

Investigating the humor of gelotophobes: Does feeling ridiculous equal being humorless?

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Abstract

Titze (1996) concluded from individual case studies that gelotophobes do not experience humor and laughter as a shared enjoyment but rather as a threat. Two studies examined whether gelotophobes are less humorous in general or whether this is true only for certain components of humor. In study I, three samples (N = 120 and 70 students; N = 169 adults) filled in the GELOPH<46> along with several humor instruments (i.e., 3 WD, CHS, HBQD, HSQ, HUWO, STCI-T<60>). Results showed that gelotophobes are less cheerful and characterize their humor style as inept, socially cold, and mean-spirited. They report less frequent use of humor as a means for coping and indulge less often in self-enhancing and social humor. Appreciation of incongruity-resolution humor and nonsense humor (but not sexual humor) was lower than for non-gelotophobes. Study II (N = 131 adults) focused on the relation between gelotophobia, gelotophilia, and katagelasticism and the ability to create humor (i.e., the CPPT). The ability to create humor is unrelated to gelotophobia, and tends to be positively correlated with gelotophilia and katagelasticism. Future studies should investigate why gelotophobes see their humor style as inept despite not lacking wit, and how their beliefs can be made more consistent with their abilities.

Keywords: Gelotophobia; humor; humor appreciation; humor styles; sense of humor; wit.

1. Introduction

Humor research has spent a lot of effort on defining various facets of humor (Martin 2007; Ruch 1998a, 1998b). However, humorlessness has received little attention despite the fact that in every day conversation the expression that someone lacks a sense of humor is used very often. Someone overly serious who doesn't easily switch into a humorous mode of conduct is seen as humorless, as is someone who can't take something with humor, is too touchy or loses his or her humor in the face of adversity.

Gelotophobia might be a key concept that illuminates one facet of humorlessness, or humorlessness per se. The description of gelotophobes (i.e., those who fear of being laughed at) by Titze (1996: 1) entails that "... those people have never learned to appreciate humor and laughter positively." This is presumably the case because those individuals had negative experiences with laughter and mockery in the past. Indeed, this exposure to ridicule can have affected them so intensely that gelotophobes withdraw socially to avoid being laughed at. Based on individual case studies Titze (1995, 1996, 1997) proposed several general consequences of gelotophobia, such as lack of liveliness, spontaneity, and joy, as well as a low self-esteem and only poorly developed social competence.

As first empirical studies on gelotophobia among clinical groups using the self-report measure GELOPH<46> (Ruch and Titze 1998) supported the validity of this proposed concept (Ruch and Proyer 2008a), and since there is evidence that it may apply to non-clinical groups as well, it seems now timely to substantiate the above-mentioned observations in empirical studies. In particular, the stance of gelotophobes in relation towards humor and laughter should be examined more closely. The observations made by Titze serve as an excellent starting point and need to be transformed into hypotheses about the relationship between gelotophobia and various components of humor. As the concept of sense of humor itself is not well understood, the empirical examinations should link gelotophobia to various current conceptualizations of humor.

1.1. *Gelotophobia and humor*

As Titze has observed, gelotophobes find group laughter as a sign of threat, not of shared enjoyment. They see laughter as a sign of ostracism

with themselves as the ones ostracized from the group. Accordingly, one would expect gelotophobes to avoid and evaluate negatively social humor and social occasions for laughter. Gelotophobes should be very sensitive to disparaging humor, or humor that is ambiguous and not safe. Although humor is one cause for laughter, it is not the only one and there are forms of humor that are not accompanied by social laughter. However, while the interpersonal component of humor will be missing among gelotophobes, they still might enjoy “canned” humor in the form of printed jokes and cartoons. Therefore the hypotheses in the present article depend on the specific settings of the humor.

Gelotophobes consider themselves to be rather the butts of humor than its agents. Titze claimed that they are convinced that they are ridiculous, and that others are right in laughing at them. However, one could also argue that if disparagement is all the humor gelotophobes were exposed to, they might have learned this form of humor as an effective weapon that they can use against others too. In that sense, one might argue that gelotophobes are not just at the receiving end in this form of humor at all.

It is difficult to predict the stance of gelotophobes towards aggressive forms of humor. On the one hand one might assume that they know the disastrous effects of such humor and therefore refrain from indulging in it at all (as an agent) and, if indulging in aggressive humor, they try to be more benevolent. However, one might also argue that if this is all they know humor to be, they will be involving themselves in that too.

Yet another scenario is also possible. Maybe gelotophobes engage particularly in competitive ridicule and indulge in laughing at each other, and just happen to be the ones who are at the receiving end more often. This might be the case because they are lacking in the cognitive skills to fight back; i.e., in quick witty repartee. In this sense it might be interesting to investigate their humor production abilities. However, it is also possible that they do not actually lose such battles of wit and punning, but indulge in them and merely fear to be the one being laughed at.

1.2. *Approaches to humor as a trait*

How would gelotophobes score in current tests of sense of humor? There is neither a definite definition of humor nor an all-encompassing measurement tool. As pointed out before (Ruch 1998a) two major terminological systems of the term *humor* exist. In one historical nomenclature humor

is only one element of *the comic*, and is distinguished from *wit*, *mock/ridicule*, or *fun*. Humor in its narrow sense is based on sympathy and is by definition benevolent. No test of humor is based precisely on this definition.

The other major terminological system, which is largely endorsed by current North-American research, uses humor as an umbrella term for *all* phenomena of the field of the comic. Researchers of this tradition treat humor as a neutral term that is not restricted to positive meanings. Numerous components of humor are distinguished (e.g., humor creation, humor appreciation, coping humor) but their exact number, nature, and interrelationship are not yet fully known. Because of the diversity of the components of humor, for a comprehensive coverage of the domain of humor (and an understanding of the lack thereof) different approaches need to be considered.

As in other domains of personality psychology different methodological approaches for the measurement of the sense of humor exist. Self-report questionnaires have been the favorite, but humor researchers also used peer reports, behavioral observations, and performance tests to measure the sense of humor and related states and traits (for a compendium of different measurements see Ruch 1998b). It has been argued that there is a relationship between the type of component of humor and the measurement approach. For example, performance tests assess humor creation as an ability better than a self-report questionnaire.

One concept that comes closest to humor in the narrow sense is *humor as a coping mechanism*. People use humor to ameliorate the negative impact of adversity. Freud (1928) viewed humor as the highest of the defense mechanisms (see Martin 2007 for an overview). However, contrary to current views he saw this as an unconscious process, not an active strategy. Several empirical studies addressed the question whether sense of humor fulfills a stress-buffering role. While this stress-buffering role should be verified with genuine measures of sense of humor, contemporary approaches build in the tendency to use humor for coping already into the questionnaire content (e.g., Coping Humor Scale—CHS, Martin and Lefcourt 1983; Multidimensional Sense of Humor Scale—MSHS, Thorson and Powell 1993).

Other components of humor that are currently discussed are *humor creation* and *humor appreciation*. Humor creation (or “wit”) is often defined as the ability to create a funny effect (as opposed to sheer reproduction of humor), but also the ability to communicate humor effectively and the de-

gree to which a person is motivated to be funny (Feingold and Mazella 1991). This ability is commonly assessed with self-report questionnaires (e.g., subscales of the MSHS, Thorson and Powell 1993; Sense of Humor Questionnaire Ziv—SHQZ, Ziv 1981). Furthermore, in performance tests subjects write their own punch lines for cartoons. Examples are the humor creation subscale of the Antioch Humor Test (Mindess et al. 1985) and the Cartoon Punch line Production Test (CPPT, Köhler and Ruch 1993). While *humor appreciation* is also assessed by means of questionnaires (e.g., Thorson and Powell 1993; Ziv 1981), there is a longstanding tradition to utilize behavioral measures, such as joke and cartoon tests to measure an individual's profile of humor preference. In these approaches people indicate to what degree they like different jokes and cartoons, which are usually categorized into different content classes. However, factor analytic studies (Ruch 1992) showed that structural properties are at least as important as their content, with two factors consistently appearing, namely *incongruity-resolution* humor and *nonsense* humor. The third factor, *sexual* humor, may have either structure, but is homogeneous with respect to sexual content. The 3 WD (Witz-Dimensionen) Test developed by Ruch (1992) measures funniness of and aversion to these categories.

