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The relationship of teasing in childhood to the expression of gelotophobia in adults

Willibald Ruch[1], René T. Proyer[2] & Larry Ventis[3]

Abstract

In observations from clinical practice, the origin of gelotophobia, the fear of being laughed at, was traced back to traumatizing experiences of being laughed at in childhood. Because gelotophobia is assumed to be mediated by a personal sense of shame, this hypothesis was tested using a group of gelotophobes (N = 99), a shame-based clinical group (N = 103), a non shame-based clinical group (N = 166), and normal controls (N = 495). While gelotophobes and the shame-based group reported having had more traumatizing experiences than the normal controls and the non shame-based group, their intensity and frequency did not explain individual differences in the fear of being laughed at for gelotophobes and the shame-based group.

Key words: gelotophobia, fear, laughter, shame, childhood

[1] *Correspondence concerning this article should be addressed to:* Prof. Willibald Ruch, PhD, Section on Personality and Assessment, Department of Psychology, University of Zurich, Binzmühlestrasse 14/7, 8050 Zurich, Switzerland; email: w.ruch@psychologie.uzh.ch

[2] University of Zurich, Zurich, Switzerland

[3] College of William and Mary, Williamsburg, USA

While the number of empirical studies on the fear of being laughed at is steadily growing (see Ruch 2009a and this issue for an overview), its origins are still somewhat unclear and less well studied. Thus, the question arises as to how this heightened fear of being laughed at develops. There are only a few theoretical accounts that might contribute to the understanding of the underlying processes. Initial information on putative causes stems from case observations from clinical practice in which a group of patients in clinical practice was observed who were permanently concerned with being laughed at by others (Titze, 1995, 1997; see Titze [2009] for an overview). Based on information derived from these observations, Titze speculated about the origins of gelotophobia and a theoretical model on its causes and consequences was set up (see Ruch & Proyer, 2008a).

Titze considers three periods to be of importance. First, in his view, early experiences in infancy are said to be relevant as during this period the foundation for a proneness to shame is laid. Titze (2009) argues that gelotophobia is a shame-bound anxiety. This anxiety leads to a high level of self-observation and self-control. He describes the gelotophobes' general state to be "agelotic" (= being unable to appreciate the benefits of laughter). The origin of this attitude was, in many cases, that they experienced their early reference persons as lacking a "smiling face." The face they apparently recollect from childhood corresponds to the petrified countenance of a sphinx: with a blank gaze, being constantly disinterested and distant. Titze reckons that those caretakers may have been suffering from gelotophobic problems as well. When infants are confronted with such a face, the "interpersonal bridge" cannot be constructed and these children may experience themselves as being unconnected to others (Kaufman, 1985). Titze (2009) suggests that gelotophobes' parents demand conformity from their child "to a specific interpretation of reality that is related to normative ideas that have, in most cases, only private validity" (p. 32). Punishment by the parents is often shame-inducing (e.g., ridicule). It is assumed that these children do not experience laughter as a positive means of shared identity, and they cannot develop prosocial emotions, which reflect a cheerful and self-confident imperturbability. Rather other people are construed to be hostile strangers who treat them in an uncaring, cold, or sarcastic way. One weapon these strangers might use is derisive laughter, and this kind of laughter is what dissociated children are assumed to fear so much (Titze, 1997).

The above-mentioned events are not expected to lead directly to gelotophobia but are considered to facilitate its emergence. According to Titze, repeated and intense experiences of being laughed at in *childhood* and *youth* (e.g., bullying at school) and/or repeated intense experiences of being ridiculed during *adolescence* and *adulthood* (e.g., mobbing/bullying at work) are the more direct factors leading to the development of gelotophobic symptoms. Titze provides cases of patients who remember being ridiculed by their parents or teachers. However, detailed statistics about the prevalence of the different putative causes were not reported. In fact it is neither clear how many cases were studied altogether nor how many of the different experiences described above applied (e.g., how often one or more of these events occurred to how many people, and whether or not the severity or frequency of those events differ with levels of fear of being laughed at).

Independently from the case studies by Titze, there is evidence from two different sources that highlight the important role of shame for gelotophobia. Firstly, it was shown that the emotional response pattern of gelotophobes (e.g., in teasing and ridicule situations, maximal intensity of the emotion ever experienced, and prevalence during a typical week) consists primarily of high shame and fear and low joy (Platt, 2008; Ruch & Platt, 2009). Secondly, using Tangney's *Test of Self-Conscious Affect* (TOSCA-3; Tangney, Dearing, Wagner, & Gramzow, 2000), gelotophobes were found to react with shame and externalization to emotional aspects in day-to-day situations (Proyer, Platt, & Ruch, in press). Despite the fact that shame was of lesser importance compared to other emotions in the scenario-test that Rawlings, Tham, and Milner-Davis (2010, this issue) used, there is – next to the theoretical considerations that were described above – a solid empirical basis for the assumption that gelotophobes are shame-prone.

