

Using Humor in Systematic Desensitization to Reduce Fear

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ABSTRACT. Effectiveness of systematic desensitization for fear reduction, using humorous hierarchy scenes without relaxation, was tested. Participants were 40 students highly fearful of spiders. Using a 24-item behavioral approach test with an American tarantula, participants were matched on fear level and randomly assigned to 1 of 3 treatment groups: (a) systematic desensitization, (b) humor desensitization, and (c) untreated controls. Each participant was seen for 6 sessions, including pretest and posttest. Analyses of covariance of posttest scores revealed that the 2 treatment groups showed greater reduction in fear than the controls on 3 measures but did not differ from each other. Therefore, humor in systematic desensitization reduced fear as effectively as more traditional desensitization. This finding may have therapeutic applications; however, it may also be applicable in advertising to desensitize fear of a dangerous product, such as cigarettes.

Key words: advertising, behavior therapy, fear, humor

ADVOCATING HUMOR as being psychotherapeutic has become increasingly popular (Fry & Salameh, 1987, 1993; Gelkopf & Kreitler, 1996; Kuhlman, 1984; Ventis & Ventis, 1989), but there has been little empirical study to demonstrate specific therapeutic benefits. One prominent reason for the shortage of research on the topic is that humor in therapy is often spontaneous and therefore difficult to study in a controlled, experimental way. A possible application of humor in therapy that is amenable to controlled experimental research is the

This study was conducted as part of a Faculty Research Grant from the College of William and Mary. Funds for research assistants were provided by the Virginia Consortium Program in Clinical Psychology.

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use of humor in systematic desensitization to reduce fear, as exemplified by Smith (1973) and Ventis (1973). Because this approach involves the purposeful introduction of humor by the therapist in a sequence of discrete imagined scenes, it is particularly compatible with the kind of control necessary in experimental research.

Furthermore, the two case studies cited suggested two advantages to using humor in desensitization. Smith (1973) found that humorous desensitization worked when traditional desensitization had failed. Ventis (1973) demonstrated that desensitization with humor was effective in only a single session. Both findings, if replicable, implied that humor in desensitization might be more effective than traditional desensitization.

Two rationales can explain the potential benefits of using humor in systematic desensitization. Koestler (1964) argued that laughter serves to relieve physiological arousal associated with the emotions of aggression or apprehension. He poetically described laughter as "the puffing away of emotion discarded by thought" (p. 56). This contention is unproven, but if true, then laughter in the context of desensitization could relieve the apprehension and fear associated with the feared stimuli.

A second rationale can be derived from the work of Kavanagh and Bower (1985), which showed that experiencing positive emotion results in greater self-report of perceived self-efficacy. Further, self-efficacy has been shown to be an influential mediating variable in overcoming fear (Bandura & Adams, 1977). Thus, experiencing a feared stimulus in a humorous context may enhance feelings of self-efficacy and one's willingness to encounter or deal with the feared situation. At the very least, perceiving humor in a context that had been purely fearful allows for a new and clearly less fearful cognitive construction of the situation.

Finally, therapeutic change is often associated with suffering, or at least discomfort. Consider the technique of flooding, for example, in which intense negative emotion is elicited. If we can accomplish therapeutic goals and enjoy the process, then why not do it?

In the present study, we used humor to reduce fear in the systematic desensitization of a relatively common, specific fear—that of spiders. Fear of spiders was chosen as the target for the study for two reasons. First, it was reported with sufficient frequency to enable us to obtain a reasonable experimental sample. Second, this fear of a specific concrete object allowed use of a behavioral approach test. It should be noted that this was an analogue study. Rather than implementing a literal clinical treatment, we examined the potential fear-reducing effects of humor in a controlled setting.

It was hypothesized, from the cited case study results, that humor desensitization would produce greater fear reduction than traditional desensitization. It was further hypothesized that both desensitization with humor and traditional desensitization would produce greater fear reduction than a no-treatment condition.