There are also attempts to sample the domain of humor more comprehensively. Two approaches describe humorous behavior in terms of different humor styles. Craik et al. (1996) sampled non-redundant descriptions of everyday humorous conduct, which are organized along five factors. Each factor is characterized by two contrastive styles, namely *socially warm* vs. *cold* (the individual's tendency to use humor to promote good will vs. an avoidance or aloofness regarding mirthful behavior), *reflective* vs. *boorish* (discerning the spontaneous humor found in doings of oneself, other persons or everyday occurrences vs. an uninsightful, insensitive and competitive use of humor), *competent* vs. *inept* (active wit, the capacity to convey humorous anecdotes effectively vs. the lack of skill and confidence in dealing with humor), *earthy* vs. *repressed* (a harsh delight in joking about taboo topics vs. an inhibition concerning macabre, sexual or scatological modes of humor), and *benign* vs. *mean-spirited* (having pleasure in mentally stimulating and innocuous humor-related activities vs. having the tendency to use humor to attack or belittle others). The Humorous Behavior Q-Sort Deck (HBQD, Craik et al. 1996) assesses these ten styles by means of 100 statements describing one's everyday humorous conduct. Martin and his colleagues (Martin et al. 2003) distinguish four different humor styles, two of which are assumed

to be adaptive (i.e., *affiliative, self-enhancing*) and two maladaptive humor styles (*aggressive, self-defeating*). The adaptive humor styles are related to psychological health and wellbeing, whereas the maladaptive styles are connected to negative moods. The authors constructed the Humor Styles Questionnaire (HSQ, Martin et al. 2003) to assess these four styles.

In personality research the psycho-lexical approach has been fruitful for a comprehensive sampling of traits. As Goldberg (1982: 204) stated "... Those individual differences that are the most significant in the daily transactions of persons with each other will eventually become encoded into their language. The more important such a difference is, the more people will notice it and wish to talk of it. With the result that eventually they will invent a word for it." Sampling the domain of humor and humorlessness, Ruch (1995) compiled lists of German type nouns (e.g., wit, cynic, grump), verbs (e.g., to tease, to joke), and adjectives (e.g., funny, witty, cynical) that were then used to map the field of humor. Factor analysis of self- and peer reports of the type nouns yielded two major bipolar factors, namely *playful vs. serious* (representing a mentality dimension) and *grumpy vs. cheerful* (representing an affective dimension of positive-negative mood). The HUWO (Humor Words, Ruch 1995) is a yet unpublished compendium of 99 type nouns that can be scored for some domains as well as those two factors.

Finally, rather than measuring the sense of humor or components thereof, Ruch et al. (1996) suggested to study what they think to be the temperamental basis of humor. Thus, rather than describing humor behaviors, thoughts, and feelings, the underlying mental state and affective basis are the focus of the constructs. In short, the authors see trait *cheerfulness* as a factor facilitating the expression of humor, while *seriousness* and *bad mood* represent dispositions for different forms of humorlessness. These components and their facets are assessed with the State-Trait-Cheerfulness-Inventory (STCI; Ruch et al. 1996).

1.3. *Present study*

The section above described how several research approaches address humor as a trait in general. The aim of the present study was to examine the relationship between gelotophobia and various components of humor as described above, that is, to study the connection of humor, or more specifically, *humorlessness* particularly with regard to the concept of

gelotophobia. It was tested whether gelotophobes indeed lack humor in general, or whether some forms of humor are unaffected by their gelotophobia or if they even excel in them.

More specifically, the GELOPH<46>, a list of statements for the subjective assessment of gelotophobia, was correlated with measures of humor style (HBQD, HSQ), humor temperament (STCI-T), humor appreciation (3 WD), humor coping ability (CHS) and to type nouns describing humor and humorlessness (HUWO). It was expected that gelotophobes score low in scales reflecting the socially warm, positive affect, beneficial components of humor (e.g., the *social* and *self-enhancing* style in the HSQ and *socially warm* humor style of the HBQD; *trait cheerfulness* of the STCI-T; CHS) and high in self-harming, and seriousness and negative affect components of humorlessness (*trait seriousness*, *trait bad mood* of the STCI-T, *self-defeating* humor style in the HSQ). Furthermore, they were not expected to have developed strong humor skills (i.e., they were expected to obtain low scores in the CPPT and to display a *non-competent*, *inept* humor style in the HBQD). There was no basis to decide whether gelotophobes engage in hostile humor or avoid it; hence the nature of the relationship with the *mean-spirited* (HBQD) and *aggressive* (HSQ) humor style (and their equivalents in the HUWO) could only be guessed at. Likewise, no prediction was made with respect to the *earthy vs. repressed* and *reflective vs. boorish* (HBQD) humor styles. Finally, it was not expected that the fear of being laughed at would strongly affect appreciation of jokes and cartoons. Thus, the 3 WD scales were expected to be unrelated or only slightly negatively related to the intensity of that fear.

2. Study I

2.1. Method

2.1.1. *Participants.* Sample I consisted of $N = 120$ students between 17 and 50 years ($M = 24.51$, $SD = 5.75$) from the University of Düsseldorf. The male:female ratio was about 1:1 with 58 males (48.74%) and 61 females (51.26%). Sample II consisted of $N = 169$ German adults between 20 and 93 years ($M = 45.12$, $SD = 13.38$). There were 58 men and 111 women. Sample III consisted of $N = 70$ female Austrian students between 19 and 42 years ($M = 25.70$, $SD = 4.35$).

2.1.2. *Self-report questionnaires.* The *GELOPH<46>* (Ruch and Titz 1998) is a subjective measure of gelotophobia utilizing 46 positively keyed items in a four-point answer format (1 = “strongly disagree”; 2 = “moderately disagree”; 3 = “moderately agree”; 4 = “strongly agree”). In the present study, all 46 items were administered but only 15 were scored. Ruch and Proyer (2008b) reduced the number of items to 15. This revised version focuses on the core symptoms and behavioral manifestations of the fear of being laughed at.

The *HBQ Rating Form* (i.e., rating form containing the items of the *Humorous Behavior Q-Sort Deck—HBQD*, Craik et al. 1996) consists of a set of 100 statements describing humor-related behaviors or behavior tendencies. The statements were aggregated to five bipolar styles of humorous conduct, namely *socially warm vs. cold*, *reflective vs. boorish*, *competent vs. inept*, *earthy vs. repressed*, and *benign vs. mean-spirited*. The English version of the HBQ Rating Form utilizes a nine-step scale ranging from “least characteristic” (= 1) to “most characteristic” (= 9) with a value of 5 indicating “neutral”. Because the German language does not provide a fine enough gradation, the German version provides only a seven-point answering format.

The *Humor Styles Questionnaire—HSQ* (Martin et al. 2003) is a self-report questionnaire composed of 32 items measuring four unipolar styles of humor, namely *self-enhancing*, *affiliative*, *aggressive*, and *self-defeating* humor. Respondents rate the items on seven-point scales in terms of agreement (“totally agree” = 7) vs. disagreement (“totally disagree” = 1).

The *Coping Humor Scale—CHS* (Martin and Lefcourt 1983) assesses the degree to which individuals make use of humor in coping with the stressful events that they encounter in their lives. Participants answer the seven items on a four-point Likert scale from 1 = “strongly disagree” to 4 = “strongly agree”.

