Face reading the emotions of gelotophobes toward disparaging humorous advertising

Maria C. Voutsa
Cyprus University of Technology, Cyprus
maria.voutsa@cut.ac.cy

Leonidas Hatzithomas
University of Macedonia, Greece
hatzithomas@uom.edu.gr

Eirini Tsichla
American College of Thessaloniki, Greece
etsichla@act.edu

Christina Boutsouki
Aristotle University of Thessaloniki, Greece
chbouts@econ.auth.gr

Abstract

Prior research has indicated that gelotophobia, people's fear of being laughed at, influences their emotions toward a disparaging humorous event. Based on two experiments with a sample of 50 Greek participants each, the present study employed face recognition software to explore the emotions of gelotophobes, when exposed to an advertisement. It further examined the moderating role of the type of advertisement (i.e. a disparaging humorous ad vs. a non-disparaging non-humorous ad) and identification with the victim of the joke, on gelotophobes' emotions. At higher levels of identification with the victim, gelotophobes indicated lower levels of joy, joyful (Duchenne) smile, and a positive emotional valence toward a disparaging-humorous advertisement as opposed to non-gelotophobes. Joy was also found to mediate the negative effects of gelotophobia on attitude toward the ad.

Keywords: gelotophobia, disparagement humour, emotions, facial expressions recognition.

1. Introduction

Gelotophobia was originally discussed in a clinical context by Titze (1996) as the pathological fear of being laughed at. Subsequent studies (Ruch & Proyer, 2008ab) introduced gelotophobia as an individual differences variable that can be studied among normal individuals. This approach has spurred the interest of researchers over the last decade. Numerous studies in diverse environments (Ruch & Proyer, 2008ab; Lampert, Isaacson & Lyttle, 2010, Proyer, Ruch & Chen, 2012) estimate gelotophobes to be around 10 percent of the general population. The notion that gelotophobes constitute a distinct group of people with specific profiles has caused researchers in marketing and advertising (Voutsa, Hatzithomas & Boutsouki, 2018, Karpinska-Krakowiak, 2020) to focus on gelotophobia as a potentially important segmentation variable.

Prior research (Voutsa et al., 2018) on the role of gelotophobia on advertising effectiveness revealed that gelotophobia exerts a negative effect on consumers' attitudes toward a disparaging humorous advertisement. Disparagement humour, the "humor that derogates or provides negative information about someone or something" (Janes & Olson, 2000: 474) has been extensively used in advertising over the last two decades and represents a significant part of the advertising budget (Gulas, McKeage & Weinberger, 2010; Timamopoulou, Hatzithomas, Boutsouki & Voutsa, 2021). While prior research (Proyer, Platt & Ruch, 2010; Ruch, Hofmann, Platt & Proyer, 2013) has demonstrated the adverse relationship between gelotophobia and disparagement humour appreciation, understanding how and when gelotophobia leads to negative attitudes toward a disparaging humorous advertisement remains uncharted.

Hence, the present study has a threefold objective. First, it examines the emotions experienced by gelotophobes when they are exposed to a disparaging humorous advertisement. Basic emotions namely joy, anger, sadness, fear, and disgust (Ekman, 1992) alongside joyful (Duchenne) smile, valence, and arousal are recorded through facial expression recognition software (FaceReader). Facial expressions can disclose participants' intuitive, spontaneous, and not easily controlled responses (Poels & Dewitte, 2006). Yet, to date, the emotional reactions of gelotophobes have been addressed only through self-reported or non-automated measures (based on Facial Action Coding System; Hofmann, Platt, Ruch, Niewiadomski & Urbain, 2015; Ruch, Hofmann & Platt, 2015). Second, the study investigates the moderating role of advertising type and identification with the victim on the relationship between gelotophobia and emotional reactions (i.e. basic emotions, joyful smile, and valence). Third, it analyses the mediating effect of emotional responses (i.e. basic emotions, joyful smile, and valence) on the relationship between gelotophobia and attitude toward the ad. The study assumes that gelotophobes' attitudes toward a disparaging advertisement are formed by a change in their emotional state. The findings extend prior knowledge on gelotophobia suggesting that gelotophobes experience less positive and more negative emotions compared to non-gelotophobes (Platt, 2008; Hofmann et al., 2015; Ruch et al., 2015) and highlight valuable managerial implications for advertisers.

2. Theoretical background

Two distinct and diverse approaches dominate the discussion of the role of emotion in consumer responses to advertising. The first is the specific emotion approach that investigates discrete emotion families (Izard, 1977; Ekman, 1992). Discrete emotions are characterized by cross-cultural transferability and are followed by physiological, mimic, and behavioural reactions (Hupp et al., 2008).

Ekman's (1992) theory predetermines a finite set of six distinguishable basic emotions (joy, sadness, anger, fear, disgust, and surprise), exposed by an "emotion-specific central nervous

system activity" (Ekman, 1992: 50). The specific emotion approach underlines the reasoning of several studies investigating the effect of discrete emotions on consumer responses to advertising (e.g. Lerner, Small & Loewenstein, 2004).

The second approach does not focus on specific emotions per se; rather, it examines the underlying dimensions of the emotional experience. The most influential typology within this approach in advertising research is Mehrabian and Russell's (1974) PAD scheme (Olney, Holbrook & Batra, 1991), developed to assess the emotional dimensions of pleasure (or valence), arousal, and dominance. However, extensive analyses of behavioural, self-report, and physiological data designate only arousal and valence as dimensions of emotional response (Russell, 1980). As a result, a two-dimensional model (i.e. valence and arousal) has prevailed in advertising research where valence reflects the degree of an emotional response's pleasantness or unpleasantness. Positive valence is associated with any aspect of joy and negative valence with the emotions of anger, fear, sadness, or disgust (Yik, Russell & Barrett, 1999). Arousal reveals the level of alertness and activation (Revelle & Loftus, 1990).

Russell and Barrett (1999) combined the two approaches in a circumplex fuzzy hierarchy. According to them, prototypical emotional episodes (e.g. joy, sadness, anger, fear, disgust, and surprise) and core affect (i.e. valence and arousal) are two phenomena that together are called emotion, although they do not fully cover the domain of emotion. Prototypical emotional episodes include core affect, which is "elementary consciously accessible affective feelings (and their neurophysiological counterparts) that need not be directed at anything" (1999: 806). However, core affect is directed to specific events or stimuli (such as an advertisement), when it is part of a prototypical emotional episode. The latter can be also determined as a combination of a degree of valence and a degree of arousal. For instance, a combination of negative valence (i.e. low pleasure) and high arousal (or high activation) yields emotions such as fear, anger, and disgust. Joy/Happiness is characterized by positive valence (i.e. high levels of pleasure) and relatively high levels of arousal, whereas sadness is characterized by negative valence (i.e. low levels of pleasure) and relatively low levels of arousal. Russell and Barrett's (1999) circumplex model is the foundation of the Noldus FaceReader 8 analysis of valence, arousal, and emotion (employed in this research).

3. Research hypotheses

3.1. The influence of gelotophobia on emotions

Prior research has uncovered the relationship between gelotophobia and perceived emotions (Ruch et al., 2015). Gelotophobia is associated with low life satisfaction since gelotophobes tend to avoid any happiness orientation; hedonism (i.e. pleasure-seeking), engagement (related to flow-experiences), and eudaimonia (i.e. meaning-seeking) (Proyer et al., 2012). In a typical week they seldom experience high levels of happiness (and joy), while the experience of this feeling takes longer to start, is less intense, and has a shorter duration (Platt & Ruch, 2009). Gelotophobes often misinterpret joyful smiles as contemptuous and thus show a smaller increase in their positive mood, and less facial joy towards a smiling face than non-gelotophobes (Ruch et al., 2015).

On the contrary, gelotophobes experience greater sadness, fear, anger, and disgust in their everyday life (Platt & Ruch, 2009). Gelotophobia is positively related to fear, sadness, and anger during daily social interactions, whereas it leads to experiencing more intense and longer-lasting fear in a typical week (Ruch et al., 2015). Gelotophobes are also highly susceptible to emotional contagion with negative emotions, when they are exposed to the affective states of other people (Papousek, Schulter & Lang, 2009). Interestingly, even exposure to a smiling face is likely to

engender expressions of contempt to gelotophobes (Ruch et al., 2015). From the above analysis, it becomes obvious that gelotophobes have a strong disposition to negative feelings and a low disposition to happiness/joy. Thus, it is expected that gelotophobia will lead to less positive and more negative emotions toward an advertisement. The following hypotheses are advanced:

H1: Gelotophobia is negatively associated with (a) joy and (b) joyful smile and positively with negative emotions, such as (c) sadness, (d) anger, (e) fear, and (f) disgust, during exposure to an advertisement.
H2: Gelotophobia is negatively associated with positive emotional valence, during exposure to an advertisement.

3.2. Moderating effects of disparaging humour and identification with the victim

Gelotophobes report to have been bullied during their childhood (Proyer et al., 2012), adolescence (Führ, 2010), or adulthood (Platt, Proyer & Ruch, 2009) and feel easily victimized by humour. Gelotophobes, show difficulties in discriminating between ridicule and good-natured teasing humour and express low levels of happiness and high levels of fear toward either form of humour (Platt, 2008). However, they are more aversive toward aggressive rather than non-aggressive humorous stimuli (Samson & Meyer, 2010). It is therefore anticipated that whilst viewing a humorous ad, gelotophobia will diminish joy (and joyful smile) and increase negative emotions (i.e. sadness, anger, fear, and disgust), especially when the advertisement incorporates disparagement humour.

Identification with the advertising victim is also an important determinant of the effect of gelotophobia on perceived emotions, during an individual's exposure to disparaging, humorous advertisements. People often identify with other individuals and feel vicariously embarrassed when observing their pitfalls. "When identifying with a character, a person feels empathy and affinity towards that character (affective empathy component) and adopts the character's goals and point of view within the narrative (cognitive empathy component)" (Tal-Or & Cohen, 2010: 404). People tend to identify with either victims or victimizers that share some common observable physical characteristics with them, such as race/ethnicity, gender, and age (Murphy, Frank, Chatterjee & Baezconde-Garbanati, 2013). According to vicarious superiority theory (LaFave, 1972; LaFave et al., 1996) people laugh when a joke disparages a person (i.e. a victim) who belongs to a negative identification group (e.g. different age or racial group) and esteems a person who belongs to a positive identification group (e.g. same age or racial group). In the same vein, Ford et al. (2020) have supported that humour increases perceived social identity threat, leads to negative representations of possible self, and to feelings of social exclusion when it disparages one's in-group rather than an out-group. Moreover, advertising researchers have shown that emotional identification with the victim of a comedic-violence advertisement could lead to a lower perceived humorousness, and less positive attitudes (Weinberger, Swani, Yoon & Gulas, 2017).

