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Emoji Your Story: The Advertising Effectiveness of Emoji-Based Narratives

By Vanessa Haltmayer and Heribert Gierl

Emojis are often used as single symbols to express emotions. Moreover, they serve as paralanguage in mass media and digital communication. Emojis are also used to tell narratives in advertising. Thus far, the latter usage of emojis has not been investigated. In two studies, we investigated the effectiveness of emoji-based narratives compared with textual narratives. Based on the data obtained from a thought-listing task, we found that consumers focus on solving the emoji puzzle when emojis are presented, whereas textual narratives are seldom replicated in such detail and induce additional thoughts about product features. We found the following five mediating effects: emoji-based narratives influence brand attitudes and the propensity to follow recommendations (provided in social-marketing campaigns) through 1. higher levels of narrative transportation, 2. higher perceptions of ad originality, 3. lower message comprehensibility, 4. stronger curiosity, and 5. lower perceptions of brand/organization trustworthiness. In total, emoji puzzles proved to be advantageous compared with textual narratives,

with one exception: if the ad promoted advice that had no immediate and direct relevance for the consumers' lives (e.g., avoiding the use of animal-tested cosmetics and contributing to the preservation of the Amazon rainforest), the participants showed a low propensity to solve the emoji puzzle.

1. Definition of emojis and usage in marketing

In advertising, the use of emojis has recently become more common, especially when addressing younger audiences. The application ranges from using single emojis to express emotions (e.g., joy, fear) to telling small stories via a sequence of several emojis (e.g., small episodes from everyday life with a happy ending due to the consumption of a certain product). However, scientific findings on the effectiveness of emoji-based stories are neither yet available for product/brand advertising nor social marketing campaigns. Before examining in more detail the possible mechanisms by which emoji-based narratives influence the achievement of certain advertising goals (e.g., brand evaluations or following advice), we will first briefly explain what is meant by emojis and which forms of using emojis have become established in advertising.

1.1. Definition of emojis

In face-to-face communication, nonverbal information is important. The facial expression of the sender tells perceivers how to understand and interpret the conversation. Without this information, many messages are likely to be misunderstood. [1] When face-to-face communication is impossible, symbols denoted as emoticons, smileys, and emojis are used to indicate the sender's emotions.

Emoticons are punctuation marks, letters, and numbers used to create pictorial symbols that generally display an emotion or sentiment. For instance, :-) represents joy, :-(represents sadness, :'- (represents crying, ;-) symbolizes humor, and :- 0 indicates surprise (Kaye et al. 2016; Li et al. 2019; Rodrigues et al. 2017; Thompson and Filik 2016). Riordan (2017a) locates the origin of this practice in 1982 with the suggestion of the computer scientist Scott Fahlman. Fahlman sought to reduce misunder-



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standings on a university blog. Characteristically for these Western-style emoticons is the fact that one recognizes a face and its emotion if viewed sideways. Computer keyboards enlarged the number of symbols that enabled users to write Japanese-style emoticons (e.g., (^_^) = laughing, (*_*) = being enthusiastic, (>_<) = being angry, or (-.-) = being bored). They no longer had to be rotated to infer meanings. When the number of ASCII codes was enlarged by special characters on computer keyboards, the first two types of smileys became available (☺ and ☹; see Rezabek and Cochenour 1998).

Bai et al. (2019) report that the Japanese designer Shigetaka Kurita invented the first set of emojis in 1999. [2] According to these authors, emojis have taken over emoticons and smileys and are thus considered “advanced versions of Emoticons.” Generally, they can be divided into face emojis (symbols expressing facial emotions, such as 😊, 😞, 😂, and 😄) and nonface emojis, i.e., object-related emojis (e.g., pictograms, such as 🍷, 🍕, 🚗, 🍷, 🍷, and 🍷). Emojis are based on the so-called Emoji Unicode. The Unicode is universal character encoding maintained by the Unicode Consortium. The Unicode standard provides the basis for processing, storing and interchanging text data in any language in all modern software and information technology tools. As of September 2020, there were 3,521 emojis in the Unicode Standard. The most recent emoji release is Emoji 13.1, which added 217 new emojis (Unicode.org 2020). A complete list of emojis is available at <https://Emojipedia.org/>. This list can be used to search for specific emojis and then “copy and paste” them in texts as if they are letters. These graphical images are supposed to be understood cross-culturally with few exceptions, e.g., while the thumbs-up emoji has a positive meaning in North America and Asia, it is regarded as an insult in Iraq and Greece (Danesi 2016). Since 2014, there has been an annual “World Emoji Day”, which is celebrated on July 17. This date was chosen because it is famously displayed on the “calendar emoji” 📅. In 2015, Oxford Dictionaries in the UK selected an emoji (😂 = face with tears of joy) as the “Word of the Year 2015.” For the first time ever, the Oxford Dictionaries’ Word of the Year was a pictograph. In 2016, 92 percent of the users of messenger services such as WhatsApp stated that they include emojis in their communication. This fact provides evidence of the claim that emojis have achieved high acceptance (Daniel and Camp 2020).

1.2. Usage of emojis in marketing

In the following text, we explain the main ways that emojis are used in marketing.

1.2.1. Emojis as single symbols to express specific emotions

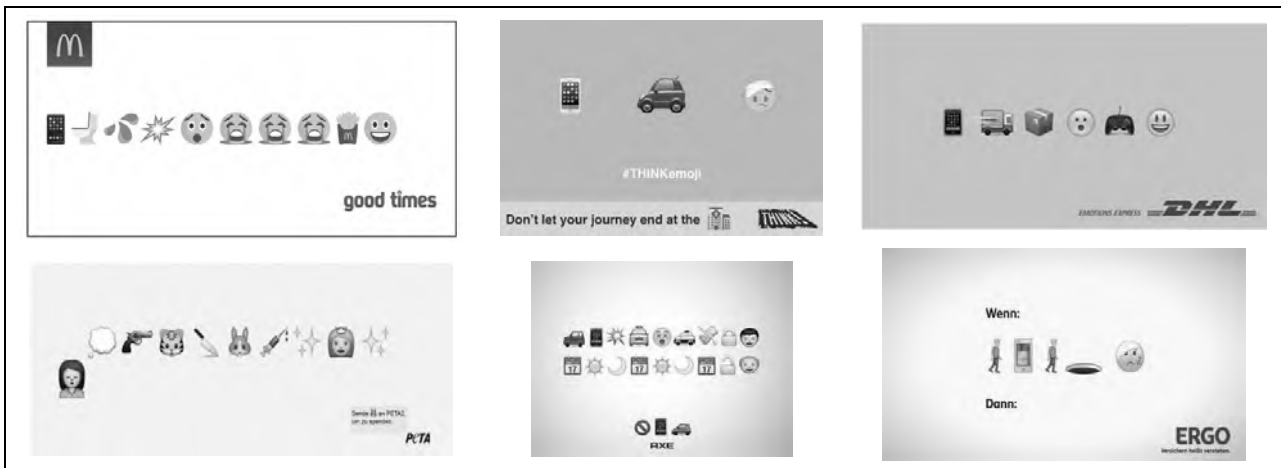
In today’s mass media advertising and digital communication landscape, emojis are often used as single symbols. The top of a bottle of Nestlé Vera water is shaped as

😺 (smiling cat with heart eyes), and in the ad promoting this product, this emoji is depicted six times. Moët & Chandon offer a special edition of its champagne, the “Rose Emoji Champagne.” On its label and box, a multitude of emojis are displayed indicating fun and joy at a party. Kinder joy of Ferrero offers chocolate showing happy emojis on the packaging. These emojis are also contained as toys within the chocolate eggs. Aldi (retailer) offers biscuits shaped like emojis. On its packaging, Mentos (sweets) depicts smiling emojis indicating enjoyment. Pepsi launched the “Say it with Pepsi” ad campaign. The emojis shown on the bottles’ labels express different happy consumption situations. There are also ads that aim to express negative emotions with the help of emojis. For instance, the “Don’t text and drive” campaign of Volkswagen shows an injured emoji expressing pain as a metaphor for what can happen when this advice is not followed.

The effectiveness of these symbols is commonly explained as follows: face emojis look like human faces. They express emotions as humans do, e.g., joy, surprise, fear, anger, or disgust. If such images are shown, emotional contagion (for a discussion of this concept, see Friedman and Riggio 1981; Hatfield et al. 1993; Hatfield 1994) is likely to result, i.e., perceivers unconsciously adopt the emotion of their artificial counterparts in a weakened form (Kelly and Watts 2015; Lohmann et al. 2017; Smith et al. 2020). Churches et al. (2014) found that the use of an emoji expressing enjoyment can improve the perceiver’s mood. These researchers observed that people process images of emojis in the same brain area as human facial expressions and interpret them in a similar way. Consistent with this presumption, some authors found that perceivers experience positive affect if they view smiling emojis and experience negative affect if the face of the emojis expresses negative emotions (e.g., Ganster et al. 2012; Yakin and Eru 2017). In an advertising setting, Danesi (2017), Das et al. (2019), and Şener and Atar (2016) investigated the effectiveness of emotion-expressing emojis and found that emojis increase the effectiveness of campaigns.

1.2.2. Emoji-based paralanguage in digital conversation

Since the emergence of digital channels (e.g., e-mail and WhatsApp), emojis (and formerly, emoticons) have served as a paralanguage (Bai et al. 2019; Luangrath et al. 2017). They give weight to a message (Derks et al. 2008a), alter affective states (Danesi 2017; Das et al. 2019; Kaye et al. 2016; Kralj Novak 2015; Smith et al. 2020), express mood (Walther and D’Addario 2001), are inserted to avoid misunderstandings (Kaye et al. 2016; Riordan and Trichtinger 2017), and express a large variety of meanings that cannot be expressed textually with the same effectiveness (Riordan 2017b). Many companies use emojis in sales conversations with their customers on social media platforms, via e-mail, and in live chats. For instance, imagine the request of a customer



Note: In the original ads of DHL and Peta, the emojis are rather small. For the purpose of illustration, we enlarged the images.

Fig. 1: Examples of ads containing emoji-based stories

who wants to receive detailed product information from a company, which an employee answers on the company's Facebook account or via e-mail as follows: "Thank you for your interest in our products 🤔. Our products ... 😊 and ... Have a nice day 😊."

There are two main explanations why the emoji parlanguage is expected to be effective. *First*, like nonverbal communication in face-to-face communication, emoji-assisted digital communication tells perceivers how to interpret textual information. As noted, without looking at facial expressions, perceivers are likely to misunderstand messages (Kaye et al. 2016; Riordan and Trichtinger 2017). *Second*, because emoji-based digital communication signals friendship, it may reduce social distance. If a company adopts symbols with which customers are familiar in digital communication among friends and family members, they pretend to behave like friends. Thus, perceivers could mistakenly assume that friends are talking to them (Glikson et al. 2018; Li et al 2019). Daniel and Camp (2018), Glikson et al. (2018), Li et al. (2019), and Smith and Rose (2020) examined the effects of emoji-assisted sales conversation in a digital media setting. They found a positive effect in terms of perceptions of the sender's "warmth." However, there is no clear answer to the question concerning whether emojis improve or impair message credibility and senders' trustworthiness and whether they affect brand evaluations.

1.2.3. Emoji-based narratives

Emojis are also often used for the purpose of storytelling. In this case, perceivers can infer a narrative from a given sequence of emojis. At present, even books are translated into the "Emoji language" (e.g., "Emoji Dick"), and there is a movie entitled "The Emoji Movie" released by Sony Pictures Enterprises in which emojis are the main actors. In 2015, Chevrolet published a long press release that was written exclusively with emojis. It was intended to be a puzzle to catch the interest of audiences and en-

courage them to decode the message. For example, the header of the press release was 😊 ❤️ 🚗, which was meant to be decoded as "I love Chevrolet".

In emoji-based narratives, emojis are combined in a sequence, which enables consumers to infer a narrative. In Fig. 1, we provide a few examples. In McDonald's 2015 "Good times" campaign, emojis tell sad stories that lead to a happy ending after a restaurant visit; in the selected ad, a mobile phone has accidentally fallen into a toilet, which caused desperation – a visit at McDonald's makes the unfortunate person happy again. In 2018, Think!, a governmental organization in the UK, created emoji-based stories for a road-safety campaign; in one ad version, the emojis tell the story that when a mobile phone is used while driving a car, injuries will happen. The depicted version combines emojis with textual elements: 📱 🚗 😱 "Don't let your journey end at the 🏠." In an ad version of DHL's 2017 "Emotions Express" campaign, emojis tell a story of the happiness of consumers who have ordered a controller for a game console that is delivered by the company. In a 2014 video entitled "Beyond words", Peta, an animal-rights organization, uses emojis to confront the product-related wishes of a young girl to acts of cruelty against animals. On its Facebook website in 2015, Axe, a body-care brand, tells its followers not to "text and drive" by narrating an emoji-based story as follows: a young man causes an accident, is sentenced to jail and leaves prison as an old man. In 2017, Ergo, a German insurance company, promoted its services by using emojis to visualize accidents. For example, a man is shown falling into an open manhole while focusing on his mobile phone.

To our knowledge, academic research has neither developed theoretical explanations about why emoji-based narratives might be effective tools in advertising nor investigated such stimuli.

2. Narratives and narrative advertising

The section above highlighted a lack of research on the effectiveness of emoji-based narratives. This paper is an attempt to contribute to research efforts in this area. However, we must first analyze whether this type of emojis usage indeed qualifies as “narrative.”

2.1. What is a narrative?

There are different conceptions of what a narrative is. One stream of research surmises the existence of a narrative if a piece of information (in the broadest sense) possesses certain objective characteristics (e.g., Dessart 2018; Feng et al. 2019; Kim et al. 2017; Solja et al. 2018; van Laer et al. 2014). The following aspects/questions identify the most mentioned characteristics of narratives. 1. Theme: A narrative has a central theme. 2. Who? There must be one actor or more actors (also denoted as characters, protagonists, or main agents of activity). 3. Why? The actor must exhibit particular characteristics (i.e., is motivated by goals or has particular motives; is thinking and feeling). 4. What? The actor takes actions to achieve the goals. 5. When? Events exist that are arranged chronically (also denoted as episodes, time evolution, plot, timeframe, temporal sequence of events; the story has a beginning, a middle, and an end). 6. Where? The events might occur in a specific physical or social setting (also denoted as context). 7. How? There is a causal relationship among the events (i.e., the actor’s goals result causally in actions or resolutions of an event that finally results in outcomes).

