

Research Note

Differential perception of shame in the Japanese: gelotophobia tendency and negative emotional states responding to being laughed at

Mariko Shirai

Shinshu University, Japan
m.shirai218@gmail.com

Rie Ito

Tokoha University, Japan
r_ito@sz.tokoha-u.ac.jp

Abstract

Although laughter is typically considered to be a positive expression, being laughed at by someone else evokes several types of negative emotions. However, the changes in the negative emotions recognized after being laughed at compared to before have yet to be clarified. The present study investigated the emotional responses and the relationship between the intensity of these emotions and gelotophobia when laughed at due to an unexpected failure situation of tripping over. Study 1 involved a survey with 130 Japanese undergraduate students. Study 2 was performed to confirm the results of Study 1 and examine gender differences. The participants of Study 2 were 392 Japanese undergraduate students, and we assessed the intensity of four negative emotions (shame, pain, anger, and sadness) perceived by participants when the character in the given scenario was laughed at following a failure (tripping over). The results of Study 1 and 2 showed that shame was mainly reported in the laughing situation irrespective of gelotophobia. Furthermore, significant correlations between anger or sadness and gelotophobia were observed but not between shame and gelotophobia. In conclusion, gelotophobia as individual differences modulates the perception of emotional feelings, producing different mixed negative emotions in the same laughing situation.

Keywords: being laughed at, emotion, shame, sadness, gelotophobia.

1. Introduction

Laughter is a common experience in an individual's life, evoked when watching comedies or chatting with friends. Typically, laughter is linked to positive emotions (Davila-Ross & Dezecache, 2021; Dunbar et al., 2012; Manninen et al., 2017). However, laughter does not always connote a positive meaning (Platt et al., 2010). Laughter has a binding function to correct, repulse, and pressure individuals to conform (Grammer & Eibl-Eibesfeldt, 1990) or communicate exclusion from a group (Keyton & Beck, 2010). For example, Klages and Wirth (2014) asked participants to recall an event in which laughter made them feel excluded and to assess their emotional states during that time, and their results revealed laughter as a type of social exclusion. Particularly, laughter expressing exclusion evoked increased negative emotions such as anger, sadness, and anxiety, suggesting that laughter could lead to negative emotions as a consequence of social exclusion. Additionally, Shirai and Ito (2018) reported that several negative emotions (shame, pain, anger, and sadness) were involved when being laughed at due to one's failure. Hurtful laughter is a situation that resembles an "insult," evoking negative emotions such as shame or anger (Mosquera et al., 2000), and can cause simultaneous shame, anger, and sadness. Hence, although laughter is associated with positive emotions, it can also evoke negative emotions when a person is laughed at. Hurt through laughter is less recognized as a form of nonphysical bullying (Klages & Wirth, 2014) because laughter is considered as positive phenomenon. To prevent oversight of such emotional bullying, the emotional states associated with being laughed should be elucidated.

Although several types of negative emotions have been implicated in being laughed at, it remains unclear how negative emotions combine to construct mixed negative emotional states. If people feel shame dominantly when they fail, regardless of whether they are laughed at, they would report their emotional state as shame. However, the extent to which not only shame, but also other negative emotions such as anger or sadness are evoked may differ depending on whether they are laughed at or not. Specifically, when you are laughed at, you may feel shame more predominantly than when you are not laughed at, but concurrently, you may be in a state of shame mixed with other negative emotions such as anger or sadness.

Individual differences may also modulate the emotions experienced when being laughed at. In this study, we focused on the degree of gelotophobia. Gelotophobia is derived from the Greek words "gelos" and "phobos," which means laughter and fear, respectively (Ruch et al., 2014; Ruch & Proyer, 2008a). Gelotophobia is defined as a pathological fear of being laughed at and ridiculed and ranges from no fear to extreme fear of being laughed at (Ruch & Proyer, 2008b). Gelotophobia was initially observed as a clinical condition (Titze, 1996); however, about 12% of individuals among a normal German sample exceeded the cut-off value (Ruch & Proyer, 2008b). Therefore, the fear of being laughed at is now interpreted to vary among normal individuals (Proyer et al., 2010; Ruch & Proyer, 2008b).