The *State-Trait-Cheerfulness Inventory—STCI-T* (Ruch et al. 1996) measures *cheerfulness*, *seriousness*, and *bad mood* as habitual traits. The standard trait form STCI-T<60> contains 60 items in a four-point answer format from 1 = “strongly disagree” to 4 = “strongly agree”.

The *3 Witz-Dimensionen humor test—3 WD* (Ruch 1992) assesses appreciation of jokes and cartoons of the three humor categories of *incongruity-resolution (INC-RES)* humor, *nonsense (NON)* humor, and *sexual (SEX)* humor. Thirty-five jokes and cartoons are rated for “funniness” and “aversiveness” using two seven-point scales from “not funny”

/ “not aversive” (= 0) to “very funny” / “very aversive” (= 6). Six scores may be derived, three for funniness and three for aversiveness of incongruity-resolution (INC-RES), nonsense (NON), and sexual (SEX) humor. Total scores for funniness and aversiveness are computed by summing up the three scales.

The *Humor Words*—*HUWO* (Ruch 1995) is a compendium of 99 type nouns extracted from German dictionaries depicting persons characterized by humor (e.g., *wit*, *joker*) and lack thereof (e.g., *grump*, *party pooper*). Participants rate the degree to which the term describes them using a four-point scale from 1 = “strongly disagree” to 4 = “strongly agree.” Factor scores for *playful vs. serious* and *grumpy vs. cheerful* are derived by means of factor analysis of all data collected so far. Furthermore, category scores are computed by summing up nouns for each of 12 categories.

2.1.3. *Procedure.* The student sample (sample I) was recruited by means of pamphlets. The participants completed the GELOPH<46>, HBQD, HSQ, CHS, STCI-T<60>, 3 WD, and the HUWO. They were tested individually and they were paid for their participation. Testing took place in laboratory rooms in University. The sample of adult volunteers (sample II) was recruited via advertisements in newspapers and took part in a large-scale personality study. They were mailed questionnaires (GELOPH<46>, HBQD, HSQ, and STCI-T<60>) and filled them in at home in solitude during their leisure time. They received a feedback on group and individual results to honor their participation. Participants of sample III (students) were recruited via a notice displayed on the bulletin board of the department. They received course credit for taking part in the study, which was part of a larger study on emotional reactivity. Participants completed the questionnaires (GELOPH<46>, STCI-T<60>) individually in the laboratory room.

2.2. Results

The answers to the relevant 15 items of GELOPH were averaged. Overall, the averaged total scores ranged from 1.00 to 3.67 (Maximally possible score = 4.00) with a mean of $M = 1.77$ and a standard deviation of $SD = .57$ in sample I. There were 12% gelotophobes in the sample, with 12, 2, and 1 exceeding the cut-off values for slight, marked, and extreme gelotophobia (Ruch and Proyer 2008b), respectively.

The scores for the adult sample (sample II, $N = 168$) ranged from 1.00 to 3.73 with a mean of 1.68 and a SD of .60. Altogether 10.1% of the 168 adults exceeded a cut-off point of 2.50 and could be seen as gelotophobic. Among them were 10, 4, and 3 with slight, marked, and extreme gelotophobia, respectively. Finally, the scores in sample III ($N = 70$) ranged from 1.00 to 2.93, with a mean of 1.66 and a SD of .47. Altogether 5.7% of the 70 female students exceeded a cut-off point of 2.50 and could be seen as gelotophobic.

The 15 items of GELOPH proved to be reliable. Cronbach Alpha was .91, .91, and .89 for samples I, II, and III, respectively. There were no age (sample I: $r = -.17$, $p = .07$; sample II: $r = -.12$, ns; sample III, $r = -.01$, ns) or gender differences (sample I: $r = -.05$, ns; sample II: $r = -.06$, ns).

Correlations between the GELOPH and the scores of the STCI-T<60>, HBQD, CHS, HSQ, HUWO, and 3 WD, were computed for the different samples. The results are given in Tables 1 to 5.

2.2.1. *Humorous temperament.* Table 1 shows that people scoring higher in gelotophobia were lower in trait cheerfulness and higher in trait bad mood in all three samples. The correlation between gelotophobia and trait seriousness was positive in all samples but only significant in the sample with a greater age range and a higher variance in seriousness.

Table 1. *Correlation between gelotophobia and the STCI-T<60> in the two student (sample I and III) and the adult (sample II) samples*

STCI-T<60> (Ruch et al. 1996)	M	SD	Alpha	r
Sample I				
trait cheerfulness	62.26	10.16	.92	-.57***
trait seriousness	47.92	6.91	.72	.16
trait bad mood	40.98	12.80	.95	.57***
Sample II				
trait cheerfulness	58.12	11.85	.95	-.58***
trait seriousness	52.61	9.21	.85	.41***
trait bad mood	40.03	12.65	.94	.67***
Sample III				
trait cheerfulness	64.57	9.57	.94	-.63**
trait seriousness	46.16	6.65	.74	.18
trait bad mood	33.59	10.01	.93	.66**

$N = 119-120$ (sample I); $N = 168$ (sample II); $N = 70$ (sample III)

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 2. Correlation between gelotophobia and the HBQD in the student (sample I) and adult (sample II) samples

Humor styles HBQD (Craig et al. 1996)	M	SD	Alpha	r
Sample I				
socially warm vs. cold	13.16	14.74	.76	-.42***
reflective vs. boorish	43.12	13.43	.68	-.21*
competent vs. inept	8.02	10.66	.70	-.57***
earthy vs. repressed	15.94	13.26	.76	-.06
benign vs. mean spirited	-9.77	11.68	.59	-.27**
Sample II				
socially warm vs. cold	13.07	17.10	.81	-.56***
reflective vs. boorish	44.98	12.36	.63	.06
competent vs. inept	9.02	9.36	.67	-.27***
earthy vs. repressed	4.76	10.05	.67	-.18*
benign vs. mean spirited	-3.45	10.09	.58	-.21**

$N = 117-118$ (sample I); $N = 163-164$ (sample II)

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

2.2.2. *Humorous Behavior Q-sort Deck—HBQD* (Craig et al. 1996). Table 2 confirms that high scorers in gelotophobia characterized their humor style as socially cold and inept, but also as mean spirited. In the student sample the gelotophobes seemed to see their humor style as boorish (and not reflective), but this correlation could not be replicated in the sample of adults. On the other hand, among the adults (but not the students) gelotophobia seemed to go along with a repressed (vs. earthy) humor style. In general, the adults seemed to score lower in the dimension earthy vs. repressed, i.e., show a more repressed humorous style, than the student sample.

To illustrate the findings, correlations of gelotophobia with the individual HBQD items were computed. In the student sample the following HBQD-statements yielded the highest negative correlations: *Displays a quick wit and ready repartee* (HBQD15; $r = -.36$, $p < .001$), *Displays a well-developed, habitual humorous style, even when not really feeling lighthearted* (HBQD88; $r = -.34$, $p < .001$), *Manifests humor in the form of clever retorts to others' remarks* (HBQD11, $r = -.32$, $p < .001$), *Has a salty sense of humor* (HBQD22, $r = -.31$, $p < .001$), *Has a good sense of humor* (HBQD18, $r = -.29$, $p < .01$), *Has an infectious laugh that starts others laughing* (HBQD44; $r = -.24$, $p < .01$). However, gelotophobes tended to agree to the following statements: *Misinterprets the intent of*

others' good-natured kidding (HBQD48; $r = .40, p < .001$), Smiles grudgingly (HBQD26; $r = .42, p < .001$), Is crushed when humorous efforts meet with less than enthusiastic reception (HBQD68; $r = .42, p < .001$), Reacts in an exaggerated way to mildly humorous comments (HBQD47; $r = .43, p < .001$), Is only humorous in the company of close friends (HBQD62; $r = .45, p < .001$), and Habitually covers anxiety with a nervous snicker (HBQD46; $r = .46, p < .001$). These items exclusively stem from two HBQD factors confirming that gelotophobes display a socially cold and inept humor style.

