

The applicability of the GELOPH<15> in children and adolescents: First evaluation in a large sample of Danish pupils

*Martin Führ*¹

Abstract

Gelotophobia is defined as the fear of being laughed at. This is the first empirical study on gelotophobia among children and adolescents (aged 11-16 years). Data was collected in Denmark ($N = 1,322$). The Danish version of the GELOPH<15> (Führ, Proyer & Ruch, 2009) was used and yielded good psychometric properties in terms of a high internal consistency of the items and the factorial structure (one-dimensional solution) was highly similar to data for the adult version. As in adults, higher bullying experiences were well predicted by the individual expression of the fear of being laughed at. While the actual number of absent days from school was widely unrelated to gelotophobia, those pupils who frequently think about not attending school but have a low number of actual absent days yielded the highest gelotophobia scores. This study shows that gelotophobia can be reliably measured with the standard form of the GELOPH<15>. The pupils did not report problems with understanding the items (though the eleven year olds needed help by teachers for filling in the items). This study allows planning and conducting follow-up studies (e.g., longitudinal design) with much younger populations as has so far been studied. The knowledge about the fear of being laughed at among children and adolescents is still very limited.

Key words: absenteeism, adolescents, children, gelotophobia, humor

¹ *Correspondence concerning this article should be addressed to:* Assoc.Prof. Martin Führ, PhD, University of Aalborg, Department 11 – Department of Communication and Psychology, Kroghstræde 3, Room: 1-208, 9220 Aalborg, Denmark; email: humorforskning@webspeed.dk

During the past decades, humor research has given its priority to adult humor; for example, investigating the use of humor as a coping tool, as communicative or social competence, or as attitude towards life (see Martin [2007] or Ruch [2008] for an overview). Thus far no studies have empirically dealt with the subject of being laughed at in childhood – especially, its causes and consequences. However, humor plays an important role in the life of children and adolescents (e.g., Bergen, 2007; Wolfenstein, 1978). For example, there is evidence that children use humor as a coping mechanism (Führ, 2002a). In an influential work, Rod Martin (1998), favored the distinction between humor as a coping strategy and defense mechanism. Mishkin (1977; cited after Martin, 1998) referred to humor as a *courage mechanism* “... suggesting that, like defense mechanisms, humor serves as a device for contending with unpleasant aspects of reality; however, unlike defense mechanism, it is based on cognitive processes that do not reject or ignore the demands of reality” (p. 44). A further important distinction mentioned by Martin (1998) is whether coping humor can be regarded as a kind of ability or as a habitual behavioral style or trait. Thus, it is suggested that humor can be beneficially used by some children to cope with adversities of life. However, data collected with adults suggest that those who fear being laughed at (gelotophobes) do not endorse the use of humor as a coping strategy (Ruch, Beermann, & Proyer, 2009). Empirical data are needed for testing whether fear of being laughed at exists among children and adolescents as well or whether it develops later. It is assumed that it exists at all stages in life from childhood to higher age (see Platt & Ruch [2010] this issue) and that certain periods in life might provide more pitfalls for being laughed at than others. In studying the fear of being laughed at among children and adolescents, a special look at challenges that children and adolescents face needs to be taken.

Specific challenges in adolescence that might be related to being teased and bullied by others. Developmental psychologists (e.g., Erikson, 1968) regard adolescence as the most difficult period in human life. It seems obvious that this period of life provides multiple “chances” for being laughed at. The challenge of growing sexual maturity, indicated by visible changes of the body, sexual interest in own and opposite-gender sexuality and the response of one’s own *entourage* to these changes, as well as the growing *ego-reflectivity* (Stern, 1925) have to be considered as a common challenge to this age group. Furthermore, the question “who am I” and “which way do I want to go” is *redefined*. At this time, the challenge of moving from one’s own dependence on the family towards the first own attempt of an attitude towards life has to be faced. Kauke (1996) refers to this as *Lebensentwurf* (outline of life); i.e., an outline for a wished self, which is seen as an aim for the development of self. Führ (2002b) showed that the ability to be good to talk to, have your own opinion on things, have humor, to be good looking and to be dressed with the right clothes are the major predictors for acceptance and status in this age group. Lacking these “abilities” or “physical fortunes” may contribute to the fear of being laughed at in a very vulnerable developmental period of life; but for the analyst, the question remains of how to access gelotophobia in adolescence.

Studying gelotophobia among children and adolescents. Thus far all studies on gelotophobia – including the articles in this special issue except for the present one – have been conducted with adults. Therefore, there are no experiences with using the GELOPH<15>

(or an alternate instrument or any other technique) with non-adults. The items in the scale reflect typical convictions, ideas, and behaviors of gelotophobes and were developed with a focus on adults. Nevertheless, they seem to be applicable to younger samples as well as they deal mainly with everyday situations that might also be encountered by children and adolescents. However, the assumption that the GELOPH<15> might be suitable for studying children and adolescents as well has not yet been tested empirically.

A large survey among Danish children and adolescents, that focuses on humor and the use of humor as a coping tool (Führ, 2009), provided the possibility to collect data on gelotophobia with this age group. This study also provided information on self-reported bullying experiences and absences from school that may be related to the fear of being laughed at. The absences are available from self-reports but also from an objective source (i.e., from the schools directly).