Gelotophobia is a universal phenomenon. In a study using the GELOPH<15> questionnaire across 73 countries to measure the tendency toward fear of being laughed at, the validity of the questionnaire items was confirmed in all cultures (Proyer et al., 2009). Interesting results were obtained in cultural comparisons. In general, Asian countries (China and Japan) had higher average scores than did Western countries (United States and Switzerland). Furthermore, the specific items central to the description of gelotophobia varied by culture. These results suggest that the fear of being laughed at may be related to specific cultural norms and values. However, the reasons for the differences in gelotophobia across cultures may be influenced by social norms, among other factors, but this remains speculative. In contrast, Davies (2009) highlighted that gelotophobia may be more prevalent in cultures where shame serves as a mechanism for social regulation. Japanese culture is a "shame (*haji*) culture," indicating consciousness of

external criticism (Benedict, 1946/2005). Based on Davies (2009), it is possible that the degree of gelotophobia can influence the emotional state when being laughed at in Japanese individuals.

The most common emotion related to being laughed is shame, and gelotophobia is initially considered shame-bound anxiety (Titze, 2009). Several studies have reported a relationship between gelotophobia and multiple emotions including shame. In these studies, feelings were assessed by recalling a past experience or by reading emotion-evoking scenarios wherein they felt the highest intensity of each emotion (e.g., shame, fear, and sadness) (Platt & Ruch, 2009; Rawlings et al., 2010). These studies found that people with high levels of gelotophobia tended to feel shame and fear at higher intensities (Platt & Ruch, 2009; Rawlings et al., 2010) and frequencies during a typical week (Platt & Ruch, 2009). Compared with those with no fear, individuals with gelotophobia have the interpretation bias of smiling face and perceive similar displays to contain more contempt and assess the joy lower (Hofmann et al., 2015). Such a misinterpretation of laughter-related expressions or situations might lead to feelings of shame (Ruch et al., 2014). Previous studies also found a relationship between gelotophobia and other negative emotions, including sadness, anger, disgust, and guilt (Rawlings et al., 2010; Ruch et al., 2014). Furthermore, individuals with gelotophobia discriminate less between playful teasing and ridicule and report a higher intensity of negative emotions experienced during two laughing conditions in comparison to those without gelotophobia (Platt, 2008). Thus, the intensity of emotion varies depending on the presence or absence of gelotophobia.

This study aimed to investigate the emotional responses and the relationship between the intensity of emotions and gelotophobia when laughed at due to an unexpected failure situation. We evaluated four negative emotions, namely, shame, pain, anger, and sadness. Previous research has shown these emotions to be central to gelotophobia. Furthermore, these four emotions were frequently reported in Japanese surveys evaluating responses to being laughed at in unexpected failure situations (Shirai & Ito, 2018). These situations were identical to those used in this study, and thus, these emotions were evaluated. We hypothesized that shame, pain, anger and sadness would be observed in the laughing situations and that there would be a direct relationship between the degree of gelotophobia and the intensity of negative emotions, except shame. As despite not having gelotophobia, being laughed at for unexpected failures may cause shame (Keltner, 1996), the degree of shame may not necessarily vary with the strength of gelotophobia. Furthermore, the situations that strongly evoke shame in Eastern cultures differ from those in Western cultures. In Japanese culture, a representative Eastern culture, shame is most intense when the public self is compromised, that is, when one is openly being ridiculed. In contrast, Americans reported most intense shame when character flaws are shown (Crystal et al., 2001). These cultural differences originate from differences in the sense of self (Markus & Kitayama, 1991). Given that this study targeted Japanese individuals, we predicted a high degree of shame will be reported regardless of the degree of gelotophobia. However, it was anticipated that the intensity of negative emotions other than shame would vary with the degree of gelotophobia. For example, individuals with a high gelotophobia may feel sadness more intensely when laughed at. Shame might be the most significant emotional state, but the intensity of other negative emotions was predicted to vary according to the degree of gelotophobia.

2. Study 1

2.1. Materials and methods

2.1.1. Participants

Participants were 130 Japanese undergraduate students (15 men, 115 women) with a mean age of 19.70 ($SD = .72$) years. They were native Japanese speakers and majored in Early Childhood Education and Care. The experimental protocol followed the guidelines of the ethics committee of the Faculty of Psychology of the first author's university and adhered to the 1975 Declaration of Helsinki and its later amendments. Informed consent was obtained from all participants before the experiment.