2.2.3. *Coping humor and styles of humor.* Table 3 shows that gelotophobes scored lower on the coping humor scale; i.e., as expected, they reported less frequently using humor as a means to cope with adversity. Furthermore, results of both samples showed that they indulged less often in self-enhancing humor and affiliative humor. While gelotophobic students clearly more often showed self-defeating humor, the correlation between gelotophobia and self-defeating humor in adults just failed to be significant ($r = .15, p = .06$; two-tailed). The use of aggressive humor appeared unrelated to gelotophobia.

In the student sample, the six items with the highest negative correlations were: *If I'm by myself and I'm feeling unhappy, I make an effort to think of something funny to cheer myself up* (HSQ18; $r = -.31$,

Table 3. *Correlation between gelotophobia and CHS and HSQ in sample I and II*

	M	SD	Alpha	r
CHS (Martin and Lefcourt 1983)				
Sample I	19.76	3.74	.69	-.37***
HSQ (Martin et al. 2003)				
Sample I				
affiliative humor	44.14	7.55	.82	-.42***
self-enhancing humor	36.63	8.61	.81	-.38***
aggressive humor	31.42	8.30	.76	-.04
self-defeating humor	25.85	8.75	.81	.29**
Sample II				
affiliative humor	40.66	10.30	.85	-.52***
self-enhancing humor	34.60	8.92	.82	-.37***
aggressive humor	25.94	8.14	.67	-.08
self-defeating humor	21.58	8.99	.78	.15

$N = 112$ (CHS; sample I), $N = 120$ (HSQ; sample I), $N = 167-168$ (HSQ; sample II)

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

$p < .001$), *Even when I'm by myself, I'm often amused by the absurdities of life* (HSQ6; $r = -.28$, $p < .01$), *If I am feeling depressed, I can usually cheer myself up with humor* (HSQ2; $r = -.27$, $p < .01$), *I laugh and joke a lot with my closest friends* (HSQ13; $r = -.26$, $p < .01$), *I don't have to work very hard at making other people laugh—I seem to be a naturally humorous person* (HSQ5; $r = -.25$, $p < .01$), and *I don't need to be with other people to feel amused—I can usually find things to laugh about even when I'm by myself* (HSQ30; $r = -.23$, $p < .05$). Items that tended to be endorsed by gelotophobes were: *I let people laugh at me or make fun at my expense more than I should* (HSQ4; $r = .31$, $p < .001$), *I often try to make people like or accept me more by saying something funny about my own weaknesses, blunders, or faults* (HSQ12; $r = .38$, $p < .001$), *When I am with friends or family, I often seem to be the one that other people make fun of or joke about* (HSQ24; $r = .39$, $p < .001$), *If I am feeling sad or upset, I usually lose my sense of humor* (HSQ22; $r = .41$, $p < .001$), *I usually don't laugh or joke around much with other people* (HSQ1; $r = .42$, $p < .001$), and *I usually can't think of witty things to say when I'm with other people* (HSQ29; $r = .43$, $p < .001$). Again, those items stem from only three scales and suggest that gelotophobes were low in affiliative (4 items) and self-enhancing (5 items) and high in self-defeating (3 items) humor.

2.2.4. *Humor appreciation.* Table 4 shows that gelotophobes rated incongruity-resolution humor and nonsense humor less funny than the low scorer; however, appreciation of sexual content was uncorrelated.

Table 4. *Correlation between the GELOPH and humor appreciation (3 WD)*

	M	SD	Alpha	r
3 WD (Ruch 1992)				
INC-RES _f	20.72	11.36	.84	-.21*
NON _f	21.30	10.78	.80	-.23*
SEX _f	20.39	12.42	.86	-.18
total funniness	62.41	28.19	.91	-.25**
INC-RES _a	8.01	10.80	.89	.06
NON _a	10.54	11.83	.88	.03
SEX _a	16.79	14.35	.90	.18*
total aversiveness	34.97	31.91	.94	.10

$N = 118-119$

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 5. *Correlation between the GELOPH and categories of humor type nouns*

	r
Factor I. serious vs. playful	-.27**
Factor II cheerful vs. grumpy	.61***
cheerful	-.36***
composed	-.20*
entertainer	-.10
fun	-.05
laughter	.06
ridicule	.19*
silly	.23*
serious	.37***
dissatisfied	.45***
grumpy	.47***
sad	.48***
touchy/sensitive	.48***

$N = 119$

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Total funniness of jokes and cartoons was generally lower for people scoring higher in gelotophobia. Gelotophobes found sexual humor more aversive than those with a low fear of being laughed at. The general degree of aversiveness was uncorrelated to gelotophobia. In general the size of the significant correlations between gelotophobia and the scales of the 3 WD was very low.

2.2.5. *Type nouns related to humor and humorlessness* (HUWO, Ruch 1995). Gelotophobia correlated very highly positively with the affective dimension ($r = .69$, $p < .001$; $df = 117$) and slightly negatively with the mentality dimension ($r = -.27$, $p < .01$) of the factors derived from the intercorrelation among the trait nouns relating to humor and humorlessness. Thus, gelotophobes characterized themselves by terms expressing grumpiness (but not cheerfulness) and seriousness (but not wit or a playful mental attitude). While, in general, gelotophobes described themselves primarily as serious grumps, the analysis of the domains gives a more detailed picture. Not surprisingly, they scored highly in the clusters of synonyms relating to terms expressing grumpiness, sadness, touchiness and dissatisfaction, seriousness, and low in terms relating to cheerfulness and composedness. Interestingly, there was no relationship with nouns re-

lating to laughter, entertainment, and fun. Thus, some of the participants with higher scores in gelotophobia seemed to be quite willing to act humorously, entertain others, or laugh. Interestingly there was a small positive correlation to terms relating to mocking and acting silly. The only individual terms expressing humor (not humorlessness) that correlated *positively* with gelotophobia were *cynic* ($r = .18$), *silly clown* ($r = .19$), *mocker* ($r = .21$), *sarcast* ($r = .22$), *chuff* ($r = .24$, all $p < .05$), *griper* ($r = .26$), *grumbler* ($r = .32$, all $p < .01$), and *trouble maker/vituperator* ($r = .35$, $p < .001$).

2.3. Discussion

The present study aimed at testing the assumption that gelotophobes are generally humorless; i.e., that humor and laughter are not relaxing and joyful social experiences to them. This general assumption was broken down into different components to see whether the statement is true in general or whether there are also components of humor that are not affected by gelotophobia, where gelotophobes actually indulge in, or even excel.

Using multiple measures of humor allowed to examine different facets of the construct and also to study the overlap in the correlation with the gelotophobia measure. All in all, the results show that the gelotophobes appear to be humorless in multiple (even uncorrelated) ways, but there are indeed components they score high in. However, part of the correlation pattern may also be explained statistically by shared variance with personality variables.

The results seem to fall into three general groups. First, gelotophobes are less cheerful and more grumpy, serious, touchy, and more often in a bad mood. They do not indulge in social humor but are more socially cold in their humorous conduct and describe themselves as boring persons. Thus, there is a bad mood quality in their humor related affectivity as well as a social withdrawal. Similarly, general enjoyment of canned humor (i.e., jokes and cartoons) and enjoyment of incongruity-resolution and nonsense humor also seem to be affected. However, on closer examination, this does not seem to reflect a particular liking or disliking of a humor category but a generally lowered positive affect in response to humor. The correlation between gelotophobia and funniness in the 3 WD disappears when STCI-T-cheerfulness is controlled for ($r = .08$, $p = .39$),

suggesting that this is due to a shared overlap with trait cheerfulness. It should be noted that the one HBQD statement (HBQD48, *Misinterprets the intent of others' good-natured kidding*) referring to the effects of gelotophobia demonstrated by Platt (2008) is scored for socially cold humor. In the HSQ the item coming closest to gelotophobia (HSQ24, *When I am with friends or family, I often seem to be the one that other people make fun of or joke about*) stems from the self-defeating humor category; nevertheless, affiliative and self-enhancing humor styles are empirically more highly correlated. This underscores that the social-affective axis is the most important defining component of gelotophobia.