Beyond the clinical observations by Titze (see, for example, the single case report in Titze, 2009), so far there is no systematic empirical study on how frequently those putative causes (i.e., having been repeatedly and intensively laughed at by parents, teachers or peers in childhood and youth) can be found in the life history of gelotophobes (and non-gelotophobes) and whether gelotophobes report those experiences more often than do those without the fear of being laughed at. Does experiencing more of such life events, or experiencing those events at higher intensity, make someone gelotophobic? These questions remain to be answered.

Aims of the present study. The aim of the present study is the independent empirical validation of these patient reports in larger samples of gelotophobes and non-gelotophobes. Patients as well as normal controls were asked to remember whether or not they experienced certain events during certain periods of their lives. Further, because a sense of shame is assumed to prominently mediate sensitivity to others' laughter, for a hopefully more informative comparison, two patient groups were included in addition to the gelotophobic group. Non-shame based psychotherapy clients were judged by the treating clinician to have other problems (e.g., centering around guilt, anxiety or depression), and therefore despite experiencing sufficient problems to seek psychotherapy, in the present context of gelotophobic phenomena, they were expected to be highly similar to the non-clinical normal control participants. Shame based psychotherapy clients, judged to have a pervasive sense of shame about the self, but at a less intense level than gelotophobes, were expected to yield results, which were more similar to those of the gelotophobic group. The definition of the non shame-based and shame-based clinical groups is based on Nathanson's (1992) distinction between typical (i.e., guilt-based) and atypical (i.e., shame-based) depression. This is a re-analysis of the data that were used for the initial validation of gelotophobia and the development of the GELOPH<15> with new research hypotheses.

Two types of predictions were made and tested. Firstly, it was expected that gelotophobes would have uniquely encountered certain life experiences (e.g., those encountered by the patients interviewed by Titze), which are less prevalent or unknown to other people. Therefore, they were expected to agree to a list of putative causes for the fear of being laughed at more often than other groups do. More precisely, the prior study (Ruch & Proyer, 2008a) confirmed that the fear of being laughed at increases from the groups

of non shame-based psychotherapy clients (which were equal to normal controls) to shame-based therapy clients, to genuine gelotophobes. The three clinical groups are made up of people with a heterogeneous array of formal clinical diagnoses, all of whom were being seen in psychotherapy. Those in the non-shame based group were seen to primarily experience guilt about specific aspects of their experience. Those in the shame-based group were judged to more pervasively experience a sense of shame with regard to the self in general. Gelotophobes were seen as experiencing a more intense and extreme general sense of personal shame with a significant degree of focus on others laughter as an external indication of their personal deficiencies. Thus, for the present study it is expected that there will be similar differences in the prevalence of those putative causes in the four groups; i.e., normals and the non shame-based group will have encountered those events equally infrequently. The shame-based group will have encountered those more often but less so than genuine gelotophobes.

Secondly, it was expected that high scores on the fear of being laughed at would correlate significantly with a higher prevalence rate in those causes *within* each of the four groups. Individuals that massively experienced ridicule and mockery will have higher fear of being laughed at (compared to those with less such experiences) irrespective of what nosological category they belong to. Thus, if these are (some of) the origins that are of relevance it is expected that gelotophobia scores would vary with the frequency/intensity of those experiences both within groups and between groups.

Since it was not possible to do in-depth interviews with such large groups, a few representative causes were used in an exploratory survey. They cover different age spans, different behaviors, and different interaction partners. Derived from the common observations by Titze, the following prototypical situations were considered: (a) the avoidance of contacting peers during puberty in order not to be teased by them, (b) experiences with teachers who made fun of the person himself/herself while teaching (during the lessons), (c) experiences with punishment by parents by means of ironic and sarcastic comments, and (d) experiences of having been teased quite often in school.

While those events need to be remembered and thus are prone to memory bias, there is no reason to assume that those memories would be strongly differently affected for different groups or for the different age spans or interaction partners involved. Thus, it is assumed that the survey design will at least allow for testing whether or not the memories of the gelotophobes regarding their childhood and youth were replicable outside the therapy setting where they were first observed.