Platt, Proyer, and Ruch (2009) found that gelotophobia is a very potent predictor of experiences of having been bullied (see also Platt, 2008). Based on theoretical considerations by Titze, one would expect that repeated and intense experiences with having been laughed at (which might be translated as “bullying”) lead to the development of gelotophobia (see Titze [2009] for an overview). As bullying in schools or new forms of bullying (e.g., cyber bullying; see for example Riebel, Jäger, & Fischer, 2009; or the EXBUS-project [*Exploring Bullying in Schools*] in Denmark, Kofoed, 2009) seem to be a quite frequent experience among children and adolescents, it is assumed that bullying experiences can be observed in the present sample of children and adolescents as well. Given the serious (psychological) consequences that have been reported for bullying victims (e.g., Bowling & Beehr, 2006; Gini & Pozzoli, 2009; Gladstone, Pargett, & Mahli, 2006; Neary & Joseph, 1994), this seems to be an important research topic. Furthermore, gelotophobes do not appreciate the positive effects of humor, it seems evident that humor-related incidents might play a key role in remembered events of having been bullied (harmless jokes and funny remarks might be misinterpreted as offensive). However, results should be about comparable to what adults report; i.e., gelotophobes are more prone to experience (to recollect) bullying incidents than non-gelotophobes.

Thus far, there are no data on whether gelotophobia is associated with a higher number of absences from work or school or not. However, there is literature that indicates that psychological distress is a predictor of absenteeism (see e.g., Dake, Price, & Telljohann, 2003; Hardy, Woods, & Wall, 2003). One might assume that gelotophobes have a higher number of absent days at work or school for avoiding to be the butt of jokes by colleagues and to protect themselves from derision. Three different sources of information on absence days from school are being reported in this study: (1) a self-report on whether the person has already skipped school or not; (2) self-report data on whether the person frequently thinks about skipping school; and (3) schools provided information on the actual number of absent days for their pupils. However, the latter does not contain information on *why* a pupil has been away from school. Therefore, the reasons for absent days might be quite diverse (e.g., [chronic] illness, other obligations, skipping school, etc.). As these data cannot be coded retrospectively, they might be difficult to interpret, as chronically ill pupils would fall in the same category as those who frequently skip school. Therefore, it is suggested not only to relate gelotophobia to the single variables but also

to combine them. For example, one might differ between pupils who frequently think about not going to school with high or low numbers of actual absent days. Other combinations might also contribute to the further understanding of these relations.

The fear of being laughed at in Denmark. Gelotophobia (in adults) has been studied in Denmark before (Führ, Proyer, & Ruch, 2009). Compared to other data that has been published (e.g., Carretero-Dios, Proyer, Ruch, & Rubio, in press [Spain and Colombia]; Forabosco, Dore, Ruch, & Proyer, 2009 [Italy]; Hřebícková, Ficková, Klementová, Ruch, & Proyer, 2009 [Czech Republic and Slovakia]; Kazarian, Ruch, & Proyer, 2009 [Lebanon]; Platt et al., 2009 [England]; Ruch & Proyer, 2008a [Germany]; Sarid, Ruch, & Proyer, in press [Israel]), Denmark had the lowest number of gelotophobes in the sample (< 2 %). In this study, the Danish version of the GELOPH<15> demonstrated high internal consistency ($\alpha = .84$) and as in the initial German version (Ruch, & Proyer, 2008a) a one-dimensional factor solution did fit the data best. While gelotophobia existed independently from demographics in German data (Ruch & Proyer, 2008ab), younger Danes that were males and not in a relationship tended to score higher in the fear of being laughed at. It was concluded that the Danish version has satisfying psychometric properties and could be used for research purposes. The present study contains the first data that were collected among children and adolescents with the GELOPH<15>.

Method

Sample. $N = 1,322$ children and adolescents between the age of 11 and 16 entered the study; $n = 102$ were 11 years (53 boys and 46 girls; 3 did not indicate their gender), $n = 255$ were 12 years (124 boys and 123 girls; 8 did not indicate gender), $n = 291$ were 13 years (139 boys and 148 girls; 4 did not indicate gender), $n = 337$ were 14 years (160 were boys and 169 were girls; 8 did not indicate gender), $n = 231$ were 15 years (118 were boys and 110 were girls; 3 did not indicate gender), and $n = 106$ were 16 years (59 were boys and 43 were girls; 4 did not indicate gender). The mean age in the total sample was 13.50 ($SD = 1.39$). The gender distribution was about equal with 653 boys (49.4 %) and 639 girls (48.3 %); 30 (2.3 %) did not provide information on their gender.

Instruments

The *GELOPH<15>* (Ruch & Proyer, 2008a) is a 15-item questionnaire for the subjective assessment of gelotophobia. Führ, Proyer, and Ruch (2009) authored the Danish version that was used in the present study. All items are positively keyed and the 4-point answer format ranges from 1 = “strongly disagree” to 4 = “strongly agree”. The *GELOPH<15>* is the standard instrument for the assessment of the fear of being laughed at. It has been widely used in research and has been translated to more than 40 different languages so far (e.g., this issue; Papousek, Ruch, Freudenthaler, Kogler, Lang, & Schultze, 2009; Ruch, 2009a; Ruch & Proyer, 2009a).

Information on bullying-experiences, thoughts about not going to school, and having skipped school were gathered via single item measures; i.e., “I have been bullied in school” (four categories, 1= “no experiences” to 4 = “lots of experiences”); “It appears quite often, that I have thought about not attending school” (four point answer form; 1 = “totally agree” to 4 = “not agree at all) and “I did stay away from school without permission” (four point answer form; 1 = “totally agree” to 4 = “not agree at all).

Procedure

As humor, especially as a communicative, social and coping tool in children has been subject of massive public interest in the recent years, several articles and interviews on this matter had been available in schools in Denmark. The majority of the participating schools in this survey reacted on a request by the author, when announcing the wish to investigate humor in childhood and adding the question of gelotophobia in children to earlier research subjects.

In a first step the community school boards received broad informational material about background, subject and purpose of the investigation. After agreeing to the research project in general, each school was contacted separately. On the one hand, all information provided by the school as well as the questionnaire could be treated completely confidentially and correlated to each other due to the code-system developed and on the other hand, all questionnaires could traced back to the single participant on behalf of a follow up qualitative interview study (Führ, 2009). All teachers involved received instructions about how to carry out the survey. It appeared doubtful whether the youngest participants in grade 5 (aged app. 11 years) would be able to read and understand all questions by themselves. Therefore, the teachers were asked to read each question and be of assistance if necessary in the fifth grade but all other grades completed the questionnaire handed out by their class teachers on their own.