Second, the humor competence of gelotophobes seems to be impaired in two ways. They do not use humor for self-enhancement but self-defeating, and they do not use humor as a coping tool. These findings seem to be compatible with a lowered level of cheerfulness and an enhanced bad mood. Furthermore, they describe themselves not in terms of high humor competence but as inept. The latter fact (i.e., the inaptitude of showing a quick and witty repartee) might represent a weakened ability to protect oneself in mockery situations. Additionally, they describe themselves in terms of nouns relating to silliness.

Third, people with high scores in gelotophobia indulge in a mean spirited use of humor and less often in a benign way. Likewise, the type nouns they use to describe themselves related to mockery of others and being cynical and sarcastic. Interestingly, it has been observed that gelotophobes as children were mocked by their mother and other caretakers (Titze 1996). Notably, the aggressive humor style as measured by the HSQ does not fit into this pattern, as it is unrelated to gelotophobia. This is surprising, as the two scales of antagonism in humor (mean spirited, hostile humor) do correlate negatively with each other in both the student ($r = -.56, p < .001$) and adult population ($r = -.40, p < .001$) samples. As the contents of the two scales overlap considerably it is difficult to see a clear difference, which might account for these results. It should be mentioned, however, that at the level of individual items only about a quarter of the HBQD statements did indeed correlate with the gelotophobia scale. Among them was only one salient marker (HBQD79, *Is scornful; laughs "at" others, rather than "with" them*) that did yield a significant correlation, while the others (e.g., HBQD07, *Occasionally makes humorous remarks betraying a streak of cruelty*; HBQD40, *Jokes about others imperfections*; HBQD59, *Needles others, intending it to be just kidding*) did not correlate.

A fourth and not less interesting cluster of results related to the humor components that are distinct from gelotophobia. These zero correlations suggest some gelotophobes have access to those resources while other gelotophobes do not. In detail, the fear of being laughed at is orthogonal to finding jokes and cartoons aversive; this is not surprising as the 3 WD represents canned humor, not humor occurring in life situations. Likewise, gelotophobia is indifferent to enjoying sexual (3 WD) and bathroom (or “earthy”) humor. Furthermore, reflective vs. boorish humor is also uncorrelated with gelotophobia. However, in the present study the correlations for this humor style and the earthy vs. repressed humor style were different for the student and adult samples. Thus, no conclusion on these two humor styles can be drawn at the moment; they need further scientific inquiry. Finally, interestingly the type nouns relating to entertaining others (HUWO) are also uncorrelated with gelotophobia. This again suggests that some of those who are afraid of being laughed at indulge in the entertainment of others.

3. Study II

Study I showed that gelotophobes report displaying an inept humor style; i.e., they say they cannot tell jokes successfully and also lack wit or ready repartee. Indeed, one might assume that gelotophobes lack humor abilities and hence cannot respond successfully if they are the object of mockery. This would assume that possessing wit (i.e., the ability to make spontaneous funny remarks) would be a protective factor, as it would enable individuals to be an equal or even superior combatant in ridiculing exchanges. Or, one might assume that individuals lacking wit are more likely to be the butt of jokes as they are “safe targets.”

However, the negative correlation between gelotophobia and humor creation abilities might also be challenged. Self-report measures of *competencies* are always problematic as they only tell how the behavior is perceived and seen, and individuals actually do not need to show the behaviors. One might argue that gelotophobes do possess wit, but cannot use it in social situations or that they do not want to use it or engage in such witty fights. Or, they possess wit, but only in playful and not biting quality. Thus, it is essential to look at the actual humor competence as assessed by a performance task and see whether individuals high and low in gelotophobia differ.

After study I was conducted the study of gelotophobia was complemented by two related concepts. Ruch and Proyer (2008a, this issue) suggested studying the fear of being laughed at in the context of gelotophilia (the joy of being laughed at) and katagelasticism (the joy of laughing at others). Gelotophilia is negatively related with gelotophobia but does not form its opposite pole. It turned out that gelotophobia and katagelasticism are orthogonal. Thus, some gelotophobes do like to ridicule others and some do not. High scorers in gelotophilia and katagelasticism share the view that it is acceptable to laugh at others—there is indeed a positive correlation between these scales.

For both new concepts specific predictions can be made regarding their humor competence. One might assume that the ability to make spontaneous funny remarks will be higher among the katagelasticists than among those who do not like to ridicule others. Presumably they like to use humor as a weapon to laugh at others, playfully or not, and it is expected that they have developed strategies that enable them to produce multiple perspectives on a given situation. Humor creativity might also be a prerequisite for gelotophilia. However, this skill is used by gelotophiles to make fun of themselves. They would not hesitate telling others embarrassing stories or misfortunes that happened to them in a funny entertaining way. Thus, overall a positive relation among humor creation and gelotophilia and katagelasticism was expected.

Aim of the present study. In the present study the relationship between humor creation and gelotophobia, gelotophilia and katagelasticism was examined using a modified version of the Cartoon Punch line Production Test (CPPT, Köhler and Ruch 1993). The CPPT measures two components of creativity, namely, according to Eysenck (1995), fluency (or quantity of humor production) and origence (or quality of humor production). The CPPT asks subjects to write as many witty punch lines to caption-removed cartoons as they can think of. The fluency component of humor creation is operationalized by the frequency of written valid punch lines. The origence component is typically rated by a set of six to 10 peers, who evaluate both the funniness and originality of the material created, and estimate globally the wit and richness of fantasy of the creators (e.g., Köhler and Ruch 1996).

This measure of humor creation does not correlate with humor appreciation (i.e., the 3 WD; Ruch and Köhler 1998). However, those who prefer nonsense over incongruity-resolution humor seem to be better at

creating funnier punch lines (r ranging from .20 to .23). While trait cheerfulness among the STCI scales correlates positively and trait bad mood correlates negatively with wittiness of punch lines, trait seriousness seems to be the best predictor of both quality and quantity of humor production, with r 's ranging from $-.26$ to $-.45$. Humor creation seems to be connected to different aspects of personality. Whereas quantity of humor creation goes along with Extraversion ($r = .25$), qualitative aspects are related to Psychoticism (correlations ranging from $r = .20$ to $.26$).

In addition to examining fluency and origence of humor creativity the present study examined potential differences in the *content* of the humor produced. For example, it was expected that katagelasticists would have an inclination to create humor that is somewhat aggressive and biting. The description of the concept involves that they do not hesitate in embarrassing others by laughing at them. While the CPPT does not measure humor creation in real life interaction one might still hypothesize that the punch lines written reflect the habitual humor style of the creator. Thus, the peer raters also evaluated the content of the produced humor and judged the degree of mockery in the punch line produced. Likewise, indicators of the fear and enjoyment of being laughed at were extracted from the material. In general, it was expected that the content of humor production would reflect these three tendencies, and positive correlations were expected for homologous rated content and the trait measures for gelotophobia, gelotophilia, and katagelasticism.