Method

Participants

Clinical samples. A total sample of $N = 368$ (135 males, 232 females, one not providing information on gender) patients were recruited from private practices and hospitals. The age span was from 16 to 83 years ($M = 40.49$ years, $SD = 11.00$) and 99 were diagnosed

as gelotophobes (G), 166 were therapy clients seen as having general shame-based problems (S), and 103 formed the clinical group with non shame-based problems (NS). Among all of these groups various types of depression dominated. The three groups did not differ from each other with respect to age (F[2,365] = .81; *n.s.*). Also, there is the same female to male ratio (2:1) in all samples (including the control group; $\chi^2(3) = 2.55$; *n.s.*).

The process of diagnosing the three clinical groups is described in detail in Ruch and Proyer (2008a). In short, psychotherapists working intensively with these patients were the diagnosticians. Diagnoses for group assignment were based on Nathanson (1992). The diagnosis of gelotophobia was given if the shame experiences were not restricted to objective causes in circumscribed areas of life, the shame experience was connected with a (poor) self-evaluation which, regularly, could be enforced by those social encounters where laughing or smiling is included, and the respective patient showed a restrained (stiff) posture, combined with awkward movements, averted gaze and other forms of inappropriate behavior (Titze, 1995, 1997). It should also be noted that gelotophobia was not a primary presenting symptom for most of the gelotophobic group, but on the basis of their vulnerability to a pervasive sensitivity to shame they were judged to be highly vulnerable to this fear.

Control sample. The control group consists of N = 495 adult volunteers and paid students (185 males, 383 females) from 16 to 93 years of age (M = 36.45 years, SD = 14.23). It has to be mentioned that since this is a non-clinical volunteer sample no one from the control group underwent a psychiatric screening. Hence, it cannot be ruled out that people with high fear of being laughed at, or other clinical attributes, including those of the shame-based or non shame-based groups, may be in this group.

Materials

The *GELOPH<15>* (Ruch & Proyer, 2008b) is a 15-item questionnaire for the subjective assessment of gelotophobia and the standard instrument for the assessment of the fear of being laughed at. All items are positively keyed. Answers are given on a four point Likert scale (1 = strongly disagree; 2 = moderately disagree; 3 = moderately agree; 4 = strongly agree). The reliability (internal consistency) of the instrument was high in the present study (α = .94 across all research groups). The questionnaire has been used in a wide range of studies so far (e.g., this issue; Papousek et al., 2009; Platt, 2008; Platt, Proyer, & Ruch, 2009; Ruch, 2009; Ruch & Proyer, 2009a).

Putative causes. A *list of putative causes* was used for the examination of putative causes of gelotophobia. The self-report indicators for the putative causes were included in the list of gelotophobia-statements and had to be answered in the same format (a four point Likert scale from 1 = strongly disagree to 4 = strongly agree). The four statements are: (1) “During my school time I was teased quite often”, (2) “Some of my teachers made fun of me while teaching (during lessons)”, (3) “My mother/my father used to punish me by means of ironic and sarcastic comments”, and (4) “During puberty I have avoided contact with peers in order not to be teased by them”.

These items will be analyzed separately but a total score will be computed as well. Furthermore, for a more restrictive test of the hypotheses it seemed advisable to count only the strong agreements (= 4) and contrast them to all other answers (1, 2, 3). Thus, the responses to these four statements were dichotomized based on the answer categories; we recoded the answer category that indicates strong agreement (= 4) into a 1 and compared it to all other answers (= 0). Again, the dichotomized items will be analyzed separately but also added up to form a total score of frequency of extreme experiences.

Procedure

The data collection took place between 2001 and 2006. Two clinical psychologists with expert knowledge regarding the concept of gelotophobia provided the diagnosis based on the criteria outlined in the previous section. The two therapists worked with the patients in a clinical setting (the participants from the clinical samples were already undergoing treatment) and provided the diagnosis for the present project. All patients already had a (traditional) clinical diagnosis when they completed the questionnaires. They did not know the questionnaire results and thus were not influenced by the scores from the subjective assessment procedure. The clients did not receive any remuneration for their participation and the completion of the questionnaire was offered as a voluntarily activity within the daily clinical routine (all tests were administered individually). The full procedure is described in more detail in Ruch and Proyer (2008a).

The sample of normal controls was recruited via advertisements in newspapers and took part in a large-scale personality study. They were mailed questionnaires, which they filled in at home in solitude during their leisure time. They received feedback on group and individual results in appreciation for their participation. The student samples were recruited by means of pamphlets. They were tested individually and they were paid for their services. Testing took place in laboratory rooms in the University.