2.1.2. Scripts of the three situations

Three targeted situations were prepared based on the study by Ito (2017). These situations were identified through observational studies of children aged 4-6 years. The participants read the following story: the main character, "A" was walking outside. When a friend called A's name, A hurried to join the friend's group. However, A tripped over a stone and fell down (tripping situation: "tripping"). Next, "B" was behind A and witnessed that A tumbled over, which caused B to laugh at A (being laughed at situation: "laughing"). Finally, A was crying (crying situation: "crying"). As the scenarios were presented in sequence, the crying situation was perceived in a context that included both tripping and being laughed at. The scripts used are shown in Table 1.

Table 1. Script used in studies 1 and 2

Situation	Script
Tripping	"A" was walking outside.
	When a friend called A's name, A was getting run to the friend in a hurry.
	But A tripped over a stone and fell down.
Laugh	"B", who was behind A, saw A tumbled over. B laughed at A.
Crying	A was crying. (Study 1)
	A almost shed tears. (Study 2)

2.1.3. Types of emotions

Four negative emotions (pain, shame, anger, and sadness) were selected based on a previous study (Shirai & Ito, 2018) that examined the types of emotions evoked by each consecutive situation. Whether pain is considered to be an emotion is controversial; however, some researchers advocate the idea that pain is a specific emotion (Craig, 2003). Accordingly, pain was included as one of the targeted emotions.

2.1.4. Gelotophobia

To assess the individual differences in gelotophobia, the Japanese version of the GELOPH scale (J-GELOPH) was used (Toyota & Hamakawa, 2008). The J-GELOPH scale is a 15-item questionnaire written in Japanese and created based on the original GELOPH scale consisting

of 46 items used by Ruch and Proyer (2008a). Both GELOPH <15> and <46> have good reliability (Ruch & Proyer, 2008b). J-GELOPH was based on the responses of a Japanese sample; therefore, the questions slightly differ from those of GELOPH <15>. It consists of 7 items from GELOPH <15> (original item numbers: 2, 3, 4, 5, 7, 8, and 14) and another 8 items from GELOPH <46>. A high score indicates high gelotophobia. The J-GELOPH and GELOPH <15> are composed of slightly different items. Therefore, the scores are not suitable for cultural comparison. However, gelotophobia is regarded as a singular factor structure, and the items of J-GELOPH encompass the entirety of the original GELOPH <46>. Therefore, we adopted the Japanese version of the GELOPH <15> scale (J-GELOPH<15>) ($\alpha = .88$; Toyota & Hamakawa, 2008). Ruch & Proyer (2008b) established the cut-off values for the GELOPH <15> as follows: slight gelotophobia, 2.50-2.99; pronounced gelotophobia, 3.00-3.49; and extreme gelotophobia, > 3.50. The frequency of gelotophobia levels was reported according to these cut-off points.

2.1.5. Procedure

Data were collected online using the Qualtrics survey software (<http://www.qualtrics.com>), which presented the situation script and question items. The questionnaire link was distributed during an early childhood care and education class. The participants were instructed that the experiment involved evaluating emotional responses upon reading a scenario, and they were asked to respond to the questionnaire. First, the participants read the script of the tripping situation and evaluated the intensity of the negative emotions A felt (pain, shame, anger, and sadness); responses were recorded using a 5-point Likert scale (1 = do not feel, 5 = feel very much). The same procedures were applied for the “laughing” and “crying” situations. Therefore, the participants rated 12 times (three situations \times four emotions). Additionally, the participants were asked to answer the J-GELOPH using a 4-point Likert scale (1 = strongly disagree, 4 = strongly agree) to assess gelotophobia.

2.1.6. Data analysis

To identify the intensities and changes of the four negative emotions rated for the three situations, the average rating of each emotion in each situation was calculated and analyzed using a two-way repeated measure analysis of variance (ANOVA), with emotion type and situation as the independent variables. When the main or interaction effect was significant, post hoc analyses using the Scheffe method were performed ($p < .05$). Additionally, the Greenhouse-Geisser correction of degree-of-freedom was applied if the Mauchly test was violated. To clarify the relationship between gelotophobia and the intensity of each emotion for each situation, Pearson’s correlation coefficients between gelotophobia and the 12 emotional ratings (three situations \times four emotions) were calculated.