Additionally, the school administration was requested to provide two types of information for all participants: (1) Ethnicity and (2) the number of absence from school during the last school year. In Denmark, the class teacher reports the attendance and absence from classes on a daily basis for each pupil using a class list. These lists are handed out to the school administration on a monthly basis and the results are reported once a year to the community school board. Parents had to provide consent for the participation of their children and the information on absences were handed out to the project leader. The participants were informed that participation in the study is voluntary and that they could refuse participation or stop filling in the questionnaires at any time they wanted to.

This survey covers geographically all parts of Denmark, with participating schools from the very south of Gotland and the north of Sealand including the islands of Falster and Lolland. Demographically the study covers urban and town schools, a catholic private school, a gymnasium school in Copenhagen, as well as an urban school with 35 % of non-ethnic Danes. The entire study covers eleven schools with 91 classes in grades 5 to 9.

Results

Descriptive statistics were computed along with the correlation between the fear of being laughed at and demographics (age and gender). Furthermore, a reliability analysis was conducted. Finally, a factor analysis was computed for testing the assumption that a one-dimensional solution fits the data best (as for the adults). These analyses were performed for the total sample and subsequently also for the six age groups that entered the study (11 to 16 years). All statistics for the total sample are shown in Table 1.

Table 1 shows that the data were normally distributed. Neither a single item nor the total score correlated strongly with age or gender. None of the correlation coefficients indicated more than 4 % of shared variance between the expression of gelotophobia (single item, total score) and one of the demographic variables. This remained also true for gender if data was analyzed for each of the age groups separately. The correlation coefficients (gender and the total score of the GELOPH<15>) were .13, -.01, .00, .02, .07 (all *n.s.*), and .21 ($p < .05$) for the six age groups (starting with eleven year olds). However, it should be noted that three items were equal to or exceeded a correlation coefficient of .30 for the group of the 16-year-old adolescents. Girls tended more strongly to agree to the items “When others make joking remarks about me I feel being paralyzed” ($r = .30$), “If I did not fear making a fool of myself I would speak much more in public” ($r = .36$), and “When I have made a fool of myself in front of others I grow completely stiff and lose my ability to behave adequately” ($r = .33$; all $p < .05$).

Table 1 shows that all items yielded high corrected-item total correlation and the alpha-coefficient was .84 in the total sample indicating a high internal consistency. The median of the corrected-item total correlations was .47 and ranged from .34 to .56. The inter-item correlations were in the expected range. Their mean was .26 and ranged between .13 and .48.

The reliability coefficients and item statistics were highly similar for each of the age-groups. The alpha-coefficients were .82, .83, .82, .86, .86, and .86 for the 11 to 16 year-olds. The median of the corrected item-total correlations ranged from .44 (11 year-olds) to .52 (14 year-olds). Across all age groups and items, the lowest corrected item-total correlation was .17 and the highest was .63. The mean of the item-intercorrelations ranged from .23 to .30 in the six age groups and range between -.05 and .64. The latter was found in the group of 16 year olds between the two items reflecting suspiciousness on the laughter by others (i.e., items number 1 and 3).

The correlation coefficients with age shown in Table 1 indicated that gelotophobia did exist widely independently from age. However, as there might also be a non-linear relation between age and gelotophobia, means and standard deviations were computed for each age group separately and compared (see Table 2). This analysis should also enable future comparisons with data collected with participants in this age group.

Table 2 shows that there were only minor differences between the age groups. More specifically, the largest difference in the mean scores for the total scores was 0.08. The standard deviations were also very similar (e.g., the largest difference for the standard

Table 1: Descriptive statistics, corrected-item total correlations, factor loadings and correlations with age and sex for the items or the total score of the Danish GELOPH<15>

Items	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>K</i>	<i>CITC</i>	<i>Loadings</i>	<i>Age</i>	<i>Sex</i>
When others laugh in my presence I get suspicious	2.17	0.95	0.40	-0.78	.41	.51	-.03	.01
I avoid showing myself in public because I fear that people could become aware of my insecurity and could make fun of me.	1.94	0.97	0.72	-0.54	.56	.65	-.03	.07*
When strangers laugh in my presence I often relate it to me personally.	2.01	0.94	0.62	-0.52	.55	.64	-.03	.04
It is difficult for me to hold eye contact because I fear being assessed in a disparaging way.	1.77	0.92	0.89	-0.30	.53	.63	-.02	.01
When others make joking remarks about me I feel being paralyzed.	2.04	0.96	0.55	-0.71	.50	.59	-.05	.16*
I control myself strongly in order not to attract negative attention so I do not make a ridiculous impression.	2.24	0.94	0.25	-0.86	.46	.55	.00	-.01
I believe that I make involuntarily a funny impression on others.	1.75	0.85	0.98	0.31	.43	.51	.03	-.06
Although I frequently feel lonely, I have the tendency not to share social activities in order to protect myself from derision.	1.61	0.89	1.32	0.64	.47	.56	-.01	-.06*
When I have made an embarrassing impression somewhere, I avoid the place thereafter.	2.04	0.94	0.55	-0.63	.41	.50	-.01	.13*
If I did not fear making a fool of myself I would speak much more in public.	2.31	1.07	0.22	-1.20	.42	.51	-.02	.06*
If someone has teased me in the past I cannot deal freely with him forever.	1.76	0.91	0.98	-0.01	.37	.45	.02	.07*
It takes me very long to recover from having been laughed at.	1.67	0.86	1.19	0.60	.56	.65	-.02	-.10*
While dancing I feel uneasy because I am convinced that those watching me assess me as being ridiculous.	2.22	1.08	0.37	-1.16	.34	.42	-.04	-.15*
Especially when I feel relatively unconcerned, the risk is high for me to attract negative attention and appear peculiar to others.	1.83	0.85	0.83	0.04	.49	.58	-.01	-.02
When I have made a fool of myself in front of others I grow completely stiff and lose my ability to behave adequately.	1.77	0.88	0.94	0.02	.54	.63	-.06*	.05
Total score	1.94	0.52	0.56	0.19	---	---	-.04	.04