Results

Intercorrelations among the putative causes

As expected, the four putative causes showed moderate intercorrelations. Across all participants the intercorrelations ranged from .28 to .48 (all $p < .05$; average correlation = .36; Cronbach alpha = .70). This is in line with the view that earlier teasing gradually makes individuals vulnerable for later events of mockery. The correlations for the separate groups were all positive but more diverse. They ranged from 0.13 to 0.46 with a median of 0.30, and were all significant with the exception of two. The interrelations among the statements reflecting the causes were numerically lower in the groups with higher levels of gelotophobia, namely the gelotophobes (mean correlation: $r = 0.26$) and the shame-based clinical group (mean $r = 0.29$) (although there is no ceiling effect to be observed). The average scores were higher for normal controls (mean $r = 0.33$) and the

non shame-based clinical group (mean r = 0.36). A mean score ("Total score putative causes list") was computed by averaging the four statements.

Across-group analysis of putative causes

Five one-way ANOVAs were computed with the four groups as classification variable and the four putative causes (and a sum score of the causes) as dependent variables. Post hoc tests (Scheffé) were used to investigate whether the groups differed with respect to those eliciting conditions. Table 1 gives the results of the ANOVAs as well as the means of the four groups in the four self-report indicators for the putative causes and the total score composed of the average of the four statements along with Cronbach alphas for gelotophobia in the four groups.

Table 1:
Incidence of being laughed at in youth for the different groups

Items		NC	NS	S	G	F	p
During my school time I have been teased quite often.	*M*	1.86[b]	2.01[b]	2.43[a]	2.68[a]	23.84	=.0001
	S.D.	0.97	1.14	1.11	1.22		
Some of my teachers made fun of me while teaching (during lessons).	*M*	1.49[b]	1.70[b]	1.98[ab]	2.16[a]	21.58	=.0001
	S.D.	0.79	0.98	1.04	1.08		
My mother and/or my father used to punish me by means of ironic and sarcastic comments.	*M*	1.59	2.00[b]	2.21[ab]	2.41[a]	27.93	=.0001
	S.D.	0.89	1.16	1.15	1.25		
During puberty I have avoided contact to peers in order not to have been teased by them.	*M*	1.43[a]	1.39[a]	1.75	2.33	32.78	=.0001
	S.D.	0.80	0.76	0.99	1.14		
Total score putative causes list	*M*	1.59[a]	1.77[a]	2.09	2.40	52.94	=.0001
	S.D.	0.61	0.73	0.74	0.78		
	α	0.69	0.67	0.53	0.48		
Mean gelotophobia	*M*	1.76 [a]	1.72 [a]	2.34	3.15	207.37	=.0001
	S.D.	0.57	0.45	0.54	0.46		
	α	0.90	0.83	0.84	0.79		

Note. N = 863. NC = normal controls (n = 495), NS = non shame-based group (n = 103), S = shame-based group (n = 166), G = gelotophobes (n = 99); M = mean; S.D. = standard deviation; Mean gelotophobia = mean score of gelotophobia in the four research groups. Means sharing a superscript do not differ from each other.

Table 1 shows that while group membership had a significant impact on each individual statement, the post hoc tests (Scheffé) yielded different patterns for different statements. The putative causes indeed tended to be most prevalent in the groups with higher scores in gelotophobia. However, while the gelotophobes had numerically higher means than the shame-based group, none of those differences were significant except for avoiding contact with peers during puberty in order to avoid being teased by them. Here, gelotophobes scored higher than the shame-based group (and the other two groups; p =.0001). Only the mean of having been teased quite often during school time numerically exceeded the scale midpoint (i.e., 2.5) in the group of gelotophobes. The gelotophobes yielded higher scores than the other groups in the statement regarding the avoidance of contact with peers in puberty for not being teased by them. Remembered incidences of being mocked and punished by ironic and sarcastic remarks from parents discriminated between the normal controls and the three clinical groups (all p = .0001); however, while the latter were numerically different they did not differ significantly; except for the comparison of gelotophobes against the non shame-based group where gelotophobes scored higher (p = .0420).

Table 1 also shows that the four groups were significantly different in the total score of the four items and post hoc tests yielded significant differences among all adjacent means (except for the normal controls and the group of non shame-based patients). Thus, overall the four groups differed with respect to frequency of recalling having been exposed to mockery situations from parents, teachers and peers. The four groups were also compared regarding their mean score in gelotophobia (see Table 1 for results of the one-way ANOVA). It is apparent that the four groups varied in a similar way, but with some notable differences, in the intensity of gelotophobia and the total score in putative causes. The similarity was in the rank order of the means, yet the *amount* of differences varied. While on the GELOPH<15> the gelotophobes scored more than two standard deviations higher than the normal controls, and more than one standard deviation above the shame-based group, the difference was only half the size for the sum of the four putative causes. Gelotophobes exceeded the shame-based group and normal controls only by one and a half standard deviation, respectively. Thus, compared to the prevalence of those putative causes the gelotophobia scores were disproportionately high.