3.1. *Method*

3.1.1. *Participants.* A sample of $N = 131$ participants from 18 to 80 years ($M = 31.90$, $SD = 13.60$) was used for the present study. More females ($n = 109$) than males ($n = 22$) completed the tests. 92 participants (70.77%) were single, 29 (22.31%) were married, one was widowed (.77%), and eight (6.15%) were separated or divorced from their partners. Fourteen participants (10.69%) spent 9–10 years in school, 33 (25.19%) had a completed vocational training (10–12 years in school), 55 (41.98%) held a diploma from secondary school qualifying for University admission or matriculation (12–13 years in school), and 29 (22.14%) held a degree from University or University of Applied Sciences. 94 (71.76%) of the participants were Swiss, 25 (19.08%) were Germans, and six (4.58%)

were Austrians. The three samples were collapsed into one sample since they did not differ regarding their age or other demographic variables.

3.1.2. Instruments. The *Cartoon Punch line Production Test* (CPPT; Köhler and Ruch 1993) contains six caption-removed cartoons of the three humor categories *incongruity resolution* (INC-RES), *nonsense* (NON) and *sexual* (SEX) humor (2 each), and the subjects are asked to create as many punch lines as they are able to. While the CPPT was constructed as a paper-pencil-test, the present study was conducted online on the Internet. Thus, the CPPT was adapted for this special use. Overall, the requirements for testing were not changed except that the participants had to type in the answers via their computer. It was permissible to skip cartoons in case nothing came to ones mind. Unlike Köhler and Ruch (1993), there was no time limit for typing in the answers. The *total number of punch lines created* forms the CPPT NP score (quantity of humor creation). A second fluency score refers to the *number of cartoons for which a punch line was written* (CPPT NC).

The quality/origence of humor production scores were provided by a group of 10 adults (five males and five females) differing in educational background and age (23 to 50 years). They were given all punch lines written by all participants. They worked independently from each other at their own pace and without time restrictions. For each person they first selected the best punch line for each cartoon and rated its quality on a 10-point Likert-scale from 1 = “not at all witty” to 10 = “extremely witty.” The two measures derived were the *total wittiness of the best punch line* (CPPT WP) and the *average wittiness of the best punch line* (CPPT WPF). The latter score took into account the number of cartoons a participant provided punch lines for. Furthermore, a seven-point Likert scale (1 = “not at all” to 7 = “extremely strong”) was used to indicate how marked the *wit* of the creator of the punch lines is (CPPT WI). Thus, the scores allow distinguishing between wit of the person and wittiness of the punch line. It is assumed that these scores will be similar in most cases (i.e., witty persons create witty punch lines) but in some cases a non-witty person may produce a funny punch line. This might be true for persons who create punch lines that are based on stereotypes (e.g., stupid blonde women, stingy Scottish people, and so forth) that might make one laugh but might not be a sign of overall wittiness.

Additionally, the 10 raters indicated on the same seven-point scale the person’s tendency to create punch lines in which she/he (a) *puts herself/*

himself down involuntarily and present him/herself in a disparaging way (CPPT PHO), (b) makes voluntarily fun of herself/himself (CPPT PHI), and (c) makes fun of others or mocks others (CPPT KAT). All ratings were averaged across the 10 raters.

The *PhoPhiKat-45* (Ruch and Proyer this issue, 2008b) is a 45 items questionnaire for the measurement of the degree of *gelotophobia* (sample item: “When they laugh in my presence I get suspicious”), *gelotophilia* (“I seek situations in everyday life, in which I can make other people laugh at me”), and *katagelasticism* (“I like to compromise other persons and enjoy when they get laughed at”). Each scale comprises 15 items in a four-point Likert-answer format (1 = “strongly disagree” to 4 = “strongly agree”). All items are positively keyed.

3.1.3. *Procedure.* All participants completed the CPPT and the *PhoPhiKat-45* along with a set of socio-demographic variables in an Internet study hosted by the University of Zurich. The inventories were completed in a single setting. Participants were recruited via an announcement in a newspaper that is distributed for free in the Zurich public transport system. Additionally, it was advertised on the website of the Department of Psychology at the University of Zurich. Participants were not paid for their services but upon request, they received an individual feedback via Email one to two months after they finished the study.

3.2. Results

All three scales of the *PhoPhiKat-45* yielded sufficiently high reliabilities in the present sample; Cronbach alpha coefficients were $\alpha = .82$ (gelotophobia), $\alpha = .86$ (gelotophilia), and $\alpha = .82$ (katagelasticism). Statistical parameters and psychometric information were also computed for the modified version of the CPPT. Special attention was given to the three additional indices of content of humor produced. Furthermore, quantity and quality of the humor creation was correlated with gender and age (see Table 6).

Table 6 shows that on average the participants created punch lines for slightly more than four out of the six cartoons. The total number of created punch lines per person ranged from one to 23 for all six cartoons. The mean rating of humor creativity for a person (both based on rating

Table 6. *Descriptive statistics for CPPT-parameters of fluency (quantity), origence (quality) and content (style) of humor creation and their relation to gender and age*

	M	SD	Min	Max	Sk	K	α	sex	age
Fluency									
CPPT NP	7.54	4.55	1.00	23.00	.94	.75	.82	-.15	.15
CPPT NC	4.36	1.68	1.00	6.00	-.62	-.97	.77	.01	.08
Origence									
CPPT WP	14.08	6.05	1.50	27.10	-.14	-.62	.83	-.10	.05
CPPT WPM	3.23	.66	1.50	5.10	-.04	.05	—	-.20*	.00
CPPT WI	4.11	.68	2.20	5.50	-.30	-.57	.81	-.21*	.07
Content									
CPPT PHO	2.59	.39	1.90	3.50	.56	-.56	.79	-.18*	.07
CPPT PHI	3.01	.47	1.90	4.10	.01	-.42	.65	-.07	.13
CPPT KAT	3.80	.79	1.90	5.30	-.22	-.53	.61	-.10	-.03

$N = 154$; M = mean; SD = standard deviation; Min = lowest score; Max = highest score; Sk = skewness; K = kurtosis; α = Cronbach Alpha, indicating homogeneity of the 6 items (for NP, NC, WP) or of the 10 rater (for WI, PHO, PHI, KAT); CPPT NP = total number of punch lines; CPPT NC = number of cartoons for which a punch line was written; CPPT WP = total score of the wittiness of the best punch line for all punch lines (on a scale ranging from 1 to 10; averaged across the 10 rater); CPPT WPM = mean rating on the wittiness of the best punch line; CPPT WI = ratings for the wit of the person on a scale from 1 to 7; CPPT PHO = does the punch line indicate gelotophobic-tendencies (on a scale from 1 to 7); CPPT PHI = gelotophile punch lines; CPPT KAT = katagelast punch lines; sex = Spearman rank correlation with gender (1 = males, 2 = females); age = Pearson correlation coefficients with age.

* $p < .05$

of wittiness of the best punch line and on degree of wit of the participant) was below the midpoint of the scales. The distributions of the scores were fairly normally and they yielded acceptable reliabilities (suggesting both homogeneity of the 6 cartoons [NP, NC, WP] and convergence of the 10 raters [WI, PHO, PHI, KAT]). In order to see the convergence of raters for CPPT WP Cronbach alpha was computed for each Cartoon separately (treating the 10 raters as items; not shown in Table 6); the coefficients ranged from .59 to .77 (with a median of .73) suggesting that 10 raters were sufficient to get reliable estimate of the participants' wit. Cronbach alpha was .78 when computed for the 10 raters on the basis of their mean funniness of the captions produced (data averaged across the cartoons; raters served as "items") scores. Thus, the 10 raters overlapped sufficiently to give a reliable scale. Men yielded slightly higher scores for wit than females. There were no age differences.

The experimental indicators for content of humor production yielded poorer results. While the alpha for the tendency to write punch lines revealing gelotophobic tendencies was satisfactory, the low mean of 2.59 showed that those tendencies were rarely present. However, they seemed to be more prevalent among males. The raters were more frequently able to extract the tendencies towards gelotophilia ($M = 3.01$) and katagelasticism ($M = 3.80$). However, those scores were less homogeneous; i.e., the raters did not overlap as well as was the case with the quality scores.