Note. $N = 1,179$ -1,322. M = mean, SD = standard deviation, Sk = skewness, K = kurtosis; $CITC$ = corrected item-total correlation; $Loadings$ = factor loadings; age = correlations with age (Pearson); $gender$ = correlations with gender (1 = boy, 2 = girl; Spearman). $p < .05$.

Table 2: Means and standard deviations for the items and the total score of the Danish GELOPH<15> split by six age groups (11 to 16 years)

	11 years		12 years		13 years		14 years		15 years		16 years	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
<i>Total score</i>	2.00	0.51	1.96	0.50	1.95	0.49	1.92	0.53	1.92	0.53	1.94	0.56
<i>Item content</i>												
GELOPH<15>	2.20	1.01	2.22	0.99	2.14	0.91	2.17	0.96	2.14	0.93	2.12	0.96
Suspiciousness	2.07	0.97	1.97	0.94	1.93	1.01	1.85	0.94	1.99	0.96	1.88	1.01
Public appearance	2.08	0.97	2.10	0.99	2.02	0.95	1.93	0.89	1.96	0.90	2.10	0.99
Strangers	1.90	0.96	1.78	0.92	1.80	0.90	1.71	0.89	1.72	0.92	1.88	0.96
Assessment by others	2.05	0.95	2.13	0.98	2.04	0.96	2.06	0.99	1.94	0.88	1.94	1.06
Feeling paralyzed	2.25	0.96	2.26	0.93	2.25	0.94	2.19	0.94	2.25	0.92	2.30	1.00
Control behavior	1.58 ^{ab}	0.76	1.70 ^b	0.81	1.88 ^{ab}	0.94	1.76	0.81	1.74	0.83	1.74	0.87
Funny impression	1.77	1.08	1.57	0.87	1.68	0.91	1.53	0.81	1.58	0.89	1.63	0.93
Social activities	2.20	1.02	1.98	0.90	2.03	0.94	2.05	0.97	2.07	0.94	1.99	0.89
Embarrassment	2.34	1.08	2.33	1.04	2.36	1.07	2.25	1.06	2.26	1.08	2.35	1.09
Public speaking	1.75	0.93	1.78	0.92	1.72	0.85	1.77	0.94	1.74	0.88	1.90	1.04
Dealing with others	1.71	0.84	1.71	0.90	1.64	0.79	1.67	0.85	1.61	0.89	1.69	0.95
Recovering	2.34	1.11	2.28	1.06	2.17	1.07	2.19	1.08	2.32	1.10	1.99	1.09
Dancing	1.84	1.01	1.81	0.81	1.88	0.87	1.83	0.83	1.79	0.80	1.81	0.89
Appearing peculiar	1.99	0.94	1.78	0.89	1.75	0.85	1.80	0.91	1.66	0.84	1.74	0.82
Growing stiff												

Note. *N* = 102 (11 years), *n* = 255 (12 years), *n* = 291 (13 years), *n* = 337 (14 years), *n* = 231 (15 years), *n* = 106 (16 years). *M* = mean, *SD* = standard deviation.

^{ab} Means sharing a superscript differ significantly from each other.

deviations in the total score was 0.07). Thus, there does not seem to be much variation in the mean scores across the age groups. However, some of the differences in the mean scores were much larger in size (the largest absolute difference between two mean scores was .30). Nevertheless, they almost all failed to reach statistical significance. Analyses of variance with the total score for the items as dependent variables and the age groups as grouping variable yielded a significant effect only for a single item ($F[5, 1303] = 2.40, p = .035$). This result should be further highlighted. The item was “I believe that I make involuntarily a funny impression on others”. A subsequently conducted post hoc test (LSD) indicated that the eleven-year-old children scored lower than the 13 year old ones and that the same was true for the twelve-year-old children. However, it has to be mentioned that there was no correction for attenuation in this analysis and that these differences should not be over-interpreted.

How many gelotophobes are in the sample? Ruch and Proyer (2008a) suggested that scores in the GELOPH<15> could be classified (based on empirically validated cut-off scores) as *no* gelotophobia (i.e., mean scores < 2.50), *slight* gelotophobia (< 3.00), *marked* gelotophobia (< 3.50), and *extreme* expressions of gelotophobia (> 3.50). Additionally, Ruch (2009b) suggested a *borderline* category that comprises mean scores ≥ 2.00 and < 2.50. These cut-off scores were validated for adult samples and there are no experiences with its application to samples of non-adults. However, it seems to be instructive to apply them to the present data for a first verification of the expression of gelotophobia in this age group. In any case, results should be interpreted conservatively. The data shows that 85.85 % could be classified as non-gelotophobes ($n = 1,135$). Out of this group $n = 353$ were in the borderline category (26.70 %). 10.44 % ($n = 138$) had a slight, 3.33 % ($n = 44$) a marked, and 0.38 % ($n = 5$) an extreme expression of the fear of being laughed at. This indicated that 14.15 % of the participants could be classified with at least a slight expression of gelotophobia. This frequency analysis was repeated for all age groups separately (see Table 3).