Method

Participants

The participants were 40 undergraduate students (2 men and 38 women) from introductory psychology classes who earned research participation credit through their involvement in the study. Although the students earned only 2 hr of research participation credit, which was the class requirement, they participated for six 1-hr sessions. This extended involvement suggested that participants had motivation to decrease their fear, in addition to merely meeting the course requirement for research participation.

Students first replied to a mass testing questionnaire asking for ratings of a number of fears. Ratings were made on a scale from 1 to 5. Those who rated 5 on fear of spiders were asked several additional questions during a phone interview. If they indicated intense fear and an interest in decreasing it, then they were invited to a pretest session. Those who seemed genuinely fearful in the test situation were given the option of participation in the study. The minimum criteria indicating genuine fear and consequent inclusion in the study were based on a 24-item behavioral approach test (BAT). To be included in the study, the person either had to refuse to do a minimum of 4 items or had to have a mean fear rating of 8 or greater on a 10-point scale for the last 10 items. This combination of criteria was chosen because some participants seemed to push themselves to complete items despite being intensely visibly fearful. The mean number of items refused, out of 24, across all three groups was 9.8. Those who agreed to participate were then matched according to level of fear shown in the BAT, and they were randomly assigned to one of the groups in the study. The purpose of the matching was to ensure that the groups did not differ significantly on the BAT at pretesting, and they were matched only crudely on this single variable. Therefore, we did not block the matched participants together for the analyses. One participant who was originally in the desensitization group dropped out after the third session, saying that she did not have time to participate; her data are not included. All others completed the study.

Measures and Materials

Humor ratings of hierarchy items. To test whether humorous hierarchy items could facilitate fear reduction in desensitization, there had to be a validity check to determine whether items intended to be humorous were perceived as humorous. To verify that the supposedly humorous items were perceived as such, we asked the humor-desensitization group to rate all hierarchy items with which they were presented (those intended to be both humorous and nonhumorous) on a 1 to 10 scale for humor. The traditional-desensitization group saw and rated only non-humorous items for humor. Mean humor ratings could then be contrasted, for

humorous items versus nonhumorous items, both within the humor-desensitization group and between the humor- and traditional-desensitization groups. There were no humor ratings by the no-treatment control group because they were not presented with any hierarchy scenes.

Behavioral approach. BATs are a typical inclusion in behavioral research on fear of specific objects. The BAT in the present study consisted of 24 approach tasks requiring increasing approach to a live tarantula. The tasks began with participants entering a hallway from which the caged tarantula was visible and ended with them touching the spider in the opened cage with a bare hand if they chose to do so. Prior to the pretest, we gave participants factual information about tarantulas to eliminate individuals whose fear could be allayed with information alone. The experimenter or an assistant stood slightly behind each participant and read each task description aloud, after which she or he chose whether or not to engage in the task. An example of a task description is "Are you willing to stand at a point 20 feet from the tarantula?" Points corresponding to described distances were designated on the floor with chalk marks. The BAT score was the number of tasks the individual performed successfully.

Fear arousal. Assessment of fear arousal during the BAT was adapted from a self-report procedure called the Fear Thermometer, reported to have adequate reliability and construct validity in the context of training airborne military personnel to jump from a 34-foot tower (Walk, 1956). During each task performed in the BAT, the participant rated aloud, on a scale from 1 to 10, the degree of fear experienced. The mean fear ratings per item of the tasks completed in the pretest were computed and compared with the mean fear ratings per item for the same tasks in the posttest, yielding a measure of change in self-reported fear arousal in the BAT.

Perceived self-efficacy. Immediately after the pretest BAT, participants were given the list of tasks in the BAT and were asked to rate each on the probability that they would perform them later. They rated the tasks on a 100-point probability scale (10 = *high uncertainty*, 100 = *complete certainty*). If they considered the task impossible, then it was to be marked with an X. The perceived self-efficacy score was the sum of the self-efficacy ratings for the 24 items. The procedure was adapted from Bandura and Adams (1977). The validity of this type of procedure for assessment of self-efficacy is supported by the findings of Bandura, Taylor, Williams, Mefford, and Barchas (1985) and Bandura (1986). Posttest ratings were done just prior to the post-BAT.

