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Individual differences in uses of humor and their relation to psychological well-being: Development of the Humor Styles Questionnaire

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Abstract

Describes the development and initial validation of the Humor Styles Questionnaire, which assesses four dimensions relating to individual differences in uses of humor. These are: relatively benign uses of humor to enhance the self (Self-enhancing) and to enhance one's relationships with others (Affiliative), use of humor to enhance the self at the expense of others (Aggressive), and use of humor to enhance relationships at the expense of self (Self-defeating). Validation data indicate that the four scales differentially relate in predicted ways to peer ratings of humor styles and to measures of mood (cheerfulness, depression, anxiety, hostility), self-esteem, optimism, well-being, intimacy, and social support. They also relate to all five dimensions of the Five Factor Model and to Agency and Communion. The first two scales overlap with previous humor tests, whereas the Aggressive and Self-defeating humor scales largely tap different dimensions. Males scored higher than females on Aggressive and Self-defeating humor. It is expected that the HSQ will be useful for research on humor and psychological well-being by assessing forms of humor that may be deleterious to health as well as those that are beneficial.

Keywords: Sense of humor; Measurement; Mental health; Positive psychology; Sex differences

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1. Introduction

Throughout the 20th century, psychologists showed an ongoing interest in the study of individual differences in humor (Martin, 1998). Since the early 1980s, much of this research has focused on potential beneficial effects of humor on physical and psychosocial health and well-being (Lefcourt, 2001; Martin, 2001). Interest in the study of humor-related traits is likely to continue, in view of current attention to the concept of "positive psychology" (Seligman & Csikszentmihalyi, 2000; Snyder & McCullough, 2000), which focuses on such adaptive strengths as optimism, faith, and courage, as well as humor.

"Sense of humor" refers to humor as a stable personality trait or individual difference variable (see Ruch, 1998, for reviews of personality approaches to humor). Rather than being a single dimension, however, sense of humor is a multi-faceted construct which is best viewed as a class of loosely related traits (Martin, in press; Ruch, 1996). For example, sense of humor may be conceptualized as: (1) a cognitive ability (e.g., ability to create, understand, reproduce, and remember jokes; Feingold & Mazzella, 1993); (2) an aesthetic response (e.g., humor appreciation, enjoyment of particular types of humorous material; Ruch & Hehl, 1998); (3) an habitual behavior pattern (e.g., tendency to laugh frequently, to tell jokes and amuse others, to laugh at others' jokes; Craik, Lampert, & Nelson, 1996; Martin & Lefcourt, 1984); (4) an emotion-related temperament trait (e.g., habitual cheerfulness; Ruch & Kohler, 1998); (5) an attitude (e.g., bemused outlook on the world, positive attitude toward humor; Svebak, 1996); (6) a coping strategy or defense mechanism (e.g., tendency to maintain a humorous perspective in the face of adversity; Lefcourt & Martin, 1986); and so on. The different facets of sense of humor lend themselves to different measurement approaches, including maximal performance tests (e.g., humor as cognitive ability), funniness ratings (e.g., humor as aesthetic response), and observer ratings (e.g., Q-sort techniques for assessing humorous behavior), as well as self-report scales. These diverse components of sense of humor are not necessarily highly intercorrelated, and not all are expected to be related to psychosocial health and well-being. For example, the ability to generate witty cartoon captions or the appreciation of nonsense versus incongruity-resolution jokes may be less relevant to well-being than is the use of humor as a coping mechanism.

In the past two decades, researchers interested in relations between humor and various aspects of psychosocial and physical health and well-being have made use of a number of self-report measures that focus on some aspects of sense of humor considered to be germane to well-being (for reviews, see Martin, in press; Ruch, 1998). These measures purportedly assess such aspects of humor as the degree to which individuals smile and laugh in a wide variety of situations (Situational Humor Response Questionnaire—SHRQ; Martin & Lefcourt, 1984), use humor as a coping strategy (Coping Humor Scale—CHS; Martin & Lefcourt, 1983), notice and enjoy humor (Sense of Humor Questionnaire—SHQ-6; Svebak, 1996; Multidimensional Sense of Humor Scale—MSHS; Thorson & Powell, 1993), and so on. A considerable amount of validation support has been found for several of these measures (e.g., Martin, 1996).

Recently, however, some researchers have begun to question the degree to which these measures adequately assess health-relevant dimensions of sense of humor. For example, Kuiper and Martin (1998) examined relations between several widely used self-report humor scales and various measures relating to aspects of mental health and "positive personality" (e.g., dispositional optimism, psychological well-being, self-esteem, moods). Based on the results of several studies, they concluded that these humor measures are only weakly related to mental health constructs, in contrast with other measures associated with positive psychology, such as dispositional optimism (Scheier & Carver, 1985). Correlations between self-report humor scales and various measures of psychological health and well-being reported in the literature, when significant, are typically less than .25, suggesting that these dimensions of humor account at best for less than 6% of the variance in mental health (e.g., Thorson, Powell, Sarmany-Schuller, & Hampes, 1997). Furthermore, studies reporting stress-moderating effects of humor as measured by self-report scales (e.g., Martin & Lefcourt, 1983; Nezu, Nezu, & Blissett, 1988) have not always replicated (e.g., Korotkov & Hannah, 1994; Porterfield, 1987). In addition, in a review of the research on humor and physical health, Martin (2001) found no consistent evidence for relations between self-report humor measures and such health indicators as immunity, pain tolerance, or illness symptoms. Thus, despite the widespread view that a sense of humor is an important component of healthy psychological functioning, existing self-report humor measures show, at best, only weak and inconsistent relations with various indicators of psychological, physical, and social well-being.

One possible reason for these generally weak findings to date may be that current self-report humor measures generally do not explicitly distinguish between potentially adaptive functions of humor and uses of humor that may be less conducive and possibly even detrimental to well-being (Kuiper & Martin, 1998; Martin, 2001). Past theorists such as Freud (1928), Allport (1961), Maslow (1954), and Vaillant (1977) have noted that healthy psychological functioning is associated with distinctive uses or styles of humor (e.g., affiliative, self-deprecating, or perspective-taking humor), and that other forms of humor (e.g., sarcastic, disparaging, or avoidant humor) may actually be deleterious to well-being. Thus, in studying the relation between humor and psychological health, it seems important to examine the ways in which individuals use humor, both interpersonally and intrapsychically, in their daily lives. Moreover, the absence of certain potentially detrimental uses of humor may be as important to psychological well-being as is the presence of more beneficial uses of humor.

However, this focus on the functions served by humor and the distinction between potentially more or less healthy uses of humor seems to have been largely ignored in recent research on humor and well-being. Although the existing humor scales were designed to assess presumably adaptive aspects of humor (Ruch, 1996), they do not typically address the specific ways in which individuals use or express humor. Thus, scales such as the SHRQ, SHQ, and MSHS assess the degree to which people engage in smiling and laughter, notice, enjoy, create, and express humor, and so on, but they typically do not assess the specific ways in which people use humor in their lives. For example, typical humor scale items such as "Uses of humor help me master

difficult situations'' or ''I can often crack people up with the things I say'' (both from the MSHS), which are assumed to assess adaptive types of humor, might also be endorsed by individuals who frequently engage in potentially deleterious forms of humor such as sarcasm, disparagement humor, or humor used as a form of defensive denial. One exception is the CHS, which does focus on the use of humor as a coping strategy. However, none of these self-report measures specifically assess uses of humor that are potentially detrimental to psychosocial well-being, such as aggressive or avoidant humor. Although the Humorous Behavior Q-Sort Deck (Craik et al., 1996) does contain items assessing socially cold, boorish, and mean-spirited humor, it was designed for use by trained observers rather than self-report. Although some researchers have employed it in a self-report format, many of its items are difficult to understand by untrained raters and many refer to behaviors that are not readily accessible to self-observation (e.g., ''Enhances humorous impact with a deft sense of timing,'' ''Delights in the implicit buffoonery of the over-pompous'').

In this paper, we present the development and initial validation of a new multidimensional measure, the Humor Styles Questionnaire (HSQ), which assesses four dimensions relating to different uses or functions of humor in everyday life. Two of these dimensions are considered to be conducive to psychosocial well-being, while two are hypothesized to be less benign and potentially even deleterious to well-being. The HSQ is not viewed as a comprehensive measure of all components of sense of humor mentioned earlier, but rather it focuses on the interpersonal and intrapsychic functions that humor is made to serve by individuals in their everyday lives, and particularly those functions that are considered most relevant to psychosocial well-being. By assessing each of these functions of humor, we expect that these scales, taken together, may account for a greater proportion of the variance in various aspects of mental health and well-being than do previous self-report humor scales.