2.2. Results

Table 2 shows the averaged ratings of the four negative emotions in each situation. The main effects of emotion and situation were significant [situation: $F(2, 258) = 71.99$, $\varepsilon = 1.00$, $\eta_p^2 = 0.36$; emotion: $F(3, 387) = 129.51$, $\varepsilon = 0.95$, $\eta_p^2 = 0.50$, all $p < .01$]. Similarly, the interaction effect was significant [$F(6, 774) = 44.94$, $\varepsilon = 0.86$, $\eta_p^2 = 0.26$, $p < .01$]. Furthermore, a significant simple main effect of the situation in each emotion was observed [pain: $F(2, 258) = 7.41$, $\eta_p^2 = 0.05$; shame: $F(2, 258) = 4.90$, $\eta_p^2 = 0.04$; anger: $F(2, 258) = 86.36$, $\eta_p^2 = 0.40$; sadness: $F(2, 258) = 107.73$, $\eta_p^2 = 0.46$, all $p < .01$]. Post hoc comparison indicated that shame was the highest in the laughing situation among all the situations. Furthermore, pain rating was significantly higher in the crying situation compared to that in the tripping and laughing situations. Anger ratings in the laughing situation were significantly higher than those in other

situations. In contrast, anger ratings were the lowest in the tripping situation. Sadness ratings were the highest in the crying situation and were significantly higher in the laughing situation than in the tripping situation. In summary, the shame and anger ratings were the highest in the laughing situation, whereas the pain and sadness ratings were the highest in the crying situation.

A follow-up analysis revealed that the simple main effects of all emotions within each situation were significant [tripping: $F(3, 387) = 227.10, \eta_p^2 = 0.64$; laughing: $F(3, 387) = 79.75, \eta_p^2 = 0.38$; crying: $F(3, 387) = 25.90, \eta_p^2 = 0.17$, all $p < .01$). In the tripping situation, post hoc comparisons indicated that the highest ratings were for shame among all emotions. Moreover, the ratings were significantly higher for pain than for sadness and anger. The ratings were the lowest for anger. In the laughing situation, the ratings were the highest for shame among the four emotions; however, no significant difference was observed between anger and pain, whereas the rating for sadness were relatively lower than those for other emotions. In the crying situation, the ratings for shame and sadness were higher than those for the other emotions. Additionally, the ratings were the lowest for anger. In summary, shame was consistently high across all three situations. Furthermore, the ratings for shame, anger, and sadness in the laughing situation were significantly higher than those in the tripping situation.

Table 2. Average ratings for the four negative emotions in the three situations

Situation	Emotion	<i>M</i>	<i>SD</i>
Tripping	Pain	3.22	1.01
	Shame	3.91	1.01
	Anger	1.41	.71
	Sadness	1.82	1.01
Laughing	Pain	3.10	1.20
	Shame	4.25	.99
	Anger	2.91	1.29
	Sadness	2.38	1.41
Crying	Pain	3.55	1.50
	Shame	3.95	1.31
	Anger	2.64	1.40
	Sadness	3.69	1.41

The α for J-GELOPH<15> was .88, confirming the internal consistency of the items. There were 111 (85%) individuals with no gelotophobia, 17 (13%) individuals with slight gelotophobia, and 2 (2%) individuals with pronounced gelotophobia. The mean value for men was 1.96 ($SD = 0.94$), and that for women was 1.84 ($SD = 0.94$). The relationship between gelotophobia and the intensity of each of the four negative emotions was calculated using Pearson's correlation coefficients. The results showed that anger ratings were significantly positively correlated with gelotophobia in both laughing and crying situations. Furthermore, sadness ratings were significantly positively correlated with gelotophobia in both laughing and

crying situations. However, no significant correlations were observed among shame, pain, and gelotophobia across all situations (Table 3).