Anxiety Differential. The Anxiety Differential, a general measure of state anxiety, has been shown to have construct validity in that changes in test scores correspond to external manipulations of anxiety, and its internal consistency is shown in a median Cronbach alpha coefficient of .68, across 11 samples (Husek &

Alexander, 1963). It is regarded as an efficient, psychometrically sound self-report inventory of anxiety (Nietzel, Bernstein, & Russell, 1988). The scale consists of 28 semantic differential-type ratings. An additional advantage of the measure is that the majority of participants cannot identify what it is intended to measure.

Spider Cognitive Dimension Rating. An 8-item semantic differential rating of the term *spider* constituted this measure. The ratings were summed and divided by the number of items (8) to yield an average rating per participant. The measure was adapted from a similar measure used by Bandura and Adams (1977) to assess fear of snakes.

Sense of Humor Questionnaire. The Sense of Humor Questionnaire yields three scores: metamessage sensitivity, or ability to recognize humor; liking of humor; and emotional expressiveness, or the tendency to express one's emotions (Svebak, 1974). Lefcourt and Martin (1986) reported stability coefficients over a 1-month interval of .78, .58, and .58, respectively, for the three scales. The Sense of Humor Questionnaire, with all three scales included, was administered at both pretest and posttest sessions, primarily to explore whether such general measures would be affected by the humor therapy procedure.

Marlowe-Crowne Social Desirability Scale. The Crowne and Marlowe (1960) scale of 33 items was used to control for potential effects on change scores of a tendency to respond in a socially desirable way. It is one of the oldest and most widely used of the established social desirability scales (Rudmin, 1999).

Coping Humor Scale. This 7-item scale assesses the degree to which one uses humor to cope with stress. Internal consistency is seen in Cronbach alphas typically in the range from .60 to .70, and validity is reportedly clearly supported by a variety of predictive validity studies (Lefcourt & Martin, 1986).

Humorous hierarchy scenes. In addition to the dependent variables listed here, it was necessary to have humorous hierarchy scenes to study effects of humor in systematic desensitization. All humorous scenes were created by the first author to avoid prior exposure to the humor by some participants and not others, which might have been true if existing jokes had been used. Sample humorous hierarchy items, based on either the tarantula BAT or the more general spider hierarchy, are reported in the Appendix.

Procedure

All participants were tested individually at pre- and posttest sessions with the BAT and the paper-and-pencil measures. After pre-BAT scores were completed,

participants were matched roughly on their pre-BAT scores, in groups of 3, all of whose approach scores had to fall within a maximum range of 4 points on the scale (e.g., 1 to 4, or 3 to 6). Each was then randomly assigned to one of the three groups. From the group of eligible participants, 2 who matched were left over, and those 2 were randomly assigned. Participants in the 2 treatment groups attended 4 individual weekly treatment sessions of approximately 45 min each. Appointments were scheduled in an effort to preclude members of different groups from meeting during participation in the study.

Systematic desensitization. The 13 systematic-desensitization participants took part in a sequence of treatment activities based on the procedures described in Paul (1966), a relatively early and influential analogue study of desensitization. In Session 1, participants were first given a rationale, including an explanation of reciprocal inhibition, counterconditioning, and cognitive influences, and the positive research history of systematic desensitization. They were then led through a progressive muscle relaxation training procedure derived from Masters, Burish, Hollon, and Rimm (1987). The participants then gave fear ratings in subjective units of discomfort (SUD) on established hierarchies, one pertaining to the tarantula BAT (25 items) and one pertaining to more general spider situations (23 items). Anchor points for the SUD scale were *complete calm and relaxation* (0) and *as fearful as you have ever been* (100). The participants were then asked to practice the relaxation procedure briefly on a daily basis. This prescription for practicing relaxation constituted homework for the systematic-desensitization group.