Next correlations were calculated between fluency, orignce and content of humor production and the scores for gelotophobia, gelotophilia and katagelasticism. As it seems difficult to judge the degree of wit of people who did not provide a full set of punch lines the analyses for orignce were calculated separately for the subgroup of individuals which were able to provide punch lines for all six cartoons (i.e., group 6) and for those who failed to write captions to all cartoons (i.e., groups 1–5). Participants that were able to produce at least one punch line for each of the cartoons are of special interest. They are the group with the highest humor production abilities. For the present study it is of special interest to examine how the expression of gelotophobia is related to this group (i.e., whether there are gelotophobes in the high humor production group). The results are presented in Table 7.

Table 7 shows that gelotophobia was negatively related to gelotophilia and not related to katagelasticism. The latter group, however, was positively associated with gelotophilia. None of the three scales were related to the *quantity* of humor creation. While the correlations between *quality* of humor production and gelotophobia were negative, they tended to be low and far from being significant. Gelotophilia yielded small but significant positive correlations with quality of wit. Gelotophiles seemed to write wittier punch lines and their overall estimation of degree of wit was considered to be higher than those with low scores in gelotophilia. There is no relationship between katagelasticism and orignce of humor production for the entire sample. However, among the participants who created at least one punch line for *each* of the six cartoons positive correlations between katagelasticism and enhanced wittiness of the best punch line and a higher degree of estimated wit of the person was found. Finally, none of the expected positive correlations between homologous scales emerged. However, individuals high in gelotophilia produced punch lines that were seen as containing elements of mockery.

Table 7. *Correlations between fluency (quantity), origence (quality) and content (style) of humor creation (CPPT) and gelotophobia, gelotophilia, and katagelasticism*

	Gelotophobia	Gelotophilia	Katagelasticism
Gelotophobia	1.00	-.28**	.11
Gelotophilia		1.00	.28**
Katagelasticism			1.00
CPPT-fluency			
CPPT WP	.00	.12	-.02
CPPT WPM	-.09	.09	-.11
CPPT-origence			
CPPT WP	-.06	.14	.01
CPPT WPM	.00	.16	.16
group 1-5	-.01	.18	.03
group 6	-.02	.15	.37*
CPPT WI	-.06	.18*	.09
group 1-5	-.04	.18	-.03
group 6	-.07	.18	.38*
CPPT-content			
CPPT PHO	.00	.06	.13
group 1-5	.06	.01	.20
group 6	-.09	.12	.12
CPPT PHI	.04	.09	.02
group 1-5	.11	.03	.01
group 6	-.04	.21	.10
CPPT KAT	-.10	.19*	.05
group 1-5	-.04	.15	.06
group 6	-.11	.26	.14

$N = 127-131$

Group 1-5 = subgroup of participants which wrote punch lines for less than six cartoons (i.e., one to five; $n = 81$); group 6 = subgroup of participants which wrote punch lines to all six cartoons ($n = 47$). For further abbreviations, see Table 6. The intercorrelations among gelotophobia, gelotophilia, and katagelasticism are Pearson correlation-coefficients; all others are Spearman rank correlations.

* $p < .05$; ** $p < .01$

3.3. Discussion

The aim of study II was twofold. Firstly, the *quantity/fluency* and *quality/origence* of humor creation and its relation to the gelotophobia, gelotophilia, and katagelasticism-scores of the participants was examined. In particular, it was of importance to see whether the gelotophobes' tendency to evaluate their humor ability as poor is substantiated by lower performance scores. The results clearly contradict this view. The expression of the fear of being laughed at is not related to humor creation abili-

ties in the CPPT performance tasks. Gelotophobes are neither less fluent in their creation of punch lines, nor are they less witty. The fear of being laughed at exists independently from the ability to create witty punch lines (which might be used in retaliation against someone starting the mockery). Thus, it might be fruitful to look at subgroups derived from crossing these two variables. There is a group of gelotophobes that is lacking wit (and hence might be an ideal target). However, there is another group of gelotophobes possessing wit, but being unable or not wanting to use it in social situations. It might be of interest to compare these two in future studies. Of course, there are the groups of people not fearing to be laughed at that either possess wit or do not. Overall one can conclude that gelotophobes are heterogeneous in their humor creation abilities. Based on these results, a useful intervention strategy for gelotophobes might be to strengthen individuals' perceptions of their own abilities, especially with respect to their humorous productions.

The expected positive relationship between katagelasticism and humor creation ability could only be partially substantiated. While the sign of the correlation was positive, the coefficients were significant only for the subgroups of people who provided captions for each cartoon. The katagelasticists did not produce more punch lines or punch lines to more cartoons. However, among those who were motivated and able to follow the instructions (and provided enough material) the raters assigned more wit to the punch lines, which were written by the katagelasticists in general. Also gelotophiles were considered to possess more wit. Again, while they did not score higher in fluency of humor creation both the wittiness of the punch lines and the overall estimate of wit tended to be higher than those scoring low in gelotophilia. However, the correlations were low and need to be replicated. At this time it can only be guessed whether an increase in the number of cartoons would yield substantially better results. However, it might be assumed that gelotophiles would get higher fluency scores for situations in which they are requested to produce punch lines that are pointed directly at themselves and that katagelasticists might score higher in situations in which they are asked to mock others. However, it has to be mentioned that the alpha level was not adjusted downward in the results section for reporting the correlations and there is the possibility that some of the relations could have occurred due to chance (type one error).

The second aim of the study was to explore whether the *content* of humor production does allow inference of the creators score in fear of being

laughed at, gelotophilia and katagelasticism. Overall, this does not seem to be the case. While the gelotophilia scores were related to the rating of the degree to which the punch lines entail components of laughing at others, none of the correlations among the homologous scales was significant. However, it must be taken into account that the mean scores and standard deviations for these judgments were low for the gelotophobia (CPPT PHO) and the gelotophilia (CPPT PHI) appraisals. Perhaps responding to six cartoons does not provide enough material to allow for a valid assessment of those tendencies. The raters may also need to receive some training or at best be clinical psychologists familiar with the concepts under investigation. It is also possible that one cannot extract these dimensions from humor production at all. An informal inspection of the punch lines written seems to contradict this conclusion as it allowed finding salient matches to scores of the individuals in the questionnaire. This can be exemplified by the captions of different people to the following cartoon. The picture displayed a nude woman sitting on a sofa, apparently laughing at a man standing in front of her in his underpants holding his pants in his hands (a cactus is placed on a shelf in the room) and says (original caption): "Yes, I know! It looks like Africa; so what?" Indeed, the shape of his hairy chest had the form of the African continent, and the woman apparently was giggling at this fact. A characteristic caption for a katagelast was: "Does this mean that you were not talking about your bed when you said: 'too tiny/small'?" This statement apparently refers to the size of the man's genitals. The caption produced by a high scorer in gelotophilia for the same cartoon was: "I can't be blamed—I am as speedy in bed as on the highway." This gelotophile seemed to imply that the intercourse was of short duration and he compared it more cheerfully to his preferred tempo at the highway. The only gelotophobic person that wrote punch lines to all cartoons wrote two captions for this one, and both seemed to be peculiar. Her first one stated: "Just laugh at me, but my mommy has knitted these underpants for me by herself!" and a second one was "Not everyone is sexually that premature and has his first time at the age of twenty." Both captions do make one belittle the adult character for having to wear underpants knitted by ones mother and for assuming that 20 would be an early age for the first intercourse. As a comparison: The person with the lowest gelotophobia score wrote as a punch line: "I am done!"