Another approach suggests that for narratives to exist, a piece of information must place people in a narrative mode of thought, and people must infer narrative experiences from that piece of information. This idea is based on the presumption that “people have a natural propensity to organize information (...) in story format” (Padget and Allen 1997, p. 53). Thus, narratives exist if the perceiver is put in a “mode of thought (in which s/he) constructs stories. (... The perceiver) seeks a lifelike (...) explanation for events (...). The customer (herself/himself) creates a story to interpret the ad stimuli.”

2.2. What is narrative advertising?

In accordance with these two definitions of narratives (1. information that has distinct properties of a narrative; 2. information that prompts perceivers to create narrative thoughts), there are different conceptions of narrative advertising. *First*, narrative advertising exists if ads tell narratives in fact. In these storytelling ads, the characteristics of narratives are used for advertising (Escalas 2004a). For instance, commercials promoting Budweiser beer tell stories about Clydesdale horses, and a Wrigley’s Extra gum commercial tells the love story of Sarah & Juan. In a Christmas commercial, Edeka tells the story of a lonely Grandpa who was able to convince all of his children to visit him. On YouTube, narrative commercials

are the most viewed commercials. *Second*, narrative advertising exists if the ads “prompt consumers to (mentally) construct functional consequences and symbolic meanings to interpret the advertisement” (Padget and Allen 1997, p. 57). In this concept, narrative advertising exists if the ad puts perceivers in a mode of thought in which s/he creates a story.

We adopt the second conceptualization of narratives and narrative advertising for our study.

3. Research questions

As explicated in Section 1, researchers have provided insights into the effectiveness of single emojis used as signs of specific emotions as well as of the use of emoji-based paralanguage in digital sales conversation. However, we do not know whether and why emoji-based narratives are effective means to influence consumer evaluations compared to narratives without emojis.

We aim to contribute to the research by comparing emoji-based narratives to textual narratives. The comparison is not trivial because we cannot simply transfer findings about emojis used as signs of specific emotions and findings about emoji-based paralanguage to discern the effectiveness of emoji-based narratives. If there is a larger number of emojis (as is the case in emoji-based narratives), contagion effects that are likely induced by a single-face emoji are unlikely to happen. Moreover, we do not expect that emoji-based narratives induce perceptions of sender “warmth” (which is reported if emojis are used as paralanguage). In contrast, we expect a multitude of positive effects (likely through narrative transportation, perceptions of ad originality, curiosity, and sensations of humor) as well as negative effects (likely as low message comprehensibility and reduced brand trustworthiness). We pose the following question:

RQ1: What mental processes are elicited by emoji-based narratives?

We presume that emoji-based narratives affect brand attitudes via a set of mediating variables (as explained in RQ1). If positive and negative effects are observed via these mediating variables, what is the total effect of emoji-based narratives in promoting brands or when used in social campaigns? In other words: if there is a multitude of positive and negative effects, is there one effect that is predominant? Thus, we ask:

RQ2: Are emoji-based narratives effective?

Clearly, we cannot investigate a large set of boundary conditions in which the total effect of emoji-based narratives (compared to textual narratives) is positive or negative. We focus on brand-emoji fit and consumers’ need for cognition. For some brands, there might be a high fit between these brands’ positioning and “funny communication”, whereas this communication might not fit other brands’ positioning. Moreover, for some consumers,

solving emoji puzzles might be an interesting task (e.g., for customers with a high need for cognition), while consumers with a low need for cognition might feel irritation or frustration when they are confronted with emoji-based narratives. Accordingly, we ask the following question:

RQ3: Do brand or consumer characteristics limit the effectiveness of emoji-based narratives?

Some companies use emoji-based narratives to promote their brands (e.g., McDonald's in *Fig. 1*), while other companies and nonprofit organizations provide non-brand-related messages about harmful behaviors (e.g., Think! in *Fig. 1*). We aim to learn whether these different advertising objectives influence the effectiveness of emoji-based narratives. Thus, we ask the following question:

RQ4: Does the advertising objective matter?

4. Theoretical considerations concerning emoji-based stories

Emoji-based stories are likely to induce specific mental processes in consumers that differ from processes elicited by other types of advertising stimuli because emoji-based narratives have the following characteristics: 1. narrative format, 2. rather innovative format for advertising, 3. puzzle-like appearance, 4. comics-like appearance, and 5. similarity to children's books. In anticipation of the empirical studies, data from thought-listing tasks will be used to identify further distinguishing aspects.

4.1. The narrative format

What is narrative transportation? One specific effect of narratives is putting perceivers in the mental state of "narrative transportation." Narrative transportation is the extent to which perceivers empathize with the story, the degree to which they mentally simulate the episodes, the phenomenon of being lost in another world and tending to temporarily ignore real-world facts, the imagination of having the same or a similar experience in the future, reminisce on similar experiences in one's own life, the intensity with which people immerse themselves in the story, and the extent to which they experience the main actor's experiences themselves by mentally merging with her or him (if such actors exist) (Dessart 2018; Escalas 2004a, 2004b; Polyorat et al. 2007; Wentzel et al. 2010). To our knowledge, Green and Brock (2000) initiated this line of research. They exposed a student sample to a narrative written as a nine-page textual story that described the cruel fate of a fellow student's young sister named Katie, who was brutally murdered in a shopping mall. The participants were asked to agree or disagree with statements aimed at measuring the mental state of "narrative transportation" (e.g., "While I was reading the narrative, I could easily picture the events in it taking place," "I could picture myself in the scene of the events described in the narrative," and "While reading the nar-

rative I had a vivid image of Katie"). The authors reported that participants who were put into a higher state of narrative transportation evaluated Katie more favorably compared to participants who scored low on narrative transportation.

Comparing types of narratives: Prior research on narrative transportation through advertising compared narrative formats to nonnarrative formats, e.g., to advertisements that merely highlight the benefits of the promoted products. However, our study's purpose is to compare emoji-based narratives to textual narratives. In the following, we present research on the effects of these two types of narratives (emoji-based narratives vs. textual narratives) on the state of narrative transportation.

Numerous authors who have investigated the effect of narratives presume that the human cognitive resources available for processing ad messages are relatively constant. Consequently, they argue that two processes compete for cognitive resources. According to Bhatnagar and Wan (2011, p. 40), these processes consist of "(1) story-oriented narrative processing, in which people need cognitive resources to absorb the story and put themselves in the shoes of the characters, and (2) brand-oriented information processing, in which people require cognitive resources to critically evaluate brand information." Thus, being absorbed or immersed in a story impedes thinking analytically about product features and benefits. Green and Brock (2000, p. 701) state that perfect "transportation into a narrative world" is "a distinct mental process, an integrative melding of attention, imagery, and feelings (...) where all mental systems and capacities become focused on events occurring in the narrative." Similarly, Bhatnagar and Wan (2011, p. 40) posit: "Fewer cognitive resources are left thereafter for attending to and critically thinking about integrated brand messages; this lack of critical judgment in turn raises brand evaluations." We hypothesize that emoji-based narratives demand higher cognitive resources for processing an ad than textual narratives do because the meaning of the symbols must be decoded. Clearly, the meaning of letter-based words must be decoded as well; however, older children and adults are accustomed to easily completing this task. For instance, imagine that a car brand creates a "Don't text and drive" campaign. Understanding a sequence such as 📱, 🚗, and 😞 demands more cognitive resources compared to comprehending the meaning of a verbal text such as "Texting while driving causes injuries." Thus, the level of narrative transportation is expected to be higher when a story is emoji-based compared to a textual presentation of the same story.

Narratives often have the potential to stimulate audiences to invent their own narratives that combine self-related facts with the promoted brand (Escalas 1998). Therefore, the connections between the promoted brand and the consumer's own person may be intensified (Wentzel et al. 2010, p. 512). Because people tend to evaluate themselves favorably, they will positively evaluate the brand

as well. A distinct feature of emoji-based stories is that they contain images. Images such as 📱🚗🚑 are more concrete (e.g., show a wound dressing) than corresponding texts such as “Texting while driving causes injuries.” Thus, emoji-based narratives facilitate the retrieval of personal experiences (e.g., the customer’s own accidents) or imaginations (“How would I look with a wound dressing?”). Similarly, Petrova and Cialdini (2005, p. 442) argue that individuals use the ease with which they can generate a mental script of an event as an indicator of the likelihood of experiencing this event. Furthermore, emoji-based narratives possess a greater scope for interpretation. Perceivers must choose a particular interpretation, most likely for self-related events. Thus, emoji-based narratives are more likely associated with one’s own person and therefore will be accompanied by more intense narrative transportation.

In general, narratives have the potential that the recipient identifies with them by tentatively putting herself/himself in the events of the story (Boller and Olson 1991, p. 173; Escalas 1998, p. 281). The individual could ask questions such as “Could it be my own experience?”, “Should I strive for the same experiences?” or “How could I avoid these experiences?” We surmise that emoji-based narratives foster identification to a higher extent than textual narratives do because face emojis look like human faces. They are images that are more imaginative than textual information is, i.e., they can be processed and stored in memory as textual as well as visual stimuli (for processing different types of stimuli, see Paivio and Csapo 1973). They express concrete feelings as humans do, e.g., joy, surprise, fear, anger, and disgust (Das et al. 2019). If such emojis are shown in the narrative, e.g., 😬, perceivers could more easily put themselves in the role of the actors in the story compared to the condition in which they are exposed to textual information (“causes injuries”). Thus, we assume a higher level of narrative transportation in the emoji condition.

Effect on brand attitudes: The level of narrative transportation is presumed to affect evaluations. *First*, in the state of high narrative transportation, the perceiver is distracted from scrutinizing features and benefits of products and brands as well as from thinking about reasons why a company used such ads. *Second*, when cognitive resources must be spent completely for processing the narrative, perceivers likely refrain from developing counterarguments (Bhatnagar and Wan 2011; Chang 2009; Escalas 2007). Most likely, in the example used above (📱🚗🚑), additional thoughts such as “Somebody takes care of me and issues this warning” might be stronger in the condition of high narrative transportation. Considering these arguments, we hypothesize as follows:

H1: The level of narrative transportation is higher for emoji-based narratives than for textual narratives (H1a), which positively spills over to evaluations of the promoted brand or the propensity to follow the advice presented in the narrative (H1b).

4.2. Innovative format

While consumers are familiar with narrative advertising *per se*, emoji-based stories are comparatively new and thus are perceived to be innovative. They are expected to be incongruent with stored knowledge of consumers concerning how typical advertising looks because there has not yet been a habituation effect. These stories may thus still be experienced as unusual, uncommon, irregular, and surprising to a large extent.

Consumer perceptions of originality are a consequence of innovativeness. Originality exists when a stimulus “contains elements that are novel, different, or unusual” (which is denoted as divergence) and when these “elements are rare, surprising, or move away from the obvious and commonplace” (which makes the divergence appear original). These definitions are adopted from Lehner et al. (2014), Pieters et al. (2002), Smith et al. (2008), and Yang and Smith (2009). Perceptions of ad originality likely support pleasant feelings because these ads might be experienced as entertaining, a distraction from the everyday, or something enabling unique experiences.

For emoji-based narratives, these conditions are likely to be met. Moreover, emoji-based narratives (compared to corresponding textual narratives) are artful because their creation demands a large amount of creativity from their designers. Perceivers are likely to respect and enjoy creativity and skills. For instance, imagine a producer of champagne intends to connect its brand with New Year’s Eve and therefore has created the following story: 📅 + 🕒 + 🍾 = 🍷 + 🎉. Perceivers might interpret this as a creative description of New Year’s Eve and enjoy recognizing the special meaning of this sequence: The creator wants to be modern, provides trendy messages, and shows commonality with customers because consumers themselves use emojis in their private communication about New Year’s Eve. Thus, we expect the following to be valid:

H2: Emoji-based stories evoke more intense perceptions of originality than textual stories (H2a) do, which positively spills over to evaluations of the promoted brand or the propensity to follow the advice presented in the narrative (H2b).

4.3. Puzzle-like appearance

When consumers are exposed to formats of advertising that they are familiar with, they typically do not solve puzzles. “Reading” an emoji-based story is akin to solving a puzzle. Imagine that a story in an advertisement starts not with the text “Christmas is coming soon” but with the sequence 🧑🏻‍🎄, 🚪, and 🗨️ (Santa Claus, pointing to, door); in this case, a type of puzzle is presented. Alternatively, suppose the following story is presented: 📅 + 🕒 + 🍾 = 🍷 + 🎉. Comprehending its meaning demands a higher level of processing compared to the text: “At New Year’s Eve.” We expect that puzzle solving is

associated with distinct mental processes. To pursue our arguments, we add two variables to our model.

Message comprehensibility

Undoubtedly, textual narratives can be read and understood more easily than emoji-based texts can, which appear like puzzles at first glance. Willoughby and Liu (2018) report that people process text messages without emojis more easily than they do text messages that include emojis. Compared to word-based texts, emojis must first be decoded, and this process requires cognitive effort. Perceivers may not always perfectly comprehend the meaning of an emoji-based narrative within the time they are willing to spend processing. Generally, if people are unable to grasp or extract the meanings from a message, negative evaluations will result (Hafer et al. 1996; Mick 1992; van Enschot and Hoeken 2015). Thus, we test the following hypothesis:

H3: Emoji-based stories evoke lower message comprehensibility than textual stories do (H3a), which negatively spills over to evaluations of the promoted brand or the propensity to follow the advice presented in the narrative (H3b).