Within-groups analysis of putative causes

In order to examine whether the four self-report indicators for the putative causes predict the intensity of gelotophobia the list of statements (individually and combined) was correlated with the gelotophobia-score separately in the four groups and for the entire sample. Furthermore, to examine how much variance the putative causes account for altogether a regression analysis with the four statements as predictors and the gelotophobia mean score as criterion was performed for the different groups separately and combined (see Table 2).

Table 2:
Correlations of the items related to the putative causes with the gelotophobia-scores

Items	NC	NS	S	G	Total sample
During my school time I have been teased quite often.	.41*	.32*	.18*	.15	.41*
Some of my teachers made fun of me while teaching (during lessons).	.23*	.35*	.07	.11	.30*
My mother and/or father used to punish me by means of ironic and sarcastic comments.	.28*	.38*	.00	.03	.31*
During puberty I have avoided contact to peers in order not to have been teased by them.	.44*	.35*	.26*	.23	.47*
Total score putative causes list	.49*	.49*	.18*	.19	.51*
Multiple regression	.52*	.49*	.28*	.24	.53*

Note. $N = 863$. NC = normal controls ($n = 495$), NS = non shame-based group ($n = 103$), S = shame-based group ($n = 166$), G = gelotophobes ($n = 99$).
*$p < .05$.

Table 2 shows that the pattern of correlations was quite different for the four groups. Agreement to the four putative causes did predict gelotophobia within the group of normal controls and the non shame-based group. Roughly 25 % of the variance in the intensity of the fear of being laughed at was accounted for by the four causes together. However, the correlations were only negligible in the shame-based clinical group and the gelotophobes. While they failed to be significant altogether for the gelotophobes, the relationship was significant among the shame-based group (explaining 2-3 % of the variance). This effect was *not* simply due to differences in the reliability (in terms of internal consistency) of the gelotophobia score in the four groups. Also the variance in gelotophobia was roughly comparable in all four groups (see Table 1). Perhaps the standard deviation of the gelotophobes is slightly narrowed due to a very mild ceiling effect. Nevertheless, the scores were normally distributed and the mean is further away from the maximal score (of 4.00) as the mean of the normal is from the minimal score (of 1.00).

The relationship between those putative causes and level of gelotophobia was stronger for younger than for older individuals in all groups. For example, in the group of normal controls the correlation for individuals in the ages from 18 to 30 years was $r = .59$ ($df = 204$; $p < .05$) compared to $r = .43$ ($df = 287$; $p < .05$) for those older than 30 years; the two correlation coefficients did differ significantly from each other ($p < .05$; Steiger, 1980). The more time that elapses between those events and current age, the lower was the relationship.

Number of putative causes

The group of gelotophobes did show a few peculiarities regarding the four putative causes. Despite the fact that gelotophobes had the highest variance in the scores, their intercorrelation was lowest (yielding also the lowest alpha). Also, this large variation in the causes was not paralleled in the gelotophobia scores, where the variance is low compared to the other groups. This might indicate that the causes are very specific. Thus, one gelotophobic individual might report having experienced intense mockery at school (and not at home, or with friends), while others may have met frequent sarcasm of parents but experienced school and peers not to be hostile. This might have led to higher variance in those statements but also to lower intercorrelations. Thus, taken together the observed lower consistency might speak for highly ideographic antecedents. Therefore, as a consequence, it might not make sense to add the fine grained responses to these statements, but only count, if intense mockery took place at all, and if so, perhaps also how often. Therefore, for a more restrictive test of the hypotheses the dichotomized scores (strong agreement = 1; all other answers = 0) were used as well.

Results showed that many gelotophobes reported that they had been teased quite often during the time they went to school (1, or "strongly agree": 37.37 %). Over one quarter also reported that their parents used to punish them by means of ironic and sarcastic comments (strongly agree: 28.28 %). Having been made fun of by teachers in class (strongly agree: 13.13 %) and having avoided contact with peers during puberty to prevent being teased by them (strongly agree: 20.20 %) were not strongly endorsed. All in all, for 58.59 % of the gelotophobes at least one of the causes did strongly apply. While this number is far away from being compelling it is high compared to the 14.34 % among the normal controls. More precisely, among the gelotophobes, 41.41 % did say that *none* of the four causes did apply (i.e., they did not strongly agree with any of the four statements). One of the putative causes did apply for 33.33 %, and the frequencies for 2, 3, and 4 were 14.14 %, 7.07 %, and 4.04 %, respectively. The picture was quite different for normal controls; here 85.66 % remembered experiencing none of those causes, and only 10.71 % listed one of the causes. More than one of those causes was extremely rare (2 = 3.03 %; 3 = 0.20 %; 4 = 0.40 %). While the prevalence of those causes increased with the level of fear of the group, in total the sum of those causes was not sufficient to explain the group or individual differences in gelotophobia.