Table 3. Correlation between emotion and gelotophobia among the three situations

Situation	Emotion	<i>r</i>
Tripping	Pain	-.16
	Shame	.12
	Anger	.17
	Sadness	.22
Laughing	Pain	-.10
	Shame	.05
	Anger	.31*
	Sadness	.30*
Crying	Pain	.01
	Shame	.03
	Anger	.21*
	Sadness	.27*

* Significant correlation coefficient ($p < .05$)

2.3. Discussion

Among the three situations, the ratings of shame and anger were the highest in the laughing situation. On the other hand, the ratings of sadness and pain were the highest in the crying situation. The ratings for shame were relatively higher than those for other emotions in all situations, as expected. Shame is associated with poor performance (Keltner, 1996), and this may explain the high ratings during the tripping situation, which corresponds to a failure situation. There were high levels of shame and anger during the laughing situation. Japanese people report strong feelings of shame in situations in which they are laughed at (Crystal et al., 2001), consistent with our predictions of high levels of shame when laughed at. Additionally, in this study, laughter indicated the evaluation from others toward the failure action of tripping over a stone and falling. Although several meanings may be attributed to laughter (Giles & Oxford, 1970), interpretations of shame and anger may increase when laughter is perceived as an insult (Rodriguez Mosquera et al., 2008). In the current study, the ratings for shame were not only high due to the shame of falling, but also because the laughter from others was perceived as an insult. In contrast, the level of sadness was the highest in the crying situation. This may be due to the association of crying as the typical behavioral response to sadness (Shiota & Kalat, 2018; Vingerhoets, 2013). However, there were higher ratings of sadness in the laughing situation than in the tripping situation. Aggressive laughter can ostracize the person being laughed at (Ito, 2017). Considering into that sadness can be caused by social rejection, which causes painful sadness (Leary, 2015; Shaver et al., 1987), these results suggest that aggressive laughter has exclusionary effects (Klages & Wirth, 2014), increasing the intensity of sadness.

Regarding individual differences, there was a small but significant correlation between gelotophobia and emotional response for ratings of sadness and anger in the laughing and crying situations. In contrast, no significant correlations were observed with shame or pain. These findings were consistent with our assumption of the association between gelotophobia and negative emotions, such as anger and sadness without pain. Thus, gelotophobia can modulate the intensity of other negative emotions, suggesting that the emotion of shame may not be affected by the degree of gelotophobia unlike other negative emotions. However, the results may be influenced by the higher number of women than men. Although a previous study reported that the level of gelotophobia was not affected by gender (Ruch et al., 2014; Wu et al., 2019), another study found gender differences in the levels of gelotophobia in some countries (Vagnoli et al., 2023). Gender differences in gelotophobia may be influenced by cultural norms and rules. Although the factors contributing to the cultural differences were not specified, some gender-related factors such as the gender role or social norm could possibly affect gelotophobia in Japan. The higher number of female participants in this study may have influenced the results.

3. Study 2

In Study 1, there was an imbalance between the number of men and women. Emotional experiences vary by gender, with particularly stronger emotional experiences in women than in men (Deng et al., 2016). Thus, the results of Study 1 could have been affected by the gender differences. Furthermore, the crying situation was selected from a previous study that included children as the participants (Ito, 2017) and thus depicted overt crying behavior. In contrast, the current study targeted college students, in whom overt expressions of emotions may have affected the results in Study 1. Therefore, Study 2 was conducted to re-examine and validate the results of Study 1, considering these limitations.

3.1. Material and methods

3.1.1. Participants

The participants were 392 Japanese undergraduate students (189 men, 203 women) with a mean age of 20.32 ($SD = 1.68$). They were native Japanese and some of them majored in Psychology. Some participants were recruited through Yahoo crowdsourcing. The experimental protocol followed the guidelines of the ethics committee of the Faculty of Psychology of the first author's university and adhered to the 1975 Declaration of Helsinki and its later amendments. Informed consent was obtained from all participants before the experiment. They received course credits or crowdsourcing points for the participation.

3.1.2. Scripts regarding the three situations and questionnaire items

The crying situation illustrated less overt crying behavior than Study 1 (in this case, A almost shed tears; see Table 1). The other two situations were identical to Study 1. All questionnaire items (types of emotions and gelotophobia) were identical to the ones used in Study 1.

3.1.3. Procedure and data analysis

The procedure and data analysis conducted was similar to those in Study 1. The only difference was that the ANOVA included gender factors to evaluate the gender effects. For correlation analysis, correlation coefficients for each gender were calculated.