It is expected that both high (i.e. marked or extreme) and low (i.e. non-) – gelotophobes will experience similar emotions if they do not identify with the victim. On the contrary, high-gelotophobes will experience less joy (demonstrate a joyful smile) and stronger negative emotions than low-gelotophobes when they identify with the victim. Proyer et al. (2013) sustain that gelotophobes laugh less when they are personally subjected to an embarrassing situation, but not when another person is embarrassed. Some gelotophobes even enjoy laughing at others, regardless of how hurtful this is for the victims (Proyer et al., 2010). In other words, they fear experiencing personal victimization and humiliation (even vicariously) but resemble non-

gelotophobes in enjoying humour that disparages the third party. Hence, the following hypotheses are advanced:

H3: Gelotophobia is negatively associated with (a) joy and (b) joyful smile and positively with (c) sadness, (d) anger, (e) fear, and (f) disgust; these effects are greater (lower) in a disparaging (non-humorous non-disparaging) advertisement and high (low) identification with the victim.

H4: Gelotophobia is negatively associated with positive emotional valence; these effects are greater (lower) in a disparaging (non-humorous non-disparaging) advertisement and high (low) identification with the victim.

3.3. The mediating role of emotions on attitude toward the ad

Prior studies (Holbrook & Batra, 1987) have established the importance of emotions as mediators between advertising content and consumers' attitudes toward the advertisement. In the same vein, recent studies (Warren & McGraw, 2016; Warren, Carter & McGraw, 2019) indicate that negative and positive emotional reactions mediate the relationship between aggressive humour and consumers' attitudes. Emotions also mediate the effects of personality traits, such as neuroticism, on attitude toward the ad (Orth, Malkewitz & Bee, 2010). Taking into consideration prior findings indicating that gelotophobia reduces positive and increases negative emotions (Ruch et al., 2015), while it leads to less favourable attitudes toward the ad (Voutsa et al., 2018), it is expected that positive (i.e. joy, and joyful smile) and negative (i.e. sadness, anger, fear, and disgust) emotions will mediate the adverse relationship between gelotophobia and attitude toward the ad (see the conceptual model in Figure 1).

H5: (a) Joy, (b) joyful smile, (c) sadness, (d) anger, (e) fear, and (f) disgust mediate the relationship between gelotophobia and attitude toward the ad.

H6: Valence mediates the relationship between gelotophobia and attitude toward the ad.
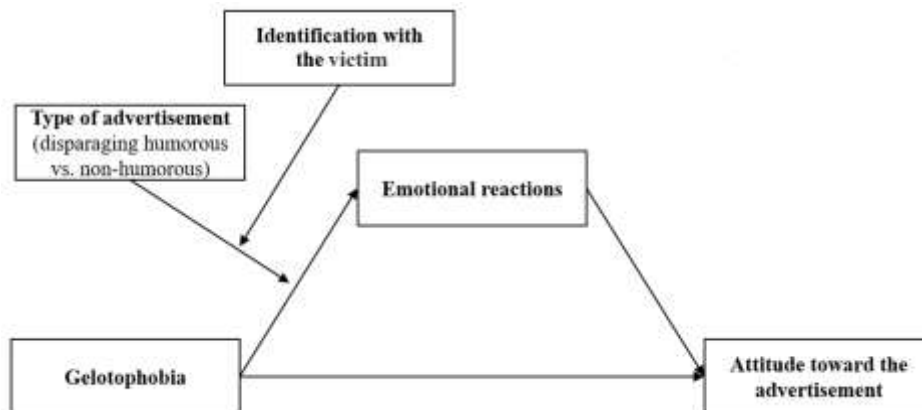

Figure 1. Conceptual model

4. Experiment 1

4.1. Method

4.1.1. Participants & experimental design

A single exposure experiment was designed in which participants watched either a disparaging humorous or a non-humorous version of an ad. A priori power analysis was conducted using G*Power 3.1 (Faul et al., 2007) to determine the required sample size and to simultaneously test the effect of two moderators (two-tailed test, high ($f^2 = .35$) to moderate ($f^2 = .15$) effect size, and alpha = .05). A total sample of 31 to 68 participants in two equal groups was established to determine high to moderate effects for a .80 power. Overall, 50 students (25 females; aged between 20-24 years, $M = 21$, $SD = 1.3$) from two large Greek universities participated in the experiment and were awarded extra credit for their participation. Purposive sampling was used. Participants in the study were selected from a population that comprised of several gelotophobes among others, to ensure their presence in the experiment in sufficient numbers. This population and its synthesis were familiar to the researchers based on their collaboration in a prior study on gelotophobia. Young students fit with the objectives of the present study as younger people are more open to disparagement humour (Swani, Weinberger & Gulas, 2013), are considered more expressive (Tu, Lin, Suzuki & Goh, 2018), and thus easier to track their emotions through automated measures.

Popular methods to measure emotional expressions include electromyograph assessments (EMG) and manual facial coding systems like Ekman and Friesen's Facial Action Coding System (FACS). This is an anatomically based system for measuring all kinds of visible human facial behavior (Ekman & Friesen, 1976) based on 44 independent, observable facial mimetic musculature movements known as Action Units (AUs) (Hwang & Matsumoto, 2016). Although FACS is highly reliable and comprehensive, it is labour-intensive and requires certified coders. Automated facial coding (AFC) systems address these limitations and are increasingly used in emotion (Chentsova-Dutton & Tsai, 2010) and consumer behaviour research (e.g. Garcia-Burgos & Zamora, 2013). Automated facial coding systems use the coding of emotional facial expressions (i.e. FACS) to measure emotions based on neural networks.

The facial recognition software Noldus's FaceReader 8, applied in this experiment, has high convergent validity with FACS ratings (Lewinski, den Uyl & Butler, 2014). FaceReader provides automatic classification of basic emotions (Ekman & Friesen, 1976), the neutral state, the joyful smile, valence, and arousal.

All participants received detailed instructions for the experiment, were informed of the recording, and were asked for written consent. Microsoft LifeCam Studio webcam (1920×1080 resolution at 25 frames per second), and professional lighting were placed across participants' faces (Noldus operational specifications) for the recording. Participants were asked to evaluate a movie trailer and a related commercial. Brand familiarity and attitude toward the brand were measured before their exposure to the stimuli. A blank, off-white screen was displayed for five seconds for calibration. A two-minute trailer of the feature film "Gorillas in the Mist," (also see Swani et al., 2013) was then displayed followed by one of the commercials under study. The film trailer provided participants time to become more comfortable with the video recording process and thus reduce the *Hawthorne Effect*. Right after the trailer, the disparaging humorous or non-disparaging non-humorous commercials were automatically played, thus avoiding *compensatory rivalry*.

All commercial dependent, manipulation and confound check variables, and demographics were measured at the end of the process.

4.1.2. Stimuli

Non-fictitious commercials may lack internal validity but adhere to external validity standards, as the high-budget production techniques guarantee authenticity and effectiveness (Lee, 2006). Ad familiarity and humour repetition though, may affect humorous ad appreciation (Weinberger & Gulas, 1992) and confound the experiment. Thus, the experiment employed actual TV commercials but unknown to the Greek audience. Two original Doritos commercials, the "Time Machine" (disparaging humorous version) and the "No Logo" (non-humorous version), were selected among 332 commercials used in 10 prior studies based on specific criteria (adopted by Yoon, 2016): (1) the disparagement was between a victimizer (low identification) and a victim (high identification), (2) the disparagement was intentional, (3) the non-humorous ad did not evoke any other emotion (e.g. fear appeals), (4) there was a non-humorous and a disparaging humorous commercial for the same product, (5) the commercials were for a product, (6) both sexes were targeted, and (7) the advertisements were not familiar but comprehensible to the audience. For optimal comprehension of the advertising stimuli, professionally translated subtitles were added. All pre-test results were successfully manipulated (Table 1).

Table 1. Manipulation Checks (Experiments 1 & 2)

Measures	AD	Experiment 1				Experiment 2			
		Pre-test		Main Experiment		Pre-test		Main Experiment	
		M (SD)	t (df) [d]	M (SD)	t (df) [d]	M (SD)	t (df) [d]	M (SD)	t (df) [d]
Perceived Humour	NH	1.48 (0.43)	-7.23 (18)*** [3.06]	2.75 (1.01)	-4.91 (48)*** [1.4]	1.82 (0.72)	-3.77 (15)*** [3.59]	2.34 (0.94)	-7.06 (48)*** [1.99]
	DH	3.68 (0.92)		4.01 (0.78)		3.90 (0.39)		4.05 (0.77)	
Perceived Disparagement	NH	1.00 (0.00)	-7.33 (18)*** [2.96]	1.50 (0.79)	-6.12 (48)*** [1.73]	1.06 (0.17)	-5.17 (48)*** [2.43]	1.58 (0.71)	-5.81 (48)*** [1.64]
	DH	3.47 (1.18)		3.12 (1.06)		3.09 (1.17)		3.06 (1.06)	
Identification with the victim	NH	1.00 (0.00)	-3.38 (18)** [1.36]	2.64 (1.12)	-1.25 (43.62) [0.36]	1.22 (0.44)	-0.99 (15) [0.47]	2.30 (0.89)	-1.79 (48) [0.51]
	DH	2.00 (1.04)		2.99 (0.81)		1.50 (0.71)		2.77 (0.94)	
Ad Familiarity	NH	1.00 (0.00)	–	1.92 (1.26)	1.95 (37.6) [0.55]	1.11 (0.33)	0.94 (15) [0.47]	1.40 (1.00)	1.33 (29.22) [0.38]
	DH	1.00 (0.00)		1.36 (0.70)		1.00 (0.00)		1.12 (0.33)	
Ad comprehension	NH	3.33 (0.65)	-3.56 (18)** [1.65]	3.48 (1.13)	-3.06 (48)** [0.86]	4.67 (0.71)	-1.31 (15) [0.66]	4.04 (1.10)	-1.54 (48) [0.43]
	DH	4.50 (0.76)		4.40 (1.00)		5.00 (0.00)		4.48 (0.92)	
Brand familiarity	NH	–	–	4.32 (0.99)	–	–	–	2.68 (1.49)	4.27 (33.5)*** [1.21]
	DH	–		4.32 (0.69)		–		1.28 (0.68)	
Product consumption	NH	–	–	2.88 (0.90)	-0.35 (48) [0.10]	–	–	4.16 (0.89)	-0.09 (48) [0.03]
	DH	–		2.96 (0.73)		–		4.18 (0.66)	

*Note: *** p < .001; ** p < .01; * p < .05; AD – Type of advertisement; NH – non-humorous version; DH – disparaging humorous; d – Cohen's d*

4.1.3. Measures

This research uses measurements that have been employed in previous studies. The "back translation and monolingual test" method was used to guarantee the accuracy of the items (Maneesriwongul & Dixon, 2004: 178).

Gelotophobia (Independent Variable)
Geloph<10> (Ruch & Proyer, 2008) is a 10-item (e.g. "When they laugh in my presence, I get suspicious") 4-point scale [(1) "strongly disagree" to (4) "strongly agree"] that measures participants' fear of being laughed at. All items were adopted from the Greek translated version in Proyer et al.'s (2009) cross-cultural study of gelotophobia. Their average score represents participants' level of gelotophobia. Reliability check exceeded Nunnally's (1978) criterion (α = .87).