Although it was possible to find examples for punch lines that can be related to gelotophobia, gelotophilia, and katagelasticism it has to be

mentioned that not all of the created punch lines can be associated clearly with one of the three groups. In some cases the decision from the 10 raters might have been biased by various factors. Thus, a suggestion for a follow-up study would be using different test material with pictures more clearly showing laughter-related events. This material might stem from a nonverbal measure of gelotophobia that has been used in the Ruch, Altfreder, and Proyer (this issue) study. Here, pictures of laughter-related ambiguous situations are used. It might be fruitful to repeat the study using these or similar stimuli. Clearly more research should be dedicated to the question whether or not the content of the humor produced is of significance and if yes, what does it signify?

Gelotophiles are probably “limited” in the quality of their humor productions to situations in which they can make fun of themselves, which is not necessarily linked to the creation of captions for cartoons of diverse topics. This hypothesis might be supported by the fact that a higher relation was found in the group that created punch lines for up to five cartoons only.

Another important point related to the test material needs to be mentioned. Six stimuli might not be enough for a proper judgment on the gelotophobic, gelotophilic, and katagelast-components of the punch lines. While this number might be enough for a good measure of the creativity underlying the humor creation it might be too small for a deeper understanding of the psychological components underlying the punch lines. Another factor is that, especially for the ratings of the 10 persons assigning the punch lines to gelotophilia and katagelasticism, low internal consistencies were reported that indicate a low convergence in the judgments. Thus, either the punch lines did not reflect these contents (e.g., because the number of stimuli was too small) or (at least some of) the rating persons were not able to identify these contents. However, a replication of these findings is needed.

The way in which the CPPT was used in the present study needs to be discussed under two important aspects. Firstly, the original paper-pencil test was adapted to a web-based setting. In general, results from studies using self-report data converge well in terms of the reliability and the validity with samples from paper-pencil studies (Gosling et al. 2004). The CPPT, however, was used for the first time in this web-based setting. Therefore, it is suggested to replicate the findings with the paper-pencil version to eliminate biases that might be traced back to the assessment method. Secondly, in the standard instruction a time limit for the

completion of the test is given. Due to technical restrictions of the platform that was used for conducting the study a time limit could not be implemented. Furthermore, it was not possible to record how long the participants actually worked on the captions for (each of) the cartoons. It might be possible that some people just clicked through the following pages after completing the first few cartoons. Thus, it remains unclear whether the testing conditions had an influence on the results.

4. General discussion and conclusion

The results of the present studies provide support for Titze's claim that gelotophobes tend to lack humor. More specifically, the use of different conceptualizations of the sense of humor and different measurement approaches allows us now to put forward more refined hypotheses. It seems that the fear of being laughed at and humor tend to be antagonistic in at least three ways. On an affective-social axis several humor-related concepts are related to gelotophobia to varying degrees. Above all, gelotophobes lack the mood state related to humor (i.e., cheerfulness) but predominantly display different moods related to humorlessness. Less characteristically but still highly typical is the avoidance of indulging in social forms of humor, which involves others and humor in social interaction. Somewhat typical (i.e., based on correlations of a mid-range size) for gelotophobes is their failure to use humor as a coping style or way to enhance the person; which might constitute a further reason to be in a humorless mood more often. Finally, there is a tendency to experience less amusement from forms of humor that one can enjoy in solitude (e.g., appreciating jokes and cartoons). However, humor appreciation is not affected beyond the point that among (the generally less cheerful) gelotophobes jokes and cartoons evoke less positive feelings. In other words, humor appreciation is more or less unaffected but leads to slightly less amusement. While gelotophobes score high in bad mood they do not find canned humor more aversive.

On the competence-ability axis they see their own humor style as inept, but performance tests do not support such a conclusion. Humor as an ability (i.e., wit, or the ability to make spontaneous funny remarks) cannot be seen to be a protective factor. High scorers in wit may be high and low in the fear of being laughed at. Stated otherwise, individuals high

in gelotophobia may be very witty or lack wittiness. Gelotophobes also did not show punch lines that were self-deprecating, involuntarily or intentionally making fun of oneself, or particularly low in mockery. This raised the question why at least one half of the gelotophobes fear mockery although they are best equipped to counter it. Thus, we need to study why the ability to be witty among some gelotophobes does not transform into a humor performance in everyday life that they can consider as competent rather than inept. One explanation might be that gelotophobes underestimate their humor creation abilities (as they presumably underestimate other abilities as well) and therefore do not consider using them in everyday life.

Finally, on the motivational (malevolent vs. benevolent) axis there is the tendency of gelotophobes to indulge in mean-spirited humor and to see oneself as being cynical, sarcastic and a mocker. However, overt hostility in humor is not a distinguishing factor (and the produced punch lines did not reflect higher levels of ridicule). Interestingly, other content-related areas like sexual or scatological topics are unrelated to gelotophobia.

While some of these findings are, to a great extent, compatible with Titze's view that gelotophobia leads to humorlessness, the present design does not allow one to draw any conclusion regarding causality. We do not know whether gelotophobia leads to humorlessness, or lacking humor facilitates developing a fear of being laughed at. Yet another possibility needs to be considered; variables like a (low) predisposition to positive emotions simultaneously might affect both, restricted development of humor traits and high gelotophobia. Indeed, those alternatives need to be examined as well. Does gelotophobia develop because some individuals are not prepared for humor and therefore feel uncomfortable when confronted with humor? Or do they become humorless because they are gelotophobic and thus have had bad experiences with humor?

Likewise, also the use of a mean spirited humor style and mockery is not easy to interpret and not easy to integrate into the developmental model by Titze (1995). Did their mocking style develop as a response to having been laughed at repeatedly? One might argue that this is the only form of humor gelotophobes know best and have experienced (albeit from the receiving end). Alternatively, it may be argued that gelotophobes are not really victims but are people who are actively involved in aggressive humor and in mocking others, and within this context they fear to lose, i.e., to be the one being laughed at.

One might also argue that gelotophobes perhaps misread situations, which they fail to understand due to their affective disposition. Research with German, Swiss, and English samples showed that gelotophobes are prone to shame and fear, but not to joy. So it might well be that a low inclination to experience joy (and understand the context of joy in terms of elicitors, roles, social situation, etc.) and a low threshold for experiencing shame and fear might facilitate a gelotophobic response in a humor situation. Humor and laughter are ambiguous and perhaps those with no inclination for joy do not generate an according response but follow their habitual tendencies, namely to show shame and fear. The results by Platt (2008) and Ruch, Altfreder, and Proyer (this issue) seem to be compatible with this explanation.

While the present study has been quite comprehensive, not all aspects of humor have been studied. Which part of the sense of humor might be missing most strongly? Laughing at oneself and not taking oneself too seriously (also referred to by others as self-deprecating humor) is often seen as a central component of the sense of humor (Lersch 1962; McGhee 1999). This might be an ability gelotophobes particularly lack. Such a study might want to involve related concepts as well. For example, gelotophobes describe themselves as using self-defeating humor and thus may be making fun of themselves in an unhealthy, maladaptive way (Martin et al. 2003). This raises the question of the nature of the difference between self-defeating humor and laughing at oneself. Is there a healthy way of laughing at oneself—indulged in by people with no fear of being laughed at—and an unhealthy one—used by gelotophobic persons?

One also needs to find out why gelotophobes are lacking witty repartee when in social situations. Is there a difference in humor production ability depending on how much a situation is emotionally demanding or straining for the person? Do some gelotophobes lose their wit when in social situations? Do they not want to use wit in negative ways? Can gelotophobes be trained to use their humor potential when in challenging situations?

Finally, the present study is restricted to examining the relationships between humor and gelotophobia. We do not know much about the humor of gelotophiles and katagelasticians. Future studies might want to include these two concepts and examine their relation to broader conceptualizations of humor.

Notes

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