Feelings of curiosity

In general, if an incoming stimulus does not conform to the perceiver's expectations, i.e., does not match a schema stored in her/his memory concerning categories to which the stimulus might belong, the condition of schema incongruence exists. Mandler (1982, p. 16) defines a schema as "a category of mental structures that organize past experience." In the condition of schema incongruence, people dedicate a large amount of available cognitive resources to comprehending the incongruent fact, which enables them to process that fact and decide how to respond. This phenomenon can be illustrated by the cocktail-party effect. A party guest does not expect to hear her/his name. If she/he unexpectedly hears her/his name in the babble of voices and noise, her/his entire capacity for listening and viewing will focus on the location where her/his name was spoken; she/he will subjectively label this state as attention to this fact. If high cognitive resources are made available, people move into a state of curiosity (Berlyne 1963; Jepma et al. 2012; Loewenstein 1994). Curiosity results from the desire to cognitively resolve incongruence (Prinz 2005). Curiosity is regulated by forming hypotheses about reasons for the incongruence and engaging in exploratory behavior to check the validity of these reasons. In summary, attention exists if something unexpected happens and is directed to the unexpected fact; curiosity exists if people attempt to find a valid reason why something unexpected has happened. In other words, Memon and Soman (2002, p. 3) state that curiosity is "manifested as the desire to seek knowledge", and this desire "is generated only when the gap in knowledge is perceived."

In particular, for most consumers, there will be no schema stored in their memory concerning how emoji-based

narratives in advertising typically look, how they should be processed, and which meanings should be assigned to them, which likely attracts customers' attention and triggers curiosity to decode the meaning of the emoji-based narrative. We presume that curiosity – the propensity to cognitively analyze reasons for the incongruence – makes people aware of their own task-related abilities. When people are exposed to 🤔, 🤪, and 🤨 and strongly are willing to "read" this sequence, an "Ah, I get it" experience likely emerges. Schema-incongruence theory (Mandler 1982; Meyers-Levy and Tybout 1989) predicts that people experience pleasant affect if they experience that their abilities are sufficient for successfully resolving incongruence. Therefore, we test the following hypothesis:

H4: Emoji-based stories evoke stronger feelings of curiosity than textual stories do (H4a), which positively spills over to evaluations of the promoted brand or the propensity to follow the advice presented in the narrative (H4b).

In this hypothesis, we consider the condition in which recipients presume that they will understand the message of companies or organizations using emoji-based narratives after processing the sequence of emojis and, thus, feel curiosity. In this hypothesis, we do not consider the condition in which recipients immediately recognize that they will be unable to "read" what the emojis communicate; if they experience great difficulty comprehending the emoji-based narrative (see H3), negative affect (e.g., irritation, frustration) is predicted to occur. In [3], we add a critical discussion regarding H3 and H4.

4.4. Comics-like appearance

Category-based processing: People may gain a superficial, overall visual impression by looking at an emoji-based narrative as a whole. Then, they quickly recognize similarity with picture stories and comics. This recognition occurs because emoji-based stories share manifold symbols (object-related emojis) with picture stories and comics such as 🌊 (splash), 💥 (collision), 💡 (flash of thought), 💡 (idea), 💢 (rage or violence), or 🎈 (speech balloon). Then, perceivers might respond to emoji-based stories in a mode of category-based processing. Categorization theory assumes that perceivers simplify information processing. Simplification occurs when people rely on information stored in their memory (Fiske and Pavelchak 1986; Mervis and Rosch 1981; Mitchell 1983). From superficial impressions (e.g., the existence of comic-like object-related emojis), people recognize a commonality between the stimulus (emoji-based narrative) and a category (e.g., comics), retrieve stored category information (e.g., "it's funny," "it's entertaining," or "it's nonsense") and mobilize this category knowledge to evaluate the stimulus. Das et al. (2019) argue that emojis can generate a positive mood in perceivers. Duan et al. (2018) posit that emoticons increase the pleasure of "reading" texts. Thus, people do not necessarily need to

decode the metaphor implemented in the sequence of emojis. People have the schema that comics are funny and entertaining and might infer that something funny and entertaining is being shared. Thus, people might be humored simply because the symbols indicate that something funny is being conveyed.

Piecemeal-based processing: When perceivers do not detect enough similarity between the emoji-based narrative and stored mental categories, they likely are engaged in piecemeal information processing – in this case, an emoji-by-emoji processing of the narrative. Imagine, the statement “Christmas is coming soon” is defamiliarized with the sequence of the following symbols: 🎅 🚪 📖. In this case, “language” contains a metaphor consisting of three visual symbols. Metaphors are replacements of the actual fact (e.g., textual information such as “only a few days before Christmas”) by other facts that are similar and visually richer. When consumers translate the symbols back, i.e., aim to infer the actual fact and succeed, they may be surprised that the metaphor actually has a meaning at a different level (e.g., “Ah, I got it. 🎅, 🚪, and 📖. Clearly, it is Santa Claus in front of the door. Christmas is coming”) (Gkiouzepas and Hogg 2011; Mohanty and Ratneshwar 2015). People may be made laugh when confronted (surprised) with unexpected events that are possible “on another level”, i.e., that make sense there (Raskin 1985).

From both approaches, we conclude that emoji-based stories may not be a source of laughter but are nonetheless perceived as funny and entertaining. We test the following hypothesis:

H5: Emoji-based stories evoke higher sensations of humor than textual stories do (H5a), which positively spills over to evaluations of the promoted brand or the propensity to follow the advice presented in the narrative (H5b).

4.5. Childishness, credibility, and trustworthiness

Emojis are not only used in advertising and digital sales conversations. In fact, many object-related emojis have been used in children’s books for decades. When parents have children, they read picture books, which are composed of letter-based words and object-related images. For instance, *Ponyhof Geschichten* (pony farm stories) and *Erste Geschichten zum Lesenlernen* (first stories to

learn reading) in Germany are narratives; they are characterized by the fact that words and images alternate repeatedly (parents read a few words, and children add the next word by decoding the meaning of an object-related symbol). Hence, emoji-based narratives are likely associated with children and thus to a certain extent with childishness. This phenomenon is also presumed to exist by Glikson et al. (2018) and Provine (2007), who state that smileys may be seen as childish and be interpreted as a sign of poor verbal ability. According to McShane et al. (2021), emojis encourage perceptions of playfulness, which can also be related to childishness in a broader sense.

Perceptions of childishness are expected to affect the perception of credibility. Prior research found that the competence of information senders deteriorated if she or he used emoticons or emojis in a professional work context (Glikson et al. 2018; Haberstroh 2010; Krohn 2004; Li et al. 2019; Munter et al. 2003; van Kleef et al. 2012). In addition, researchers found that emoticons and emojis are primarily used in socioemotional conversations, i.e., in conversations among friends, and less often in task-oriented conversations with work colleagues (Derks et al. 2007; 2008b). People may be accustomed to emojis in private communication but might feel that these visual stimuli are inappropriate if they do not know the sender personally (which is also the case in an advertising context) (Kaye et al. 2016). Thus, brands using emojis in their advertisements can violate social norms of communication. Messages of senders who violate social norms are expected to be less credible, and senders of less credible messages are expected to be less trustworthy (for a discussion on this issue, see Lutz 1985). Note that we use the term “credibility” as a property of messages and “trustworthiness” as a property of persons or institutions that are represented by a brand. Therefore, we test the following hypothesis:

H6: Emoji-based stories evoke lower perceptions of message credibility and brand trustworthiness than textual stories (H6a), which negatively spills over to evaluations of the promoted brand or the propensity to follow the advice presented in the narrative (H6b).

In summary, the mediation model underlying this study can be visualized as shown in Fig. 2.

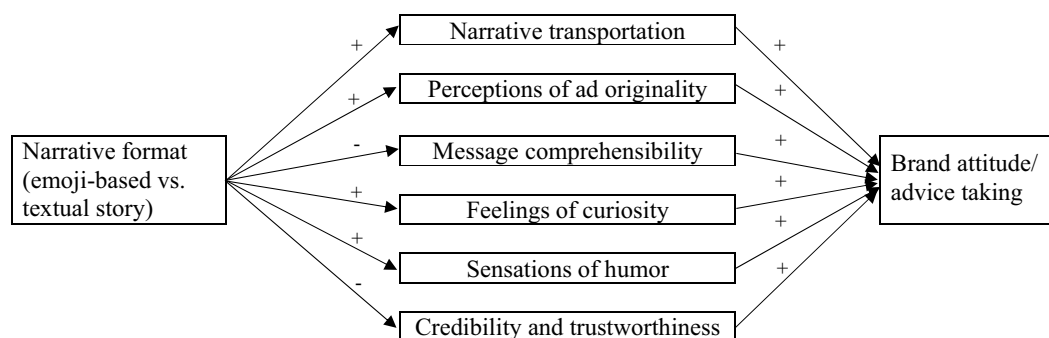


Fig. 2: Conceptual model underlying the hypotheses

4.6. Potentially moderating variables

In the preceding section, we discussed six reasons why emoji-based narratives (compared to textual narratives) are expected to affect brand attitudes. In this section, we consider three aspects that are likely to shape the strength of these effects: consumers' need for cognition, brand-emoji fit, and the objective of the advertisement (promoting products vs. social marketing).

Need for cognition: Cacioppo and Petty (1982, p. 116) argue that people differ regarding the extent to which they “engage in and enjoy thinking.” The authors use this concept to highlight a condition under which consumers are willing to process arguments in favor of products and brands in advertising. The relevance of this personality variable in our context is unclear. On the one hand, among the mediating variables discussed above, the propensity to engage in puzzle solving is associated with one's need for cognition. On the other hand, people with a high need for cognition are expected to be more interested in processing arguments and less interested in decoding peripheral cues such as emoji-based narratives (Duan et al. 2018; Willoughby and Liu 2018). Thus, we do not formulate a hypothesis on the influence of the moderating effect of this variable and instead consider the relationship in an exploratory way.

Brand-emoji fit: Das et al. (2019) argue that emojis use a figurative language that is emotional and thus are a good fit with the emotional profile of hedonic goods. They found that the depiction of a happy-looking emoji holding a camera had a positive effect on the evaluation of the promoted camera when the ad only described the hedonic features of the camera. More generally, many brands can be positioned as hedonic/promotion-oriented or utilitarian/prevention-oriented. Hedonic products provide joy, pleasure, entertainment, aesthetic benefits, or good mood; consumers think about pleasure when using such products. In contrast to hedonic products, utilitarian products protect consumers against unpleasant events; consumers think about the pain or difficulties that can be avoided. This dichotomy, also termed “approach” and “avoidance” items, is widespread in the literature (e.g., Aaker and Lee 2001; Avnet and Higgins 2006; Higgins 2002). Thus, one might expect emoji-based narratives to be more effective for promoting products of brands that are positioned as hedonic, approach-oriented, or promotion-oriented. Accordingly, we also consider the extent to which consumers believe that emojis are appropriate cues to promote the brand.

Advertising objective (promoting products vs. social marketing): Many campaigns promote special product benefits. For instance, McDonald's tells girls that they must not feel despair when they receive a poor hair cut: 🙄🙄🙄🙄🙄🙄🙄🙄🙄🙄. When we collected examples of emoji-based narratives in advertising, we also found many ads that could be considered “social marketing.” Since the introduction of this term by Kotler and Zaltman (1971), many researchers have contributed to

this field. In a more recent paper, Dann (2010, p. 147) defines the concept as follows: “Social marketing is based on the adaptation of the contemporary commercial marketing theory and practice as a means of guiding and aiding social change campaigns.” “Don't drink and drive” campaigns promoted by suppliers of alcoholic beverages, car brands, and social or governmental organizations are an example of this tool. This tool has been adapted to emoji-based narratives aimed at advice taking. For instance, in a McDonald's “Don't eat too much” ad, the audience reads 🍔🍔🍔🍔🍔🍔🍔🍔🍔🍔. In a “Don't text while walking on the streets” campaign created by Think! (governmental organization in the UK), the persons read 📱📱📱📱📱📱📱📱📱📱. In a similar campaign, Axe (body care) states 🧔🧔🧔🧔🧔🧔🧔🧔🧔🧔. A festival organizer issued a warning to its guests as follows: 🗿🗿🗿🗿🗿🗿🗿🗿. Social messages ending with the image of a tombstone, a coffin, or a skull might be funny at first sight but irritating after decoding the narrative. Thus, we do not construct a hypothesis on the relevance of this issue but include this aspect (promoting a product vs. social marketing) in our investigations.

5. Study 1: Emoji-based stories promoting the purchase of products

We constructed hypotheses to compare narratives that either contain solely emojis or are text-based. Moreover, we consider the hybrid form in our experiment: the inclusion of both elements. For instance, in *Fig. 1*, we showed an ad promoting the Think! campaign, which uses the hybrid form. Thus, we added this condition merely for descriptive purposes. Probably, it combines the advantages of both types of narratives.

5.1. Experimental design

We created three versions of narrative advertisements promoting consumer brands. In the first version, the narrative was told in textual form. In the second version, a mixture of textual information and emojis was used by replacing parts of the text with emojis and pictograms. In the third version, only emojis and pictograms were utilized to display the story. These versions were created for ten brands/variants (one for McDonald's, one for TUI travel agency, two different variants for Ergo insurance, two different variants for Amazon, two different variants for “Ab in den Urlaub” travel agency, one for Coca-Cola, and one for Lufthansa). We selected these brands based on findings from a pilot study. The selected brands were the best-known brands within the respective category (e.g., Coca-Cola turned out to be the best-known nonalcoholic beverage, Ergo the best-known insurance company in Germany). Thus, we have an experimental 3 (narrative: verbal text only, verbal text and emojis, emojis only) × 10 (seven brands, two variants for three brands) between-subjects design. The brand/variant factor served to test whether the findings were stable across the brands and stories.