Table 3:

Percentage of non-gelotophobes (and borderline gelotophobes) and gelotophobes (slight, marked, and extreme) in six age groups (11 to 16 years)

	11 years	12 years	13 years	14 years	15 years	16 years
no	56.86	57.65	59.79	59.64	59.74	60.38
borderline	26.47	28.63	25.09	28.78	25.97	21.70
slight	11.76	9.80	12.37	7.72	11.26	12.26
marked	3.92	3.14	2.75	3.56	2.60	5.66
extreme	0.98	0.78	0.00	0.30	0.40	0.00
<i>Total</i>						
gelotophobes	16.66	13.72	15.12	11.58	14.26	17.92

Table 3 shows that the percentage of gelotophobes ranged between 11.52 % and 17.92 %. A χ^2 -test did not reveal differences among the frequencies. Nevertheless, it should be noted that there were only very few extreme gelotophobes in the samples and that most of those exceeding the cut-off score were in the “slight”-category.

Does the GELOPH<15> among children and adolescents yield a one-dimensional factor structure? A principal component analysis was conducted based on the intercorrelation among the 15 items found in the total sample. One very potent first factor emerged with an eigenvalue of 4.76 followed by eigenvalues of 1.06, 1.00, and 0.90 for the subsequent factors. The first factor explained 31.70 % of the variance. Thus, although three eigenvalues exceeded unity, the scree test suggested the retention of only 1 factor. The item loadings on the first factor were between .42 for the item “While dancing I feel uneasy because I am convinced that those watching me assess me as being ridiculous” and .65 for the items “I avoid showing myself in public because I fear that people could become aware of my insecurity and could make fun of me” and “It takes me very long to recover from having been laughed at”. The median of the loadings was .56.

This analysis was repeated for each of the age groups separately. In all cases a strong first factor emerged that explained 29.20 %, 30.41 %, 29.23 %, 33.83 %, 34.98 %, and 34.35 % of the variance in the six age groups. The median of the loadings ranged from .54 (13 year olds) to .61 (14 year olds) with the lowest loading being .21 (for the item “If someone has teased me in the past I cannot deal freely with him forever” for the 13 year olds) and the highest one being .72 (for the item “When others make joking remarks about me I feel being paralyzed” in the group of the 15 year olds).

How does gelotophobia relate to bullying in children and adolescents? There was a correlation of $r = .33$ ($p < .05$) between gelotophobia and self-reported experiences of having been bullied in the total sample. However, there were both non-gelotophobes that reported such incidents and gelotophobes that have not been bullied. Nevertheless, it was clear that mean scores in the bullying question were higher, the higher the expression of the fear of being laughed at was. Out of those who were either marked or extreme gelotophobes, slightly more than half (about 53 %) were also in the group with the highest mobbing experiences. An ANOVA with gelotophobia as dependent variable and bullying experiences (four groups from “no experiences” to 4 = “lots of experiences”) as grouping variable was conducted. There was a significant main effect ($F[3, 1287] = 49.67, p = .0001$). Those with the highest level of bullying experiences yielded the highest mean score in gelotophobia ($M = 2.27, SD = 0.61$). Subsequently conducted post hoc tests (LSD) indicated that this mean score was higher than the one for any other group; i.e., no bullying experiences ($M = 1.80, SD = 0.46; d = 0.87$), almost no bullying experiences ($M = 1.95, SD = 0.48; d = 0.58$), and some bullying experiences ($M = 2.10, SD = 0.47; d = 0.31$). Furthermore, all other groups also differed significantly from each other; i.e., no experiences from almost no experiences ($d = 0.32$) and from some experiences ($d = 0.65$) as well as almost no from some experiences with bullying ($d = 0.32$). Boys and girls did not differ with respect to recollections of bullying experiences ($t(1261) = 0.73, p = .47$).

When the data on the relation between gelotophobia and self-reported experiences of having been bullied were analyzed separately for all age groups, there were highly similar outcomes; i.e., $r = .35$, $r = .35$, $r = .24$, $r = .33$, $r = .35$, and $r = .37$ (all $p < .05$; ages 11 through 16). It should be noted that the correlation coefficients tended to be higher for girls in all of the age groups but none of these coefficients was significantly different from those of the boys. Though there apparently was a lower coefficient for the 13 year olds; none of the coefficients differed significantly in size from any of the others. As for the total sample, ANOVAs with bullying experiences as grouping variable were conducted. Results are not reported in detail but were highly similar as in the total sample (all with significant main effects). There was one exception worth reporting. In the group of eleven-year-old children only those with the lowest ($n = 53$) and highest amount of bullying experiences ($n = 12$) differed significantly ($M = 1.83$, $SD = 0.41$ vs. $M = 2.32$, $SD = 0.56$; $d = 1.00$) and the lowest groups also differed from those with *almost no* ($n = 18$; $M = 2.16$, $SD = 0.60$; $d = 0.64$) but not from those with *some* bullying experiences ($n = 12$; $M = 2.10$, $SD = 0.46$).

Gelotophobia and absenteeism. Information was available on (a) how frequently the pupils think about staying away from school; on (b) whether they already did stay away from school; and (c) on the actual number of absent days in the last year of school. Data on the absenteeism varied strongly. There were children and adolescents without any days off while a single person did not attend school for 133 days (next highest number of absent days were 93, 87, and 79). Thus, these data have a high peak (kurtosis = 20.97; skewness = 11.24; $M = 10.27$, $SD = 11.24$). The other variables were normally distributed. Table 4 shows correlations between gelotophobia and the two self-estimations

Table 4:
Correlations between gelotophobia and indicators of self-reported and objective data on absenteeism in Danish children and adolescent (in a total sample and split by age)

	<i>Think</i>	<i>Stay</i>	<i>Absent</i>
Total	.22*	.10*	-.07*
11 years	.30*	.09	-.01
12 years	.28*	.20*	-.08
13 years	.23*	.14*	-.13*
14 years	.19*	.11	-.03
15 years	.15*	.03	-.11
16 years	.30*	.07	.08

Note. $N = 1,127-1,289$. $n(11) = 82-96$; $n(12) = 211-243$; $n(13) = 236-282$; $n(14) = 289-335$; $n(15) = 211-231$; $n(16) = 98-106$; Think = having thought of not attending school (1 = "totally agree" to 4 = "not agree at all"); Stay = stayed away from school (1 = "totally agree" to 4 = "not agree at all"); Absent = number of days a pupil did not attend school in the last year.