Identification with the victim (Moderator)
Identification with the victim was based on a 7-item, 5-point Likert scale (e.g. "I knew exactly what the main character was going through") (Cohen, 2001). The total score represents the level of identification with the victim in the disparaging humorous commercial and with the main character in the non-disparaging, non-humorous commercial (Cronbach's α = .82).

Elicited Emotions (Mediators)
FaceReader analyzes each participant's frame and transforms their emotions (joy, anger, fear, sadness, disgust, and surprise), neutral state, joyful smile, valence, and arousal in numerical values (0 – 1 for emotions and arousal; -1 to 1 for valence). The mean scores of the numerical values represent the emotions, neutral state, joyful smile, valence, and arousal elicited from the commercial.

Attitude toward the ad (Dependent Variable)
Attitude toward the ad was measured by Baker and Kennedy (1994; α = .96) 6-items (e.g. "The ad is not interesting (reverse coded)" and "I like the ad") 5-point Likert scale [(1) strongly disagree, (5) strongly agree].

Manipulation Variables
Manipulation variables of the advertising stimuli for perceived humorousness (5-items, Zhang, 1996; e.g. "The ad is humorous;" Cronbach's α = .89) and perceived disparagement (4-items, Voutsa et al. 2018; e.g. "The character seems ridiculous;" Cronbach's α = .92), were measured in a 5-point Likert scale [(1) strongly disagree to (5) strongly agree].

Covariates
According to prior research, ad familiarity, ad comprehension, product knowledge, brand familiarity, gender, age, perceived realism (Karpinska-Krakowiak, 2020), perceived severity (Brown, Bhadury & Pope, 2010), intentionality of disparagement, masculinity (6-items; Zhang, Norvilitis & Jin, 2001; Cronbach's α = .81), and femininity (7-items; Zhang et al., 2001; Cronbach's α = .9) are variables that can affect the appreciation of disparaging humorous advertisement. All covariates were recorded in 5-point Likert scales (1= "strongly disagree" to 5= "strongly agree"). Cronbach's α exceeded Nunnally's criterion (Nunnally, 1978) in all cases. Control variables for movie evaluation (e.g. the movie was enjoyable; Swani et al., 2013) and the emotions elicited during the trailer "Gorillas in the Mist" (FaceReader analysis) were also measured. Only gender, age, brand consumption, boring trailer, and intentionality of

disparagement had a significant bivariate correlation with the dependent variable (attitude toward the ad) or any mediator and were used in subsequent analyses (Becker, 2005).

4.2. Results

4.2.1. Manipulation checks

Manipulation checks revealed that the disparaging humorous advertisement scored higher than non-humorous for perceived humorousness (t (48) = -4.91, $p < .001$; $d = 1.4$) and perceived disparagement (t (48) = -6.12, $p < .001$; $d = 1.73$; Table 1). The control video and the non-humorous ad did not elicit any emotional reactions.

4.2.2. Preliminary analysis

Descriptive statistics are presented in Table 2. Gelotophobes comprised 28 % of the sample (12 % slight, 14 % marked, and 2 % extreme gelotophobes). The mean score of gelotophobia was 2. Like prior studies (e.g. Kostyra et al., 2016; Vergura & Luceri, 2018), the mean score of some emotions (e.g. sadness, fear, and joyful smile) measured by FaceReader had low variance. This low variation in emotional reactions could affect subsequent correlation and moderated moderated mediation analyses. However, both SPSS and PROCESS macro have an inherent mechanism that reports any analysis inability due to low variance of scores (Lewinski et al., 2014; Hayes, 2018). No such inability has been reported in the analysis. All measures apart from emotions, arousal and valence were normally distributed as expected (Lewinski et al., 2014). Thus, Spearman's rank-order coefficients were used for correlation analyses (Table 3). Joy and valence ($r_s = .72$, $p < .001$), perceived humorousness and attitude toward the ad ($r_s = .75$, $p < .001$) were strongly positively correlated. All other correlation coefficients ranged between -.42 and .55. Gelotophobia was significantly, negatively correlated with joy ($r_s = -.36$, $p = .01$), joyful smile ($r_s = -.35$, $p = .012$), valence ($r_s = -.42$, $p = .003$), arousal ($r_s = -.42$, $p = .002$) and surprise ($r_s = -.37$, $p = .008$).

Table 2. Descriptive statistics and bivariate Spearman's correlations (Experiments 1 & 2).

Variable Name	Experiment 1						Experiment 2					
	M	SD	S	K	Min	Max	M	SD	S	K	Min	Max
1. Gelotophobia	2.09	0.74	0.39	-0.93	1.00	3.60	2.02	0.58	-0.18	-0.63	1.00	3.00
2. Identification	2.81	0.98	-0.12	-0.97	1.00	4.33	2.54	0.94	0.03	-1.10	1.00	4.40
3. Joy	0.05	0.09	1.97	2.81	0.00	0.32	0.05	0.11	2.31	4.42	0.00	0.41
4. Joy smile	0.01	0.01	4.79	21.90	0.00	0.02	0.00	0.01	4.01	16.58	0.00	0.05
5. Sadness	0.02	0.05	3.33	11.30	0.00	0.22	0.02	0.03	3.30	12.25	0.00	0.18
6. Anger	0.02	0.03	2.95	12.00	0.00	0.18	0.04	0.07	3.52	14.52	0.00	0.37
7. Fear	0.01	0.01	3.48	13.10	0.00	0.04	0.01	0.01	2.94	9.56	0.00	0.05
8. Disgust	0.01	0.01	2.80	8.40	0.00	0.07	0.01	0.03	5.30	32.28	0.00	0.17
9. Valence	0.03	0.11	0.28	0.88	-0.22	0.29	0.05	0.14	0.35	1.20	-0.37	0.41
10. Arousal	0.27	0.04	0.87	1.40	0.18	0.37	0.28	0.05	0.74	0.52	0.17	0.39
11. Neutral	0.75	0.16	-0.33	-1.02	0.43	0.99	0.70	0.18	0.05	-1.35	0.35	0.99
12. Surprise	0.02	0.04	5.22	29.50	0.00	0.26	0.01	0.01	2.84	7.31	0.00	0.05
13. Ad Attitude	3.24	1.01	-0.55	-0.43	1.00	5.00	3.02	1.03	0.20	-0.71	1.00	5.00
14. Humorous	3.38	1.10	-0.64	-0.31	1.00	5.00	3.20	1.21	-0.26	-1.08	1.00	5.00
15. Disparaging	2.31	1.24	0.35	-1.35	1.00	4.75	2.32	1.16	0.47	-0.76	1.00	5.00

*Note: *** $p < .001$; ** $p < .01$; * $p < .05$; M – Mean; SD – Standard Deviation; S – Skewness; K – Kurtosis; Min – Minimum; Max – Maximum*

4.2.3. *Main effects of gelotophobia on emotional reactions*

A series of hierarchical regression analyses were conducted to test the research hypotheses. Possible covariates were controlled in Step 1. The three main effects of the level of gelotophobia, the level of identification with the victim, and the type of advertisement were incorporated in Step 2, their 2-way interactions in Step 3, and their 3-way interaction in Step 4.

Step 2 of the hierarchical regression analyses (Table 4) indicated that gelotophobia was negatively related to joy (β = -.442, p = .001; H1a was supported), joyful smile (β = -.322, p = .044; H1b was supported) and valence (β = -.458, p = .001; H2 was supported), but positively related to anger (β = .35, p = .031; H1d was supported).

Table 3. Descriptive statistics and bivariate Spearman's correlations (Experiments 1 & 2).

Variable Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Gelotophobia		-0.07	-0.31*	-0.38**	0.09	0.32*	0.14	0.16	-0.38**	0.05	-0.24	-0.02	-0.1	0.13	0.16
2. Identification	0.04		0.28*	0.26	-0.18	-0.23	0.19	-0.20	0.08	0.17	-0.19	0.16	0.49**	0.51**	0.14
3. Joy	-0.36**	0.11		0.50***	-0.10	-0.32*	0.01	0.12	0.57***	0.42**	-0.24	0.34*	0.28	0.46**	0.38**
4. Joy smile	-0.35*	0.18	0.36**		0.06	-0.16	-0.06	0.07	0.39**	0.33*	-0.21	0.02	0.33*	0.42**	0.18
5. Sadness	-0.09	-0.17	-0.11	-0.13		0.14	0.02	0.05	0.12	-0.15	0.03	-0.05	-0.12	-0.02	0.11
6. Anger	0.13	-0.15	-0.24	0.22	0.09		0.14	0.20	-0.24	-0.07	-0.22	-0.21	-0.24	-0.32*	-0.27
7. Fear	0.04	-0.31*	0.09	-0.16	0.24	-0.06		0.28	-0.04	0.16	-0.14	0.59***	-0.01	-0.01	-0.07
8. Disgust	0.41**	-0.02	0.01	-0.29*	-0.05	-0.08	-0.17		-0.10	0.38**	-0.44**	0.22	-0.34*	0.02	0.07
9. Valence	-0.42**	0.24	0.72***	0.34*	-0.08	-0.19	-0.09	0.03		0.36*	-0.01	0.25	0.21	0.26	0.26
10. Arousal	-0.42**	0.08	0.50***	0.37**	0.14	-0.18	0.08	-0.20	0.50***		-0.55***	0.46**	0.11	0.33*	0.18
11. Neutral	-0.06	-0.33*	-0.07	-0.31*	-0.13	0.07	-0.27	-0.20	-0.25	-0.27		-0.22	0.02	-0.3*	-0.27
12. Surprise	-0.37	0.21	0.49	0.23	0.08	-0.08	0.42	-0.15	0.46	0.24	-0.13		-0.01	0.18	0.15
13. Ad Attitude	-0.09	0.55***	0.42***	0.24	-0.29*	-0.10	-0.25	0.05	0.48***	0.22	-0.24	0.21		0.58***	0.23
14. Humorous	-0.09	0.41**	0.41**	0.25	-0.10	-0.27	-0.10	0.09	0.47***	0.26	-0.15	0.23	0.75***		0.49***
15. Disparaging	0.06	0.05	0.30*	0.14	0.21	-0.17	0.26	0.18	0.31*	0.28*	-0.30*	0.15	-0.01	0.22	

*Note: *** p < .001; ** p < .01; * p < .05; Lower diagonal shows correlations of Experiment 1; Upper diagonal shows correlations of Experiment 2.*