5.2. Test stimuli

The manipulated parts of the ad versions used in this experiment are depicted in Fig. 3. The tested ad versions looked authentic, i.e., additionally contained the brand logo and the background color, which is typically used in

ads promoting a particular brand (e.g., the color red for Coca-Cola). Because the study was conducted in Germany, the textual components were written in the German language. Here, we illustrate the ads after translating them into the English language. Moreover, in the tested ads, we used emojis supported on Apple platforms,

Brand/variant	Text only	Text and emojis	Emojis only
McDonald's	In a traffic jam again? Do not be sad. Next exit McDonald's. Hooray!	In a 🚗 🚗 🚗 🚧? Do not 😞 😞 😞. Next exit 🍔 Hooray!	🚗 🚧 🚗 🚧 🚗 🚧 🚗 🚧 🚗 🚧 🚗 🚧 🚗 🚧 😞 🍔 😊
TUI	Annoyed by the weather in Germany? Time for new destinations. TUI takes you to the sun.	Annoyed by ☁️ in 🇩🇪? Time for new destinations. ☺️ takes you to the ☀️.	🇩🇪 ☁️ 🧑 🌈 ✈️ ☀️ 😊
Coca-Cola	Didn't you get out of bed again? Don't worry! Start the day easy with Coca-Cola.	Didn't you get out of 🛏️? Don't 😞! Start the day easy with 🍷 😊.	🛏️ 🕒 😞 🕒 😞 🍷 😊
Lufthansa	Are you stressed? Then pack your suitcase now! We'll fly you quickly to your dream destination! Whether sunbathing or surfing ...	Are you 😞? Then pack your 🧳 now! We'll ✈️ you quickly to your 😊 destination! Whether ☀️-bathing or 🌊-surfing.	🧳 📦 😞 ✈️ 😊 ☀️ 🌊
Amazon (variant 1)	Christmas is around the corner! Order at Amazon now!	🎄 is around the 📦! Order at amazon now!	🎄 📦 📦. ➡️ amazon !
Amazon (variant 2)	Christmas is around the corner. You still need presents for the family? You do not have ideas and time for a long shopping tour? Then order at Amazon now!	🎄 is around the 📦! You still need 📦 for the 👨👩? You do not have 💡 and 🕒 for a long shopping tour? Then order at amazon now!	🎄 ➡️ 📦 📦 👨👩 ? 🕒 ? 🕒 ? ➡️ amazon !
Ab in den Urlaub (variant 1)	In the mood for pizza, pasta & amore? Then, off to Rome by plane.	In the mood for 🍕, 🍝 & 🍷? Then, off to Rome by ✈️.	🍕 🍝 🍷 👨👩 ➡️ ✈️ 📦 🇮🇹
Ab in den Urlaub (variant 2)	Annoyed by bad weather? Then book your dream under palm trees.	Annoyed by ☁️ ☁️ 🌳? Then book your dream under 🌴 🌴.	☁️ ☁️ 🌳 ➡️ ☀️ 🌴 🌴
Ergo (variant 1)	If a boar jumps in front of your car ... then Ergo car insurance provides best protection after the accident.	If a 🐷 jumps in front of your 🚗 then ERGO provides best protection after the 🚗 😞.	If 🚗 🐷 = 🚗 😞 then ERGO
Ergo (variant 2)	If there is a fir tree in your way while skiing, then Ergo insurance provides best protection after the accident.	If there is a 🌲 in your way while 🏂 then ERGO provides best protection after the 🏂 😞.	If 🏂 🌲 = 🏂 😞 then ERGO

Fig. 3: Test stimuli used in Study 1

which look slightly different from those in “Segoe UI Emoji” font. For simplicity, we depict only the narratives in this figure. Note that we added a few symbols in jpg format because they were unavailable in the “Segoe UI Emoji” font. We explain the ad versions using McDonald’s as an example. In an original McDonald’s ad, only emojis were used to tell a story that, after passing a traffic jam that caused the emotion of sadness, McDonald’s was visited, which created the emotion of joy. For the hybrid form, we replaced some images to create a narrative composed of textual information and some emojis. In our text-only condition, no emojis were shown. The same procedure was used for creating ad versions for the other brands. Admittedly, the stories told are rather simple.

5.3. Pretest

Because we aimed to obtain insights into whether the effect of the ad version is contingent on whether consumers believe that the brand fits emojis, we conducted a pretest. We selected the ad versions from the emoji-only condition (ten advertisements). In total, 540 consumers (56.3 % females, $M_{\text{age}} = 22.88$ years, $SD = 3.60$, 93.3 % students) indicated the degree to which the ad fits the brand. To assess fit, participants expressed their agreement or disagreement with the following statements on a seven-point scale ($\alpha = .932$): “The motif of the ad fits the brand very well,” “The motif of the ad is very appropriate for this brand,” “The motif of the ad is ideal for this brand,” and “The motif of the ad is very suitable for this brand”. Data were collected using an online survey in spring 2018. As we had ten brands/variants, each emoji-ad was evaluated by approximately 54 participants.

A Scheffé test indicated the existence of two groups among the emoji-based ads ($p < .05$). For both ad variants of Ergo, the brand-emoji fit was relatively low ($M_{\text{Ergo variant 1}} = 3.12$, $M_{\text{Ergo variant 2}} = 2.71$). For the other ad versions, the brand-emoji fit was average with respect to the scale’s range, i.e., neither very low nor very high ($M_{\text{McDonald’s}} = 4.42$, $M_{\text{TUI}} = 4.01$, $M_{\text{Amazon variant 1}} = 4.85$, $M_{\text{Amazon variant 2}} = 4.34$, $M_{\text{Ab in den Urlaub variant 1}} = 4.53$, $M_{\text{Ab in den Urlaub variant 2}} = 4.61$, $M_{\text{Coca-Cola}} = 4.23$, and $M_{\text{Lufthansa}} = 4.02$). We surmise that Ergo is a prevention-oriented brand (it aims to protect consumers against unpleasant events such as high costs in the case of accidents). In contrast to the services offered by an insurance brand, food from McDonald’s and beverages from Coca-Cola promise enjoyment, travel agencies and airlines such as TUI, Ab in den Urlaub, and Lufthansa promise pleasant experiences, and Amazon enables the purchase of products that create fun experiences; thus, all these brands could be interpreted as brands inducing the “promotion focus” in consumers (for the difference between promotion- vs. prevention-oriented thoughts, see Aaker and Lee 2001; Avnet and Higgins 2006; Higgins 2002). Thus, we provide findings for Ergo vs. the remaining brands separately.

5.4. Test procedure

In the main study, data were collected using an online survey between summer 2018 and spring 2019. In total, 24 students assisted us in posting links to the surveys on social platforms. The students distributed the links to their friends via e-mail, Facebook, WhatsApp, and other platforms. The participants could watch one of the 30 ad versions as long as they wished and then completed the questionnaire. Note that data were collected brand-by-brand. For each brand, the participants were randomly assigned to the conditions. On the upper part of each survey page (when requesting to participate in the thought-listing task and when assessing the main variables), the ad was visually present.

First, the participants completed a thought-listing task. They were asked to write down all thoughts and feelings evoked by the ad verbally as follows: “Please indicate all your thoughts and feelings evoked by the ad.” *Second*, Likert-type scales were included in the survey pages, which were used to answer the questions. This part of the questionnaire started by measuring the following response variables: (1) attitudes toward the brand, (2) attitudes toward the ad (likeability and enjoyment to watch), (3) purchase intention, (4) intention to recommend the brand to friends, (5) intention to search for further information, (6) narrative transportation, (7) perceptions of ad originality, (8) message comprehensibility, (9) feelings of curiosity, (10) sensations of humor, (11) message credibility, and (12) brand trustworthiness. Subsequently, some control variables were assessed. We asked participants to indicate the relevance of the product categories and their interest in emojis in general. We wanted to ensure the experimental conditions did not differ across these variables. Next, the need for cognition was measured. The participants agreed or disagreed with statements on a seven-point scale (1= totally disagree, 7 = totally agree). *Third*, the participants reported age, gender, and occupational status.

5.5. Measures

We report the statements that we used to assess the variables in *Tab. 1*. To assess the discriminant validity of the mediating variables, we calculated the Fornell-Larcker criterion. [4]

5.6. Sample

In total, 1,682 people participated in this experiment. The mean age of the participants was 22.83 years ($SD = 3.312$); 55.1 % were females and 94.7 % were students. The control variables did not differ significantly across experimental conditions (category relevance $F_{(2;1679)} = .136$, n.s.; interest in emojis $F_{(2;1679)} = .265$, n.s.; need for cognition $F_{(2;1679)} = 2.013$, n.s.; participant’s age $F_{(2;1679)} = .216$, n.s.). Thus, the control variables are unlikely to bias the effects of the type of narrative presentation on the dependent variables. Interest in emojis was considerably high in our sample ($M = 5.31$ on the seven-point scale).

	Statements	Alpha	Source
Attitude toward the brand	The brand is very attractive. The brand is very likeable. The brand is very appealing. The brand is very pleasant.	.953	Spears and Singh (2004)
Attitude toward the ad – ad likeability	The ad is very attractive. The ad is very likeable. The ad is very appealing. The ad is very pleasant.	.966	Burke and Edell (1989)
Attitude toward the ad – feelings of enjoyment	The ad evoked a positive mood. The ad evoked pleasant feelings. I enjoyed viewing the ad very much. The ad brought fun into my daily life.	.938	Das et al. (2019); Watson et al. (1988)
Purchase intention	I very easily can imagine buying a product of this brand.	-	Spears and Singh (2004)
Intention to recommend	I very easily can imagine recommending this brand.	-	Spears and Singh (2004)
Intention to search for further information	I strongly intend to search for further information.	-	Spears and Singh (2004)
Narrative transportation	While I was viewing the ad, I could very easily picture the events in it taking place. I could picture myself in the scene of the events described in the ad. While viewing the ad I had a very vivid image of the story. The motif supports my visual imaginations. The motif creates mental imaginations.	.883	Escalas (2004a); Green and Brock (2002);
Perceptions of ad originality	The ad is very creative. The ad is very unique. The ad is very innovative. The ad is very original. The ad is very imaginative.	.954	Pieters et al. (2002); Smith et al. (2007); Yang and Smith (2009)
Message comprehensibility	The ad is very easy to understand. The ad is very comprehensible. The ad message can very easily be identified. The ad message is not very difficult. The ad message is very clear.	.908	Pieters et al. (2010)
Feelings of curiosity	The ad made me very curious. I was very keen to resolve the message behind the ad. The ad evoked my interest very strongly.	.926	Menon and Soman (2002)
Sensations of humor	The ad is very humorous. The ad is very funny. The ad is very amusing. The ad made me very cheerful.	.970	Vanden Bergh et al. (2011)
Message credibility	The ad message is very credible. The ad message is very persuasive. The ad message is very reliable.	.846	Ohanian (1990)
Brand trustworthiness	The brand is very trustworthy. The brand is very reliable.	$r =$.796	Li et al. (2019); Ohanian (1990)

Tab. 1: Measures used in Study 1 (Part 1: Response variables)

5.7. Manipulation Check – Did the participants experience narratives?

In Section 2, we explained two conceptions of narratives (1. information that has the distinct properties of a narrative; 2. information that prompts perceivers to create narrative thoughts). We consider that all test stimuli evoke narrative thoughts. We consulted the data from the thought-listing task to check whether the participants perceived the versions as narratives, i.e., whether the

thoughts listed conformed to the criteria that should be satisfied for narratives.

For the *textual* ad promoting McDonald's, typical thoughts written down by four participants were as follows: person #1: "hunger, burger, greasy, filled up;" person #2: "Because the traffic jam can take a long time and the drivers get hungry, they will be happy if there is something to eat on the next exit;" person # 3: "Long car journeys, hunger, few choices about what to eat, bad

	Statements	Alpha	Source
Category relevance	I frequently purchase such products (services). I like to purchase such products (services). I am very interested in such products (services).	.860	Laurent and Kapferer (1985)
Interest in emojis	I frequently use emojis in my private conversation. I like to use emojis in my private conversation. I know the different meanings of emojis very well. Emojis belong to my private communication with family and friends.	.917	Laurent and Kapferer (1985)
Need for cognition	I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought. Simply knowing the answer rather than understanding the reason for the answer to a problem is not enough for me. I find satisfaction in deliberating hard and for long hours. Thinking is my idea of fun.	.715	Short version of the scale developed by Cacioppo and Petty (1982)

Tab. 1: Measures used in Study 1 (Part 2: Control variables and need for cognition)

food”; person #4: “McDonald’s, fast food, if you are stuck in a traffic jam, it will probably still take a long time to get to the next exit.” Such *thoughts* have a theme (hunger and McDonald’s), refer to an actor (car driver or the participant herself/himself), contain goals or motives (e.g., getting food, becoming happy), describe actions (e.g., taking the next exit), consist of events that are arranged in a chronological order, refer to locations where the uncomfortable event happens, and show consequences (e.g., bad food, greasy food). Thus, even when the ad does not communicate a concrete story, the participants created a story. When we analyzed the *emoji-only ad* versions promoting McDonald’s, the thoughts were also story-like but had a higher degree of vividness: the participants were able to envision more details about the events (e.g., feelings of happiness in “I know that well, after a traffic jam and a long drive you are sometimes very happy about McDonald’s” or sensations of relief in knowing

that “after long traffic jams and roadworks on the highway, finally a rescue in sight → McD.”). We replicated this analysis for all test stimuli and found that the thoughts reported in the thought-listing task were story-like for all ad versions.

5.8. Description of results

We calculated the mean values for the response variables and used ANOVA and Scheffé tests to reveal significant differences across the experimental conditions. The findings are provided in *Tab. 2*.

In general, the “text & emojis” and the “emojis only” conditions resulted in more favorable brand and ad evaluations compared to the “text only” condition. There was only one exception: for purchase intention, there was no significant difference between the “text only” and “text and emoji” conditions. Thus, from this overall perspec-

	Type of story presentation			ANOVA $F_{(2; 1,679)}$
	Text only	Text & emojis	Emojis only	
Dependent variables				
Attitude toward the brand	3.57 (1.52) _a	4.55 (1.38) _b	4.41 (1.39) _b	76.697 ^{***}
Attitude toward the ad (likeability)	2.96 (1.44) _a	4.92 (1.56) _c	4.41 (1.37) _b	272.147 ^{***}
Attitude toward the ad (enjoyment)	2.77 (1.35) _a	4.46 (1.25) _b	4.38 (1.31) _b	297.767 ^{***}
Purchase intention	4.27 (1.85) _a	4.45 (1.89) _{ab}	4.53 (1.83) _b	3.951 [*]
Intention to recommend	3.88 (1.83) _a	4.18 (1.85) _b	4.18 (1.83) _b	4.984 ^{**}
Intention to search for further information	3.82 (1.83) _a	4.34 (1.69) _b	4.26 (1.72) _b	13.958 ^{***}
Potentially mediating variables				
Narrative transportation (H1a)	3.77 (1.41) _a	4.16 (1.44) _b	4.25 (1.31) _b	18.183 ^{***}
Perceptions of ad originality (H2a)	2.50 (1.29) _a	3.71 (1.60) _b	4.11 (1.58) _c	170.038 ^{***}
Message comprehensibility (H3a)	5.77 (1.22) _b	5.64 (1.26) _b	4.55 (1.26) _a	158.835 ^{***}
Feelings of curiosity (H4a)	2.98 (1.43) _a	3.86 (1.51) _b	5.03 (1.43) _c	269.173 ^{***}
Sensations of humor (H5a)	2.25 (1.40) _a	3.59 (1.75) _b	3.64 (1.68) _b	129.526 ^{***}
Message credibility (H6a)	3.88 (1.40) _b	3.37 (1.36) _a	3.25 (1.31) _a	33.913 ^{***}
Brand trustworthiness (H6a)	4.34 (1.48) _c	3.56 (1.71) _b	3.08 (1.60) _a	85.211 ^{***}

Notes: Scale ranges from 1 (negative) to 7 (positive). Standard deviation in parentheses. Different subscripts indicate significant differences in the Scheffé test at the .05 level. ANOVA ^{***} $p < .001$, ^{**} $p < .01$, ^{*} $p < .05$.