1.1. Conceptual framework

In developing this new measure, we began by examining past theoretical and clinical literature on the relation between humor and well-being to identify the various functions, forms, or styles of humor that have been described as adaptive and beneficial versus maladaptive and detrimental to well-being (e.g., Allport, 1961; Freud, 1928; Kubie, 1971; Maslow, 1954; O'Connell, 1960; Strean, 1994; Vaillant, 1977; Ziv, 1984). Since most of these authors (with the possible exception of Freud) have not formulated well-defined theories of humor, we developed a 2×2 conceptualization of everyday functions of humor that we believe captures most of the elements discussed in this literature.

The first distinction in this model has to do with whether humor is used (a) to enhance the self, or (b) to enhance one's relationships with others. The use of humor to enhance the self relates to Hobbes' famous description of laughter as ''the sudden glory arising from some sudden conception of some eminence in ourselves...'' (quoted in Ziv, 1984, p. 8). It includes notions of humor as a method of coping with stress (Dixon, 1980; Lefcourt & Martin, 1986) or as a defense mechanism (Freud, 1928) or courage mechanism (Mishinsky, 1977). It also relates to humor as a form

of tension relief and to concepts of gallows or black humor, in which humor in the face of adversity, threat, or oppression is a means of asserting one's own feelings of invincibility, control, mastery, or victory over the situation (Obrdlik, 1942; Ziv, 1984). Since the focus is on the use of humor to protect the self, this is viewed as an intrapsychic function of humor.

On the other hand, the use of humor to enhance one's relationships with others refers to interpersonal humor that "oils the wheels of communication and permits the establishment of social relations with a minimum of conflict" (Ziv, 1984, p. 32). Thus, it relates to the use of humor in a dyad to increase the other's feelings of well-being, reduce conflicts and strengthen ties between individuals, and increase one's attractiveness to the other. In a larger group context, it relates also to the use of humor to raise the morale of group members, enhance group cohesiveness and identity, create an atmosphere of enjoyment, reinforce group norms, and so on (Martineau, 1972). This distinction between the use of humor to enhance the self and the use of humor to enhance one's relationships with others parallels the distinction commonly seen in many areas of psychology between agency, individualism, autonomy, and power motivation on the one hand, and communion, relatedness, affiliation, and intimacy motivation on the other (e.g., Wiggins, 1991).

Cutting across both these broad functions of humor is a distinction between (a) humor that is relatively benign and benevolent (i.e., tolerant and accepting of both self and others), and (b) humor that is potentially detrimental or injurious, either to the self or to one's relationships with others. Thus, humor may be used to enhance the *self* in a way that is tolerant and non-detrimental to others (*self-enhancing humor*), or it may be done at the expense and detriment of one's relationships with others (*aggressive humor*). The latter refers to hostile uses of humor, in which the self is enhanced by denigrating, disparaging, excessively teasing, or ridiculing others (Zillman, 1983). Although friendly teasing and playfully poking fun at others may be a way of enhancing cohesiveness in more benign forms of affiliative humor, we refer here to more aggressive uses of humor that are intended to belittle others, albeit often under the guise of playful fun. This type of humor, when used excessively, is hypothesized to be potentially detrimental to well-being due to its tendency to alienate others and to impair important relationships.

Correspondingly, humor may be used to enhance one's *relationships with others* in a way that is relatively benign and self-accepting (*affiliative humor*), or it may be done at the expense and detriment of the self (*self-defeating humor*). The latter use of humor refers to excessively self-disparaging humor, or attempts to ingratiate oneself or gain the approval of others by doing or saying funny things at one's own expense. This also involves the use of humor as a form of defensive denial, or engaging in humorous behavior as a means of repressing one's underlying feelings, in order to maintain the acceptance of others (Kubie, 1971). Self-defeating humor is seen as potentially detrimental to well-being when used excessively, since it involves denigration of the self and repression of one's own emotional needs.

It is important to note that the distinction between potentially benign and deleterious uses of humor is one of degree, rather than a dichotomy. For example, relatively benign forms of affiliative humor may often involve some degree of

disparagement, such as when groups of friends or colleagues enhance their feelings of group identity, cohesiveness, and well-being by making fun of other groups or individuals outside the group who are disliked or pose some threat to them (e.g., "gallows humor," see Obrdlik, 1942). Also, affiliative humor may involve gentle teasing or playfully poking fun at others within one's own group, which could be seen as containing some mildly aggressive elements. Similarly, relatively benign forms of self-enhancing humor may involve deriving some inner amusement and pleasure from observing or imagining the ignominious defeat of one's adversaries. However, we would distinguish between the aggressive elements in these relatively benign forms of humor and more hostile uses of humor that may be injurious to important relationships with others, such as one's friends, family members, and colleagues. By the same token, self-deprecation may be a component of benign affiliative humor, since individuals who are able to gently poke fun at their own faults and who do not take themselves too seriously may be perceived by others as more likeable and less threatening (Vaillant, 1977; Ziv, 1984). This is in contrast to the more excessively self-disparaging types of humor seen in self-defeating humor. However, given the overlap between these benign and potentially deleterious forms of humor, it may be impossible to disentangle them completely. Consequently, although we expected that these dimensions would be distinguishable from one another, we anticipated some degree of overlap among them.

Note also that we do not assume that these various functions of humor are necessarily consciously selected or used in a volitional manner. For example, in coping with stressful situations, humor may be an automatic response akin to a defense mechanism (Freud, 1928; Vaillant, 1977), rather than a consciously chosen strategy.

To summarize, based on this 2×2 model of humor functions, we posit four dimensions relating to individual differences in humor use, as follows:

(1) *Affiliative humor*. Individuals who are high on this dimension tend to say funny things, to tell jokes, and to engage in spontaneous witty banter to amuse others, to facilitate relationships, and to reduce interpersonal tensions (Lefcourt, 2001). To put others at ease, they are also likely to engage in self-deprecating humor, saying funny things about themselves and not taking themselves overly seriously, while maintaining a sense of self-acceptance (Vaillant, 1977). This is an essentially non-hostile, tolerant use of humor that is affirming of self and others and presumably enhances interpersonal cohesiveness and attraction. This style of humor is expected to be related to extraversion, cheerfulness, self-esteem, intimacy, relationship satisfaction, and predominantly positive moods and emotions.

(2) *Self-enhancing humor*. This dimension involves a generally humorous outlook on life, a tendency to be frequently amused by the incongruities of life, and to maintain a humorous perspective even in the face of stress or adversity (Kuiper, Martin, & Olinger, 1993). Closely allied to the concept of coping humor (Martin, 1996), this relates to perspective-taking humor (Lefcourt et al., 1995), and the use of humor as an emotion regulation or coping mechanism (Dixon, 1980; Martin, Kuiper, Olinger, & Dance, 1993). It is most consistent with the Freudian definition of humor, in the narrow sense, as a healthy defense mechanism that allows one to avoid negative emotions while maintaining a realistic perspective on a potentially aversive situation

(Freud, 1928). In comparison to Affiliative humor, this use of humor has a more intrapsychic than interpersonal focus, and is therefore not expected to be as strongly related to extraversion. Given the focus on the regulation of negative emotion through humorous perspective-taking, this dimension is hypothesized to be negatively related to negative emotions such as depression and anxiety and, more generally, to neuroticism, and positively related to openness to experience, self-esteem, and psychological well-being.

(3) *Aggressive humor*. This relates to the use of sarcasm, teasing, ridicule, derision, "put-down," or disparagement humor (Zillman, 1983). It also includes the use of humor to manipulate others by means of an implied threat of ridicule (Janes & Olson, 2000). In general, it relates to the tendency to express humor without regard for its potential impact on others (e.g., sexist or racist humor), and includes compulsive expressions of humor in which one finds it difficult to resist the impulse to say funny things that are likely to hurt or alienate others. We expect that this dimension of humor is positively related to neuroticism and particularly hostility, anger, and aggression, and negatively related to relationship satisfaction, agreeableness, and conscientiousness.