Table 4. Standardized hierarchical regression coefficients of Experiment 1

	Joy *(Hypotheses H1a & H3a)*				**Joyful smile** *(Hypotheses H1b & H3b)*				**Sadness** *(Hypotheses H1c & H3c)*				**Anger** *(Hypotheses H1d & H3d)*			
	Step1	**Step2**	**Step3**	**Step4**	**Step1**	**Step2**	**Step3**	**Step4**	**Step1**	**Step2**	**Step3**	**Step4**	**Step1**	**Step2**	**Step3**	**Step4**
Gender	0.14	0.00	-0.09	0.06	-0.26	-0.36*	-0.43*	-0.26	0.05	0.09	0.15	0.12	-0.05	0.03	-0.09	-0.04
Age	-0.09	-0.20	-0.09	0.01	-0.06	-0.17	-0.10	0.01	0.44**	0.44*	0.51**	0.49**	-0.07	-0.06	-0.09	-0.05
Brand consum	-0.02	0.00	0.00	0.00	0.02	0.02	0.03	0.03	-0.14	-0.15	-0.08	-0.08	-0.13	-0.16	-0.18	-0.18
Boring trailer	0.01	-0.01	-0.19	-0.12	-0.09	-0.08	-0.25	-0.17	-0.35*	-0.33	-0.38*	-0.40*	0.00	-0.01	-0.21	-0.19
Intentionality	0.56***	0.18	-0.38	-0.28	0.30	0.25	-0.14	-0.02	-0.08	0.22	0.37	0.35	-0.30	0.35	0.01	0.05
PHO	–	-0.44***	-0.55***	-0.52***	–	-0.32*	-0.44**	-0.41**	–	0.15	0.05	0.05	–	0.35*	0.22	0.23
AD	–	0.20	0.59**	0.49**	–	-0.11	0.13	0.03	–	-0.26	-0.47	-0.45	–	-0.64*	-0.42	-0.46
ID	–	0.25*	0.27*	0.08	–	0.12	0.08	-0.13	–	-0.12	-0.27	-0.23	–	-0.14	-0.20	-0.27
PHO × AD	–	–	-0.51***	-0.53***	–	–	-0.42*	-0.44**	–	–	-0.02	-0.02	–	–	-0.43*	-0.44**
AD × ID	–	–	0.17	0.027	–	–	-0.02	-0.18	–	–	-0.42*	-0.39*	–	–	-0.11	-0.16
PHO × ID	–	–	-0.11	-0.54***	–	–	-0.15	-0.63**	–	–	-0.37*	-0.29	–	–	0.05	-0.12
PHO×AD×ID	–	–	–	-0.51***	–	–	–	-0.57**	–	–	–	0.10	–	–	–	-0.20
F-value	4.86***	5.67***	9.25***	14.88***	1.85	1.94	2.42*	3.63***	2.18	1.54	2.45*	2.22*	0.86	1.74	2.12*	2.01*
$R^2 / \Delta R^2$	.36/.36***	.53/.17**	.73/.2***	.83/.1***	.17/.17	.27/.10	.41/.14*	.54/.13**	.20/.20	.23/.20	.42/.18*	.42/0	.09/.09	.25/.17*	.38/.13	.40/.02
Power $(1 - \beta)$	0.98	1.00	1.00	1.00	0.63	0.81	0.97	1.00	0.73	0.71	0.97	0.97	0.32	0.76	0.94	0.95

	Fear *(Hypotheses H1e & H3e)*				**Disgust** *(Hypotheses H1f & H3f)*				**Valence** *(Hypotheses H2 & H4)*			
Gender	-0.24	-0.17	-0.22	-0.34	0.11	0.12	0.10	0.15	0.19	0.06	0.02	0.15
Age	-0.17	-0.13	-0.08	-0.16	-0.09	0.03	0.10	0.13	-0.21	-0.30*	-0.22	-0.14
Brand consum	-0.25	-0.28	-0.29	-0.28	0.06	0.10	0.09	0.09	0.06	0.08	0.08	0.07
Boring trailer	-0.09	0.04	-0.04	-0.10	0.04	-0.10	-0.09	-0.07	0.13	0.12	0.07	0.13
Intentionality	-0.21	-0.17	-0.48	-0.57	0.23	-0.42	-0.65	-0.62	0.49***	-0.04	-0.36	-0.27
PHO	–	0.07	0.03	0.01	–	0.05	0.07	0.08	–	-0.46***	-0.47***	-0.45***
AD	–	0.15	0.38	0.46	–	0.69**	0.88**	0.85**	–	0.39	0.63**	0.55*
ID	–	-0.32	-0.29	-0.13	–	0.28	0.36*	0.30	–	0.24	0.30*	0.14
PHO × AD	–	–	-0.26	-0.25	–	–	-0.11	-0.12	–	–	-0.23	-0.24
AD × ID	–	–	0.16	0.27	–	–	0.27	0.23	–	–	0.23	0.12
PHO × ID	–	–	-0.01	0.34	–	–	0.01	-0.12	–	–	-0.02	-0.37*
PHO×AD×ID	–	–	–	0.42	–	–	–	-0.15	–	–	–	-0.43*
F-value	1.17	1.36	1.27	1.58	0.66	1.82	1.59	1.48	3.70***	4.72***	4.16***	4.97***
$R^2 / \Delta R^2$	.12/.12	.21/.09	.27/.06	.34/.07	.07/.07	.26/.19*	.32/.05	.33/.01	.30/.30***	.48/.18**	.55/.07*	.62/.07*
Power $(1 - \beta)$	0.44	0.64	0.73	0.86	0.25	0.79	0.85	0.84	0.94	1.00	1.00	1.00

Note: ***$p < .001$; **$p < .01$; *$p < .05$; Ad – Disparaging humorous versus non-disparaging non-humorous ad; Id – Identification with the victim; Pho – laughter related personality trait of gelotophobia;
 Intentionality – intentionality of disparagement; Brand consum – brand consumption; Age in years; Gender: 0=male, 1=female.

Gelotophobia was not significantly associated with sadness (β = .153, n.s.; H1c was rejected), fear (β = .446, n.s.; H1e was rejected) and disgust (β = .045, n.s.; H1f was rejected).

4.2.4. *Moderating effects of type of advertisement and identification with the victim*

In Step 3, significant two-way interaction effects on emotional reactions were detected between gelotophobia and type of advertisement and between gelotophobia and identification with the victim. Gelotophobia, led to decreased joy (β = -.514, p < .001), decreased joyful smile (β = -.421, p = .011) and increased anger (β = .408, p = .02), in disparaging humorous ads. In high identification with the ads victim, gelotophobia led to decreased sadness (β = -.416, p = .011).

The three-way interaction effect (Step 4) of gelotophobia, type of advertisement and identification with the victim on the emotional reactions was statistically significant only for joy (β = -.505, p < .001), joyful smile (β = -.573, p = .003), and valence (β = -.425, p = .013). Hence, sadness (β = .098, *n.s.*), anger (β = -.195, *n.s.*), fear (β = .419, *n.s.*), and disgust (β = -.153, *n.s.*) were excluded from further analysis (hypotheses H3c, H3d, H3e, H3f were rejected). Post hoc power analyses through Linear multiple regression (F tests) – (Fixed model, R^2 deviation from zero; Type I error or a = .05; Faul et al., 2007) also supported the proposed model. The interaction of gelotophobia with type of advertisement and identification with the victim predicted joy (f^2 = 4.882; $1 - \beta$ = 1), joyful smile (f^2 = 1.174; $1 - \beta$ = .999), and valence (f^2 = 1.632; $1 - \beta$ = 1).

Simple slope analyses suggested that in low identification with the victim, there was no statistically significant interaction effect of gelotophobia and type of advertisement on joy (β = .004, *n.s.*; Figure 2a), joyful smile (β = .001, *n.s.*; Figure 2c) and valence (β = .026, *n.s.*; Figure 2e). For high levels of identification with the victim, the same interaction effect on joy (β = -.101, p < .001; Figure 2b), joyful smile (β = -.005, p < .001; Figure 2d), and valence (β = -.079, p = .003; Figure 2f) was statistically significant. More specifically, in disparaging humorous ads gelotophobia was negatively associated with joy (β = -.199, p < .001), joyful smile (β = -.005, p < .001) and valence (β = -.17, p < .001). In the non-disparaging non-humorous ads, there were no significant differences in the emotional reactions of high- and low-gelotophobes ($p_s \geq$ .339). Thus, hypotheses H3a, H3b and H4 were supported.

4.2.5. *Emotional reactions mediate the effect of gelotophobia on attitude toward the advertisement*

Model 4 of PROCESS macro (Hayes, 2018) was used for the analysis. We used 10,000 bootstrap sampling to implement bias-corrected 95 % confidence intervals. In this model, the indirect effect through the mediator, the estimated total effect, and the direct effect of the independent on the dependent variable can be calculated with ordinary least square analysis (Preacher and Hayes, 2004). Based on Hayes (2018), mediation can be assumed when the 95 % confidence interval of the indirect effect does not include zero. If the direct effect is not statistically significant and is closer than the total effect to zero, then it is called complete mediation. However, if the direct effect is statistically significant and is closer than the total effect to zero, then it is called partial mediation. The inclusion of zero (0) means there is no significant mediation, due to the small sample size.

A simple mediation analysis with gelotophobia as independent variable, attitude toward the ad as dependent variable, joy, joyful smile, and valence as mediators, and gender, age, brand consumption, boring trailer, intentionality as covariates (Table 5) showed that the relationship