Tab. 2: Consumer responses depending on the type of story presentation (Study 1)

tive, emoji-based narratives can be considered advantageous compared to textual narratives.

5.9. Effect of the ad version on the (potentially) mediating variables

To test the hypotheses, we compared the text-only condition to the emoji-only condition and tested the effect on the mediating variables. The results of the Scheffé tests contained in *Tab. 2* indicate that, in the emoji condition, the level of narrative transportation is higher (supporting the validity of H1a), perceptions of ad originality are higher (supporting H2a), message comprehensibility is lower (supporting H3a), feelings of curiosity are more intense (supporting H4a), sensations of humor are more intense (supporting H5a), and message credibility and brand trustworthiness are lower (supporting H6a). Thus, our statistical analysis provides support for the hypotheses. Because we did not develop hypotheses for advantageous or disadvantages of the hybrid condition (mixture of emojis and text), we did not include this condition to test H1a to H6a.

To identify additional important mediating variables, we examined the texts written by the participants (thought-listing task) in the emojis-only condition. We found that most participants responded to this task by *correctly* replicating the emoji-based story in their own words. None of the participants who replicated the story in their own words told a different story. Most likely, by doing so, they wanted to demonstrate that they were able to decode the emoji puzzle. In some cases, the participants' own experiences were associated with the emoji narratives (e.g., some texts mentioned events when the participant had overslept, the participant's experiences with traffic jams, or the participant's pleasurable memories in Rome). Occasionally, participants noted that the ad is rather modern or creative. A small portion indicated that they did not understand the message (with a comparatively large portion for Amazon variant 2). Sometimes, the participants indicated that the ads were rather funny or childish and kitschy. None of the participants directly ex-

pressed feelings of curiosity (e.g., being keen to solve the message). However, we believe that the large number of people who told the story in their own words represents curiosity, i.e., they were keen to solve the puzzle. None of the participants indicated that emojis do not fit the brand. Most importantly, we did not reveal an additional issue (except the term "childishness"), which might also be included as a variable that mediates the effect of emoji-based (vs. textual) narratives on evaluative responses. All results are reported in *Tab. 3*.

We replicated this analysis for the emoji-and-text and text-only conditions. The proportion of participants repeating the story in their own words was slightly lower in the hybrid condition and even lower in the text-only condition. However, we found a relatively high proportion of participants listing beliefs and benefits (advantages and disadvantages) of the brand in the text-only condition. For instance, in the text-only condition, many participants also associated McDonald's with "greasy food" and "junk food." The frequency of reported product- or brand-related features and benefits was lower in the hybrid condition, and in the emojis-only condition, unfavorable brand beliefs and benefits were not reported. Thus, the participants focused on the story in the emojis-only condition; in the text-only condition, participants focused to a higher extent on unfavorable beliefs and benefits of the products. This finding from the thought-listing task indicates the importance of narrative processing. When people's cognitive resources are mostly spent decoding an emoji-based story, detrimental thoughts about the brand or product are suppressed.

5.10. Effect of the (potentially) mediating variables on brand attitude

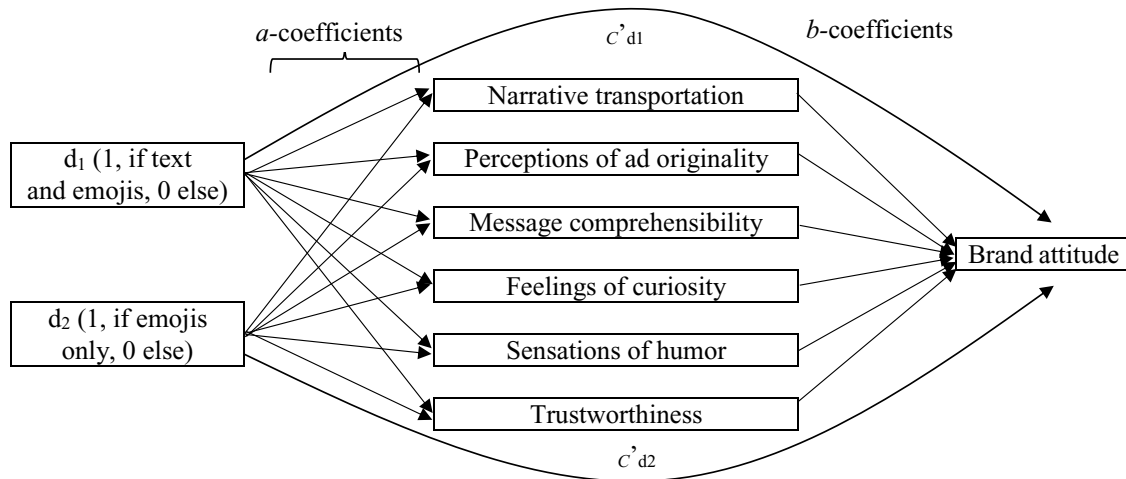
We calculated two binary variables d_1 (1: text & emojis, 0: else) and d_2 (1: emojis only, 0: else) and used them as independent variables for Hayes' mediation procedure with more than one independent variable (Hayes and Preacher 2014). Thus, the "text only" condition serves as the reference category. We used brand attitude as the de-

	<i>N</i>	Verbal replication*	Own experiences	Ad originality	Incomprehensibility	Curiosity	Humor	Childishness
McDonald's	63	47	4	-	5	-	2	1
TUI	65	40	5	5	2	-	5	-
Ergo variant 1	61	38	1	6	2	-	6	3
Ergo variant 2	25	19	1	2	-	-	3	-
Amazon variant 1	62	57	1	-	2	-	-	-
Amazon variant 2	64	43	5	2	10	-	-	-
Ab in den Urlaub variant 1	40	28	4	1	5	-	1	1
Ab in den Urlaub variant 2	40	35	2	-	-	-	-	2
Coca-Cola	69	46	2	6	-	-	4	1
Lufthansa	55	42	6	2	1	-	-	1

Notes: The frequencies indicate the number of the test participants who reported thoughts about the issues.

* If the test participant replicated the Emoji puzzle verbally, s/he replicated it correctly.

Tab. 3: Results from the thought-listing task in the emojis-only condition (Study 1)



Notes: *a*-coefficients denote the effects of both binary independent variables on the mediating variables. *b*-coefficients represent the effects of the mediating variables on the dependent variable, and *c'*-coefficients denote the (residual) direct effects of the independent variables on the dependent variable.

Fig. 4: Estimated model (Study 1)

	<i>a</i>	<i>b</i>	<i>c'</i>	<i>t</i> -value	<i>a</i> × <i>b</i> and .95 CI
<i>a</i> _{d1} →narrative transportation	.392	-	-	4.732****	.015 (.002; .042)
<i>a</i> _{d1} →perceptions of ad originality	1.214	-	-	13.632****	.054 (.018; .126)
<i>a</i> _{d1} →message comprehensibility	-.137	-	-	-1.847**	-.017 (-.040; -.001)
<i>a</i> _{d1} →feelings of curiosity	.881	-	-	10.151****	.130 (.080; .185)
<i>a</i> _{d1} →sensations of humor	1.343	-	-	13.956****	.022 (-.052; .096)
<i>a</i> _{d1} →brand trustworthiness	-.778	-	-	-8.158****	-.185 (-.245; -.138)
<i>a</i> _{d2} →narrative transportation	.473 (H1a)	-	-	5.507****	.018 (.004; .045)
<i>a</i> _{d2} →perceptions of ad originality	1.609 (H2a)	-	-	17.670****	.071 (.024; .164)
<i>a</i> _{d2} →message comprehensibility	-1.230 (H3a)	-	-	-16.229****	-.152 (-.225; -.079)
<i>a</i> _{d2} →feelings of curiosity	2.047 (H4a)	-	-	23.075****	.302 (.188; .410)
<i>a</i> _{d2} →sensations of humor	1.390 (H5a)	-	-	14.122****	.023 (-.054; .098)
<i>a</i> _{d2} →brand trustworthiness	-1.260 (H6a)	-	-	-12.924****	-.300 (-.367; -.243)
<i>b</i> _{narrative transportation→brand attitude}	-	.038 (H1b)	-	1.683*	-
<i>b</i> _{ad originality→brand attitude}	-	.044 (H2b)	-	1.743*	-
<i>b</i> _{comprehensibility→brand attitude}	-	.124 (H3b)	-	4.556****	-
<i>b</i> _{feelings of curiosity→brand attitude}	-	.147 (H4b)	-	5.873****	-
<i>b</i> _{humor→brand attitude}	-	.016 (H5b)	-	.604 ^{NS}	-
<i>b</i> _{brand trustworthiness→brand attitude}	-	.238 (H6b)	-	11.654****	-
<i>c'</i> _{d1→brand attitude}	-	-	.979	11.317****	-
<i>c'</i> _{d2→brand attitude}	-	-	.873	8.359****	-

Note: **** *p* < .001, *** *p* < .01, ** *p* < .05, * *p* < .10.

Tab. 4: Results of a mediation analysis (Study 1)

pendent variable. Because brand trustworthiness and message credibility are conceptually similar variables, we refrained from including message credibility as a mediating variable. Fig. 4 depicts the estimated model.

The effects are estimated with the Hayes procedure (model 4 with multicategorical independent variables). [5] They are contained in Tab. 4. The *a*-coefficients are mean differences of the (potentially) mediating vari-

ables; at the top, the mean difference between the “text & emoji” vs. “text only” conditions is reported; below, the mean difference between the “emoji only” vs. “text only” conditions is shown. At the bottom, the OLS regression coefficients (*b* and *c'*) of the (potentially) mediating variables and both binary variables *d*₁ and *d*₂ on brand attitude are reported. The Hayes procedure contains a bootstrapping procedure that allows the calculation of the indirect effect *a*×*b* plus an estimation of a .95 confidence

interval of each $a \times b$. If this asymmetric confidence interval covers the value zero, a mediation effect must be rejected.

Regarding the effects of the (potentially) mediating variables on brand attitude (see the b -coefficients in *Tab. 4*), we find support for all hypotheses except for H5b: more positive brand attitudes with higher narrative transportation (H1b), with higher perceptions of ad originality (H2b), with higher message comprehensibility (H3b), with stronger feelings of curiosity (H4b), and with higher brand trustworthiness (H6b). One exception is that we did not find a significant positive effect of sensation of humor; thus, H5b must be rejected. The confidence intervals indicate mediation effects except for sensations of humor. Thus, the statistical analyses provide evidence that all potentially mediating variables are affected by the narrative format and that all potentially mediating variables influence brand attitude (with the exception of the path via sensations of humor).

Moreover, there are significant positive residual direct effects (c'). They indicate the effect of d_1 (and d_2) on brand attitude that cannot be explained by the included mediating variables. Although there are manifold reasons why these residual direct effects exist, based on our findings from the thought-listing task, we surmise that the emoji-based and hybrid “text & emoji” narratives suppressed thoughts about various disadvantages of the brands (e.g., “contains too much sugar”; “is very expensive;” “is unhealthy food”), which impair brand attitudes in the text-only condition (and in turn contribute to an improvement in attitudes in the emoji conditions).

5.11. Effect of the (potentially) moderating variables

Finally, we examined whether the results are contingent on the brand or variant (we had two variants for three brands), the brand positioning (Ergo as an example of a brand that has a low fit with emojis vs. the other brands), and consumers’ need for cognition.

First, we examined the effect of the type of narrative (text only, text & emojis, emojis only) on brand attitude per brand/variant (*Tab. 5*). With two exceptions, brand evaluations were higher in the emoji-only condition than in the text-only condition. The exceptions were “Ab in den Urlaub variant 2” and Lufthansa. Except the data collected for the Lufthansa ads and the “Ab in den Urlaub variant 2” ads, the hybrid ads (text and emojis) resulted in higher brand attitudes than the text-only ads.

Second, we compared the effect of the type of narrative on brand attitude for Ergo vs. the other brands. We did not find remarkable differences; emoji-based narratives were advantageous for the ads created for Ergo as well as for the other brands.