3.2. Results

The intensities of the four negative emotions by situation and gender are shown in Table 4. Three-way ANOVA was performed with emotion, situation, and gender as the independent variables for emotional rating. The main effects of emotion and situation were significant (situation: $F(2, 780) = 120.46, \epsilon = 0.98, \eta_p^2 = 0.24$; emotion: $F(3, 1170) = 276.42, \epsilon = 0.94, \eta_p^2 = 0.41$, all $p < 0.01$). The interaction effects were significant (gender \times situation: $F(2, 780) = 4.19, \eta_p^2 = 0.01, p = .016$; gender \times emotion: $F(3, 1170) = 15.78, \epsilon = 0.94, \eta_p^2 = 0.04, p < .01$; situation \times emotion: $F(6, 2340) = 152.83, \epsilon = 0.92, \eta_p^2 = 0.28, p < .01$). However, no significant differences were observed for the main effect of gender and emotion \times situation \times gender [gender: $F(1, 390) = 0.28, \eta_p^2 = 0.00, n.s.$; second interaction effect: $F(6, 2340) = 1.05, \eta_p^2 = 0.00, n.s.$].

Table 4. Average ratings for the four negative emotions among the three situations by gender

Situation	Emotion	Men		Women	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Tripping	Pain	3.76	1.02	3.43	1.01
	Shame	3.71	1.14	4.00	1.01
	Anger	1.92	.99	1.46	.74
	Sadness	2.22	1.23	2.08	1.08
Laughing	Pain	3.07	1.29	2.89	1.16
	Shame	3.96	1.30	4.28	1.04
	Anger	3.06	1.38	2.84	1.34
	Sadness	2.74	1.39	2.72	1.33
Crying	Pain	3.56	1.24	3.42	1.23
	Shame	3.48	1.28	4.08	1.15
	Anger	2.75	1.33	2.67	1.35
	Sadness	3.86	1.26	3.78	1.38

We focused on the relation between situation and emotion and analyzed the interaction between them in the following. Regarding the interaction effect between emotion and situation, the simple main effect of the situation for each emotion was significant [pain: $F(2, 780) = 52.62, \epsilon = 0.95, \eta_p^2 = 0.12$; shame: $F(2, 780) = 14.35, \epsilon = 0.95, \eta_p^2 = 0.04$; anger: $F(2, 780) = 182.68, \eta_p^2 = 0.32$; sadness: $F(2, 780) = 289.97, \epsilon = 0.99, \eta_p^2 = 0.43$, all $p < .01$].

Post hoc analysis showed that shame ratings were significantly higher in the laughing situation than in the tripping and crying situations. Additionally, the ratings for anger were the highest in the laughing situation. The anger ratings were significantly higher in the crying situation than in the tripping situation. Sadness ratings were the highest in the crying situation, and the ratings for sadness in the laughing situation were significantly higher than those in the tripping situation. The pain ratings were the lowest in the laughing situation than among all other situations. Another follow-up analysis indicated that the simple main effect of the emotion

within each situation was significant [tripping: $F(3, 1170) = 512.56$, $\varepsilon = 0.95$, $\eta_p^2 = 0.57$; laughing: $F(3, 1170) = 144.81$, $\varepsilon = 0.93$, $\eta_p^2 = 0.27$; crying: $F(3, 1170) = 79.26$, $\varepsilon = 0.96$, $\eta_p^2 = 0.17$, all $p < .01$]. Post hoc comparisons indicated that in the tripping situation, the ratings were the highest for shame among all emotions. Additionally, pain ratings were higher than anger and sadness ratings. In the laughing situation, shame ratings were significantly higher than those for other emotions. Furthermore, pain and anger ratings were significantly higher than sadness ratings. In the crying situation, the anger ratings were significantly lower than the other three emotion ratings. Additionally, ratings for shame and sadness were significantly higher than those for pain. In summary, there were high feelings of shame during all three situations. In addition, shame and anger ratings were higher in the laughing situation than in the other situations.

The α for J-GELOPH<15> was .89, confirming the internal consistency of the items. For the degree of gelotophobia, there were 300 (77%) individuals with no gelotophobia, 61 (16%) individuals with slight gelotophobia, 26 (7%) individuals with pronounced gelotophobia, and 5 (1%) individuals with extreme gelotophobia. The mean J-GELOPH<15> value for men was 2.20 ($SD = 1.01$), and that for women was 1.97 ($SD = 0.95$). Pearson's correlation coefficient analysis showed small but significant positive relationships between the anger ratings and gelotophobia in all three situations. Furthermore, significant positive correlations were also observed between the sadness ratings and gelotophobia in all the situations, whereas there were no significant correlations between shame and gelotophobia in all situations (Table 5).