between gelotophobia and attitude toward the ad was fully mediated by joy ($\beta = -.243$, $SE = .14$, 95 % $CI = [-.57, -.039]$) (H5a is supported). Gelotophobia decreased perceived joy and subsequently attitude toward the ad. Joyful smile ($\beta = .03$, $SE = .05$, 95 % $CI = [-.03, .163]$) and valence ($\beta = .033$, $SE = .09$, 95 % $CI = [-.151, .234]$) did not mediate this relationship (H5b-f and H6 were rejected).
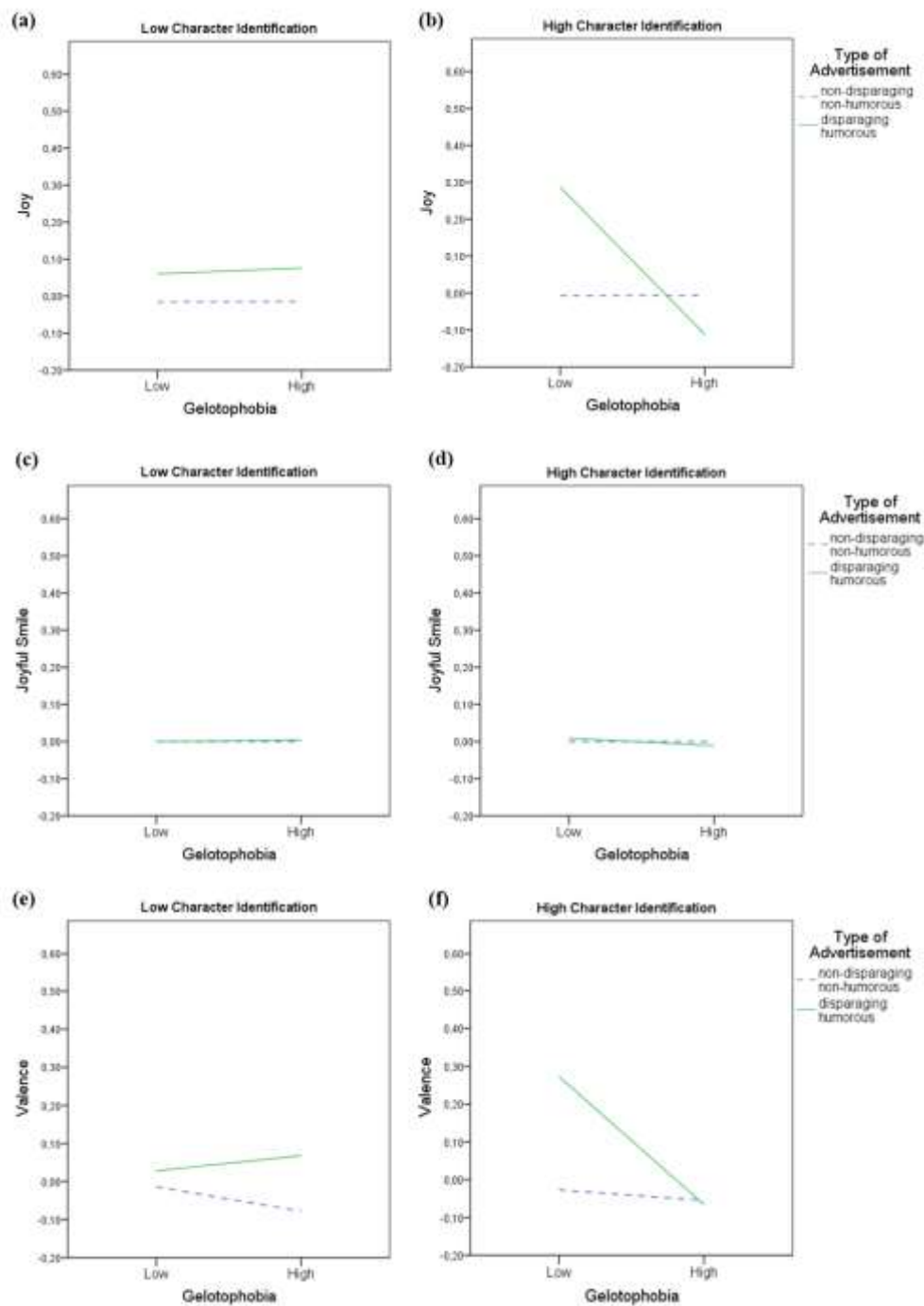

Figure 2. The moderating effect of identification with the victim and gelotophobia on the relationship between disparagement humour and (a-b) joy, (c-d) joyful smile, and (e-f) valence (Experiment 1).

Table 5. Parallel mediation analysis (controlled for gender, age, brand consumption, boring trailer, intentionality for Experiment 1 and gender, age, perceived realism for Experiment 2) predicting the effect of gelotophobia (independent variable: IV) on attitude toward the ad (dependent variable: DV)

Mediating Variable (M)	Effect of IV on M (a)	Effect of M on DV (b)	Direct Effect (c')	Total Effect (c)	Indirect Effect a×b	95 % CI
Study 1						
Joy	-0.38**	0.63**	0.16	-0.02	-0.24[a]	[-0.57, -0.04]
Joyful smile	-0.32*	-0.09			0.03	[-0.03, 0.16]
Valence	-0.37**	-0.09			0.03	[-0.15, 0.23]
Study 2						
Joy	-0.36***	0.59*	0.11	-0.11	-0.22[a]	[-0.42, -0.02]
Joyful smile	-0.36*	0.00			0.00	[-0.11, 0.08]
Valence	-0.26*	0.00			0.00	[-0.17, 0.11]

*Note: *** $p < .001$; ** $p < .01$; * $p < .05$; [a] Significant point estimates ($p < .05$) using 95 % Bootstrapping Confidence Interval (95 % CI; 10,000 bootstrap samples); Parameter estimates are standardized regression coefficients.*

Table 6. Indices of moderated moderated mediation analysis (controlled for gender, age, brand consumption, boring trailer, intentionality for Experiment 1 and gender, age, perceived realism for Experiment 2)

Moderator	Moderators' level	Joy a×b	95 % CI	Joyful smile a×b	95 % CI	Valence a×b	95 % CI
Experiment 1							
Index (total)	–	-0.37[a]	[-.78; -.06]	0.06	[-0.06; 0.31]	0.04	[-0.22; 0.33]
Type of ad	NH	0.00	[-.11; .13]	0.00	[-0.03; 0.04]	-0.01	[-0.12; 0.08]
	DH	-0.72[a]	[-1.55; -.11]	0.12	[-0.12; 0.62]	0.08	[-0.40; 0.61]
Identification	Low	0.03	[-.25; .42]	-0.02	[-0.18; 0.03]	-0.02	[-0.27; 0.15]
	High	-0.71[a]	[-1.39; -.17]	0.10	[-0.11; 0.46]	0.07	[-0.33; 0.47]
Both	Low & NH	0.00	[-.18; .18]	0.00	[-0.05; 0.04]	0.03	[-0.15; 0.26]
	High & NH	0.00	[-.16; .19]	0.00	[-0.05; 0.06]	0.01	[-0.13; 0.20]
	Low & DH	0.05	[-.50; .83]	-0.04	[-0.38; 0.07]	-0.02	[-0.39; 0.24]
	High & DH	-1.40[a]	[-2.69; -.33]	0.20	[-0.21; 0.91]	0.14	[-0.69; 0.97]
Experiment 2							
Index (total)	–	-0.19[a]	[-0.40; -0.02]	-0.10	[-0.30; 0.00]	-0.12	[-0.36; 0.02]
Type of ad	NH	0.01	[-0.06; 0.10]	0.02	[-0.02; 0.07]	0.07	[-0.06; 0.34]
	DH	-0.36[a]	[-0.75; -0.05]	-0.17	[-0.59; 0.01]	-0.17	[-0.52; 0.03]
Identification	Low	0.06	[-0.21; 0.41]	0.05	[-0.07; 0.31]	0.07	[-0.15; 0.36]
	High	-0.31[a]	[-0.49; -0.11]	-0.15[a]	[-0.36; -0.02]	-0.18	[-0.51; 0.02]
Both	Low & NH	0.01	[-0.09; 0.10]	-0.02	[-0.08; 0.04]	-0.03	[-0.25; 0.13]
	High & NH	0.03	[-0.07; 0.16]	0.03	[-0.04; 0.10]	0.11	[-0.21; 0.65]
	Low & DH	0.13	[-0.36; 0.82]	0.08	[-0.14; 0.60]	0.10	[-0.26; 0.56]
	High & DH	-0.58[a]	[-0.89; -0.22]	-0.26[a]	[-0.67; -0.03]	-0.25	[-0.63; 0.02]

Note: [a] Significant point estimates using 95 % Bootstrapping Confidence Interval (CI); a×b – indirect effect of gelotophobia on attitude toward the ad via the emotional reactions; NH – non-humorous; DH – disparaging humorous.

To replicate these analyses examining the full model depicted in Figure 1, a moderated moderated mediation analysis (model 11 of PROCESS macro) was conducted (Table 6). The total index at 95 % bootstrap confidence interval of the moderated moderated mediation analysis was statistically significant for joy ($b = -.366$, $SE = .18$, 95 % $CI = [-.777, -.059]$). The negative indirect effect of gelotophobia on attitude toward the ad via the emotion of joy was statistically significant only for the disparaging humorous ad ($b = -.724$, $SE = .37$, 95 % $CI = [-1.554, -$

.115]), for high identification with the victim ($b = -.706$, $SE = .31$, 95 % $CI = [-1.387, -.165]$), and in the simultaneous presence of a disparaging humorous ad and high identification with the victim ($b = -1.395$, $SE = .61$, 95 % $CI = [-2.692, -.325]$).

4.3. Discussion

Experiment 1 illustrated a positive relationship between consumers' level of gelotophobia and their joy, joyful smile, and positive valence elicited by an advertisement. This relationship was moderated by the type of advertisement (disparaging humorous VS. non-humorous) and the level of identification with the victim. Consumers with a high level of gelotophobia seemed to experience less positive emotional reactions (i.e. joy, joyful smile, and positive valence) than low-gelotophobes, only when they had high level of identification with the victim of a disparaging humorous commercial. In addition, our results revealed joy to be an underlying mechanism in the relationship between consumers' level of gelotophobia and attitude toward a disparaging humorous ad. A positive association between gelotophobia and anger was also detected, albeit a weak non-stable one (post-hoc analysis).

The findings in Experiment 1 referred to a specific product category. To enhance ecological and external validity, the experiment was replicated for a different product category.

5. Experiment 2

5.1. Method

Identical to Experiment 1, a single exposure experiment was designed for an alternative product (laundry detergent). Fifty Greek students (23 females; aged between 19-35 years, $M = 21.66$, $SD = 3.66$) watched a disparaging humorous ("Birds and Windex" – Windex) or a non-humorous ("Persil Pro Clean" – Persil) actual and unfamiliar to the Greek audience TV commercials selected from the same pool with the same criteria as in Experiment 1. Participants' level of gelotophobia ($\alpha = .83$), identification with the victim ($\alpha = .83$), elicited emotions, attitude toward the ad ($\alpha = .94$), perceived humorousness ($\alpha = .89$), perceived disparagement ($\alpha = .92$), ad familiarity, ad comprehension, product knowledge, brand familiarity, gender, age, perceived realism, perceived severity, intentionality of disparagement, masculinity ($\alpha = .85$) and femininity ($\alpha = .86$) were also measured. Out of all covariates, only gender, age, and perceived realism seem to be correlated either with the elicited emotions or attitude toward the ad and were used in subsequent analyses.

5.2. Results

5.2.1. Manipulation checks

According to independent sample t-test analysis participants rated perceived humorousness (t (48) = -7.06, $p < .001$; $d = 1.99$) and perceived disparagement (t (48) = -5.81, $p < .001$; $d = 1.64$) higher in the disparaging humorous than the non-humorous commercial (Table 1). As in Experiment 1, the non-humorous commercial and control video did not elicit any emotional reactions.

5.2.2. Preliminary analysis

The average gelotophobia score was 2.02 (SD = .58) with 22 % of participants exceeding the cut-off score of 2.5 (16 % slight and 6 % noticeable gelotophobes). Descriptive statistics of gelotophobia, identification with the victim, emotional reactions, attitude toward the ad, perceived humorousness, and perceived disparagement, as well as their correlations are presented in Tables 2 and 3. Like Experiment 1, gelotophobia was negatively correlated with joy (r_s = -.31, p = .029), joyful smile (r_s = -.38, p = .007), valence (r_s = -.38, p = .007). Non statistically significant correlations between gelotophobia and disgust (r_s = .16, *n.s.*), arousal (r_s = .05, *n.s.*), and surprise (r_s = -.02, *n.s.*) were also recorded. All other correlation coefficients ranged between -.55 and .59.