Third, we split the sample into two parts: participants with a low need for cognition (value less than 4 on the seven-point scale) and participants with a high need for cognition (scale value 4 or above). We did not find a “type of presentation \times need for cognition” interaction effect ($F_{(2;1676)} = 1.603, p > .10$). Thus, our data do not indicate that the effectiveness of emoji-based narratives depends on consumers’ need for cognition. We additionally examined the effect of consumer age. However, because all participants were rather young, this analysis did

	N	Type of story presentation			ANOVA
		Text only	Text & emojis	Emojis only	
Brand					
McDonald’s	187	3.25 (1.53) _a	4.16 (1.41) _b	3.85 (1.37) _b	$F_{(2;184)} = 6.433^{**}$
TUI	195	3.50 (1.25) _a	4.33 (1.34) _b	4.03 (1.31) _b	$F_{(2;192)} = 6.834^{***}$
Ergo variant 1	188	2.70 (1.18) _a	4.04 (1.28) _c	3.41 (1.21) _b	$F_{(2;185)} = 18.983^{***}$
Ergo variant 2	85	2.51 (1.12) _a	3.29 (1.21) _b	3.64 (1.07) _b	$F_{(2;82)} = 7.258^{***}$
Amazon variant 1	186	4.13 (1.37) _a	5.09 (1.25) _b	5.26 (1.19) _b	$F_{(2;183)} = 14.181^{***}$
Amazon variant 2	188	3.54 (1.45) _a	5.40 (.96) _c	4.86 (1.41) _b	$F_{(2;185)} = 33.029^{***}$
Ab in den Urlaub variant 1	113	3.53 (1.24) _a	4.41 (1.02) _b	4.28 (1.18) _b	$F_{(2;110)} = 6.180^{**}$
Ab in den Urlaub variant 2	120	3.61 (1.28) _a	4.05 (1.45) _a	4.24 (.92) _a	$F_{(2;117)} = 2.703^{NS}$
Coca-Cola	209	3.88 (1.70) _a	4.50 (1.18) _b	4.99 (1.36) _b	$F_{(2;206)} = 10.504^{***}$
Lufthansa	211	4.75 (1.62) _a	5.06 (1.38) _a	4.82 (1.21) _a	$F_{(2;208)} = .825^{NS}$
Need for cognition					
Low (below scale center 4)	509	3.45 (1.50) _a	4.67 (1.35) _b	4.45 (1.41) _b	$F_{(2;506)} = 34.241^{***}$
High (4 or above)	1,173	3.62 (1.52) _a	4.51 (1.38) _b	4.38 (1.38) _b	$F_{(2;1170)} = 44.234^{***}$
Total	1,682	3.57 (1.52) _a	4.55 (1.38) _b	4.41 (1.39) _b	$F_{(2;1679)} = 76.697^{***}$

Notes: Scale ranges from 1 (negative) to 7 (positive). Standard deviation in parentheses. Different subscripts indicate significant differences in the Scheffé test at the .05 level. *** $p < .001$, ** $p < .01$, * $p < .05$.

Tab. 5: Attitude toward the brand depending on the narrative format, the brands, and different levels of need for cognition

not show that a median split of age (18 to 22 years, 23 years and older) resulted in a “type of presentation × consumer age” interaction effect ($F_{(2, 1676)} = 1.549, p > .10$).

5.12. Discussion

Our findings indicate that the use of emojis to tell a story in advertisements elicits numerous mental responses in consumers. As expected, emoji-based narratives induce a higher level of narrative transportation, more positive perceptions of ad originality, a decrease in message comprehensibility, stronger feelings of curiosity, higher sensations of humor, and lower message credibility and brand trustworthiness. All these factors spill over to brand attitude, with one exception. We did not find support for the hypothesis that higher sensations of humor positively affect brand attitudes; thus, we rejected H5b. *Tab. 2* shows that the type of narrative strongly affected feelings of curiosity. For instance, agreement with “I was very keen to resolve the message behind the ad” was rather strong in the emoji-only condition. *Tab. 3* indicates that most participants focused on decoding the emoji puzzle because they translated the pictograms into words in the thought listing task. Thus, we surmise that brand evaluations strongly depended on experienced success due to the translation of the story. What inhibited an additional effect via humor? Possibly, our examples contained in the study were not humorous enough to induce an effect via humor. In the thought-listing task, the participants stated that the brands “*want* to be funny.” Thus, they qualified the ads “as funny” but did not truly experience humor.

With respect to the brand factor, brand-emoji fit, and need for cognition, our findings do not show that these aspects limit the effectiveness of emoji-based narratives. We surmise that consumers’ engagement in translating the emoji-based narrative into natural language prevented consumers from scrutinizing whether they should consider fit aspects while evaluating the brand. We should note that we were surprised by the strong effects of our manipulation. For instance, ad likeability was strongly increased by emojis, and brand attitudes benefited from the use of these images, although we had used highly familiar brands as test objects.

6. Study 2: The effect of emoji-based stories on social marketing effectiveness

In this study, we tested whether the propensity of advice taking by consumers to protect themselves and nature against harmful behaviors is higher for emoji-based narratives than for textual narratives. Although these messages do not directly aim to improve attitudes toward brands and organizations, there might also be a spillover effect on the evaluation of the brand and organizations that will also be examined in this study. We included Study 2 because advice to protect oneself against harm (e.g., accidents) and to protect animals and nature in gen-

eral concerns more serious issues. These issues might induce a strong sense of protection motivation. At least, consumers are unlikely to expect these issues to be associated with entertainment and humor. Thus, emojis might have different effects in this context.

6.1. Experimental design

We created three ad versions (text only, text & emojis, and emojis only) for four brands. We included two product brands and two nature/animal-protection organizations in this study: Warsteiner beer ads containing a “Don’t drink and drive” warning, BMW ads issuing a “Don’t text and drive” warning, WWF asking for donations to protect the Amazon rainforest against deforestation, and Peta containing the request to refrain from the use of cosmetics that are animal-tested. Thus, we have an experimental 3 (ad version: text only, text and emojis, emojis only) × 4 (brand/organization) between-subjects design.

6.2. Test stimuli

As in Study 1, the words contained in the ads were originally written in the German language, and the ads also contained the brand’s or organization’s logo and background color. Again, we used emojis supported on Apple platforms. For the purpose of simplicity, we only show the narratives contained in the advertisements in *Fig. 5*.

6.3. Test procedure

The test procedure was adopted from Study 1. Twenty students assisted us in collecting the data with the help of online surveys between summer 2019 and spring 2020.

6.4. Measures

We adopted the measures used in Study 1 with some modifications.

First, the questionnaire did not contain measures of sensations of humor. We suspected that emoji-based stories that aim to protect animals/nature and consumers against harmful behavior will not be associated with laughter.

Second, we included a measure of perceptions of childishness for two reasons. In Study 1, which preceded Study 2, some participants indicated the emojis were cute and childish; we aimed to consider this aspect in more detail. Moreover, as the stories contain serious topics (fatal accidents, animal cruelty, and deforestation), the usage of emojis that evoke association of childishness might contradict the message of the ads. The statements used to measure these perceptions were as follows: “This ad is childish,” “This ad is kitschy,” and “This ad is silly.”

Third, we included a measure for the propensity to follow the advice given in the ad (advice taking). The stories aim at inducing thoughts about harmful behaviors and how to prevent negative events. Thus, consumers are

Brand	Text only	Text and emojis	Emojis only
Warsteiner beer	Driving home drunk after a party brings you to the grave! Think of alcohol-free Warsteiner! Don't drink and drive.	Using 🚗 after 🍷🍺 brings you to 🪦. Think of alcohol-free 🍷! Don't 🗣️ and 🚗.	🍷 + 🍺 + 🚗 🗣️ + 🪦 🗣️ + 🍷 🚫 + 🗣️ + 🚗
BMW cars	Using the mobile phone while driving leads to fatal accidents!	📱 while driving leads to fatal 🚗💥!	😄 🚗 📱 🗣️ 💥 🚗 🪦
WWF	The Amazon – hot spot of the earth. Without your donation, many beings are in danger.	The Amazon – 🌳 of the 🌍. Without your 💰, the habitat of 🐼🐶 is at risk.	🌳 🌳 🌳 = 🌳 🌳 🐼 + 🚫 🌳 📱 💥 🚫 🐼 🚫 🐶
Peta	The cruelty animals suffer for our vanity is beyond words.	The 🗣️🗣️🗣️ under which animal suffer for our 🗣️🗣️ is beyond words.	🗣️ 🗣️ 🗣️ 🗣️ 🗣️ 🗣️

Fig. 5: Test stimuli used in Study 2

recommended to follow the advice (do not drive after alcohol consumption; do not text and drive; do not use animal-tested cosmetics; and do not refrain from helping to preserve the rainforest). For each brand, we used four statements that were formulated in accordance with the issue. For instance, in response to the “Don’t drink and drive” ad versions promoting the alcohol-free beer sold by the Warsteiner brewery, participants agreed or disagreed with the following: “This ad increases my awareness not to drink alcohol before car driving,” “I believe that I can prevent traffic accidents when I refrain from drinking alcohol,” “I will take the advice not to drink alcohol before driving,” and “In the future, I will respect the advice to not drink alcohol before driving.”

Fourth, we did not assess category relevance (e.g., personal importance of the product) but assessed issue relevance (i.e., personal relevance of the addressed topics). The statements used to measure this concept were as follows: “The issue emphasized in the ad is very important for me,” “... is very relevant for me,” “... addresses a topic which is very meaningful,” “... has a strong impact on me,” and “... concerns me very much.”

Fifth, we did not include measures to assess the intention to recommend the brand/organization and to search for further information. Typically, brands are recommended to friends if the products have particular benefits. We surmise that the answer to the question about whether social-marketing activities (e.g., BMW warns against texting while driving) also affect consumers’ propensity to recommend purchasing a product of this brand demands more specific investigations that are beyond the scope of our paper. People could search for further information about the brand/organization or for additional information about the harmful issue. Examining such multiple effects would also demand more specific studies.

The reliability scores are as follows: feelings of curiosity $\alpha = .947$, message credibility $\alpha = .873$, brand/organization trustworthiness $r = .750$, ad originality $\alpha = .954$, message comprehensibility $\alpha = .920$, perceptions of childishness $\alpha = .881$, narrative transportation $\alpha = .882$, attitude toward the ad (likeability component) $\alpha = .959$, attitude toward the ad (enjoyment while watching the ad) $\alpha = .873$, attitude toward the brand/organization $\alpha = .953$, advice taking $\alpha = .755$, issue relevance $\alpha = .856$, interest in emojis $\alpha = .906$, and need for cognition $\alpha = .770$.

6.5. Sample

In total, 1,120 persons participated in Study 2. The mean age was 24.63 years ($SD = 6.830$); 55.2 % were females, and 86.1 % were students. The control variables did not differ significantly across experimental conditions (issue relevance $F_{(2,1117)} = .594$, n.s.; interest in emojis $F_{(2,1117)} = .203$, n.s.; need for cognition $F_{(2,1117)} = .710$, n.s.; and participant’s age $F_{(2,1117)} = .597$, n.s.). The interest in emojis was again considerably high in this sample ($M = 5.60$ on the seven-point scale).

6.6. Description of results

When analyzing data at the brand/organization level, we found that the data patterns obtained for the product brands (Warsteiner, BMW) were different from the data patterns obtained for the organizations (WWF, Peta). For Warsteiner and BMW, the effects of the use of emojis were similar. Moreover, we observed similar results for WWF and Peta. Thus, in Tab. 6, we provide the findings after collapsing the data for Warsteiner and BMW and for the WWF and Peta.

For the product brands, we found that emoji-based narratives result in more favorable ad and brand evaluations.

	Warsteiner and BMW (product brands)				WWF and Peta (organizations)			
	Text only	Text & emojis	Emojis only	ANOVA $F_{(2; 588)}$	Text only	Text & emojis	Emojis only	ANOVA $F_{(2; 526)}$
Dependent variables								
Attitude toward the brand/organization	3.88 (1.43) _a	4.36 (1.63) _b	4.44 (1.38) _b	8.240 ^{***}	5.26 (1.17) _b	4.79 (1.69) _a	4.88 (1.53) _a	4.645 [*]
Advice taking	4.48 (1.01) _a	4.93 (1.30) _b	4.92 (1.33) _b	8.828 ^{***}	4.92 (1.22) _b	4.56 (1.46) _a	4.43 (1.42) _a	5.359 ^{**}
Attitude toward the ad (likeability)	2.99 (1.67) _a	3.63 (1.66) _b	3.87 (1.67) _b	14.591 ^{***}	4.23 (1.28) _b	3.31 (1.67) _a	3.35 (1.57) _a	19.278 ^{***}
Attitude toward the ad (enjoyment)	2.27 (1.29) _a	2.49 (1.24) _a	2.81 (1.30) _b	8.849 ^{***}	2.73 (1.36) _a	2.54 (1.32) _a	2.53 (1.25) _a	2.118 ^{NS}
Potentially mediating variables								
Narrative transportation (H1a)	3.77 (1.71) _a	3.92 (1.77) _{ab}	4.31 (1.67) _b	5.065 ^{**}	4.42 (1.14) _b	3.61 (1.67) _a	3.60 (1.63) _a	15.847 ^{***}
Perceptions of ad originality (H2a)	2.31 (1.60) _a	3.58 (1.74) _b	4.35 (1.74) _c	69.080 ^{***}	2.97 (1.59) _a	3.89 (1.79) _b	3.93 (1.62) _b	17.070 ^{***}
Message comprehensibility (H3a)	5.86 (1.23) _b	5.55 (1.40) _{ab}	5.25 (1.43) _a	9.941 ^{***}	5.70 (1.22) _b	4.53 (1.69) _a	4.42 (1.67) _a	34.024 ^{***}
Feelings of curiosity (H4a)	2.97 (1.55) _a	3.17 (1.74) _b	3.51 (1.59) _b	5.546 ^{**}	4.06 (1.67) _b	3.53 (1.76) _a	3.43 (1.68) _a	6.199 ^{**}
Ad childishness	1.86 (1.20) _a	3.26 (1.65) _b	3.32 (1.32) _b	67.973 ^{***}	1.95 (1.41) _a	4.32 (1.77) _b	3.98 (1.68) _b	103.306 ^{***}
Message credibility	4.47 (1.58) _b	4.09 (1.68) _{ab}	4.24 (1.24) _a	3.932 [*]	4.27 (1.55) _b	3.61 (1.74) _a	3.41 (1.54) _a	12.416 ^{***}
Brand/organization trustworthiness (H6a)	4.31 (1.69) _b	3.81 (1.76) _a	3.93 (1.54) _a	4.715 ^{**}	3.95 (1.70) _b	3.32 (1.72) _a	3.46 (1.58) _a	6.609 ^{***}

Notes: Scale ranges from 1 (negative) to 7 (positive). Standard deviation in parentheses. Different subscripts indicate significant differences in the Scheffé test at the .05 level. ANOVA *** $p < .001$, ** $p < .01$, * $p < .05$.

Tab. 6: Consumer responses depending on the type of story presentation (Study 2)

This pattern of results conforms to the findings of Study 1. In contrast to these findings, the results for the organizations were different. Evaluations of the ad and the organization were more favorable in the text condition.

6.7. Effect of the ad version on the (potentially) mediating variables

For the product brands (Warsteiner beer and BMW cars), the findings support the hypotheses. The data support the hypotheses that emoji-based (vs. textual) narratives result in a higher level of narrative transportation (H1a), higher perceptions of ad originality (H2a), reduced message comprehensibility (H3a), more intense feelings of curiosity (H4a), higher perceptions of childishness, lower message credibility, and lower brand trustworthiness (H6a). H5a was not tested in this study.