In Sessions 2 through 4, relaxation instructions were given, and the hierarchy scenes were presented, beginning with the least anxiety-arousing tarantula scene and working through the hierarchies. Scenes were of approximately 40 s duration with an intervening focus on relaxation of approximately 30 s between imagined scenes. Immediately after each scene, participants were asked to rate humorousness of the scene on a scale ranging from *neutral* (1) to *extremely funny* (10).

Humor desensitization. The 14 humor-desensitization participants followed this procedure: In Session 1, each participant received a rationale, including mention of case study successes, the positive findings on systematic desensitization, and the therapeutic possibilities of either physical relief of anxiety associated with laughter or reduction of fear attributable to seeing a previously feared stimulus situation from a more humorous cognitive perspective. Participants next rated nonhumorous hierarchy items for fear on the 0 to 100 SUD scale, as the desensitization group had. They were then given a task to try to begin to elicit a humorous perspective on spiders. A brief description of the Unusual Uses Test (Guilford, 1959) was given, and they were then asked to list as many uses as they could think of in 5 min for an ominously realistic rubber tarantula (about 8 inches in diameter) that squeaked when squeezed. They were then given a homework assignment of completing incomplete statements about spiders in a humorous

way (e.g., "I would rather _____ than _____ a spider.") in an exercise derived from Goodman (1983). The hierarchy presentation was then begun in which two thirds of the scenes were humorous versions of the scenes the systematic-desensitization group received and one third were nonhumorous. This was done to create an element of surprise as to whether the item was to be humorous or not. These participants also rated each item from 1 to 10 on the same humor scale immediately after it was completed.

In Sessions 2 through 4, progression through the hierarchies continued and additional homework assignments were given to encourage the participants to generate humor about spiders, such as providing captions for cartoons involving spiders and coming up with a nickname for the tarantula. These activities could be done alone or with others, because the critical consideration was thought to be not the personal production of the humor but the association of humor with spiders.

No-treatment controls. After all participants had completed the pretests and the pre-BAT results were determined, the control-group participants were contacted by telephone. After being greeted and reminded of the study, they were given the following instruction: "For the group to which you are assigned, we will call you in approximately one month to assess any changes in fear, as a function of the behavioral exposure you have experienced and the ensuing passage of time. Your results will be of great importance to our study, and we look forward to seeing you again soon. Thank you for your participation thus far." The contact person then answered any questions that the participants had and assured them that their participation would meet their class research participation requirement in full. They were expressly never referred to as "controls" or members of a "control group." Because this constituted a no-treatment control, the participants were given no activities or homework. The condition was intended to serve as a control for any change in the outcome variables that would occur in the absence of treatment but with the passage of a time interval equivalent to that required for implementation of treatment. They were called again after 3½ weeks, and a posttesting session was scheduled for the 5th week after their original testing. They were retested during the same interval when experimental participants were posttested, but on separate days to minimize contact between the groups.

Design

The present study consists of a pretest-posttest control group design (Campbell & Stanley, 1963). Group 1 received systematic desensitization. Group 2 received systematic desensitization with humorous content but without the inclusion of relaxation. Group 3 was a no-treatment control group. Participants were not informed of either the design or hypotheses of the study.