(4) *Self-defeating humor*. This dimension involves excessively self-disparaging humor, attempts to amuse others by doing or saying funny things at one's own expense as a means of ingratiating oneself or gaining approval, allowing oneself to be the "butt" of others' humor, and laughing along with others when being ridiculed or disparaged. This dimension is also hypothesized to involve the use of humor as a form of defensive denial, or the tendency to engage in humorous behavior as a means of hiding one's underlying negative feelings, or avoiding dealing constructively with problems (Kubie, 1971). Although individuals who are high on this humor dimension may be seen as quite witty or amusing (e.g., "class clowns"), there is an element of emotional neediness, avoidance, and low self-esteem underlying their use of humor (Fabrizi & Pollio, 1987). This style of humor is expected to be positively related to neuroticism and negative emotions such as depression and anxiety, and negatively related to relationship satisfaction, psychological well-being, and self-esteem.

We hypothesized that these four dimensions of humor would be relatively independent of one another, although we expected some positive correlations among them, due to the hypothesized overlap between the various functions of humor noted previously.

2. Development of the Humor Styles Questionnaire

2.1. Item generation

In developing the HSQ, we employed the construct-based scale construction approach recommended by Jackson (1970), which aims at producing measures that are theoretically based with good internal consistency and minimal overlap between scales. Although, as discussed earlier, we expected that the scales would be somewhat positively intercorrelated, we used this approach to minimize their overlap and there-

by potentially increase their discriminant validity. We began by developing mutually exclusive and specific definitions of the four hypothesized humor dimensions, as outlined above. We then generated a pool of items, sampling as many aspects of each hypothesized dimension as possible. In addition, we attempted to follow Jackson's recommendations to generate relatively short, unambiguous items with high content saturation, including items tapping negative as well as positive instances of each construct. Items were generated by the first two authors and were further refined through discussion, resulting in an initial pool of 111 items, with approximately equal numbers of items for each scale.

2.2. Analyses of initial item pool

The initial item pool was examined in a study using 117 undergraduate students from the Introductory Psychology subject pool at the University of Western Ontario (76 female, 41 male, mean age = 19.8 years). Besides responding to the humor items (using a 7-point Likert scale ranging from 1 = totally disagree to 7 = totally agree), these participants completed the Marlowe-Crowne Social Desirability Scale (MCSD; Crowne & Marlowe, 1960), a 33-item measure that assesses individuals' tendency to respond to test items in a socially desirable manner.

Following the scale development procedures recommended by Jackson (1970), we first examined item standard deviations to ensure adequate item variance across subjects. One item was deleted based on a standard deviation less than 1.0 (the remaining item *SD*'s ranged from 1.03 to 2.01). Corrected item-total correlations were then examined for each of the four scales and 16 items were deleted due to correlations below .25. We then compared each item's designated scale corrected item-total correlation with its correlations with the other three humor scale totals and with the MCSD. Items were dropped if the corrected item-total correlation with their intended scale was less than .20 higher than their correlation with the total scores of any of the other three humor scales or the absolute value of their correlation with the MCSD. The purpose of this step was to minimize the intercorrelations among the four humor scales, as well as to ensure minimal overlap with social desirability. In total, 37 items were eliminated as a result of these item correlation analyses, leaving a total of 57 items (11–18 per scale). Analysis of the reliabilities of these shorter scales showed adequate Cronbach αs (>.80) for all but the Self-defeating humor scale ($\alpha = .66$).

2.3. Further item construction and scale development

Based on the results of the first study, we generated a number of additional items. This was done primarily by re-wording a number of the items that had been eliminated in the previous study, making them more unambiguously related to their intended dimensions. In total, 39 new items were constructed, resulting in a new pool of 96 items. These items were then administered to 258 participants comprising two samples. The first sample was composed of 165 undergraduate students (94 female, 71 male, mean age = 19.8 years) from the Introductory Psychology subject

pool, who also completed the MCSD. The second sample comprised 93 members of an organization of seniors involved in a continuing education program (72 female, 21 male, mean age = 71.8 years). Data from these samples were combined and the items were analyzed following the same sequence of steps as in Study 1. These analyses resulted in the selection of 15 items for each of the four humor scales. Reliability analyses of these 15-item scales revealed Cronbach alphas ranging from .82 to 88.

2.4. Final scale refinement

The 60 items derived from the previous study were subsequently administered to additional groups of participants, with the goal of further reducing the number of items to a final 32-item measure (8 items for each of the four scales). It was hoped that scales of this length would allow for adequate reliability, while being short enough to be useful in a wide variety of future research contexts. Scale refinement was based on data from a total of 485 participants (284 females, 201 males) who were administered the 60-item questionnaire in small groups. These participants included 340 (192 females, 148 males, mean age = 19.3 years) undergraduate students from the Introductory Psychology subject pool and 145 (92 female, 53 male, mean age = 15.4 years) high school students from grades 9–12.

Using the combined data from these participants, the scale items were again analyzed using essentially the same procedures as in the earlier studies, with the goal of reducing the number of items to 8 per scale. Again, we aimed to retain items with high corrected item-total correlations with their designated scale and weak correlations with the total scores of the other three scales. At the same time, we sought to minimize redundancy between items, ensure adequate sampling of the hypothesized domains within each humor dimension, and retain a number of negatively keyed items.

A principal components analysis using Varimax rotation was computed on the final set of 32 items. Examination of the scree plot indicated that a four factor solution was clearly optimal. The first four factors had eigenvalues of 4.7, 3.9, 2.7, and 2.0, respectively, and accounted for 41.6% of the variance (the next three eigenvalues were: 1.3, 1.2, and 1.2). All items loaded greater than .40 (most over .50) on their intended factors and less than .25 (most less than .10) on the other three factors.

Cross-validation. To replicate the factor structure of the final version of the scale, we used data from two additional samples of participants. These included 300 (131 male, 169 female, mean age = 19.7 years) undergraduates recruited through the Introductory Psychology subject pool, and 152 adult participants from the general community (46 male, 106 female, mean age = 39.1 years), who were tested as part of a larger community study. Thus, a total of 452 participants (177 males, 275 females) were used for the cross-validation. Again, a four-factor solution was clearly supported by the scree plot. The first four factors had eigenvalues greater than 2, and accounted for 44.8% of the variance. Coefficients of congruence (Harman, 1967), calculated on the Varimax-rotated factor loadings from the two data sets, were at least .97 for all four factors, indicating a very high degree of factorial similarity between the two samples. When the data were analyzed for male and female

participants separately, identical factor structures were found for the two sexes (coefficients of congruence >.97).

Confirmatory factor analysis. A confirmatory factor analysis using maximum likelihood estimation (AMOS 4.0) was conducted on the data from all participants in the scale development samples who had completed the final set of 32 items ($n = 1195$). A four-factor model was tested, with the four scales as latent variables and eight items as indicators for each latent variable. Regression weights for one item on each scale were arbitrarily set at 1. Measurement error was assumed to be uncorrelated between items, while the four latent variables were allowed to covary. The results indicated a good fit to the data (CMIN/DF = 3.37, GFI = .91, AGFI = .90, RMSEA = .048). Regression weights for the 32 items on their respective scales averaged .93, ranging from .57 to 1.27. The Affiliative humor latent variable had covariances of .34 and .30 with Self-enhancing and Aggressive humor, respectively, and the covariance between the Aggressive and Self-defeating humor latent variables was .36. All other covariances between latent variables were less than .07. For comparison, we also tested 1-, 2-, and 3-factor models and an orthogonal 4-factor model, but they all revealed a significantly poorer fit to the data (GFI < .80 for all models).

The items of the final 32-item Humor Styles Questionnaire are presented in Table 1, along with their Varimax-rotated factor loadings, based on the combined data from all participants in the scale development studies. These data involve 1195 participants (725 women and 470 men), ranging in age from 14 to 87 years (mean age = 25, $SD = 15.68$). As shown in the table, all item loadings are over .40 on their designated scales, while loadings on non-designated scales are less than .25.

With regard to social desirability, the Affiliative, Self-enhancing, and Self-defeating humor scales were all unrelated to the MCSD (r's = −.04, .14, and −.15, respectively, all *ns*), based on data from a total of 165 participants (71 male, 94 female). However, the Aggressive humor scale was significantly negatively related to the MCSD ($r = -.39$, $p < .001$), indicating that individuals who report using humor in a hostile and sarcastic manner are less likely to respond in a socially desirable manner. This is perhaps not surprising in view of the fact that many of the items on the MCSD scale have to do with admitting to hostile impulses.