For the organizations (WWF and Peta), only some of the hypotheses are supported: H2a (effect on originality),

H3a (effect on message comprehensibility), and H6a (effect on childishness, credibility, and trustworthiness). H1a (effect on narrative transportation) and H4a (feelings of curiosity) were rejected, and the signs of the pattern of effects also contradict our expectations. To gain insights into these contradictory findings, we analyzed participants' verbal responses in the thought-listing task.

Comparison across experimental conditions: Because we also have these data for all conditions (text only, text and emojis, and emojis only), we first compared frequencies of types of thoughts across the test conditions. These comparisons indicated that, in the *text-only condition*, the given text is rarely replicated; mostly, responses – for instance, in the case of Peta – had an evaluative nature and were as follows: “injustice,” “torture,” “compassion,” “cruelty,” “murder,” “shocking,” “insensible,” “serious issue,” or “depressing”. We thus conclude that the text-based narratives motivated participants to report feelings

	Warsteiner	BMW	WWF	Peta
<i>N</i>	60	132	61	96
Verbal replication of the story	47 (Don't drink and drive)	89 (Don't text and drive)	35 (Appeal to donate for the rainforest)	24 (Appeal not to use animal-tested cosmetics); 3 (Appeal not to purchase fur)
Own experiences	-	4 (Paid penalty)	-	-
Ad originality	1	7	-	-
Incomprehensibility	3	8	7	14
Curiosity	1	-	-	-
Humor	-	-	1	-
Childishness	3	3	3	1
Inappropriateness of Emojis	2	6	8	2
Other issues	2 (Boring)	17 (Safety of BMW cars in the case of an accident) 3 (Sadness)	13 (Fear/sadness); 5 (Promotion of vacancies)	9 ("WWF supports animal protection"); 6 (Sadness/consternation); 3 ("I don't want to have something to do with this issue"); 2 (Appeal to donate); 2 (Woman thinking about suicide); 1 (Girl wants a good fairy to help animals); 1 ("I'm in favor of animal-tested cosmetics"); 9 (Comments on details such as "cute rabbit")

Note: The frequencies indicate the number of the test participants who reported thoughts about the issues.

Tab. 7: Results from the thought-listing task in the emoji-only condition (Study 2)

resulting from the story. In contrast, in the *emoji-only condition*, the narratives motivated participants to solve the puzzle and report the solution. Faced with emoji-based narratives, people are distracted from generating and reporting feelings because their cognition is strongly engaged in puzzle solving.

Comparison across brands: We wanted to understand why responses to the emoji-based narratives differ between Warsteiner and BMW on the one side and WWF and Peta on the other side. Thus, for simplicity, we focus on providing data on the frequencies of thoughts in the *emoji-only condition*. These thoughts can be classified as follows (Tab. 7).

The analysis of the thoughts generated a picture of associations that differs from the results obtained for the emoji-based narratives in Study 1. In Study 1, which contained ads promoting product brands, most of the narrative was verbally replicated, and the replication was correct. In Study 2, a large portion of the participants verbally replicated the story of the "Don't drink and drive" campaign of Warsteiner (47 out of 60) and the "Don't text and drive" campaign of BMW (89 out of 132). However, only half of the participants replicated

the WWF's appeal to donate to rainforest preservation (35 out of 61) and an even lower portion replicated Peta's "Don't use animal-tested cosmetics" appeal (24 out of 96). The comments to the emoji-based ads indicated that a large portion of participants were unwilling to mentally face the more abstract issues of Brazilian rainforest protection and avoidance of animal testing, whereas a large portion of participants who were exposed to the emoji-based stories in the Warsteiner and BMW ads were willing to think about personally relevant issues such as alcohol and the use of one's mobile phone while driving. Thus, the reason for the difference of the responses to Warsteiner/BMW vs. WWF/Peta is likely not the source (product brand vs. social organization) but the concreteness vs. abstractness of the issue that is highlighted in the social marketing ads. We surmise that the critical factor explaining the differences is psychological distance, which is low for products such as McDonald's hamburgers and Coca-Cola beverages, and high for the issues promoted by the WWF and Peta (for this concept, see Trope and Liberman 2010). Admittedly, we did not test this explanation in an experimental setting. Thus, we conclude that the issue and/or the organizational image of the WWF and Pe-

	<i>a</i>	<i>b</i>	<i>c'</i>	<i>t-value</i>	<i>a×b and .95 CI</i>
<i>a</i> _{d1} →narrative transportation	.149	-	-	.868 ^{NS}	.026 (-.035; .326)
<i>a</i> _{d1} →perceptions of ad originality	1.271	-	-	7.333 ^{***}	.197 (.029; .101)
<i>a</i> _{d1} →message comprehensibility	-.313	-	-	-2.309 [*]	-.041 (-.098; -.010)
<i>a</i> _{d1} →feelings of curiosity	.202	-	-	1.236 ^{NS}	.020 (-.012; .063)
<i>a</i> _{d1} →trustworthiness	-.495	-	-	-2.957 [*]	-.047 (-.113; -.010)
<i>a</i> _{d2} →narrative transportation	.537 (H1a)	-	-	3.086 ^{**}	.092 (.034; .191)
<i>a</i> _{d2} →perceptions of ad originality	2.039 (H2a)	-	-	11.622 ^{***}	.316 (.191; .472)
<i>a</i> _{d2} →message comprehensibility	-.613 (H3a)	-	-	-4.458 ^{***}	-.079 (-.164; -.030)
<i>a</i> _{d2} →feelings of curiosity	.546 (H4a)	-	-	3.297 ^{***}	.054 (.016; .119)
<i>a</i> _{d2} →trustworthiness	-.372 (H6a)	-	-	-2.195 [*]	-.035 (-.092; -.003)
<i>b</i> _{narrative transportation→advice taking}	-	.172 (H1b)	-	5.247 ^{***}	-
<i>b</i> _{ad originality→advice taking}	-	.155 (H2b)	-	4.746 ^{***}	-
<i>b</i> _{comprehensibility→advice taking}	-	.129 (H3b)	-	3.932 ^{***}	-
<i>b</i> _{feelings of curiosity→advice taking}	-	.099 (H4b)	-	2.627 ^{**}	-
<i>b</i> _{trustworthiness→advice taking}	-	.094 (H6b)	-	2.851 ^{**}	-
<i>c'</i> _{d1} →advice taking	-	-	.036	.313 ^{NS}	-
<i>c'</i> _{d2} →advice taking	-	-	-.173	-1.385 ^{NS}	-

Note: *** $p < .001$, ** $p < .01$, * $p < .05$.

Tab. 8: Results of a mediation analysis (Study 2, Warsteiner and BMW)

ta (the logo was also included in the advertisements) prevented people from fully comprehending and resolving the emoji puzzle and they were not keen to know what the WWF and Peta wanted to tell them (less curiosity), and thus, only half (WWF) or a quarter (Peta) of the participants verbally replicated the emoji-based narrative. The abstract issue of the objectives of these organizations also prevented the participants from experiencing feelings resulting from the narratives when they preferred not to comprehend the narrative.

6.8. Effect of the (potentially) mediating variables on advice taking

As noted, we did not measure sensations of humor in Study 2. As a dependent variable, we chose the propensity to follow the recommendation (advice taking). We focus on data provided for Warsteiner and BMW because we did not find support for H1a (effect on narrative transportation) and H4a (effect on curiosity) in the case of the WWF and Peta. We adopted the statistical procedure shown in Section 5.10. We did not include perceptions of childishness and message credibility as mediating variables because they are conceptually similar to brand/organization trustworthiness. The findings are shown in Tab. 8.

In total, this procedure provides support for H1b, H2b, H3b, H4b, and H6b. In terms of the .95 confidence intervals used to compare the emoji-only vs. text-only conditions, all variables included in the analysis can be regarded as mediating variables. Since the residual direct effects (c') are not significant, this represents a case of complete mediation.

Finally, we tested whether consumers' need for cognition moderates the effect of the type of narrative presentation on advice taking. Using the type of presentation of the narrative and need for cognition (split into two segments: below 4; 4 or higher) as factors and advice taking as the dependent variable, we found neither an interaction effect for the data collected for Warsteiner and BMW ($F_{(2;585)} = .202, p > .80$) nor an interaction effect for the data collected for the WWF and Peta ($F_{(2;523)} = 1.344, p > .20$).

6.9. Discussion

In Study 2, we focused on the use of narratives (emoji-based vs. textual) to provide recommendations on how to behave in a healthy and socially acceptable way. In the ads, Warsteiner warned against drinking alcohol before driving, BMW provided information about the risk that arises when people "text and drive." The WWF asked for donations to preserve the Amazon rainforest, and Peta highlighted cruelty of animal testing for cosmetics.

Overall, for Warsteiner and BMW, Study 2 replicated the findings from Study 1. We found the same mediating effects. As a side note, we want to point to the fact that a remarkable portion of participants misunderstood the objective of the BMW ad in the emoji-only condition. In the thought-listing task, they indicated that BMW is a rather reliable car that protects the driver against severe accidents if s/he "texts and drives" (17 out of 132). For product brands, emoji-based narratives were more effective than textual narratives.

In contrast, for the WWF and Peta ads, we found that a smaller portion of participants replicated the emoji puzzle.

zle in their own words (35 out of 61 for the WWF, 27 out of 96 for Peta). Participants were less immersed in the emoji-based story, and they indicated less curiosity in understanding “the message behind the ad” (compared to the textual format). In the emoji-only condition, some people reported aspects that were not at the core of the organization’s message (e.g., “cute rabbit”, “Bibi’s Beauty Palace,” or “cucumber mask”). We surmise that the puzzle character of the emoji-based narrative helped people to find an excuse not to think about topics such as rainforest devastation and animal testing for cosmetics. For these brands, textual narratives were advantageous compared to emoji-based narratives.

Clearly, all topics (drinking alcohol when driving, using one’s mobile phone when driving, rainforest devastation, and cruelty against animals for developing cosmetics) are negative, unpleasant events. We believe that the differences in participants’ responses may relate to the concreteness vs. abstractness of the topics.

7. Answers to the research questions

7.1. Research question 1

We asked: What mental processes are elicited by emoji-based narratives? The emoji format is rather innovative, and consumers are less familiar with this format compared to traditional ad formats (e.g., advertising with testimonials or ads providing arguments in favor of product benefits). We found evidence for five co-occurring processes.

Narrative transportation: If the emoji-based narratives are easy to comprehend (e.g., the ads considered in Study 1), most participants replicated the story in their own words. They did not mention other topics, such as brand benefits. Seemingly, they were “lost in the narrative” and, for instance, agreed with the statement that they could “picture themselves in the scene of the events described in the ad.” For two of the four emoji-based narratives presented in Study 2, the participants were clearly less able or willing to decode the emoji puzzle; at least a small portion of participants replicated the story in their own words. Essentially, they knew the name of the organizations (WWF, Peta) because their logos were prominently displayed in the ads. We surmise that many participants preferred not to face the topics in these organizations’ ads, likely because these issues are rather abstract from the participants’ perspective (rainforest protection, animal testing). They substituted thoughts about these abstract issues with thoughts about concrete issues (e.g., “cute rabbit”) or invented concrete aspects (e.g., “cucumber mask” or “Bibi’s Beauty Palace”). Moreover, agreement with statements such as “While viewing the ad, I had a very vivid image of the story,” “The motif supports my visual imaginations,” or “The motif creates mental imaginations” was low compared to the textual narrative format. To conclude, our findings indicate that

emoji-based narratives facilitate narrative processing when the promoted issue is concrete.

Perceptions of ad originality: We consistently found that emoji-based narratives are perceived as higher in originality, which had a positive impact on the dependent variables.

Message comprehensibility: As expected, emoji-based narratives must be decoded, which reduces comprehensibility compared to textual narratives. Our findings show that the length of the emoji puzzle strongly affects whether the participants verbally declare the story as “incomprehensible.” In Study 1, we considered two variants of emoji-based narratives promoting Amazon (variant 1: six emojis, variant 2: 15 emojis). This aspect strongly affected the number of people directly stating that they do not comprehend the message (variant 1: 2 out of 62, variant 2: 10 out of 64). Thus, the complexity or length of the emoji puzzle affects comprehensibility. Moreover, we surmise that the emoji-based narratives considered in Study 2 – with the exception of the ad associated with Warsteiner – were “too complex” and deteriorated comprehensibility. Of 132 participants, 17 interpreted the “Don’t text and drive” emoji story as BMW’s claim to offer safe cars. Of 96 participants, 14 noted that they could not comprehend the meaning of Peta’s emoji narrative. We conclude that emoji-based narratives are generally less comprehensible than textual information, and comprehensibility is further reduced with increasing complexity of the symbols.

Feelings of curiosity: The pattern of results for feelings of curiosity is related to the finding for narrative transportation. With the exception of the WWF and Peta narratives, emoji-based narratives generated higher feelings of curiosity compared to the textual version. Successfully solving the emoji puzzle positively spills over to evaluative responses to the promoted brand or issue.

Sensations of humor: We investigated this response only in Study 1. The participants indicated that the emoji-based ads were more humorous, funny, and amusing than the textual ads. However, sensations of humor did not affect brand evaluations. From the verbal comments provided in the thought-listing task, we surmise that there is a difference between the consumer’s impression that “the marketer wants to be funny” and the consumer’s own experience of humor. The participants believed that the companies wanted to produce funny ads, but they were unable to find them funny. Most likely, our test material was unable to induce sensations of humor that were strong enough to spill over to brand evaluations.

Brand trustworthiness and childishness: In Study 1, we found that perceptions of message credibility and brand trustworthiness were lower in the emoji-only condition than in the text-only condition. From the thought-listing task in Study 1, we received the insight that some consumers denoted the emoji puzzles as childish. Thus, in Study 2, we also explicitly asked the participants to indi-

cate their perceptions of childishness; we found that emoji-based narratives are perceived as childish what impaired evaluations. In total, companies' and nonprofit organizations' trustworthiness suffers from the use of emojis.

