodies a human person or a product (e.g., in a commercial promoting VW Golf, a dog imitates the sounds of the car). The frequency with which animals are used as marketing tools in practice makes it worthwhile to address such issues in the academic research.

Notes

[1] To avoid misunderstandings, it should be noted that the term "attachment" has different meanings in different streams of the academic research; there is no single "attachment theory." For instance, Park et al. (2010) used the term "brand attachment" to describe the degree to which consumers consider a brand to be a part of themselves and as the degree to which thoughts about a brand come automatically into mind without cognitive effort.

[2] The manipulated videos used in Study 2 will be made available on request.

[3] There are also software solutions that "calculate" the presence of positive or negative emotions from the movements of facial muscles. "Emo-Scan" was developed in Germany through the cooperation of Fraunhofer Institut and GfK. The authors state that they focused only on the movement of two facial muscles (Garbas et al. 2013, p. 572). Because we intended to measure all basic emotions included in EmFACS, we refrained from using a software application. Obviously, the application of the software enables researchers to assess emotions continually (Hamelin et al. 2017) and the data do not depend on coder interpretations; however, it is unclear how an aggregate measure for a commercial could be derived.

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