5.2.3. Main effects of gelotophobia on emotional reactions

Hierarchical regression analyses are summarised in Table 7. Step 2 indicated that gelotophobia was negatively related to joy (β = -.461, p < .001; H1a was supported), joyful smile (β = -.425, p = .006; H1b was supported) and valence (β = -.341, p = .014; H2 was supported). Gelotophobia was not significantly associated with sadness (β = -.115, *n.s.*; H1c was rejected), anger (β = .04, p = .031; H1d was rejected), fear (β = .231, *n.s.*; H1e was rejected) and disgust (β = .054, *n.s.*; H1f was rejected).

5.2.4. Moderating effects of type of advertisement and identification with the victim

In Step 3, significant two-way interaction effects on emotional reactions were detected between gelotophobia and type of advertisement but not between gelotophobia and identification with the victim. Gelotophobia, led to decreased joy (β = -.287, p = .018) and fear (β = -.574, p = .005) in disparaging humorous ad. Similarly to Experiment 1, the three-way interaction effect of gelotophobia, type of advertisement and identification with the victim on the emotional reactions (Step 4) was statistically significant only for joy (β = -.31, p = .006), joyful smile (β = -.328, p = .046), and valence (β = -.361, p = .018), but not for sadness (β = .105, *n.s.*; H3c was rejected), anger (β = .071, *n.s.*; H3d was rejected), fear (β = -.023, *n.s.*; H3e was rejected), and disgust (β = .075, *n.s.*; H3f was rejected). Post hoc power analyses also supported our main findings. The interaction of gelotophobia with type of advertisement and identification with the victim predicted joy (f^2 = 3; $1 - \beta$ = 1), joyful smile (f^2 = 1.174; $1 - \beta$ = 1), and valence (f^2 = 1.564; $1 - \beta$ = 1).

Moreover, as in Experiment 1, simple slope analyses suggested that for low identification with the victim, there was no statistically significant interaction effect of gelotophobia and type of advertisement on joy (β = .011, *n.s.*; Figure 3a), joyful smile (β = .002, *n.s.*; Figure 3c), and valence (β = .028, *n.s.*; Figure 3e). For high levels of identification with the victim, the same interaction effect on joy (β = -.054, p < .001; Figure 3b), joyful smile (β = -.004, p = .019; Figure 3d), and valence (β = -.075, p < .001; Figure 3f) was statistically significant. In disparaging humorous ads gelotophobia was negatively associated with joy (β = -.101, p < .001), joyful smile (β = -.008, p < .001), and valence (β = -.102, p < .001). In the non-disparaging non-humorous ads, there were no significant differences in the emotional reactions between high- and low-gelotophobes (ps ≥ .45). Thus, hypotheses H3a, H3b and H4 were supported.

Table 7. Standardized hierarchical regression coefficients of Experiment 2

	Joy (Hypotheses H1a & H3a)				Joyful smile (Hypotheses H1b & H3b)				Sadness (Hypotheses H1c & H3c)				Anger (Hypotheses H1d & H3d)			
	Step1	Step2	Step3	Step4	Step1	Step2	Step3	Step4	Step1	Step2	Step3	Step4	Step1	Step2	Step3	Step4
Gender	0.23	0.13	-0.04	0.04	0.28	0.19	0.05	0.13	0.11	0.11	0.18	0.15	0.24	0.24	0.32	0.30
Age	0.34*	0.23*	0.08	0.05	0.22	0.11	-0.03	-0.05	-0.09	-0.13	-0.05	-0.04	-0.05	-0.04	0.05	0.06
Realism	-0.38**	0.12	-0.13	-0.06	-0.26	0.11	-0.10	-0.03	-0.12	-0.05	-0.01	-0.03	0.29*	0.25	0.33	0.32
PHO	–	-0.46***	-0.35**	-0.17	–	-0.43**	-0.33*	-0.14	–	-0.12	-0.17	-0.23	–	0.04	-0.02	-0.06
AD	–	0.50**	0.25	0.26*	–	0.33	0.12	0.13	–	0.07	0.20	0.20	–	-0.04	0.00	-0.01
ID	–	0.21	0.16	0.18*	–	0.17	0.13	0.15	–	-0.22	-0.26	-0.27	–	0.03	0.10	0.10
PHO × AD	–	–	-0.29*	-0.20	–	–	-0.25	-0.16	–	–	-0.10	-0.12	–	–	0.25	0.23
AD × ID	–	–	0.07	0.17	–	–	0.07	0.17	–	–	-0.09	-0.12	–	–	-0.16	-0.19
PHO × ID	–	–	-0.29*	-0.30**	–	–	-0.25	-0.26	–	–	0.29	0.29	–	–	-0.03	-0.03
PHO×AD×ID	–	–	–	-0.31**	–	–	–	-0.33*	–	–	–	0.11	–	–	–	0.07
F-value	4.91**	9.40***	13.33***	15.14**	2.45	3.87**	4.22**	4.53***	0.61	0.66	0.68	0.62	3.01*	1.43	1.33	1.18*
$R^2 / \Delta R^2$	.24/.24**	.57/.33**	.75/.18**	.75/.8**	.14/.14	.35/.21**	.49/.14*	.54/.05*	.04/.04	.08/.05	.13/.05	.14/.01	.16/.16*	.17/0	.23/.06	.23/0
Power $(1-\beta)$	.91	1.00	1.00	1.00	0.62	0.97	1.00	1.00	0.19	0.26	0.35	0.35	0.70	0.58	0.67	0.64

	Fear (Hypotheses H1e & H3e)				Disgust (Hypotheses H1f & H3f)				Valence (Hypotheses H2 & H4)			
Gender	-0.04	-0.02	-0.05	-0.05	-0.13	-0.11	-0.15	-0.17	0.26*	0.20	0.08	0.17
Age	-0.20	-0.15	-0.14	-0.15	-0.06	-0.03	-0.06	-0.05	0.36**	0.28*	0.17	0.15
Realism	-0.03	-0.30	-0.48*	-0.47*	-0.01	0.09	0.03	0.02	-0.45**	-0.09	-0.27	-0.19
PHO	–	0.23	0.24	0.26	–	0.05	0.07	0.03	–	-0.34*	-0.27*	-0.05
AD	–	-0.32	-0.29	-0.29	–	0.20	0.11	0.11	–	0.37*	0.22	0.23
ID	–	0.28	0.11	0.11	–	-0.18	-0.16	-0.16	–	0.05	-0.01	0.02
PHO × AD	–	–	-0.57**	-0.57**	–	–	0.02	0.00	–	–	-0.26	-0.16
AD × ID	–	–	-0.08	-0.07	–	–	-0.04	-0.06	–	–	0.06	0.17
PHO × ID	–	–	0.36	0.36	–	–	-0.16	-0.16	–	–	-0.14	-0.16
PHO×AD×ID	–	–	–	-0.02	–	–	–	0.08	–	–	–	-0.36*
F-value	0.61	1.19	1.88	1.65	.025	0.51	0.40	0.37	7.19***	5.98***	5.39***	6.08***
$R^2 / \Delta R^2$	.04/.04	.14/.1	.3/.16*	.3/0	.02/.02	.07/.05	.08/.01	.09/.01	.32/.32**	.46/.14*	.55/.09	.61/06*
Power $(1-\beta)$	0.19	0.47	0.85	0.83	0.11	0.22	0.20	0.22	0.98	1.00	1.00	1.00

*Note: *** $p < .001$; ** $p < .01$; * $p < .05$; Ad – Disparaging humorous versus non-disparaging non-humorous ad; Id –Identification with the victim; Pho – laughter related personality trait of gelotophobia; Intentionality – intentionality of disparagement; Brand consum – brand consumption; Age in years; Gender: 0=male, 1=female.*
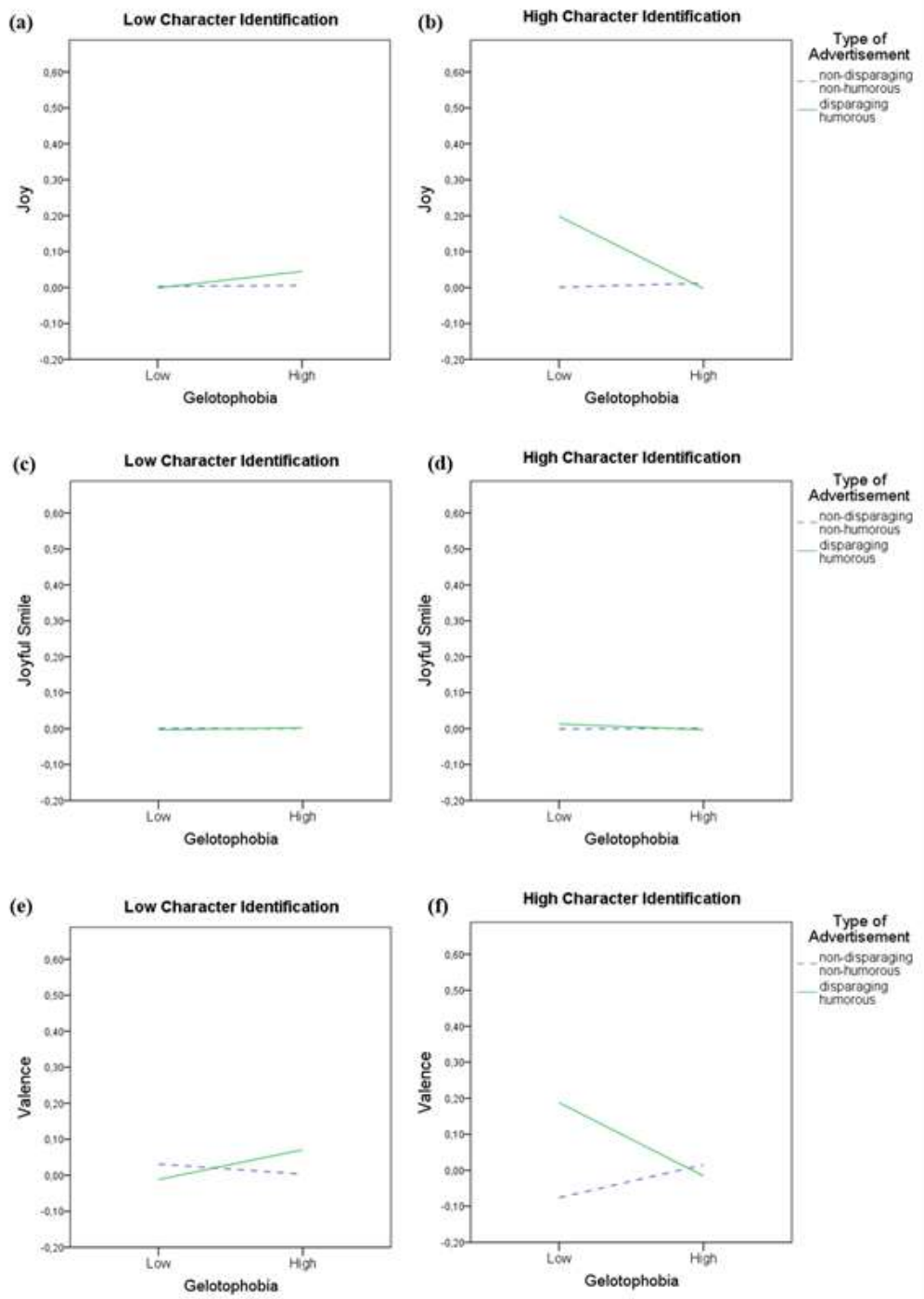
Figure 3. The moderating effect of identification with the victim and gelotophobia on the relationship between disparagement humour and (a-b) joy, (c-d) joyful smile, and (e-f) valence (Experiment 2).