An ANOVA was performed with the number of causes as grouping variable (none, one, two or three as the categories three and four were lumped together in one group to ensure that each cell had a frequency higher than five) and gelotophobia as dependent variable. The analysis yielded a significant effect of number of causes on degree of gelotophobia in the group of gelotophobes ($F[3, 95] = 2.835$; $p = 0.0425$). Post hoc tests showed that one ($M = 3.26$) or two ($M = 3.34$) intense experiences were associated with significantly higher gelotophobia scores than no cause at all ($M = 3.13$). The highest number of such experiences (i.e., more than 3) was associated again with a lower level of fear of being laughed at ($M = 3.10$).

Discussion

The present study was intended to provide a first independent empirical validation of the putative causes for gelotophobia that were observed by Titze (see Titze, 2009). This was done by comparing scores on a list of putative causes given by groups of clinically diagnosed gelotophobes, shame-based and non shame-based clinical groups and a group of normal controls. Overall, the results are mixed. While there is some supporting evidence, the results taken together make it appear unlikely that the fear of being laughed at can be traced back substantially (or exclusively) to repeated and intense experiences of having been laughed at and ridiculed by parents, peers and/or teachers in childhood and youth. In detail, contrary to the expectations three of the four statements (causes) do not discriminate between shame-based therapy clients and gelotophobes in terms of the group means. Numerically, the gelotophobes exceed the shame-based group by reporting more frequently that they have been teased quite often during the time they went to their school, that some of their teachers made fun of them in class, and that their parents used to punish them by means of ironic and sarcastic comments. However, these differences were not statistically significant. Thus, while those events are more prevalent in the two shame-related groups compared to the two non shame-based groups, they do not determine whether or not one develops a specific strong fear of being laughed at or merely has shame-related symptoms. In general, having encountered these three life events makes it more likely that someone will have shame-related symptoms (i.e., be diagnosed as a shame-based neurotic, or gelotophobic), but these events are not specific for gelotophobes. However, it should be kept in mind that the quality of the diagnoses might have an impact on the results. As a limitation it has be mentioned that it was not possible to collect information on the reliability of the diagnosis by the clinical psychologists. One clinical psychologist only assessed each patient. However, the results seem to support, at least in part, the validity of the diagnoses.

Nevertheless, gelotophobes do report significantly more often than the shame-based group that they have avoided contact with peers in puberty to avoid being teased by them. The shame-based group, in turn, was higher than the non shame-based group and the normal controls, which did not differ from each other. This statement basically expresses the early onset of this fear (i.e., during puberty), without explicitly stating that peers were actually teasing often or intensively. So far it remains unclear whether this might be a distinguishing feature among the three groups or whether this result is an artifact. A replication study is needed for a clarification of this specific point (best supplemented by other data such as peer observations). However, it should be noted that avoiding others in order to avoid being teased could well be a consequence of gelotophobia rather than a causal influence.

There is a difference though when the putative causes are aggregated; the sum of the four putative causes did discriminate well among all four groups (except for the group of normal controls, and the non shame-based group that did not yield statistically different scores). While the four groups' differences on the combined score strongly resemble those for the total degree of the fear of being laughed at, there are salient differences: the average scores for the shame-based group and the gelotophobes are lower for the putative

causes than for the gelotophobia scores. Thus, the group of gelotophobes scored higher on the gelotophobia scale than might be expected from the prevalence of the putative causes in that group. Unless this is a memory bias, one has to assume that more causes exist than those addressed in the present study. Analyzing differences in the number of the four putative causes endorsed tends to support this conclusion. It was shown that some of the diagnosed gelotophobes did not agree to a single one of the four causes. The study also suggests that endorsing a higher number of the putative causes (i.e., strong agreement to three or four of the statements) was associated with numerically lower scores in the fear of being laughed at. Thus, a higher agreement to the four putative causes was not related to higher expressions in the fear of being laughed at. Overall there was broad variation in the group of gelotophobes regarding the endorsement of the four causes that makes it unlikely that these causes are exclusively relevant for the development of the fear of being laughed at.