3. Reliability and scale norms

3.1. Scale reliabilities and intercorrelations

The internal consistencies of the four scales, as well as their intercorrelations for males and females separately, based on the data from 1195 participants, are presented in Table 2. Despite the reduction to only 8 items per scale, all four scales show adequate internal consistencies, as demonstrated by Cronbach alphas ranging from .77 to .81. The intercorrelations among the four scales are generally quite low, indicating that they measure dimensions that are relatively distinct from one another. Not surprisingly, Affiliative and Self-enhancing humor are somewhat positively

Table 1
Items and Varimax-rotated factor loadings of the four scales on the Humor Styles Questionnaire ($n = 1195$)

	Factor			
	1	2	3	4
Affiliative humor				
1. I usually don't laugh or joke around much with other people.*	**.74**	.09	.11	−.06
5. I don't have to work very hard at making other people laugh—I seem to be a naturally humorous person.	**.56**	.20	.11	.07
9. I rarely make other people laugh by telling funny stories about myself.*	**.52**	.13	.05	.13
13. I laugh and joke a lot with my closest friends.	**.70**	.10	.04	.01
17. I usually don't like to tell jokes or amuse people.*	**.75**	.08	.09	−.01
21. I enjoy making people laugh.	**.62**	.16	−.07	.05
25. I don't often joke around with my friends.*	**.74**	.04	.10	−.05
29. I usually can't think of witty things to say when I'm with other people.*	**.48**	.17	.23	−.07
Self-Enhancing humor				
2. If I am feeling depressed, I can usually cheer myself up with humor.	.09	**.71**	.04	.01
6. Even when I'm by myself, I'm often amused by the absurdities of life.	.22	**.53**	−.03	.08
10. If I am feeling upset or unhappy I usually try to think of something funny about the situation to make myself feel better.	.10	**.69**	.05	−.01
14. My humorous outlook on life keeps me from getting overly upset or depressed about things.	.13	**.69**	−.04	.01
18. If I'm by myself and I'm feeling unhappy, I make an effort to think of something funny to cheer myself up.	.10	**.74**	−.02	.01
22. If I am feeling sad or upset, I usually lose my sense of humor.*	.11	**.53**	.12	−.10
26. It is my experience that thinking about some amusing aspect of a situation is often a very effective way of coping with problems.	.07	**.66**	−.10	.17
30. 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.	.11	**.58**	−.04	−.01
Aggressive Humor				
3. If someone makes a mistake, I will often tease them about it.	.19	.06	**.59**	.22
7. People are never offended or hurt by my sense of humor.*	.03	−.07	**.58**	.08
11. When telling jokes or saying funny things, I am usually not very concerned about how other people are taking it.	−.09	.03	**.53**	.02
15. I do not like it when people use humor as a way of criticizing or putting someone down.*	.10	.02	**.67**	.02
19. Sometimes I think of something that is so funny that I can't stop myself from saying it, even if it is not appropriate for the situation.	.14	.12	**.48**	.25
23. I never participate in laughing at others even if all my friends are doing it.*	.22	−.08	**.61**	−.04
27. If I don't like someone, I often use humor or teasing to put them down.	.02	−.01	**.65**	.17
31. Even if something is really funny to me, I will not laugh or joke about it if someone will be offended.*	.07	−.02	**.69**	.03

Table 1 (*continued*)

	Factor			
	1	2	3	4
Self-defeating humor				
4. I let people laugh at me or make fun at my expense more than I should.	−.02	−.05	.05	**.64**
8. I will often get carried away in putting myself down if it makes my family or friends laugh.	−.04	−.03	.04	**.75**
12. I often try to make people like or accept me more by saying something funny about my own weaknesses, blunders, or faults.	.08	.05	.09	**.70**
16. I don't often say funny things to put myself down.*	.15	.01	.22	**.52**
20. I often go overboard in putting myself down when I am making jokes or trying to be funny.	−.12	−.06	.12	**.77**
24. When I am with friends or family, I often seem to be the one that other people make fun of or joke about.	−.08	−.04	.00	**.61**
28. If I am having problems or feeling unhappy, I often cover it up by joking around, so that even my closest friends don't know how I really feel.	.06	.20	.02	**.43**
32. Letting others laugh at me is my way of keeping my friends and family in good spirits.	.07	.08	.13	**.67**

* Items marked with an asterisk are reverse keyed.

Table 2
Cronbach αs for all participants ($n = 1195$) and intercorrelations of the four Humor Styles Questionnaire scales for males ($n = 470$) and females ($n = 725$) separately

	Affiliative	Self-enhancing	Aggressive	Self-defeating
Affiliative humor	**.80**	.33***	.28***	.04
Self-enhancing humor	.36***	**.81**	.11*	.12**
Aggressive humor	.22***	−.01	**.77**	.22***
Self-defeating humor	.06	.04	.23***	**.80**

Note. Cronbach α-coefficients (total sample) are on the diagonal. Correlations for males are above the diagonal, for females below the diagonal.

* $p < .05$.
** $p < .01$.
*** $p < .001$.

correlated (rs = .33 and .36 for males and females, respectively, both p's < .001), indicating that individuals who use humor to enhance relationships with others are also likely to engage in self-enhancing uses of humor. The Affiliative and Aggressive humor scales are also positively correlated (rs = .28 and .22 for males and females, respectively, both ps < .001), suggesting that individuals who frequently joke and laugh with others to enhance relationships also show some tendency to engage in sarcastic or hostile humor. As discussed earlier, there may be some element of aggressiveness in affiliative humor (e.g., friendly teasing; making fun of members of an "out-group"), which cannot be completely disentangled from the more hostile uses of humor assumed to be assessed by the Aggressive humor scale. Finally, the Aggres-

sive and Self-defeating humor scales are positively correlated (rs = .22 and .23 for males and females respectively, both p's < .001), indicating that those who use humor in hostile ways also tend to engage in excessively self-disparaging and avoidant uses of humor. The remaining correlations are all less than .13 (although some are significant due to the large sample size).

Test–retest reliabilities were computed using data from a sample of 179 participants (124 females, 55 males) from the Introductory Psychology subject pool, who were administered the HSQ on two occasions one week apart. Reliabilities for the Affiliative, Self-enhancing, Aggressive, and Self-defeating humor scales, respectively, were .85, .81, .80, and .82 (all p's < .001).

3.2. Scale norms and sex differences

Table 3 presents means and standard deviations of each of the four scales, for the entire sample as well as for males and females separately, based on the data from 1195 participants. The significance levels of t tests comparing males and females are also given. Males obtained significantly higher scores than did females on all four scales, although the differences observed for Affiliative and Self-enhancing humor were very small and reached significance only because of the large sample size. Not surprisingly, males reported a much greater tendency to engage in aggressive forms of humor such as sarcasm, ridicule, and "put-down" humor, as indicated by higher scores on the Aggressive humor scale (male $M = 32.3$, female $M = 26.3$, $t(1193) = 12.20$, $p < .0001$). Interestingly, males also reported a greater tendency to engage in the excessively self-disparaging and avoidant forms of humor assessed by the Self-defeating humor scale (male $M = 27.8$, female $M = 24.5$, $t(1193) = 6.09$, $p < .0001$). The greater tendency of males to engage in these presumably deleterious styles of humor is consistent with some previous evidence that men engage in more potentially maladaptive forms of humor than do women (Crawford & Gressley,

Table 3
Means and standard deviations for the four Humor Styles Questionnaire scales for all participants, and for males and females separately (470 males, 725 females)

	Total sample	t test		
		Males	Females	Signif.
Affiliative humor	46.4 (7.17)	47.3 (6.82)	46.0 (7.22)	<.01
Self-enhancing humor	37.3 (8.33)	37.9 (8.02)	36.8 (8.50)	<.05
Aggressive humor	28.5 (8.79)	32.3 (8.55)	26.3 (8.05)	<.001
Self-defeating humor	25.9 (9.22)	27.8 (9.24)	24.5 (8.97)	<.001

Note. Standard deviations are shown in parentheses.

1991; Lefcourt, Davidson, Prkachin, & Mills, 1997; Martin & Kuiper, 1999). Further research is needed to examine whether these sex differences in humor styles result from sociocultural influences or are innate.