Results

Humor items. Participants' ratings of the humor of the hierarchy items were compared for the humor-desensitization (humorous content) and systematic-desensitization (items not intended to be humorous) groups to verify whether the items differed in humor content. The humor-desensitization group rated the humorous spider items ($M = 5.2$) and the humorous tarantula items ($M = 4.0$) as significantly more humorous than the systematic desensitization group rated their corresponding but nonhumorous spider ($M = 2.2$) and tarantula ($M = 1.7$) items, $t(24) = 5.35$, $p < .001$, and $t(25) = 5.62$, $p < .001$, respectively. The results of the analyses of the humor ratings show that the hierarchy items were perceived as qualitatively different by the two treatment conditions and that the humor-desensitization group perceived significant humor in the items intended to be humorous. Additionally, the humor-desensitization group rated the humorous spider items ($M = 6.0$) and humorous tarantula items ($M = 4.0$) as significantly more humorous than the nonhumorous spider ($M = 1.3$) and nonhumorous tarantula items ($M = 1.1$), $t(8) = -11.44$, $p < .001$, and $t(13) = -9.32$, $p < .001$. The reduced degrees of freedom (8) for the analysis of the humorous versus nonhumorous spider hierarchy items for the humor treatment group resulted from the fact that one research assistant did not initially understand that the nonhumorous spider items were to be rated for humor. Consequently, 1 traditional-desensitization participant and 5 humor-desensitization participants did not provide these data.

Outcome measures. Analyses of covariance of posttreatment scores were conducted in each instance, using the relevant pretreatment measure as the covariate. Minor differences in reported degrees of freedom for the outcome measure analyses are due to missing data for some participants. Table 1 presents the pre- and posttest means and standard deviations and the derived adjusted posttest mean scores. The three groups did not differ on the premeasures for any of the five variables. The two treatment groups showed significantly greater posttest scores on three measures. The humor-desensitization and systematic-desensitization groups completed significantly more items on the BAT than the control group did, $F(2, 36) = 5.95$, $p = .006$, but did not differ from each other. The perceived self-efficacy posttest scores were also significantly greater for the humor-desensitization and systematic-desensitization groups than they were for the control group, $F(2, 35) = 7.28$, $p = .002$, but did not differ from each other. The humor-desensitization and systematic-desensitization groups also exhibited significantly higher posttest scores on their spider cognitive-dimension ratings than the no-treatment controls did, $F(2, 35) = 8.00$, $p = .001$. Again, no differences in posttest scores were found between the two treatment groups. For the fear ratings, pre- to post-, for items completed during the pretest and the posttest BAT, there was a significant effect, $F(2, 36) = 3.29$, $p = .049$, but only the systematic-desensitization group differed significantly from the controls, although the humor-desensitization group

TABLE 1
Group Pre- and Posttreatment Means, Standard Deviations, and Adjusted Post-
treatment Means on the Behavioral Approach Test, Perceived Self-Efficacy, Spider
Evaluative Ratings, Fear Ratings, and the Coping Humor Scale

Measure	Pretest		Posttest		Change score	Adjusted posttest <i>M</i>	<i>F</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Behavioral Approach Test							
Sys. desens.	13.3	5.8	19.9	4.9	6.6	20.5 _a	5.95**
Hum. desens.	14.5	6.5	20.2	5.8	5.7	20.0 _a	
Controls	14.7	5.9	16.3	5.1	1.6	16.0 _b	
Perceived Self-Efficacy							
Sys. desens.	1410	568	1797	460	387	1812 _a	7.28***
Hum. desens.	1398	584	1760	443	362	1774 _a	
Controls	1480	572	1494	431	14	1455 _b	
Mean Spider Evaluative Ratings							
Sys. desens.	5.1	0.9	4.4	0.7	-0.7	4.4 _a	8.00***
Hum. desens.	5.5	0.9	4.7	0.8	-0.8	4.6 _a	
Controls	5.2	0.9	5.3	0.9	-0.1	5.5 _b	
Fear Ratings							
Sys. desens.	5.30	1.9	2.29	1.1	-3.01	2.24 _a	3.29*
Hum. desens.	5.44	1.8	2.67	1.2	-2.77	2.58 _{a,b}	
Controls	4.66	1.4	3.16	1.4	-1.50	3.32 _b	
Coping Humor Scale							
Sys. desens.	21.5	3.0	21.3	2.5	-0.2	20.7 _{a,b}	4.60*
Hum. desens.	20.0	4.2	21.3	3.6	1.3	21.7 _a	
Controls	20.7	3.2	19.3	2.8	-1.4	19.3 _b	

Note. Within each single variable (e.g., Behavioral Approach Test), adjusted posttest mean scores not sharing the same subscript significantly differ from each other, $p < .05$. Sys. desens. = systematic desensitization. Hum. desens. = humor desensitization.