Putative causes in the non shame-based group and normal controls. The results suggest that the amount of being laughed at during childhood and adolescence does relate to the degree of gelotophobia among the *normal controls* and the *non shame-based* group. The total score of the putative causes shows a common variation with the gelotophobia-scores of 24 % in these two groups. However, the self-report indicators for the putative causes do *not* explain much of the variation among the gelotophobes or the non shame-based clinical group. In these groups the common variation of gelotophobia and the causes is only 4 % and therefore much lower than in the other two groups. Thus, the intensity of the fear of being laughed at is not varying with the degree of the prevalence of those putative causes of the fear of being laughed at. It should be noted that the scores in this scale may vary between slight and extreme fear (from 2.5 to 4.0) and while the variance in this group is slightly reduced there is still a lot of variability in need of explanation. Though not statistically significant, the correlation coefficients between the putative causes and gelotophobia were higher among the younger (18 to 30 years) compared to the older participants. This relates well to the recently reported finding that scores on gelotophobia are higher among younger (younger than thirty) compared to older age groups (Platt, & Ruch, in press, this issue; Platt, Ruch, & Proyer, 2010).

Comparison among the four groups. It is not easy to bring the results of the analyses within and between groups together. Overall, the results on differences among the four groups in the self-report indicators for the putative causes are highly interesting and several explanations might apply. One is that the strength of those factors affects individual differences in gelotophobia in the two groups where shame generally is not a problem, but it does not affect the strength of the symptomatology among the two groups with shame-related problems. Alternatively, this may be related to the intensity of the symptomatology. Those causes might affect the degree of gelotophobia for *mild* forms of gelotophobia (those two groups over all endorsed the symptoms at a low level). For the higher levels of gelotophobia (i.e., among the shame-based group and the gelotophobes) perhaps more intense causes are required. Maybe those three life events did not signify intensive mockery situations and only more traumatic events might have yielded such an effect. As the shame-based clinical group (psychotherapy clients) and gelotophobes do not differ from each other (except in one out of the four statements; see Table 1) and

individual differences in putative causes do not correlate with current level of gelotophobia other hitherto unknown factors must be assumed to determine whether a person develops a general shame-based depression or gelotophobia.

Taking the results together, there are several possible explanations for the results not fully working out as expected that might apply. First, one could argue that we did not sample the putative causes and time spans in a representative way. This is only partly true as the putative causes list covered several interaction partners (teachers, peers, and parents), situations (home, school), and time spans (childhood, puberty, adolescence). Secondly, it could be that the fear of being laughed at was primarily developed during more recent times (i.e., adulthood) and the list did not sample this. However, putative causes correlated with individual differences in gelotophobia for the two groups with generally low scores (normal controls and non shame-based clinical group). Platt and Ruch (in press, this special issue) found for a sample of healthy volunteers between the ages of 50 and 80 years that they remembered that their fear of being laughed at was typically highest up to age 30 and then declined. Only very few indicated to have developed the fear later on. Another possibility is that the diagnostic groups were not reliably identified. Verifying the hypotheses is impaired if the groups overlap rather then being clearly separated. As the assessment was based on one expert only we do not have information on the reliability of these judgments. Furthermore, maybe the severity of the teasing and being laughed at was not high enough. Perhaps being teased often accounts for individual differences in gelotophobia within the range of normality. It might require more intense and perhaps traumatic experiences to develop gelotophobia, or to account for differences in severity of the symptoms *among* the gelotophobes. The case study provided by Titze (2009) indeed yielded more intense shame experiences.

Teasing and being laughed at as putative causes of gelotophobia. Clearly, a more in depth study is needed with a broader coverage of events presumably related to the development of the fear of being laughed at, and the assessment of events should not be restricted to self-reports of remembered events. For example, Strawser, Storch, and Roberti (2005; see also Roth, Coles, & Heimberg, 2002; Storch, Roth, Coles, Heimberg, Bravata, & Moser, 2004) developed a questionnaire for the measurement of memories for childhood teasing comprising a broader list of categories. Unfortunately, this questionnaire was not available at the time the current study was planned. Edwards, Martin, and Dozois (2010, this issue) were already able to use this instrument and found it to be correlated with gelotophobia. Interestingly, significant associations between gelotophobia and a history of being teased remained (especially in the domains of academic excellence and social behavior) even after controlling for social anxiety and specific fears – see also Carretero-Dios and colleagues (2010, this issue) on the relation between social anxiety disorder, fear of negative evaluation and gelotophobia. Overall, gelotophobia was related to distress but not frequency of childhood teasing. Therefore, it would be interesting to know whether gelotophobes differ from other groups regarding the *intensity* with which they have experienced their *worst* experience of being laughed at compared to other persons. Furthermore, Platt (2008; see also Ruch, & Platt, 2009) demonstrated that ridicule and teasing have different emotional values for low and high gelotophobes. So this difference needs to be addressed in a more in depth study.