3.3. Age differences

To examine age differences in the four HSQ scales, we formed groups using the data of male ($n = 137$) and female ($n = 233$) participants younger than 19 years of age ($M = 16.9$ years, $SD = 1.39$), and male ($n = 53$) and female ($n = 165$) participants older than 25 years of age ($M = 49.7$ years, $SD = 18.53$), from the scale development samples (see Table 4). These data were analyzed using 2 (Gender) × 2 (Age group) between-subjects analyses of variance on each of the four HSQ scales. The analyses for the Affiliative humor scale revealed significant main effects for both gender, $F(1, 584) = 4.00$, $p < .05$, and age, $F(1, 584) = 51.80$, $p < .0001$, but no significant interaction, $F(1, 584) = 1.562$, *ns*. Consistent with the gender findings noted earlier, males overall had somewhat higher Affiliative humor scores than did females. In addition, younger participants ($M = 47.3$, $SD = 5.73$) had much higher scores than did older participants ($M = 41.9$, $SD = 8.94$). Thus, older adults, as compared to adolescents, appear generally to engage in less affiliative joking and laughing with others, perhaps due to less involvement in social activities. The analyses for the Self-enhancing humor scale revealed non-significant effects for gender and age, Fs$(1, 584) = .341$ and .989, respectively, but a significant interaction was found, $F(1, 584) = 4.00$, $p < .05$. The interaction was due to the fact that older women ($M = 37.6$, $SD = 8.47$) had significantly higher Self-enhancing humor scores than did younger women ($M = 35.1$, $SD = 8.86$), $t(396) = -2.73$, $p < .01$, whereas this difference was in the reverse direction, although non-significant, among males (Ms = 37.2 and 36.4 for younger and older men, respectively). Thus, older women appear to engage in more perspective-taking and coping humor than do adolescent

Table 4
Correlations between the Humor Styles Questionnaire scales and ratings by romantic partners of the four humor dimensions ($n = 165$)

	Affiliative	Self-enhancing	Aggressive	Self-defeating
"doesn't like to tell jokes or amuse others (R)"	.22*	.12	.09	.08
"humorous outlook on life keeps him/her from getting overly upset"	.18*	.33***	−.01	−.05
"will not laugh or joke if someone will be offended (R)"	.06	−.02	.32***	−.01
"goes overboard in putting self down when trying to be funny"	.08	−.06	−.03	.25**

Note. (R) indicates reverse keyed items.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

females, whereas older and younger men do not differ significantly in this use of humor.

The results for the Aggressive humor scale revealed significant main effects for both gender and age, Fs$(1, 584) = 39.80$ and 72.32, respectively, both ps $< .0001$, but no significant interaction, $F(1, 584) = .253$, *ns*. Consistent with gender differences noted earlier, males had considerably higher scores than did females. In addition, younger participants ($M = 29.5$, $SD = 8.50$) had higher Aggressive humor scores than did older participants ($M = 22.6$, $SD = 7.78$), indicating that older adults are generally less likely to use humor to disparage, ridicule, or manipulate others than are adolescents. Finally, for Self-defeating humor, there was a significant main effect for gender, $F(1, 584) = 11.35$, $p < .001$, with males having higher scores than females, as noted above. However, the effects for age group and the interaction were non-significant, Fs$(1, 584) = .854$ and .209, respectively. Thus, adults did not differ from adolescents in their use of excessively self-disparaging and avoidant forms of humor. Future longitudinal research is needed to determine whether the observed age differences are due to developmental changes in uses of humor over the lifespan or to cohort effects.

4. Construct validity

4.1. Correlations with peer ratings of humor

In a recent study of humor in romantic relationships, 165 university undergraduates (113 females, 52 males) completed the HSQ. Their dating partners were subsequently contacted and asked to rate the participants (using a 5-point likert scale) on four items adapted from the HSQ scales. The following items were used: Affiliative humor—"He/she usually doesn't like to tell jokes or amuse other people"; Self-enhancing humor—"His/her humorous outlook on life keeps him/her from getting overly upset or depressed about things"; Aggressive humor—"Even if something is really funny to him/her, he/she will not laugh or joke about it if someone will be offended"; Self-defeating humor—"He/she often goes overboard in putting himself/herself down when making jokes or trying to be funny." Scores for the Affiliative and Aggressive humor items were reverse-keyed. As shown in Table 3, significant correlations were found between each of the HSQ scales and the corresponding peer rating items, ranging from $r = .22$ ($p < .05$) for Affiliative humor to $r = .33$ ($p < .001$) for Self-enhancing humor. These findings provide evidence of the validity of the HSQ scales, indicating agreement between participants' self-reports on the four HSQ dimensions and the perceptions of individuals who know them well. Although some of these correlations were somewhat weak, note that they were based on single-item ratings. In addition, with the exception of a weak correlation between the HSQ Affiliative humor scale and the Self-enhancing humor peer rating item ($r = .18$, $p < .05$), all of the correlations between HSQ scales and non-corresponding peer rating items were non-significant, providing evidence of specificity and discriminant validity for the scales.

4.2. Correlations with other humor-related measures

Participants in several studies using the HSQ have also completed several other measures relating to humor. In one of the scale development studies involving 165 undergraduate students (94 female, 71 male), participants completed the following sense of humor measures: the Situational Humor Response Questionnaire (SHRQ; Martin & Lefcourt, 1984), a measure of individuals' tendency to respond with smiling and laughter in a wide variety of life situations; the Coping Humor Scale (CHS; Martin & Lefcourt, 1983), a measure of respondents' reported tendency to use humor in coping with life stress; and the 6-item revision of the Sense of Humor Questionnaire (SHQ-6; Svebak, 1996), which assesses individuals' tendency to notice humor in their daily life and to enjoy humor and the humorous role. A subsequent sample of 94 undergraduates (34 males, 60 females) completed the Multidimensional Sense of Humor Scale (MSHS; Thorson & Powell, 1993), which was designed to assess a broad range of humor-related behaviors and attitudes. These sense of humor measures have been widely used in past research on humor, well-being, and coping with stress. In addition, a sample of 172 undergraduates (97 females, 75 males) completed the Coping Orientations to Problems Experienced Scale (COPE; Carver, Scheier, & Weintraub, 1989), which assesses the degree to which respondents typically engage in a number of different coping strategies in dealing with life stress. Our focus here was on one of the subscales, Humor Coping, which assesses individuals' reported tendency to use humor as a coping strategy. Although this measure has not been extensively used in past humor research, we were interested in how it might relate to the HSQ scales. Finally, unpublished data were obtained from Ruch (2001) who administered a German translation of the HSQ to 120 German-speaking participants (58 males, 62 females), along with the trait version of the State-Trait Cheerfulness Inventory (STCI; Ruch, Kohler, & van Thriel, 1996), which provides scores for cheerfulness, seriousness, and bad mood. Although not considered a measure of sense of humor per se, the STCI assesses emotion-related traits that are seen as forming the temperamental basis of sense of humor (Ruch & Kohler, 1998).

Table 5 presents the correlations between each of the four HSQ scales and these other humor-related measures, along with multiple correlations derived from stepwise multiple regression analyses entering all four HSQ scales to predict each of the other variables. With regard to the four sense of humor scales used most widely in previous research on humor and well-being (SHRQ, CHS, SHQ-6, and MSHS), the multiple *R*s were all highly significant, ranging from .47 to .67 (all $ps < .001$), indicating that the HSQ scales are quite strongly related to these existing measures of sense of humor. Given that several of these measures have considerable validation support (e.g., Martin, 1996), these findings provide additional evidence of convergent validity for the HSQ. However, examination of the correlations for the individual HSQ scales indicates that most of the overlapping variance is accounted for by Affiliative and Self-enhancing humor. Both of these scales were significantly correlated with each of the previous humor measures, with correlations ranging from .27 to .54 for Affiliative humor and from .43 to .55 for Self-enhancing humor (all $ps < .001$).

Table 5
Correlations between the Humor Styles Questionnaire scales and other humor-related measures

	Affiliative	Self-enhancing	Aggressive	Self-defeating	*R*
SHRQ[a]	.27***	.43***	.12	−.01	.47***
CHS[a]	.33***	.55***	.21**	.02	.62***
SHQ-6[a]	.54***	.45***	.12	.16	.63***
MSHS[b]	.50***	.50***	.37***	.27**	.67***
COPE humor[c]	.27***	.53***	.28***	.26***	.61***
STCI-Cheerfulness[d]	.65***	.55***	.05	−.09	.75***
STCI-Seriousness[d]	−.31***	−.17	−.41***	−.13	.47***
STCI-Bad mood[d]	−.33***	−.37***	−.02	.28**	.56***

Note. SHRQ, Situational Humor Response Questionnaire; CHS, Coping Humor Scale; SHQ-6, Sense of Humor Questionnaire; MSHS, Multidimensional Sense of Humor Scale; COPE Humor, Humor coping scale of the Coping Orientations to Problems Experienced Scale; STCI, State-Trait Cheerfulness Inventory.

[a] $n = 165$.
[b] $n = 94$.
[c] $n = 172$.
[d] $n = 120$.
** $p < .01$.
*** $p < .001$.