* $p < .05$.

(Person correlations) and the relation to the objective data on absenteeism (Spearman rank correlation).

Table 4 shows that the fear of being laughed at was robustly positively related to thoughts of not attending school. Except for a peek at 12 years staying away from school was not largely associated with the fear of being laughed at. Also, the total numbers of days that a pupil did not attend school did not seem to be related to gelotophobia. However, the latter variable is confounded with different reasons for not attending school and might, therefore, be difficult to interpret.

The available data allows for a more in depth analysis of these results. Therefore, the variable on the actual number of absent days was split into four categories of equal size (lowest quartile to highest quartile). This data was used for creating a new variable that described: (a) those who say that they frequently think of not attending school and actually have a high number of absent days ($n = 52$; “absent”); (b) those who say that they frequently think of not attending school and have a low number of absent days ($n = 53$; “negatively present”); (c) those who say that they do not frequently think of not attending school and actually have a high number of absent days ($n = 57$; “inhibited”); and finally, (d) those who say that they do not frequently think of not attending school and actually have a low number of absent days ($n = 93$; “positively present”). These categories represent different extreme groups regarding absenteeism in school. A comparison of these groups allows testing whether specific combinations (e.g., the *absent* pupils) are linked to higher expressions of gelotophobia. Other pupils that could not be classified in any of these groups were not considered for further analysis.

In an ANOVA, these four groups were compared with respect to the dependent variable *gelotophobia*. The analysis revealed a significant main effect ($F[3, 254] = 7.77, p = .001$). Subsequently conducted post hoc tests (LSD) revealed that the inhibited group (who do not think of not going to school but have a high number of absences) yielded lower gelotophobia scores than any of the other groups ($M = 1.62, SD = 0.46$ vs. $M = 1.87, SD = 0.46$ ($d = 0.54$) for positively present ($p = .01$); vs. $M = 2.04, SD = 0.57$ ($d = 0.81$) for negatively present ($p < .001$), and $M = 1.99, SD = 0.52$ ($d = 0.75$) for the absent group ($p = .001$). The other groups differed not significantly from each other. However, it should be noted that it is somewhat striking that the group that frequently thinks about not going to school but has a low number of absent days yielded the highest mean score in the fear of being laughed at².

² As a side-note it should be added that analyses with bullying as a dependent variable indicated that the group with the lowest frequency of ideas of not attending school and a low number of absent days was lowest in bullying experiences (lower than any of the other groups). The highest score in bullying experiences was found for the group with most frequent ideas of not going to school and a high number of absent days (yet this was not significantly different from other groups except for the one previously mentioned).

Discussion

The present study shows that the GELOPH<15> seems to be applicable to children and adolescents between 11 and 16 years of age. Reliabilities as well as the factorial structure were highly comparable with the data obtained with Danish adults (Führ et al., 2009). Gender did not turn out as an important predictor as boys and girls did not differ strongly in their expression of the fear of being laughed at. This replicates findings from many studies on gelotophobia with adults (see this issue and Ruch [2009] for an overview). It seems as if fear of being laughed at is equally disturbing for males and females (at any age) – even if the causes why males and females fear being laughed at might be different (see Proyer, Hempelmann, & Ruch, 2009). This study enables studying the fear of being laughed at among children and adolescents by means of the same questionnaire that has been used frequently in studying adults' gelotophobia.

The results clearly show that the number of gelotophobes in this sample was about seven times higher than in the Führ et al. study with adults. There, about 2 % were gelotophobes, whereas slightly more than 14 % (total sample) of the pupils in the present sample displayed at least slight expressions of the fear of being laughed at. Overall, the eleven to sixteen year old participants did not differ in their mean scores for gelotophobia (except for differences in single items). However, the number of those exceeding the cut-off point indicating gelotophobia differed (i.e., between 11.52 and 17.92 % across the six age groups). From a developmental perspective, one might argue that the topics and challenges for the pupils are somewhat similar or at least comparable. This refers to aspects such as biological maturation, sexuality but also growing independence (from the family) and search for one's own self. This is also a time where identification with others (e.g., peer) and security (e.g., in attachments) are topics of interest.

Thus far it is unclear in how far teachers have an impact on the development or expression of gelotophobia. Ruch, Proyer, and Ventis (2010, this issue) did show that remembering having been laughed at by parents, peers, and teachers contributes to some degree to the expression of gelotophobia (in adults) but does not explain it fully (especially not among clinically diagnosed gelotophobes). However, Edwards, Martin, and Dozois (2010, this issue) found a relation of the fear of being laughed at to academic excellence. Thus, there seem to be specific aspects in school life that might be sources for being laughed at and ridiculed. Führ (2001, 2002a) asked about 1,100 pupils what they think is of importance for gaining status and respect within but also outside the school. Their rank-ordered nominations were "showing that one has his/her own mind/opinion", "being someone with whom others can talk", "having a sense of humor", "being attractive", and "clothes". Of course, these aspects may be good sources for being laughed at; especially, as the outer appearance (e.g., attractiveness, clothing) is directly visible for everyone. During puberty and the associated processes with this time, experiences of shame and insecurity might be fostered (e.g., if the outer appearance does not meet with their own expectations but also does not meet expectations by others).

It is not surprising that higher experiences with having been bullied lead to a higher number of absent days in school (e.g., for avoiding being ostracized). Of course, this

notion is strengthened if a person has the conviction that s/he cannot solve the problem and/or causes of bullying. Interestingly, Führ (2008, 2009) found that humor does not seem to be protective factor against the fear of being laughed at.