After completion of the present study, two more findings were published that should be addressed here briefly as they relate to the outcomes. First of all, experiences with being laughed at seem to be a quite frequent phenomenon. About 92 % of participants in an online survey (among the general public) reported that they could recollect at least one incident where they have been laughed at in the past twelve months (Proyer et al., 2009). Additionally, the fear of being laughed at, the joy of being laughed at (gelotophilia), and the joy of laughing at others (katagelasticism; see Ruch, & Proyer, 2009b) were about equally related to the *frequency* of remembered incidents of having been laughed at in the past twelve months. However, gelotophobes reported experiencing these incidents with a higher *intensity*. Thus, they do not seem to experience events where they are being laughed at more frequently but if such an event occurs this seems to be a very intense experience for them. A second study that has been conducted recently suggests that (remembered) social support in childhood and youth relates to the expression of gelotophobia in adults (as well as to the expression of gelotophilia; Weibel, & Proyer, 2010). According to this study higher remembered support predicts lower expressions of gelotophobia (and gelotophilia; while katagelasticism exists independently from remembered social support). A closer evaluation of the data shows that primarily support by peers and family – and less so by teachers – is related to lower expressions of the fear of being laughed at. Thus, there might be other reasons than those covered in the list of putative causes that was used in the present study that more strongly contribute to the expression of gelotophobia.

Overall, one might conclude that other factors (than those that entered the present study) must exist that determine whether gelotophobic symptoms will be developed or not. The putative causal factors in the model examined consist of interpersonal environmental influences, which are consistent with a behavioral conditioning perspective. An additional set of variables which may be highly relevant would be individual difference variables. One possible candidate would be differences in autonomic nervous system reactivity (Wickramasekera, 1988). To the extent that one's autonomic nervous system is relatively highly reactive, a potentially threatening event (such as being laughed at) may make a far more intense and lasting impression.

Considering Titze's description of the parents of gelotophobes, it could be that rather than only being directly ridiculed and laughed at, a more general influence, such as parental neglect or emotional abuse, could be a precursor which sensitizes one to the negative evaluation of others. Items assessing such a possibility could be included in later questionnaires assessing putative causes.

Another possibility would be one's cognitive style in making sense of events. Schniering and Rapee (2004) identified a four factor structure for children's negative automatic thoughts (Physical Threat, Hostility, Social Threat, and Personal Failure). It seems plausible that if one were spontaneously emphasizing the latter two, such thoughts could at least enhance the probability of gelotophobia.

All in all, it seems that the study of the etiology of the fear of being laughed at will need to account for more factors to be more successful in the prediction of the origin of the phenomenon. This will entail a more objective (and broader) assessment of the putative

causes but also the consideration of dispositional factors. Studies of personality correlates showed, for example, that gelotophobes are more frequently found among the neurotic introverts (i.e., shy/anxious) (Proyer & Ruch, in press, this special issue; Ruch & Proyer, 2009a) and that this fear is associated with a high inclination to shame and fear, but a low disposition to joy. A predisposition to facilitating or protective factors together with a high frequency and/or intensity of ridicule or bullying experiences might form a more promising etiological model. Finally, the results of the study by Führ (2010, this issue) allow now for the planning of longitudinal studies with children and adolescents that may provide further information on the antecedents and consequences of gelotophobia.

Limitations. One might argue that it is not necessary that gelotophobes have experienced these causes by themselves but were witnesses of others being repeatedly mocked. Janes and Olsen (2000) showed that witnessing others getting mocked leads to consequences in the observer (e.g., behavior inhibition, enhanced conformity or reduced creativity). Therefore, one might argue that it would be possible that merely imagined or anticipated events of being mocked or of witnessing others getting mocked might have an impact. Platt and Ruch (in press, this special issue) found that older gelotophobes also worried about age related vulnerabilities that have not actually happened to them. However, so far it is unclear whether these explanations are useful for the further understanding of the causes of gelotophobia at all and need to be tested empirically in future studies.

Overall, the conclusions drawn in this paper seem to be valid in the German-language area. However, it may be fruitful to study not only the prevalence of gelotophobia in different countries and regions of the world but also to study the relationship of the putative causes of gelotophobia in these samples as well. It might be possible that certain characteristics of the respective culture (e.g., collectivistic vs. individualistic) or differences among countries (e.g., different well-being rates in the countries) might have an impact on the relationships reported here.

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