Thus, the Affiliative and Self-enhancing Humor scales of the HSQ appear to assess constructs that are quite similar to those measured by previous sense of humor measures. These two new scales may be useful, however, in more specifically assessing two distinct uses of humor, one relating to the use of humor to enhance the self and the other to the use of humor to enhance one's relationships with others. Indeed, in multiple regression analyses, Affiliative and Self-enhancing humor each contributed significantly, after controlling for the other, in predicting each of these previous sense of humor scales, suggesting that these two HSQ scales relate to separate facets of humor that are combined in the existing humor measures.

On the other hand, the correlations between the Aggressive and Self-Defeating humor scales on the HSQ and the SHRQ, CHS, and SHQ-6 were non-significant, with the exception of a positive correlation between the CHS and Aggressive humor ($r = .21$, $p < .01$). Thus, these previous humor scales generally do not appear to assess the dimensions of humor tapped by the Aggressive and Self-defeating humor scales, which we hypothesize to be negatively related to psychological well-being. However, the MSHS was significantly positively correlated with both Aggressive ($r = .37$, $p < .001$) and Self-defeating humor ($r = .21$, $p < .01$), in addition to Affiliative and Self-enhancing humor (both rs $= .50$, $p < .001$), suggesting that the MSHS may not distinguish between potentially benign and deleterious uses of humor. If these HSQ scales are related in opposite ways to psychosocial health and well-being, as we hypothesize, then this blending of the humor dimensions may attenuate relationships between the MSHS and measures of well-being.

The Humor Coping scale of the COPE, like the MSHS, was also significantly and positively correlated with all four of the HSQ scales. Although the strongest correlation, not surprisingly, was with the Self-enhancing humor scale ($r = .53$, $p < .001$),

this measure was also moderately related to Affiliative, Aggressive, and Self-defeating humor (rs = .27, .28, and .26, respectively, all ps < .001). This finding also raises questions about the usefulness of the Humor Coping subscale of the COPE as a measure of adaptive uses of humor in coping, since it does not appear to distinguish adequately between potentially benign and deleterious uses of humor.

Finally, the three subscales of the STCI were also quite highly related to the HSQ scales, with multiple correlations ranging from .47 to .75 (all ps < .001), indicating considerable overlap between the HSQ and the emotion-related temperaments assessed by the STCI. Affiliative humor was strongly positively related to cheerfulness and negatively related to both seriousness and bad mood (rs = .65, −.31, and −.33, respectively, all ps < .001). Self-enhancing humor was also positively related to cheerfulness and negatively related to bad mood (rs = .55 and −.37, respectively, both ps < .001), but not significantly related to seriousness ($r = -.17$, ns). Aggressive humor was significantly related (negatively) only to seriousness ($r = -.41$, $p < .001$), while Self-defeating humor was significantly related (positively) only to bad mood ($r = .28$, $p < .001$). Thus, the four HSQ scales appear to occupy somewhat different locations in the three-dimensional factor space defined by the STCI.

4.3. Correlations with measures of mood, well-being, and social relationships

To begin to assess relations between the HSQ scales and aspects of psychological health and well-being, a number of additional measures were administered to various samples of participants. All 485 participants in the scale refinement samples (284 females, 201 males) also completed the Center for Epidemiological Studies Depression Scale (CESD; Radloff, 1977), a 20-item measure of symptoms of depression including depressed mood, feelings of guilt, worthlessness, helplessness, and hopelessness, loss of appetite, and sleep disturbance. Additionally, a sample of 168 undergraduates completed the following measures: the Cook–Medley Hostility Scale (Ho; Cook & Medley, 1954), consisting of 50 items from the MMPI that assess anger, resentment, and hostility; the Symptom Checklist-90-R (SCL-90-R; Derogatis, 1977), a 90-item inventory designed to measure a variety of psychological and physical symptoms including somatization, interpersonal sensitivity, depression, anxiety, and hostility; and the Social Support Questionnaire (SSQ; Sarason, Levine, Basham, & Sarason, 1983), which assesses the degree of reported satisfaction with the social support received by the respondent across a variety of potentially stressful situations. Also, a sample of 172 participants (97 female, 75 male) were administered the following measures: the State-Trait Anxiety Inventory, trait version (STAI; Spielberger, Gorsuch, & Lushene, 1969), a 20-item measure of general tendencies to experience anxiety and nervousness; the Index of Self-Esteem (ISE; Hudson, 1982), a 25-item measure of self-esteem; and the Miller Social Intimacy Scale (MSIS; Miller & Lefcourt, 1982), a 17-item scale that assesses an individual's maximum level of closeness and intimacy with another person. In addition, 333 undergraduate participants (189 females, 144 males) completed the Rosenberg Self-Esteem Inventory (RSEI; Rosenberg, 1965), a 10-item measure of positive self-esteem. Another sample of 194 participants (88 male, 106 female) also completed the Buss–Perry Aggression Questionnaire (BPAQ;

Buss & Perry, 1992), a 29-item measure comprising scales for physical aggression, verbal aggression, anger, and hostility (a total aggression score, summing across the four subscales, was used in this study). Finally, 94 undergraduate participants (60 female, 34 male) completed both the Life Orientation Test (LOT; Scheier & Carver, 1985), a 12-item measure of dispositional optimism; and the Ryff (1989) measure of psychological well-being, an 84-item questionnaire comprising scales for self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth (a total score, summing across all six subscales, was used for this study).

Table 6 presents the correlations between the four HSQ scales and each of these well-being measures, along with multiple correlations between the HSQ scales and each of the other variables. The multiple correlations for the depression (CESD), anxiety (STAI), hostility (Ho), aggression (BPAQ), self-esteem (RSEI, ISE), optimism (LOT), and well-being (Ryff) measures are all quite strong, ranging from .42 to .61 (all p's $< .001$). These correlations are considerably stronger than those typically found with previous humor measures (e.g., Kuiper & Martin, 1998; Thorson et al., 1997), suggesting that the four HSQ scales, taken together, account for a greater proportion of the variance in well-being than do previous humor scales. As shown by the simple correlations, the Affiliative, Self-enhancing, and Self-defeating humor

Table 6
Correlations between HSQ scales and measures of mood, aggressiveness, self-esteem, optimism, psychological well-being, psychiatric symptoms, intimacy, and social support satisfaction

	Affiliative	Self-enhancing	Aggressive	Self-defeating	R
STAI-Trait[a]	−.27***	−.40***	−.07	.26***	.46***
CESD[b]	−.22***	−.33***	−.08	.24***	.43***
Ho[c]	.01	.07	.29***	.38***	.43***
Aggression[d]	−.08	−.10	.41***	.28***	.47***
RSEI[e]	.21***	.28***	.03	−.36***	.49***
ISE[a]	.43***	.32***	.08	−.25***	.51***
LOT[f]	.12	.32**	−.04	−.08	.43***
Ryff Well-being[f]	.26*	.46***	−.11	−.24*	.61***
SCL-90[c]	−.14	−.04	.05	.31***	.35***
MSIS[a]	.25***	.17*	−.14	−.15*	.33***
SSQ-S[c]	.11	.30***	−.04	−21**	.38***

Note. CESD, Center for Epidemiological Studies Depression Scale; STAI, State-Trait Anxiety Inventory; Ho, Cook–Medley Hostility Scale; RSEI, Rosenberg Self-Esteem Inventory; ISE, Index of Self-Esteem; LOT, Life Orientation Test (optimism); SCL-90-R, Symptom Checklist-90 Revised; MSIS, Miller Social Intimacy Scale; SSQ-S, Social Support Questionnaire-Satisfaction.

[a] $n = 172$.
[b] $n = 485$.
[c] $n = 168$.
[d] $n = 194$.
[e] $n = 333$.
[f] $n = 94$.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

scales were all significantly correlated with the CESD, STAI, RSEI, ISE, and Ryff measures, with Self-defeating humor showing correlations in the opposite direction to those with Affiliative and Self-enhancing humor. Indeed, step-wise multiple regression analyses revealed that all three of these HSQ scales contributed independently to the variance in each of these measures. Optimism (LOT) was significantly correlated only with Self-enhancing humor ($r = .32$, $p < .01$), suggesting that an optimistic outlook on life is specifically related to the use of humor in coping, perspective-taking, and emotion regulation.