5.2.5. Emotional reactions mediate the effect of gelotophobia on attitude toward the advertisement

A mediation analysis with gender, age, and perceived realism as covariates revealed that gelotophobia had a negative indirect effect, through joy, on attitude toward the ad (β = -.221, *SE*

= .12, 95 % *CI* = [-.418, -.017]; Table 5; H5a was supported), while joyful smile (β = .001, *SE* = .05, 95 % *CI* = [-.106, .084]) and valence (β = -.001, *SE* = .07, 95 % *CI* = [-.166, .114]) did not mediate this relationship (H5b-f and H6 were rejected). These findings were also replicated in the moderated mediation analysis (Table 6). The negative indirect effect through joy was statistically significant only for the disparaging humorous ad (*b* = -.358, *SE* = .18, 95 % *CI* = [-.754, -.045]), for high identification with the victim (*b* = -.312, *SE* = .1, 95 % *CI* = [-.484, -.114]), and in the simultaneous presence of a disparaging humorous ad and high identification with the victim (*b* = -.584, *SE* = .17, 95 % *CI* = [-.892, -.217]).

5.3. Discussion

Focussing on a different product category, Experiment 2 replicated the first experiment and validated its findings. In this respect, Experiment 2 enhanced the generalizability of the proposed conceptual model.

6. General discussion

The present study used an automated emotion detection system (FaceReader) to investigate the interaction effect of gelotophobia, disparaging advertisement, and identification with the victim on perceived emotions and attitude toward the ad via two experiments. Four main findings are evident in the two experiments:

First, gelotophobia was negatively associated with joy, joyful smile, and valence when people were exposed to a TV commercial. These findings validate prior studies (Papousek et al., 2009; Platt & Ruch, 2009; Proyer et al., 2012; Ruch et al., 2015) demonstrating that gelotophobia has a negative effect on positive emotions. We extend these studies highlighting that gelotophobia influences individuals' perceived emotions not only in a social context but also during exposure to an advertisement. Joy and positive valence are two of the most frequent emotional reactions to advertisements (Ducoffe, 1995) and a joyful smile is considered the physical expression of joy.

Second, there was a three-way interaction among gelotophobia, type of advertisement, and identification with the victim that affected joy, joyful smile, and valence. Gelotophobia had a negative effect on joy, joyful smile, and valence when people were exposed to a disparaging humorous commercial and identified with the victim. These findings are in accordance with Samson and Meyer (2010) suggesting that gelotophobes are aversive to aggressively humorous stimuli. The present study extends prior research underlining that high-gelotophobes experience less positive emotional reactions (i.e. joy, joyful smile, and positive valence) than low-gelotophobes, only when they identify with the victim of a disparaging, humorous commercial. Although high-gelotophobes have a negative disposition towards advertisements that make them feel vicariously disparaged, they are not opposed to disparaging advertising overall. This evidence extends prior studies (Proyer et al., 2010) suggesting that gelotophobes may be afraid of being laughed at, but they occasionally enjoy another person's disparagement.

Third, joy mediated the negative relationship between gelotophobia and attitude toward the advertisement. In other words, gelotophobia negatively influenced consumers' perceived joy and their attitude toward the ad through a decrease in their perceived joy. Given that gelotophobes are estimated to be almost 10 percent of the general population (Proyer et al., 2012), this finding is an alarm against the widespread indiscriminate use of disparaging humour in advertising.

Fourth, it appeared that gelotophobia reduced joy and thus negatively affected attitude toward the ad only for disparagingly humorous advertisements in an audience that identified with the victim. This is a significant insight into how (through decreased joy) and when (identification with the victim of disparaging humorous advertisement) gelotophobia affects advertising effectiveness. Disparaging humorous advertising entails an inherent risk for advertising professionals; That is, in the high-identification condition, gelotophobia impedes the experience of joy and respectively leads to a reduced positive attitude toward a disparaging humorous advertisement. In the low-identification condition, however, gelotophobia does not affect the relationship between disparagement humour and attitude toward the ad. Therefore, to fully benefit from a disparaging humorous advertisement, advertisers should either target low-gelotophobes or depict advertising characters that bear no similarities with the target audience.

On a final note, the novel experimental approach adopted in two identical experiments enhanced the robustness of the findings. Yet, this research was not without limitations. The two experiments employed only one disparaging humorous and one non-disparaging non-humorous ad each. Although this is a common approach used in experimental studies in advertising (e.g. Karpinska-Krakowiak, 2020; Swani et al., 2013; Brown, Bhadury & Pope, 2010), to enhance the generalizability of findings, future research could replicate the experiments using a larger pool of disparaging humorous and non-disparaging non-humorous advertisements.

Both experiments focused on a Greek audience. Additional studies in a wider audience and different cultures could enhance the validity of the study, since emotional reactions, such as the expression of valence and arousal, seem to differ across countries (Kuppens et al., 2017). Additionally, gelotophobes comprised 28 % and 22 % of the samples used in the two experiments. This is significantly higher than the overall 10 % recorded in prior studies (Proyer et al., 2012). This could be attributed to the fact that in both experiments purposive sampling was used. Given the small sample size of both experiments and the purpose of the study, it was important to address an adequate number of gelotophobes. Thus, participants in both experiments were purposively selected from a population known to consist of several gelotophobes (as they had participated in a prior study on gelotophobia), to ensure their presence in sufficient numbers. Although the samples were not representative of the overall population, our results were qualitatively generalizable.

FaceReader results of both experiments indicated low numerical values of joyful (Duchenne) smile compared to the relatively more significant differences recorded for Joy and Valence. This is an inherent weakness of the FaceReader methodology since valence is measured as a numerical value of happiness minus the maximum negative emotion, taking into consideration all Action Units (recording points) of the software. The value of happiness and joyful (Duchenne) smile are measured with fewer specific Action Units and thus produce lower values. Future research could employ alternative measurements of emotions such as electroencephalography, heart rate, and skin conductance.

Furthermore, the study used actual, unknown to the Greek audience, TV commercials. Non-fictitious commercials are criticized for the lack of internal validity but adhere to external validity standards, as the high-budget production techniques (e.g. camera quality, music) guarantee effective disparaging humorous commercials (Lee, 2006). Additionally, the use of subtitles may have interfered with and reduced the expression of participants' emotions. Finally, previous research on humour appreciation showed that two structures need to be distinguished: Incongruity-resolution and nonsense (Heintz, 2019; Hofmann & Ruch, 2017; Ruch, 1992). Hence, future research should investigate the extent to which disparagement ads based on incongruity-resolution versus nonsense humour as well as the related individual differences might influence experimental results.

Acknowledgements

References

Baker, S. M. & Kennedy, P. F. (1994). *Death by Nostalgia: A Diagnosis of Context–specific Cases*, in Allen, C.T. & Roedder John, D. (eds.), *Advances in Consumer Research* vol. 21, eds., Provo, UT: Association for Consumer Research, pp. 169–174.

Becker, T. E. (2005). 'Potential problems in the statistical control of variables in organizational research: a qualitative analysis with recommendations'. *Organizational Research Methods* 8 (3), pp. 274-289.

Brown, M. R., Bhadury, R. K. & Pope, N. K. L. (2010). 'The impact of comedic violence on viral advertising effectiveness'. *Journal of Advertising* 39 (1), pp. 49-66.

Chentsova-Dutton, Y. E., & Tsai, J. L. (2010). 'Self-focused attention and emotional reactivity: the role of culture'. *Journal of Personality and Social Psychology* 98 (3), p. 507.

Cohen, J. (2001). 'Defining identification: a theoretical look at the identification of audiences with media characters'. *Mass Communication & Society* 4 (3), pp. 245-264.

Ducoffe, R. H. (1995). 'How consumers assess the value of advertising'. *Journal of Current Issues & Research in Advertising* 17 (1), pp. 1-18.

Ekman, P. (1992). 'An argument for basic emotions'. *Cognition & Emotion* 6 (3-4), pp. 169-200.

Ekman, P., & Friesen, W. V. (1976). 'Measuring facial movement'. *Environmental Psychology and Nonverbal Behavior* 1 (1), pp. 56-75.

Faul, F., Erdfelder, E., Lang, A. G. & Buchner, A. (2007). 'G* Power 3: a flexible statistical power analysis program for the social, behavioral, and biomedical sciences'. *Behavior Research Methods* 39 (2), pp. 175-191.

Ford, T.E., Buie, H.S., Mason, S.D., Olah, A.R., Breeden, C.J. & Ferguson, M.A., (2020). 'Diminished self-concept and social exclusion: disparagement humor from the target's perspective'. *Self and Identity* 19 (6), pp. 698-718.

Führ, M. (2010). 'The applicability of the GELOPH< 15> in children and adolescents: first evaluation in a large sample of Danish pupils'. *Psychology Science Quarterly* 52 (1), pp. 60-76.

Garcia-Burgos, D. & Zamora, M. C. (2013). 'Facial affective reactions to bitter-tasting foods and body mass index in adults'. *Appetite* 71, pp. 178-186.

Gulas, C. S., McKeage, K. K. & Weinberger, M. G. (2010). 'It's just a joke'. *Journal of Advertising* 39 (4), pp. 109-120.

Hayes, A. F. (2018). 'Partial, conditional, and moderated moderated mediation: quantification, inference, and interpretation'. *Communication Monographs* 85 (1), pp. 4-40.

Hofmann, J., Platt, T., Ruch, W., Niewiadomski, R. & Urbain, J. (2015). 'The influence of a virtual companion on amusement when watching funny films'. *Motivation and Emotion* 39 (3), pp. 434-447.

Holbrook, M. B. & Batra, R. (1987). 'Assessing the role of emotions as mediators of consumer responses to advertising'. *Journal of Consumer Research* 14 (3), pp. 404-420.

Hupp, O., Gröppel-Klein, A., Dieckmann, A., Broeckelmann, P. & Walter, K. (2008). 'Beyond verbal scales: measurement of emotions in advertising effectiveness research'. *Yearbook of Marketing and Consumer Research* 6 (4), pp. 72-99.

Hwang, H. C. & Matsumoto, D. (2016). 'Measuring emotions in the face', in Meiselman, H.L. (ed.), *Emotion Measurement,* Woodhead Publishing, pp. 125-144.

Izard, C. E. (1977). *Human Emotions*. Springer Science & Business Media.