7.2. Research question 2

We asked the following question: are emoji-based narratives effective at all? Because we expected positive and negative effects, we were unable to foresee the overall effect on evaluations. The studies revealed that emoji-based narratives are advantageous compared to textual narratives, with the exceptions of the WWF ad and the Peta ad. Clearly, we did not compare the emoji puzzle to further conceptions of ads (e.g., landscapes, testimonials, arguments in favor of benefits). Importantly, we focused on very well-known brands. In our pretest, for example, we found that Coca-Cola is the most famous soft drink brand, McDonald's is the best-known fast-food restaurant, and Amazon is the online retailer that consumers are most familiar with. From this perspective, one does not expect strong effects on brand evaluations due to a single exposure to an ad. *Tab. 2* and *Tab. 6* indicate a remarkable effect of the type of story presentation on brand attitude. Thus, we conclude that emoji-based narratives are an effective means to influence evaluations. As explained, the findings for the WWF and Peta were different.

7.3. Research question 3

At the beginning of our research, we expected brand characteristics (the brand-emoji fit) and consumer characteristics (the need for cognition) to affect our results. From our investigations, we cannot confirm the moderating effects of these two variables on the relationship between the type of story presentation and evaluative responses. Mostly, the participants were fully engaged in encoding the emoji puzzle, which likely prevented them from considering whether emojis are appropriate tools to promote the brand. In Study 1, none of the participants reported any thoughts about the inappropriateness of the use of emojis. Thus, our findings cannot support the idea that emojis have a lower fit to prevention-oriented brands (e.g., Ergo) than to promotion-oriented brands such as Coca-Cola or McDonald's. In Study 2, a remarkable proportion of participants noted that emojis should not be used to communicate messages such as "Don't drink and drive" and "Donate for the preservation of the rainforest." We did not find a moderating effect of consumers' need for cognition.

7.4. Research question 4

We presume that companies want to use "the language of the youth" to promote products in this segment as well as to warn this segment from harmful behaviors. Thus, we asked whether the effectiveness of emoji-based narratives is contingent on the advertisement's objective. Our

findings indicate that this difference matters. If warnings are issued, people tend to reinterpret the message. Of 132 participants, 17 reinterpreted the "Don't text and drive" puzzle as an ad in which BMW highlights the safety of its cars in the condition of an accident when texting while driving. The WWF and Peta emoji puzzles were also sometimes reinterpreted. Of the 61 participants who viewed the WWF emoji-only narrative, five participants interpreted the message as inviting consumers to take holidays. The emoji puzzle for Peta provoked many misinterpretations. We suggest that when companies or nonprofit organizations want to highlight serious issues, they should refrain from using emoji puzzles.

8. Implications for practice

Emojis represent a new type of language. To date, approximately 3,500 to 4,000 emojis have been made available for text writing with computers and mobile phones (Unicode.org 2020). Moreover, they are gaining wide acceptance among the younger generation. Thus, companies have started to include them in their mass media and digital communication. We focused on one specific application, the use of emojis to tell a story.

Companies and organizations that are forerunners in their categories (e.g., McDonald's, DHL, Axe, Ergo, WWF, Peta) have started to create print ads, ads on social media, such as Facebook, and commercials (WWF's Endangered emoji). Thus, we wanted to gain insights into the effectiveness of such story formats.

Mostly, we found that emoji-based narratives are superior to textual narratives, which we used as a comparison standard. However, the proportion of consumers indicating that they did not understand the narrative increased with complexity, i.e., the number of emojis used. Narratives such as "Come to McDonald's when leaving the traffic jam" (see *Fig. 1*) are easily understood and result in more favorable brand evaluations. For ads that focus on abstract issues and employ appeals such as "Donate for the preservation of the rainforest" or "Beware of animal-tested cosmetics," emoji-based narratives are disadvantageous.

Moreover, companies need not care much about whether emojis fit the brand image. We found that people are strongly engaged in translating the emoji puzzle into natural language, and thus, most likely, they do not have leftover cognitive capacity to consider whether emojis fit the promoted brand.

9. Limitations and suggestions for future research

9.1. Additional moderating variables

Consumer age: We focused on a student sample because the use of emojis is widespread among young people,

and we surmise that companies target young consumers with emoji-based narratives. Thus, in both studies, the participants were rather young. Consequently, we cannot predict how older people will respond to emoji-based narratives. In a current follow-up study, we have expanded our sample to include older participants. The initial insights indicate that they experience greater difficulties decoding emoji-based narratives. Thus, we expect that brand attitudes are unlikely to benefit from emoji-based narratives if older consumers are targeted. However, this aspect should be examined in greater detail in future research.

Complexity of emoji-based narratives: In practice, some emoji-based narratives are relatively simple (e.g., McDonald's ad shown in *Fig. 1*), whereas other ads are highly complex. To explore this aspect, future research could test the idea from researchers in the field of flow theory that task abilities should match task difficulty. Given the ability of the audience to solve puzzles, researchers could ask, "what is the optimal task difficulty?"

Construal level: In Study 1, we considered the moderating effect of the regulatory focus induced by brand positioning (Ergo helps consumers respond to unpleasant events; McDonald's provides pleasant events), but we did not find that promotion- vs. prevention-oriented brand positioning matters. Instead of this distinction, we suggest considering the psychological distance between the promoted issue and the consumer, which is discussed in construal-level theory (Trope and Liberman 2010; Yoo et al. 2018). Protection of the rainforest in the Amazon is an abstract issue, and likely, the concrete emojis used in the ad do not fit this issue. In contrast, McDonald's and Coca-Cola product promotions can be considered concrete issues.

Strong vs. weak brands: For us, the most impressive finding was the fact that many participants replicated the emoji-based story in their own words. Experience of successfully completing this task is a main determinant of the valuation of brands and organizations. However, if cognitive capacity is spent for that task, few, if any, resources are available for processing the features and benefits of the promoted object. Hence, emoji-based narratives might be particularly advantageous if a weak brand is promoted or strong arguments are missing. Thus, future research might also vary brand reputation as a factor to determine whether emoji-based narratives can compensate for a brand's weaknesses.

9.2. Hybrids of humans and emojis

Some companies created characters that are composed of face emojis and the human body. For instance, Agida, an insurance company, promotes its services by showing such hybrids in the role of happy or satisfied consumers. McDonald's even created a video entitled "Come as you are." The actors are hybrid beings (human body with face emojis as heads) in everyday life situations who finally visit a McDonald's restaurant. There is a clear anal-

ogy to mythological figures such as centaurs (human and horse), mermaids (human and fish), the ancient Egyptian god Horus (human and hawk), and the Indian god Ganesha (human and elephant). It would be insightful to test the response of consumers to such traditional vs. innovative hybrids.

Notes

- [1] The use of nonverbal communication as a paralanguage has been well known since ancient times. Publilius Syrus (approx. 90 to 40 BC) stated: *Prudenti vultus etiam sermonis loco est* (To a wise man, the face speaks as well as words). Further types of paralanguage consist of the sound of the word being spoken (e.g., speed, loudness) and the body language (e.g., handshake, touching the receiver, thumb up).
- [2] There is a debate about whether the term emoji should be used for both the singular and plural forms or whether emojis is the plural form. At unicode.org, emoji is also used as a plural form. In the academic literature, some authors use emojis (e.g., Riordan 2017a, 2017b), while others use emoji as the plural form (e.g., Das et al. 2019; Li et al. 2019). According to Emojipedia.org, "the term Emojis has risen from 18 % of plural emoji searches in 2013, up to 30 % in 2016." Thus, we surmise that at present, emojis is the most commonly used plural form.
- [3] We presumed the existence of *two effects* of the puzzle-like appearance of emoji-based narratives (compared to textual narratives) on evaluations: a detrimental effect via perceptions of message comprehensibility (emoji-based narratives are less comprehensible, see H3) and a positive effect via curiosity (emoji-based narratives could elicit pleasant feelings of curiosity, see H4). Alternatively, we could refer to the concepts of task difficulty and task abilities and apply the idea of *one single effect* resulting from the match between task difficulty and task abilities; this approach would result in collapsing H3 and H4 in one "match-up hypothesis." Comprehensibility of a message is interrelated with task difficulty. Perceptions of task difficulty result from low comprehensibility, and low comprehensibility in turn results when the task is difficult. Persons are unlikely to want to perform difficult tasks when they prefer not to be confronted with such tasks. Curiosity is interrelated with task ability. Curiosity supplies the "energy" that enables people to perform tasks (i.e., increases one's task ability). In the cocktail party example, the guest will not only spend effort recognizing who talks about her/him but also, due to curiosity, invest "energy", which enables her/him to identify the reason why these people talk about her/him. In the field of research on flow experiences, the authors state that there should be a balance between task difficulty and task ability to elicit favorable responses – the match (vs. deviation) between task difficulty and task abilities influences evaluative outcomes (Csikszentmihalyi 1977; Ghani et al. 1991; Hoffman and Novak 1996, p. 57, 60). Task ability can be too high (compared to task difficulty), and task difficulty can be too high (compared to task ability), resulting, for instance, in a deviation of the recipient's optimum stimulation (Raju 1980). Thus, the question arises about whether this match (vs. deviation) between task difficulty and task ability should be considered. Studies of researchers on the flow concept, including Novak and colleagues, regressed both components separately on flow and did not develop a "match of task difficulty and task ability" concept (Ghani et al. 1991; Ghani and Deshpande 1994; Novak et al. 1998; Novak et al. 2000). Thus, for simplicity, we also focus on two distinct concepts (comprehensibility and curiosity) and do not consider the "match" concept.
- [4] We included six mediating variables in the model. Intercorrelations among these mediating variables are likely to exist. Intercorrelations result because the mediating variables are af-

ected by the same source: the manipulation of the versions of narrative advertisements. Intercorrelations also result because the same method of assessing the variables was used (survey data). For instance, some people might tend to use the right-side scale values, and others may tend to use the left-side scale values. Thus, we cannot avoid intercorrelations. However, for the purpose of statistical analyses in mediation models, their level should be “tolerable.” There are different approaches to assess the severity of the problem. *First*, we can refer to Preacher and Hayes (2008, p. 887), who state that this problem does not prevent a meaningful mediation analysis as long as the mediators are conceptually different, which is the case in our model, and as long as the correlations between the mediators are low to moderate. In our study (Study 1), there is only one pair of mediators with a correlation above .6 (perceptions of ad originality and sensations of humor), which might cause biases. *Second*, we used Harman’s one-factor test (Harman 1967), which postulates that the variance explained by one factor – when conducting factor analysis including all variables – should not account for most of the variance in the variables (Podsakoff and Organ 1986, p. 536). As a rule of thumb, the single-factor solution should explain less than 50 % of the variance (Malhotra et al. 2006; Malhotra et al. 2017). In our data set, the one-factor solution explained only 34.7 % of the variance. *Third*, we conducted an analysis of discriminant validity by applying the Fornell-Larcker criterion. Note that these calculations are based on factor analysis, i.e., there are different weights for each variable belonging to the same concept; in our analyses reported above (mean value calculations and applications of Hayes’ procedures), each variable has the same weight – our constructs were calculated as unweighted averages of corresponding variables. The Fornell-Larcker criterion is satisfied if the square root of AVE is higher than all corresponding factor correlations (Fornell and Lar-

cker 1981). For all mediating variables, \sqrt{AVE} exceeds the factor correlations (see *Tab. A1*). *Fourth*, we conducted a collinearity analysis. We estimated six regression models. Each mediating variable served as the dependent variable, and the (five) remaining mediating variables were used as independent variables (e.g., $m_1 = \text{const} + \beta_2 m_2 + \dots + \beta_6 m_6$), thus resulting in an R^2 value for each of the six linear models. For each mediating variable, the “variance inflation factor” $VIF = 1/(1-R^2)$ and the “tolerance value” $TOL = 1-R^2$ can be calculated. O’Brien (2007, p. 674) states that “not uncommonly a VIF of 10 or even one as low as 4 (equivalent to a tolerance level of 0.10 or 0.25) have been used as rules of thumb to indicate excessive or serious multi-collinearity.” For our data, VIF values are lower (between 1.0 and 2.4), and the TOL values are higher (between .4 and .9), indicating that the collinearity bias is low. In summation, we cannot avoid intercorrelations among the mediating variables; however, the analyses presented above indicate that the level of intercorrelations is tolerable.

- [5] *First*, for our application, the Hayes procedure estimates six separate linear regression models with OLS estimation using d_1 and d_2 as binary IVs and each mediator m as DV (for instance, for narrative transportation: $m = \text{const} + a_{d1 \rightarrow \text{transp}} d_1 + a_{d2 \rightarrow \text{transp}} d_2$). *Second*, the procedure estimates one linear regression model with OLS estimation using all mediators as well as d_1 and d_2 as IVs and brand attitude as DV ($\text{attitude} = \text{const} + b_{\text{transp}} m_{\text{transp}} + b_{\text{orig}} m_{\text{orig}} + \dots + b_{\text{trustw}} m_{\text{trustw}} + c_1 d_1 + c_2 d_2$). *Third*, with the use of a bootstrapping algorithm, the procedure calculates asymmetrical confidence intervals for products between the a -coefficients and b -coefficients. If such intervals do not cover the value zero, there is statistical evidence for the existence of a particular mediation effect. For the syntax, see Hayes and Preacher (2014).

Appendix

	Narrative transportation	Perceptions of ad originality	Message comprehensibility	Feelings of curiosity	Sensations of humor	Brand trustworthiness
AVE	.670	.723	.731	.845	.854	.884
CR	.910	.929	.931	.942	.959	.938
\sqrt{AVE}	.819	.850	.855	.919	.924	.940
Factor correlations						
Narr. transportation	1.000	.248	.231	.308	.206	.058
Ad originality	.248	1.000	-.031	.458	.663	-.092
Comprehensibility	.231	-.031	1.000	-.079	-.002	.191
Curiosity	.308	.458	.079	1.000	.397	-.057
Humor	.206	.663	-.002	.397	1.000	-.092
Trustworthiness	.058	-.092	.191	-.057	-.092	1.000

Notes: AVE = average variance extracted, CR = composite reliability. \sqrt{AVE} should be higher than all correlations listed below.

Tab. A1: Analysis of discriminant validity of the mediating variables used in Study 1

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Keywords

Emojis, Narratives, Print Advertisements, Brand Evaluations.