* $p < .05$. ** $p < .01$. *** $p < .005$.

again showed results numerically similar to the systematic-desensitization group. Finally, for the Coping Humor Scale, the humor-desensitization and control groups differed significantly on posttest scores, $F(2, 31) = 4.60$, $p = .02$, with the former reporting an increase and controls reporting a decrease, but the systematic-desensitization group showed virtually no change pre- to post-, and its posttest scores did not differ from scores of either of the other two groups. The reduced degrees of freedom are attributable to 5 participants who did not complete the items in the scale.

Sense of Humor Scale. Analysis of the anxiety differential scores revealed no significant effect for general anxiety, $F(2, 36) = 2.44$, $p = .10$. Furthermore, on the

Sense of Humor Scale, there were no significant effects for emotional expressiveness, $F(2, 36) = 0.81, p = .45$, liking of humor, $F(2, 35) = 0.52, p = .60$, or metamessage sensitivity, $F(2, 35) = 1.27, p = .29$.

Correlations

Social desirability. Pearson product-moment correlations based on only the two treatment groups, for whom social desirability might have been relevant, revealed no significant relations between social desirability and the five change scores that produced significant results. Individual correlations were as follows: BAT items completed, $r = -.10, p = .63$, perceived self-efficacy, $r = -.04, p = .86$, fear ratings, $r = .14, p = .51$, spider cognitive dimensions, $r = -.22, p = .28$, and Coping Humor Scale, $r = -.21, p = .34$. Consistent with previous findings (Lefcourt & Martin, 1986), social desirability did not correlate significantly with the subscales of the Sense of Humor Questionnaire.

Perceived self-efficacy. In addition to the significant effect for self-efficacy, the post-self-efficacy scores were correlated significantly with the post-BAT scores, $r = .74, p < .01$. For the humor-desensitization group, ratings of humorousness of the tarantula and general spider hierarchy items (those with humorous content) were related to emotional expressiveness, $r = .54, p = .024$, and $r = .75, p = .001$, respectively.

Scores on the Coping Humor Scale were related to pretest levels of general anxiety, $r = -.44, p = .004$, such that participants who reported using humor as a coping strategy reported less general anxiety. Ratings of general anxiety were relatively stable between pre- and posttest measures, $r = .60, p = .001$.

Discussion

The rating of the humor items as significantly more humorous than the non-humor items meant that the participants clearly found the material humorous, and a valid test of the hypotheses was possible. We predicted that humor desensitization would produce greater fear reduction than traditional desensitization. However, the humor treatment did not in any instance produce significantly better fear reduction than the traditional desensitization procedure. In retrospect, perhaps this should not have been a surprise because systematic desensitization has extensive empirical support for its effectiveness. The prediction arose, however, from the findings in two case studies. In one, humor in desensitization had worked successfully when traditional desensitization had failed (Smith, 1973). In the other, desensitization based on humor had been achieved in only a single session (Ventis, 1973).

The second prediction—that both humor desensitization and traditional desensitization would result in significantly greater fear reduction than no treat-

ment—was supported. On three separate measures of the relevant four—the BAT, self-efficacy, and cognitive-evaluative ratings of spiders—the pre- to posttest change score results revealed comparable findings for the systematic-desensitization and humor-desensitization groups, both of which showed greater fear reduction than the no-treatment control group did. Thus, humorous and traditional desensitization did not differ, and both were significantly more effective than no treatment, supporting the second hypothesis.