Table 5. Correlation and gender differences between emotion and gelotophobia in the three situations

Situation	Emotion	Overall	Men	Women
		<i>r</i>	<i>r</i>	<i>r</i>
Tripping	Pain	.12*	.17*	.01
	Shame	.08	.04	.20*
	Anger	.23*	.19*	.21*
	Sadness	.20*	.23*	.13*
Laughing	Pain	.15*	.19*	.08
	Shame	.00	.00	.07
	Anger	.26*	.31*	.18*
	Sadness	.30*	.32*	.30*
Crying	Pain	.08	.07	.08
	Shame	.05	.14	.04
	Anger	.18*	.21*	.15*
	Sadness	.14*	.12	.14*

* Significant correlation coefficient ($p < .05$)

Additionally, correlation analyses were conducted in each gender to explore the effect of gender on the correlations. In men, significant positive correlations were observed between anger ratings and gelotophobia in all three situations. Conversely, in women, gelotophobia and anger were positively correlated in all three situations, but the correlation values were small. Furthermore, significant positive relationships were observed with sadness in the tripping and

laughing situations in men and in all three situations in women. In contrast, no significant correlations with shame were observed across all situations in either gender except for in the tripping situation in women (Table 5).

3.3. Discussion

The results of Study 2 were mostly consistent with those of Study 1. Particularly, shame ratings were consistently high among the three situations. Furthermore, similar trends regarding the ratings of the other negative emotions, including anger and sadness, were observed. Study 2 included an analysis of gender effects; however, the results showed that gender had no significant effect on the relation between situation and emotion. These findings indicate the consistent expression of shame in all three situations, which is intensified by being laughed at and is irrespective of gender or overt crying expression.

A small but significant correlation was observed between gelotophobia and emotional responses. To compare with the results of Study 1, the discussion will focus on the correlation of anger and sadness with gelotophobia. A significant correlation was observed between anger or sadness and gelotophobia. Particularly, sadness was related with gelotophobia in the laughing and crying situations, and these results were consistent with those in Study 1. Conversely, the correlations between sadness and gelotophobia in the tripping and crying situations were weaker in Study 2 than in Study 1. One possibility for this difference is that the high sadness ratings may be attributed to crying being a typical behavioral expression of sadness (Vingerhoets, 2013). In Study 2, crying behavior was less overtly expressed, and thus, the overall sadness rating was lower. Importantly, we found that gender possibly affected the relationship between emotional ratings and gelotophobia. Regarding the gender differences in the relationship between emotions and gelotophobia in the laughing situation, significant correlations of anger and sadness with gelotophobia were observed in both men and women. With respect to expressive emotional responses, women are generally more emotional than men (Deng et al., 2016; Kret & De Gelder, 2012). However, some studies found differences in gender-related emotional responses according to the type of emotion. Men feel anger more frequently, tend to be more aggressive, and show a greater response to threatening stimuli than women (Biaggio, 1989; Doyle & Biaggio, 1981; Kret & De Gelder, 2012). In this study, the laughing situation corresponded to an insult situation, wherein a low evaluation by others may be considered threatening to one's self. Thus, the higher likelihood for men to feel anger in such a threatening situation may have contributed to a stronger correlation between anger and gelotophobia in men than in women.

Conversely, there was a higher correlation with sadness than with anger in women. Overt aggression is negatively correlated with sadness ratings under stressful situations in women, whereas this is not observed in men (Verona et al., 2007). Thus, for women, self-threatening events such as those used in the present study do not evoke anger or aggressive behaviors. Instead, these events might intensify their assessment of sadness. However, sadness was significantly correlated with gelotophobia in the laughing situation in men. It is possible that as people with high gelotophobia tend to perceive laughter as negative and aggressive (Ruch et al., 2009), they may have guessed ostracized by laughter (Klages & Wirth, 2014) and perceived more sadness due to social exclusion (Leary, 2015; Shaver et al., 1987) regardless of gender. In summary, although gender differences were observed in the correlation between gelotophobia and emotions, the low scores of gelotophobia indicated that the differences between genders with respect to emotional perception toward situations might have affected the results.