As in adults (see Platt et al., 2009), bullying experiences are positively associated with higher fear of being laughed at among children and adolescents (in all age groups that entered the study). However, only a longitudinal study can test whether bullying causes the fear of being laughed at or whether the children and adolescents are already gelotophobes and get bullied because of their peculiar behavior (e.g., a wooden appearance when confronted with laughter; i.e., the so-called *Pinocchio syndrome*, see Ruch & Proyer, 2008b; Titze, 2009). It is a challenge for future research to study the relations between bullying and the fear of being laughed at more closely. In doing so it can be differentiated more closely to what degree bullying experiences might be traced back to misinterpretations of laughter-related events. This would lead to different interventions as gelotophobes were shown to have problems in appreciating the positive effects of laughter and humor and might benefit from programs for fostering their appreciation of laughter.

However, the study of the relations between the way people deal with laughter and bullying should not only be restricted to those who *fear* being laughed at. Ruch and Proyer (2009b) introduced recently to new concepts that are of relevance in this respect. They described those who enjoy being laughed at (gelotophiles) and those who enjoy laughing at others (katagelasticians). It seems to be well worth studying bullies in these relations as they might really enjoy laughing at their victims but do not feel guilt or have a bad conscience about this as they think that laughing at others is part of life – and that those who do not like being laughed at should simply fight back. Gelotophiles do enjoy the laughter of others at their own cost and it may be assumed that they are more resilient against bullying as they gain joy out of the laughter by others. Thus, one might study bullying among children and adolescents from this perspective to test whether different ways of dealing with the laughter by others contributes to different experiences with bullying.

The number of absent days per se did not predict the expression of gelotophobia very well in this study. As a limitation, it has to be noted that this variable did not distinguish different reasons for not having been in school (e.g., illness, avoidant behavior, etc.) and, therefore, it is a composite of various factors. However, those pupils who tend to think more frequently about staying away from school seem to score higher in gelotophobia. Though there are no data on the reasons why they think so, one might assume that feelings of being ostracized and/or ridiculed (or bullied) by colleagues or teachers in school could be among these reasons. This is, however, at the level of speculations at the moment. Other explanations (e.g., anxiety, below or above average performance in school etc.) might also apply. Nevertheless, it is striking that those pupils score highest in gelotophobia that frequently think of not attending school but who have a low number of actual absent days.

Further studies should focus on the correlates of gelotophobia among children and adolescents. For example, in how far secure self-evaluations, the process of building and fostering one's own identity and finding one's values and valuable characteristics con-

tribute to the expression of gelotophobia. However, influences by society and specific rules in a society might also have an impact on how members of these societies deal with being laughed at. Additionally, one might set up a longitudinal study that follows highest and lowest scorers in gelotophobia in the present sample for a longer period of time (e.g., ten years) and check which variables do change and which do not change.

References

- Bergen, D. (2007). Development of the sense of humor. In W. Ruch (Ed.), *The sense of humor: Explorations of a personality characteristic* (pp. 329-360). Berlin, Germany: Mouton de Gruyter.
- Bowling, N. A., & Beehr, T. A. (2006). Workplace harassment from the victim's perspective: A theoretical model and meta-analysis. *Journal of Applied Psychology, 91*, 988-1012.
- Carretero-Dios, H., Proyer, R. T., Ruch, W., & Rubio V. J. (in press). The Spanish version of the GELOPH<15>: Properties of a questionnaire for the assessment of the fear of being laughed at. *International Journal of Clinical and Health Psychology*.
- Dake, J. A., Price, J. H., & Telljohann, S. K. (2003). The nature and extent of bullying at school. *Journal of School Health, 73*, 173-80.
- Edwards, K., Martin, R. A., & Dozois, D. J. A. (2010). The fear of being laughed at, social anxiety, and memories of being teased during childhood. *Psychological Test and Assessment Modeling, 52*, 94-107.
- Erikson, E. H. (1968). *Identitet ungdom og kriser* [Identity youth and crises]. København, Denmark: Hans Reitzels.
- Fendt, H. (1994). *Die Entdeckung des Selbst und die Verarbeitung in der Pubertät* [The discovery of the self and its persuasion in puberty]. Bern, Switzerland: Hans Huber.
- Forabosco, G., Dore, M., Ruch, W., & Proyer, R. T. (2009). Psicopatologia della paura di essere deriso. Un'indagine sulla gelotofobia in Italia [The fear of being laughed at: A study on gelotophobia in Italy]. *Giornale di Psicologia, 3*, 183-190.
- Führ, M. (2001). Some aspects on form and function of humor in early adolescence. *Humor: International Journal of Humor Research, 14*, 25-36.
- Führ, M. (2002a). Coping humor in early adolescence. *Humor: International Journal of Humor Research, 15*, 283-304.
- Führ, M. (2002b). Humor als soziale Kompetenz [Humor as social competence]. In J. Gruntz-Stoll, & B. Rissland (Eds.), *Lachen macht Schule* [Laughter goes to school] (pp.79-92). Bad Heilbrunn, Germany: Klinkhardt.
- Führ, M. (2008). Hvad humor er [What humor is]. In J. Lyhne & H. H. Knoop (Eds.), *Positiv Psychologi – Positiv Pædagogik* [Positive psychology – Positive Pedagogic] (pp.203-219). Copenhagen, Denmark: Dansk Psykologisk Forlag.
- Führ, M. (2009). Humor in adolescence. *Manuscript in preparation*.
- Führ, M., Proyer, R. T., & Ruch, W. (2009). Assessing the fear of being laughed at (gelotophobia): First evaluation of the Danish GELOPH<15>. *Nordic Psychology, 61*, 62-73.