These findings were given further credence by the fact that a measure of social desirability did not correlate significantly with any of the four significant change scores; therefore, it did not seem that the participants' desire to perform consistently with perceived preferences of the experimenter/therapist exerted significant differential influence on the results. Furthermore, the humor treatment resulted in a significant increase in the reported use of humor to cope with stress on the Coping Humor Scale scores, contrasted with the controls. The traditional desensitization did not have the same result.

The present study was a first attempt to examine the use of humor in systematic desensitization. Multiple measures showed fear-reduction effects for the humor treatment comparable to that of standard desensitization, an empirically established fear-reduction procedure. We think these findings are encouraging for the potential use of humor in altering negative emotions such as fear, though not necessarily only in the context of systematic-desensitization therapy. We do not claim, however, that this constitutes an established treatment currently.

Despite changes in measures targeted at spiders, there was no significant change in the anxiety differential, a more general measure of current anxiety. Thus, only fear behavior in this specific context has been affected, as opposed to a general reduction in anxiety. Because significant change did not occur in the subscales of the Sense of Humor Scale either, the changes in fear-related behaviors for the humor group were not mediated by a general facilitation of any of the assessed ingredients of a sense of humor: emotional expressiveness, the liking of humor, or sensitivity to humor and its expression (although by self-report, the humor group may have come to see more value in using humor to cope). Rather, if humor exerted an influence, then it must have been in the specific association with spiders and situations involving them, possibly by increasing the sense of self-efficacy in approaching spiders.

Finally, although we tested the use of humor to alter an emotional response in a therapeutic context, the same principle may have far-reaching consequences in another context, namely advertising. Makers of dangerous products, such as cigarettes, would presumably like consumers to feel comfortable with their products. They cannot credibly claim that their cigarettes are harmless because a warning about health dangers appears on the pack, at least in the United States. If advertising presents the product in a humorous context, however, it may seem less threatening and consequently leave the consumer more likely to buy that particular brand. Extrapolating from the present results, advertisers' repeated pairing of

a humorous image with that product may desensitize consumers' fears or ambivalence about a genuine danger to health, and repeated exposure to similar advertisements could be regarded as analogous to repeated scene presentations in systematic desensitization. When viewing advertisements, the audience presumably is not motivated to reduce its wariness or fear of a product, but it may be motivated to view the humor. This motivation thus affords the opportunity for exposure, which may make desensitization of fear or ambivalence toward a dangerous product like cigarettes possible. If humor can facilitate change in an emotional response tendency like fear, then the process potentially can be used in either constructive or destructive ways. Even if humor should never come to be widely used to reduce fear in therapeutic applications, then we at least need to better understand its potential for fostering deliberate change in our emotions and attitudes.

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APPENDIX

Sample Humorous Hierarchy Items

(1) You are to touch the spider briefly and gently with your gloved hand. You recall it did nothing unusual when you touched it with the pointer or when you put your gloved hand in the cage. You put the gloved hand into the cage, approach and touch the spider's leg . . .

You think of the spider's perspective, "So who said these clowns could feel my leg? Would they be so patient if I were feeling their leg? You bet your sweet life they wouldn't. They'd have a campus cop here in a heartbeat telling me to lean against the wall and spread all my other legs for frisking."

(2) On a camping trip, you are in your sleeping bag and feel a tickling on your left calf. The ever-ready alarm goes off inside your brain (WOOOP! WOOOP! WOOOP!). "Is it a spider?" The thought is chilling. Your mind races: "Is it a poisonous spider? Is it in your pants? Will you die the agonizing death of the damned? Are you even wearing pants? Can you get out of here? If you do get out, what if it's in your pants and goes with you? Should you move? Should you freeze? If you're not wearing pants and manage to get out, might you freeze anyway? Is the spider wearing pants?" Exhausted, you roll over and go back to sleep. But you are wearing pants.

Manuscript received February 29, 2000
Revision accepted for publication December 26, 2000