4. General discussion

This study examined the degree of four negative emotions individuals infer when the character in the scenario was laughed at due to the failure. The results support the relationship between the intensity of negative emotions and gelotophobia, providing important information on understanding the emotions developed when a person is laughed at. In Study 1, the ratings for shame were consistently higher than those for other negative emotions in all situations. Furthermore, the ratings for shame and anger were the highest in the laughing situation among all the three situations. Mostly consistent results were obtained in Study 2.

Shame is one of the central emotions a person experiences when being laughed at. However, we found no significant correlations between shame and gelotophobia across all situations that corresponded to individual failure, and this could be attributed to a possible ceiling effect. Feelings of shame may be evoked and intensified by performing poorly in addition to being laughed at (Keltner, 1996). In addition, Japanese people report strong feelings of shame in situations where they are laughed at because of their own failures (Crystal et al., 2001), and consistent results were found in the present study. Therefore, it may not be surprising that people experience shame or sadness when they are laughed at because of their own failure regardless of the degree of gelotophobia.

Among the negative emotions, anger and sadness may be more important as their ratings were significantly correlated with gelotophobia in the laughing situation in both studies. Study 2 showed gender-related differences in ratings of anger and sadness. In men, anger and sadness were significantly and positively correlated with gelotophobia in the laughing situation. Nevertheless, it was sadness that was significantly positively correlated with gelotophobia in women. In contrast to previous reports of no gender differences in the degree of fear of being laughed at (Ruch et al., 2014; Wu et al., 2019), our results suggest that there may be gender-related differences in the gelotophobia and the perception of negative emotions. Even when shame is the predominant emotion and the emotional state is labeled as shame, the presence of other negative emotions (e.g., anger or sadness) means that shame is not represented in the same emotional state across different situations. The extent to which these other emotions, especially negative ones, are mixed varies with the situation, making the overall emotional experience unique. When one person says “I feel shamed,” he/she might mean feeling shamed with more anger in a laughing situation and shamed with more sadness in a crying situation. However, the sample in this study was a non-clinical sample, and the incidence of gelotophobia was generally low. This suggests that the gender differences in correlation could also represent differences in how emotions are perceived in the targeted situation. Therefore, further research is needed to clarify gelotophobia, gender-related differences, and the perception of negative emotions when laughed at.

The present study has some limitations. First, the participants were all Japanese individuals. The Japanese culture is a “shame (*haji*) culture,” indicating consciousness of external criticism (Benedict, 1946/2005). The present results are specific to the Japanese culture, and thus, future cross-cultural evaluations of differences and similarities are needed. Second, we adapted the scenarios from developmental studies in young children. Therefore, the contents of the scenarios were simple and did not represent events frequently occurring in adult life. Further research should use scenarios that fit adult life situations and examine whether the results can be replicated. Additionally, we asked participants to infer the feelings of the character in the situations. Although the participants’ assessments are considered to project their feelings onto the character in the scenario, it would also be necessary to ask how the participants “themselves” would feel under such situation. Third, we only used one situation. The results should be validated by incorporating multiple types of situations to better generalize the study findings. Further research on the emotional responses to being laughed at in situations other than the

failure situation is required. Furthermore, we presented the scenario incrementally to clarify how the degree of mixed negative emotions changes before and after being laughed at. Additional studies should set up conditions where participants are laughed at and not laughed at in the same situation for comparison. Finally, most participants were healthy and did not show a high level of gelotophobia. This shows that even non-clinical affected people (i.e., those with low gelotophobia) perceive negative emotional states toward being laughed at, and the emotional states vary according to individual differences. To better understand the varying degrees of negative emotions associated with gelotophobia, a larger sample of individuals with extreme levels of the gelotophobia should be evaluated. This would allow for a comparison of their perceptions of being laughed at with those of without gelotophobia. Moreover, further adaptation and validation of the J-GELOPH are necessary.

In conclusion, shame is mixed with other negative emotions, and the degree to which other negative emotions are mixed depends on the situation such as being laughed at. Furthermore, these emotional states might be affected by the degree of gelotophobia and gender. These findings suggest that even in the same laughing situation, although the dominant emotion is shame, the state of shame alone may be different from the state of shame mixed with other negative emotions that occur simultaneously.

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