Janes, L. M., & Olson, J. M. (2000). 'Jeer pressure: the behavioral effects of observing ridicule of others'. *Personality and Social Psychology Bulletin* 26 (4), pp. 474-485.

Karpinska-Krakowiak, M. (2020). 'Gotcha! Realism of comedic violence and its impact on brand responses: what's so funny about that bloody ad? The moderating role of disposition to laughter'. *Journal of Advertising Research* 60 (1), pp. 38-53.

Kostyra, E., Rambuszek, M., Waszkiewicz-Robak, B., Laskowski, W., Blicharski, T. & Poławska, E. (2016). 'Consumer facial expression in relation to smoked ham with the use of face reading technology. The methodological aspects and informative value of research results'. *Meat Science* 119, pp. 22-31.

Kuppens, P., Tuerlinckx, F., Yik, M., Koval, P., Coosemans, J., Zeng, K. J. & Russell, J. A. (2017). 'The relation between valence and arousal in subjective experience varies with personality and culture'. *Journal of Personality* 85 (4), pp. 530-542.

LaFave, L. (1972). 'Humor judgments as a function of reference groups and identification classes', in Goldstein, H. (ed.), *The Psychology of Humor: Theoretical Perspectives and Empirical Issues*, New York: Academic Press, pp. 195-210.

LaFave, L., Haddad, J. & Maesen, W. A. (1996). 'Superiority, enhanced self-esteem, and perceived incongruity humor theory', in Chapman, A. J. & Foot, H. C. (eds.), *Humor and Laughter: Theory, Research, and Applications.* New Brunswick, NJ: Transaction, pp. 63–91.

Lampert, M. D., Isaacson, K. L. & Lyttle, J. (2010). 'Cross-cultural variation in gelotophobia within the United States'. *Psychological Test and Assessment Modeling* 52 (2), pp. 202–216.

Lee, J. S. (2006). 'Affect intensity and need for cognition: effects on cognitive elaboration of emotional advertising', in *American Academy of Advertising. Conference. Proceedings Online*. American Academy of Advertising, p. 62.

Lerner, J. S., Small, D. A. & Loewenstein, G. (2004). 'Heart strings and purse strings: carryover effects of emotions on economic decisions'. *Psychological Science*, 15 (5), pp. 337-341.

Lewinski, P., den Uyl, T. M. & Butler, C. (2014). 'Automated facial coding: validation of basic emotions and FACS AUs in FaceReader'. *Journal of Neuroscience, Psychology, and Economics* 7 (4), pp. 227-236.

Maneesriwongul, W. & Dixon, J. K. (2004). 'Instrument translation process: a methods review'. *Journal of Advanced Nursing* 48 (2), pp. 175-186.

Mehrabian, A. & Russell, J. A. (1974). 'The basic emotional impact of environments'. *Perceptual and Motor Skills* 38 (1), pp. 283-301.

Murphy, S. T., Frank, L. B., Chatterjee, J. S. & Baezconde-Garbanati, L. (2013). 'Narrative versus nonnarrative: the role of identification, transportation, and emotion in reducing health disparities'. *Journal of Communication* 63 (1), pp. 116-137.

Nunnally, J. C. (1978). *Psychometric Theory*. New York: McGraw–Hill.

Olney, T. J., Holbrook, M. B. & Batra, R. (1991). 'Consumer responses to advertising: the effects of ad content, emotions, and attitude toward the ad on viewing time'. *Journal of Consumer Research* 17 (4), pp. 440-453.

Orth, U. R., Malkewitz, K. & Bee, C. (2010). 'Gender and personality drivers of consumer mixed emotional response to advertising'. *Journal of Current Issues & Research in Advertising* 32 (1), pp. 69-80.

Papousek, I., Schulter, G. & Lang, B. (2009). 'Effects of emotionally contagious films on changes in hemisphere-specific cognitive performance'. *Emotion* 9 (4), pp. 510-519.

Platt, T. (2008). 'Emotional responses to ridicule and teasing: should gelotophobes react differently?' *Humor*: *International Journal of Humor Research* 21 (2), pp. 105–128.

Platt, T. & Ruch, W. (2009). 'The emotions of gelotophobes: shameful, fearful, and joyless?' *Humor: International Journal of Humor Research* 22 (1-2), pp. 91-110.

Platt, T., Proyer, R. & Ruch, W. (2009). 'Gelotophobia and bullying: the assessment of the fear of being laughed at and its application among bullying victims'. *Psychological Test and Assessment Modeling* 51 (2), pp. 135-147.

Poels, K. & Dewitte, S. (2006). 'How to capture the heart? Reviewing 20 years of emotion measurement in advertising'. *Journal of Advertising Research* 46 (1), pp. 18-37.

Preacher, K. J. & Hayes, A. F. (2004). 'SPSS and SAS procedures for estimating indirect effects in simple mediation models'. *Behavior Research Methods, Instruments, & Computers* 36 (4), pp. 717-731.

Proyer, R. T., Meier, L. E., Platt, T. & Ruch, W. (2013). 'Dealing with laughter and ridicule in adolescence: relations with bullying and emotional responses'. *Social Psychology of Education* 16 (3), pp. 399-420.

Proyer, R. T., Platt, T. & Ruch, W. (2010). 'Self-conscious emotions and ridicule: shameful gelotophobes and guilt free katagelasticists'. *Personality and Individual Differences* 49 (1), pp. 54-58.

Proyer, R. T., Ruch, W. & Chen, G. H. (2012). 'Gelotophobia: life satisfaction and happiness across cultures'. *Humor: International Journal of Humor Research* 25 (1), pp. 23-40.

Proyer, R. T., Ruch, W., Ali, N. S., Al-Olimat, H. S., Amemiya, T., Adal, T. A., ... & Bawab, S. (2009). 'Breaking ground in cross-cultural research on the fear of being laughed at (gelotophobia): a multi-national study involving 73 countries'. *Humor: International Journal of Humor Research* 22 (1-2), pp. 253-279.

Revelle, W. & Loftus, D. A. (1990). 'Individual differences and arousal: implications for the study of mood and memory'. *Cognition & Emotion* 4 (3), pp. 209-237.

Ruch, W. & Proyer, R. T. (2008a). 'The fear of being laughed at: individual and group differences in gelotophobia'. *Humor: International Journal of Humor Research* 21 (1), pp. 47-67.

Ruch, W. & Proyer, R. T. (2008b). 'Who is gelotophobic? Assessment criteria for the fear of being laughed at'. *Swiss Journal of Psychology* 67 (1), pp. 19-27.

Ruch, W. & Proyer, R. T. (2009). 'Extending the study of gelotophobia: on gelotophiles and katagelasticists'. *Humor: International Journal of Humor Research* 22 (1-2), pp. 183-212.

Ruch, W., Hofmann, J. & Platt, T. (2015). 'Individual differences in gelotophobia and responses to laughter-eliciting emotions'. *Personality and Individual Differences* 72 (1), pp. 117-121.

Ruch, W., Hofmann, J., Platt, T. & Proyer, R. (2013). 'The state-of-the art in gelotophobia research: a review and some theoretical extensions'. *Humor: International Journal of Humor Research* 27 (1), pp. 23-45.

Russell, J. A. (1980). 'A circumplex model of affect'. *Journal of Personality and Social Psychology* 39 (6), pp. 1161-1178.

Russell, J. A. & Barrett, L. F. (1999). 'Core affect, prototypical emotional episodes, and other things called emotion: dissecting the elephant'. *Journal of Personality and Social Psychology* 76 (5), pp. 805–819.

Samson, A. C. & Meyer, Y. (2010). 'Perception of aggressive humor in relation to gelotophobia, gelotophilia and katagelasticism'. *Psychological Test and Assessment Modeling* 52 (2), pp. 217-230.

Swani, K., Weinberger, M. G. & Gulas, C. S. (2013). 'The impact of violent humor on advertising success: a gender perspective'. *Journal of Advertising* 42 (4), pp. 308-319.

Tal-Or, N. & Cohen, J. (2010). 'Understanding audience involvement: conceptualizing and manipulating identification and transportation'. *Poetics* 38 (4), pp. 402-418.

Timamopoulou, A., Hatzithomas L., Boutsouki C. & Voutsa M. C. (2021). 'Half a century of Super Bowl commercials: a content analysis of humorous advertising styles', in Waiguny, M.K.J. & Rosengren, S. (eds.), *Advances in Advertising Research XI*. Wiesbaden: Springer Gabler, pp. 137-150.

Titze, M. (1996). 'The Pinocchio Complex: Overcoming the fear of laughter'. *Humor & Health Journal* 5, pp. 1–11.

Tu, Y. Z., Lin, D. W., Suzuki, A. & Goh J. O. S. (2018). 'East Asian young and older adult perceptions of emotional faces from an age and sex fair east Asian facial expression database'. *Frontiers in Psychology* 9 (2358), pp. 1-18.

Vergura, D. T. & Luceri, B. (2018). 'Product packaging and consumers' emotional response. Does spatial representation influence product evaluation and choice?'. *Journal of Consumer Marketing* 35 (2), pp. 218-227.

Voutsa, M. C., Hatzithomas, L. & Boutsouki, C. (2018). 'Superiority theory and disparagement humor: the role of gelotophobia, gelotophilia, and katagelasticism', in Cauberghe, V. et al. (eds.), *Advances in Advertising Research IX*. Wiesbaden: Springer Gabler, pp. 191-204.

Warren, C. & McGraw, A. P. (2016). 'When does humorous marketing hurt brands?' *Journal of Marketing Behavior* 2 (1), pp. 39-67.

Warren, C., Carter, E. P. & McGraw, A. P. (2019). 'Being funny is not enough: the influence of perceived humor and negative emotional reactions on brand attitudes'. *International Journal of Advertising* 38 (7), pp. 1025-1045.

Weinberger, M. G. & Gulas, C. S. (1992). 'The impact of humor in advertising: a review'. *Journal of Advertising* 21 (4), pp. 35-59.

Weinberger, M. G., Swani, K., Yoon, H. J. & Gulas, C. S. (2017). 'Understanding responses to comedic advertising aggression: the role of vividness and gender identity'. *International Journal of Advertising* 36 (4), pp. 562-587.

Yik, M. S., Russell, J. A. & Barrett, L. F. (1999). 'Structure of self-reported current affect: integration and beyond'. *Journal of Personality and Social Psychology* 77 (3), pp. 600-619.

Yoon, H. J. (2016). 'Comedic violence in advertising: the role of normative beliefs and intensity of violence'. *International Journal of Advertising* 35 (3), pp. 519-539.

Zhang, J., Norvilitis, J. M. & Jin, S. (2001). 'Measuring gender orientation with the Bem Sex Role Inventory in Chinese culture'. *Sex Roles* 44 (3-4), pp. 237-251.

Zhang, Y. (1996). 'Chinese consumers' evaluation of foreign products: the influence of culture, product types and product presentation format'. *European Journal of Marketing* 30 (12), pp. 50-68.