- Gini, G., & Pozzoli, T. (2009). Association between bullying and psychosomatic problems: A meta-analysis. *Pediatrics*, *123*, 1059-1065.
- Gladstone, G. L., Parket, G. D. B., & Mahli, G. S. (2006). Do bullied children become anxious and depressed adults? A cross-sectional investigation of the correlates of bullying and anxious depression. *Journal of Nervous and Mental Disease*, *194*, 201-208.
- Hardy, G. E., Woods, D., & Wall, T. D. (2003). The impact of psychological distress on absence from work. *Journal of Applied Psychology*, *88*, 306-314.
- Hřebíčková, M., Ficková, E., Klementová, M., Ruch, W., & Proyer, R. T. (2009). Strach ze zesmesnění: Česká a slovenská verze dotazníku pro zjišťování gelotofobie [The Fear of being laughed at: The Czech and Slovak version of the GELOPH 15 for the assessment of gelotophobia]. *Ceskoslovenská Psychologie*, *53*, 469-480.
- Kazarian, S., Ruch, W., & Proyer, R. T. (2009). Gelotophobia in the Lebanon: The Arabic version of a questionnaire for the subjective assessment of the fear of being laughed at. *Arab Journal of Psychiatry*, *20*, 42-56.
- Kofoed, J. (Ed.) (2009). *Mobning, sociale processer på afveje* [Bullying: Social Processes astray]. Copenhagen, Denmark: Hans Reitzel.
- Martin, R. A. (1998). Approaches to the sense of humor: A historical review. In W. Ruch (Ed.), *The sense of humor: Explorations of a personality characteristic* (pp. 15-60). Berlin, Germany: Mouton de Gruyter.
- Martin, R. A. (2007). *The psychology of humor: An integrative approach*. Burlington, MA: Elsevier.
- Mishkinsky, M. (1977). Humor as a "courage mechanism." *Israel Annals of Psychiatry and Related Disciplines*, *15*, 352-363.
- Neary, A., & Joseph, S. (1994). Peer victimization and its relationship to self-concept and depression among scholgirls. *Personality and Individual Differences*, *79*, 183-186.
- Papousek, I., Ruch, W., Freudenthaler, H. H., Kogler, E., Lang, B., & Schultze, G. (2009). Gelotophobia, emotion-related skills and responses to the affective states of others. *Personality and Individual Differences*, *47*, 58-63.
- Platt, T. (2008). Emotional responses to ridicule and teasing: Should gelotophobes react differently? *Humor: International Journal of Humor Research*, *21*, 105-128.
- Platt, T., & Ruch, W. (in press). Gelotophobia and age: Do dispositions towards ridicule and being laughed at predict coping with age-related vulnerabilities? *Psychological Test and Assessment Modeling*.
- Platt, T., Proyer, R. T., & Ruch, W. (2009). Gelotophobia and bullying: The assessment of the fear of being laughed at and its application among bullying victims. *Psychology Science Quarterly*, *51*, 135-147.
- Platt, T., Ruch, W., & Proyer, R. T. (in press). A lifetime of the fear of being laughed at: An aged perspective. *Zeitschrift für Gerontologie und Geriatrie*, *43*, 36-41.
- Proyer, R. T., Hempelmann, C. F., & Ruch, W. (2009). Were they really laughed at? That much? Gelotophobes and their history of perceived derisibility. *Humor: International Journal of Humor Research*, *22*(1-2), 213-231.

- Riebel, J., Jäger, R. S., & Fischer, U. C. (2009). Cyberbullying in Germany – an exploration of prevalence, overlapping with real life bullying and coping strategies. *Psychology Science Quarterly*, *51*, 298-314.
- Ruch, W. (2008). Psychology of humor. In V. Raskin (Ed.), *A primer of humor* (pp. 17-100). Berlin: Mouton de Gruyter.
- Ruch, W. (2009a). Gelotophobia: The fear of being laughed at [Special issue]. *Humor: International Journal of Humor Research*, *22*(1-2).
- Ruch, W. (2009b). Fearing humor? Gelotophobia: The fear of being laughed at. Introduction and overview. *Humor: International Journal of Humor Research*, *22*, 1-25
- Ruch, W., & Proyer, R. T. (2008a). Who is gelotophobic? Assessment criteria for the fear of being laughed at. *Swiss Journal of Psychology*, *67*, 19-27.
- Ruch, W., & Proyer, R. T. (2008b). The fear of being laughed at: Individual and group differences in gelotophobia. *Humor: International Journal of Humor Research*, *21*, 47-67.
- Ruch, W., & Proyer, R. T. (2009a). Who fears being laughed at? The location of gelotophobia in the Eysenckian PEN-model of personality. *Personality and Individual Differences*, *46*, 627-630.
- Ruch, W., & Proyer, R. T. (2009b). Extending the study of gelotophobia: On gelotophiles and katagelasticists. *Humor: International Journal of Humor Research*, *22*, 183-212.
- Ruch, W., Proyer, R. T., & Ventis, L. (2010). The relationship of teasing to the expression of gelotophobia in adults. *Psychological Test and Assessment Modeling*, *52*, 77-93.
- Sarid, O., Ruch, W., & Proyer, R. T. (in press). Gelotophobia in Israel: On the assessment of the fear of being laughed at. *Israel Journal of Psychiatry and Related Sciences*.
- Stern, W. (1925). Grundlinien des jugendlichen Seelenlebens [Outlines for a psychology of youth]. In H. Küster (Ed.), *Erziehungsprobleme der Reifezeit* (pp. 28-43). Leipzig, Germany: Quelle.
- Titze, M. (2009). Gelotophobia: The fear of being laughed at. *Humor: International Journal of Humor Research*, *22*, 27-48.
- Wolfenstein, M. (1978). *Children's humor: A psychological analysis*. Bloomington, IL: Indiana University Press.