As expected, both Ho and BPAQ were significantly correlated with Aggressive humor (rs $= .29$ and .41, respectively, both ps $< .001$). Somewhat surprisingly, they were also significantly correlated with Self-defeating humor (rs $= .38$ and .28 respectively, both ps $< .001$). These findings suggest that hostile and aggressive attitudes and behaviors toward others are related to excessively self-disparaging and avoidant uses of humor, as well as to sarcastic and manipulative uses of humor. The SCL-90-R was significantly correlated only with Self-defeating humor ($r = .31$, $p < .001$), indicating that individuals who use humor in an excessively self-disparaging and avoidant manner tend to report experiencing a variety of psychiatric and somatic symptoms.

With regard to the social relationship measures, the multiple correlations tend to be somewhat weaker, but still significant. The MSIS was moderately correlated with Affiliative humor ($r = .25$, $p < .001$), and more weakly related to Self-enhancing ($r = .17$, $p < .05$), and Self-defeating humor ($r = -.15$, $p < .05$), producing a multiple correlation of .33 ($p < .001$). Thus, it appears that, as predicted, the tendency to laugh and joke with others (Affiliative humor) is particularly related to greater levels of intimacy in relationships. Finally, satisfaction with social support showed a positive correlation with Self-enhancing humor ($r = .30$, $p < .001$) as well as a weak negative relation with Self-defeating humor ($r = -.27$, $p < .01$). Somewhat surprisingly, social support satisfaction was not significantly related to Affiliative humor ($r = .11$, *ns*), suggesting that satisfaction with social support may have to do more with maintaining a humorous and cheerful perspective on life than with joking and laughing with others. Further research is needed to explore these relationships.

These well-being data, taken together, indicate that the four HSQ scales make independent contributions in the prediction of various aspects of psychological well-being and social relatedness. In particular, the pattern of correlations provides support for the view that Affiliative and Self-enhancing humor involve benign uses of humor that are positively associated with psychological health and well-being, whereas Aggressive and Self-defeating humor are negatively related to well-being and, as such, may represent more detrimental and potentially unhealthy uses of humor (although the direction of causality is of course unknown with these correlational data).

To compare the predictive ability of the HSQ with that of several previous humor scales, we computed a hierarchical multiple regression, with RSEI as the dependent measure, entering first the CHS, SHRQ, and SHQ-6 as a block, and then the four HSQ scales as a second block, using data from a sample of 165 participants (94 female, 71 male). The three previous humor scales together accounted for 6.6% of the variance in RSEI, $F(3, 160) = 3.76$, $p < .05$. The HSQ scales together added 11.8% to the explained variance, $F(4, 156) = 5.648$, $p < .001$, with both Self-enhancing and

Self-defeating humor contributing significantly to the additional explained variance. When the two blocks of variables were entered in the reverse order, the previous humor scales did not add significantly to the variance accounted for by the HSQ scales ($R^2 = .18$). Thus, as expected, the HSQ scales account for a much greater proportion of the variance in self-esteem than do these previous humor measures.

In similar analyses using a different data set ($n = 94$), we compared the HSQ and the MSHS in predicting several measures relating to psychological well-being, including the CESD, STAI, LOT, and the Ryff measure. With all four well-being measures, hierarchical multiple regression analyses revealed that the HSQ scales entered as a block added significantly to the variance accounted for by the MSHS (R^2 change = .19, .26, .19, and .32 for CESD, STAI, LOT, and Ryff measure, respectively, all ps $< .001$). In contrast, the MSHS did not add significantly to the variance accounted for after the four HSQ scales had been entered. Thus, the HSQ, by including scales assessing both potentially benign and deleterious uses of humor, appears to account for a considerably greater proportion of the variance in various aspects of psychological well-being than do several sense of humor scales that have been frequently used in previous research on humor and well-being.

4.4. Correlations with the five-factor model, masculinity and femininity

To examine the relation between the HSQ scales and broader dimensions of personality, additional personality inventories were administered to two samples of participants. A sample of 152 adults (46 male, 106 female) also completed the Revised NEO Personality Inventory (NEO-PI-R; Costa & McCrae, 1992), a 240-item measure that assesses the five domains that are seen in the Five Factor Model (FFM) as accounting for most of the variance in personality traits: Extraversion, Neuroticism, Openness to Experience, Agreeableness, and Conscientiousness. In addition, 165 undergraduates (94 female, 71 male) completed the Extended Personal Attributes Questionnaire (EPAQ; Spence, Helmreich, & Holahan, 1979), a 40-item test of masculinity and femininity that provides scores for positively valued masculinity or agency (e.g., dominant, independent, self-confident), positively valued femininity or communion (e.g., understanding of others, warm, kind), negatively valued masculinity or unmitigated agency (e.g., aggressive, hostile, cynical), and negatively valued femininity or unmitigated communion (e.g., indecisive, servile, feelings easily hurt).

Table 7 presents the correlations between the four HSQ scales and each of these personality measures, along with multiple correlations of all four HSQ scales with each of the other variables. With regard to the FFM, the multiple correlations reveal that the HSQ scales, taken together, are generally quite strongly related to each of the NEO-PI-R scales. With the exception of Openness ($R = .34$, $p < .001$), all of the multiple correlations were greater than .45. As expected, Extraversion is most strongly related to Affiliative humor ($r = .47$, $p < .001$). It is also significantly, but (as expected) less strongly, related to Self-enhancing humor ($r = .28$, $p < .001$), but unrelated to Aggressive and Self-defeating humor (rs = .13 and .10, respectively, *ns*). Previous self-report measures of sense of humor tend to be strongly related to extraversion (Ruch, 1994). Thus, the Affiliative and Self-enhancing humor scales

Table 7
Correlations between the Humor Styles Questionnaire scales and measures of the five- factor model and masculinity and femininity

	Affiliative	Self-enhancing	Aggressive	Self-defeating	*R*
NEO-PI-R:[a]					
Neuroticism	−.08	−.37***	.21*	.35***	.53***
Extraversion	.47***	.28***	.13	.10	.48***
Openness	.23**	.27***	−.14	.06	.34***
Agreeableness	−.05	.17*	−.59***	−.23**	.61***
Conscientiousness	−.07	.12	−.37***	−.34***	.47***
EPAQ:[b]					
Masculinity	.16*	.27***	.09	−.13	.32***
Femininity	.29***	.01	−.32***	−.21**	.46***
Unmit. Masc.	−.14	.03	.46***	.21**	.49***
Unmit. Fem.	−.20*	−36***	−.03	.13	.39***

Note. NEO-PI-R, Revised NEO Personality Inventory; EPAQ, Extended Personal Attributes Questionnaire.

[a] $n = 152$.

[b] $n = 165$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

appear to tap into much the same personality dimension as the past humor measures, whereas the other two scales seem to relate to different dimensions. In particular, Aggressive and Self-defeating humor were negatively related to Agreeableness ($r = -.59$, $p < .001$, and $r = -.23$, $p < .01$, respectively) and Conscientiousness (r's $= -.37$ and $-.34$, respectively, both p's $< .001$), both of which were generally unrelated to Affiliative and Self-enhancing humor. In addition, as predicted, Aggressive and Self-defeating humor were both positively related to Neuroticism ($r = .21$, $p < .05$, and $r = .35$, $p < .001$, respectively), which, as expected, was also negatively related to Self-enhancing humor ($r = -.37$, $p < .001$). Together, these three HSQ scales accounted for over 25% of the variance in Neuroticism. Finally, as expected, Openness to Experience was related to both Affiliative ($r = .23$, $p < .01$) and Self-enhancing humor ($r = .27$, $p < .001$), but not Aggressive or Self-defeating humor. Overall, the pattern of correlations with the NEO-PI-R is generally consistent with our predictions. In sum, the HSQ appears to extend the measurement of humor to facets relating to all five of the major personality dimensions posited by the Five Factor Model, rather than being limited primarily to extraversion, as are most previous humor measures, with the exception of the STCI and the HBQD (Ruch, 1994; Kohler & Ruch, 1996).

The multiple correlations with the four EPAQ scales, ranging from .32 to .49, also indicate that the HSQ is fairly representative of the personality dimensions captured by this measure. As expected, the Masculinity (agency) scale of the EPAQ was primarily related to Self-enhancing humor ($r = .27$, $p < .001$). Thus, the tendency to maintain a humorous perspective on life and to regulate one's own emotions via humor (Self-enhancing humor) appears to be primarily an agentic dimension, reflecting

such personality traits as independent, self-sufficient, and self-confident. In turn, and again as predicted, the Femininity (communion) scale of the EPAQ was related to Affiliative humor ($r = .29$, $p < .001$), indicating that the tendency to engage in affiliative humorous interactions with others may be primarily a communal dimension, reflecting such trait descriptors as understanding of others, warm, and kind. In addition, Femininity was negatively related to Aggressive and Self-defeating humor ($r = -.32$, $p < .001$, and $r = -.21$, $p < .01$, respectively), indicating that individuals who exhibit these potentially deleterious humor styles are low on communal traits. In turn, the negative masculinity dimension (unmitigated agency), which reflects hostility, competitiveness, and cynicism, was most strongly related to Aggressive humor ($r = .46$, $p < .001$). Finally, negative femininity (unmitigated communion) was negatively related to Self-enhancing and, less strongly, to Affiliative humor ($r = -.36$, $p < .001$, and $r = -.20$, $p < .05$, respectively), indicating that individuals who engage in these two presumably benign uses of humor are less likely to be overly submissive, servile, and easily hurt. The positive correlations with unmitigated masculinity and negative correlations with femininity for both Aggressive and Self-defeating humor may help to account for the finding that men score significantly higher than women on both these humor measures.

5. Discussion

The Humor Styles Questionnaire represents a new approach to measurement of individual differences in humor, in that it is the first self-report measure to specifically assess ways in which people use humor that are less desirable and potentially detrimental to psychological well-being (Aggressive and Self-defeating humor). In addition, by following Jackson's (1970) construct-based approach to carefully refine scales that are minimally intercorrelated, the other two scales in the HSQ may also be purer measures of benign or healthy humor than are those that currently exist in the literature. The scale development procedures have resulted in four 8-item scales with good reliabilities (internal consistency coefficients ranging from .77 to .81; test–retest correlations of .80 to .85). By developing the HSQ with samples of participants ranging in age from 14 to 87 years, the measure appears to be appropriate for use with participants from adolescence to old age. Although some of the scales are moderately correlated with each other (maximum $r = .36$), likely reflecting a general tendency to engage in humorous behavior, the intercorrelations are low enough for the scales to be considered to be assessing distinct facets of humor (as supported also by confirmatory factor analysis). This may allow for use of a profile approach in describing aspects of humor use in individuals. The correlational findings presented here also provide initial evidence for the discriminant and construct validity of the four scales.

The final items on the *Affiliative humor* scale primarily relate to the tendency to joke around with others, say witty things, tell amusing stories, laugh with others, and amuse others. Not surprisingly, the Affiliative humor scale is most strongly related to Extraversion in the FFM, as well as relating to Openness to Experience. It is also positively correlated with previous self-report humor measures, as well as with

cheerfulness, self-esteem, psychological well-being, social intimacy, and femininity (communion), and negatively correlated with depression, anxiety, seriousness, and bad mood. In sum, individuals with high scores on this measure appear to be socially extraverted, cheerful, emotionally stable, and concerned for others.

The *Self-enhancing humor* scale contains items relating to perspective-taking humor, a tendency to maintain a humorous outlook on life, and use of humor in emotion regulation and coping. Several of the items relate to the tendency to engage in humor even while apart from other people. Like the Affiliative humor scale, it is quite strongly related to previous humor measures, particularly the Coping Humor Scale (but it has a higher reliability than the CHS). It is also positively correlated with cheerfulness, self-esteem, optimism, psychological well-being, and satisfaction with social support, and negatively related to depression, anxiety, and bad mood. In addition, it is negatively correlated with Neuroticism and positively related to Extraversion and Openness. Finally, it is positively related to masculinity (agency) and negatively related to negatively valued femininity (unmitigated communion). This scale seems most closely related to the traditional narrow definition of "humor" as a coping mechanism or adaptive defense (Freud, 1928; Vaillant, 2000).

The *Aggressive humor* scale includes items relating to sarcasm, teasing, use of humor to criticize or manipulate others, and compulsive expressions of humor without regard for the effects on others. With regard to the FFM, this scale is negatively correlated with Agreeableness and Conscientiousness, and positively related to Neuroticism. It is also strongly associated with unmitigated masculinity, and negatively related to femininity (communion). Not surprisingly, this form of humor seems to be much more common in men than in women. This is a dimension of humor that is not well tapped by existing humor scales, as indicated by generally non-significant correlations with the other humor measures (with the exception of positive correlations with the MSHS and CHS). This scale was positively related to measures of hostility and aggression and negatively related to seriousness. In view of past research indicating negative effects of hostility and unmitigated agency on social relationships and physical health (Helgeson, 1994; Miller, Smith, Turner, Guijarro, & Hallet, 1996), further research is needed to explore the degree to which this aggressive style of humor is also negatively related to various aspects of health and well-being.

The items on the *Self-defeating humor* scale relate to tendencies to use humor in an excessively self-disparaging and ingratiating way, to allow oneself to be the butt of others' jokes, and to use humor as a form of defensive denial to hide underlying negative feelings. This is also a humor dimension that appears to be largely untapped by previous humor scales, as indicated by non-significant correlations with these measures (with the exception of a positive correlation with the MSHS). This scale is positively related to Neuroticism and negatively related to Agreeableness and Conscientiousness on the NEO-PI-R. It is also positively correlated with depression, anxiety, hostility, aggression, bad mood, psychiatric symptoms, and undesirable masculine traits (unmitigated agency) and negatively related to self-esteem, psychological well-being, intimacy, satisfaction with social supports, and femininity (communion). Like aggressive humor, it was found to be significantly higher in men than women. Further research is needed to explore the psychological implications of this use of humor.

In sum, the data obtained thus far provide evidence that the HSQ assesses two dimensions of humor that are positively related to psychosocial health and well-being, and two dimensions that are negatively related to these variables. We view this measure as an improvement on many existing self-report humor scales, most of which do not specifically assess aspects of humor that are potentially deleterious to well-being. As such, the HSQ seems to be more consistent with past theorists who have emphasized that certain forms of humor may be deleterious to psychological health, in addition to noting the specific styles of humor that seem to enhance coping and well-being (e.g., Allport, 1961; Maslow, 1954). Thus, the absence of certain detrimental styles of humor may be as important to psychosocial well-being as is the presence of more beneficial humor styles. Indeed, our findings suggest that the assessment of these different uses of humor with the HSQ may allow researchers to account for a greater proportion of the variance in various adaptational outcomes than do previous humor measures, which focus only on presumably adaptive forms of humor. In addition, our finding that men score substantially higher than women on both of the potentially detrimental humor scales (but not the two scales measuring presumably more benign humor uses) suggests that the HSQ may be useful in exploring important sex differences in humor that were largely obscured by previous measures and only hinted at in the literature (e.g., Lefcourt & Thomas, 1998).

Overall, the present findings provide encouraging evidence for construct validity of the HSQ. Besides the convergent self-report data, the correlations observed between each of the four HSQ scales and peer ratings of the corresponding dimensions (and generally non-significant correlations with non-corresponding ratings) provide promising evidence of criterion validity and specificity. However, to ensure that these scales do relate to the behaviors that they purport to measure, further validation with non-self-report methods is needed. Besides peer ratings, such research could make use of behavioral observation techniques such as laboratory humor creation procedures (e.g., Lefcourt & Martin, 1986), to determine whether the four styles of humor identified here can be reliably distinguished by trained observers and whether such behavioral ratings are significantly correlated with scores on the relevant HSQ scales. Observational research could also explore possible relations between the HSQ scales and dimensions assessed using the Humorous Behavior Q-Sort Deck (Craik et al., 1996), some of which appear to be conceptually similar.

It is also important to note that the present studies are exclusively correlational, making it impossible to disentangle the direction of causality in relations between various styles of humor and aspects of psychosocial functioning. Future research with these measures should employ longitudinal designs and experimental methodologies to explore these causal relationships.

The HSQ focuses on one domain of sense of humor, namely the functions that humor serves in everyday life, which we view as particularly germane to psychosocial well-being. Certainly, a comprehensive assessment of sense of humor would require additional measurement approaches, such as behavioral Q-sort techniques (Craik et al., 1996), humor appreciation ratings (Ruch & Hehl, 1998), temperament-based measures (Ruch & Kohler, 1998), and so on. Nonetheless, the findings to date suggest that the HSQ accounts for a greater proportion of variance in well-being than do

several existing self-report humor scales. We expect that the HSQ will be useful to researchers in exploring more fully the ways in which these potentially benign and detrimental uses of humor may relate to various aspects of psychosocial functioning, such as coping with stress, emotion regulation, and the quality of interpersonal relationships. Such research may provide better understanding of the ways in which humor may function as an adaptive resource for psychological health, as well as the ways in which it may interfere with healthy adjustment and impair relationships with others.

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