



Humor and Mental Health

In recent decades, a sense of humor has come to be viewed not only as a very socially desirable personality trait but also as an important component of mental health. Besides boosting positive emotions and counteracting negative moods like depression and anxiety, humor is thought to be a valuable mechanism for coping with stressful life events and an important social skill for initiating, maintaining, and enhancing satisfying interpersonal relationships (Galloway and Cropley, 1999; Kuiper and Olinger, 1998; Lefcourt, 2001). A good deal of research in the psychology of humor in the past two decades has focused on the relation between humor and various aspects of mental health.

Our discussion of the implications of humor for mental health in this chapter brings us to clinical psychology, the branch of psychology having to do with the study, assessment, and treatment of psychological disorders, as well as the study and promotion of factors contributing to positive mental health and well-being (Seligman and Peterson, 2003). Clinical psychology is both a research discipline and an applied profession. In this chapter, I will focus on the research aspect, exploring empirical findings concerning the role of humor in psychological health and well-being; applied issues will be the focus in Chapter 11, where I will consider applications of humor to psychotherapy.

Mental health is often defined in negative terms as the absence of psychological disturbance or emotional distress. In this chapter, I will take a more positive approach, defining it in terms of three general capacities that seem to be essential for

an individual to thrive and flourish. These are: (1) the ability to regulate negative emotions and enjoy positive emotions; (2) the ability to cope with stress and adapt to change; and (3) the ability to establish close, meaningful, and enduring relationships with others. In the following sections I will describe research investigating the potential benefits of humor for each of these three components of positive mental health.

HUMOR AND EMOTIONAL WELL-BEING

As we have seen in earlier chapters, one component of humor is the positive emotion of mirth that is elicited. When people engage in humor and laughter, they tend to feel more cheerful and energetic, and less depressed, anxious, irritable, and tense. In the short term, at least, humor seems to boost positive moods and counteract negative emotions. Thus, one way a sense of humor may be beneficial to mental health is by contributing to one's ability to regulate or manage emotions, which is an essential aspect of mental health (Gross and Muñoz, 1995).

Experimental Investigations of Humor and Emotions

The effects of humor on mood have been demonstrated in a number of laboratory experiments. In two studies, Willibald Ruch (1997) exposed participants to humor either by having them interact with a clowning experimenter or by showing them comedy videotapes. The frequency, intensity, and duration of their smiling and laughter were coded using the criteria for the Duchenne display which, as we saw in Chapter 6, indicates genuine amusement. The more the participants smiled and laughed in this way, the more their self-reported feelings of cheerfulness and mirth increased over baseline. Thus, smiling and laughter are an expression of the positive emotion of mirth that is induced by the perception of humor, and the more intense this emotion, the greater the laughter. Interestingly, there were no correlations between the participants' pre-existing (baseline) moods and the degree to which they smiled and laughed at the humorous stimuli, confirming that positive emotions were a consequence rather than a cause of humorous amusement.

Other research suggests that smiling and laughter by themselves, even without humor, can induce positive feelings of mirth. For example, when participants were asked to rate the funniness of cartoons while holding a pen in their mouth in a way that caused them to contract the facial muscles normally associated with smiling (as compared to subjects who held the pen in a way that inhibited such muscle contractions), they rated the cartoons as funnier and reported greater increases in positive mood (Strack, Martin, and Stepper, 1988). Laboratory studies have also found significant increases in positive mood in subjects following sessions of forced, nonhumorous laughter (Foley, Matheis, and Schaefer, 2002; Neuhoff and Schaefer, 2002). Thus, the act of smiling and laughing, even when done artificially, seems to induce feelings of amusement and mirth, at least temporarily.

Besides increasing positive moods, there is experimental evidence that humor can reduce negative moods. One experiment found that exposure to a four-minute humorous film led to a significant reduction in reported feelings of anxiety relative to baseline (C. C. Moran, 1996). Another study compared the mood effects of watching a 20-minute comedy videotape, running on a treadmill for 20 minutes, and watching a nonhumorous documentary video (Szabo, 2003). Compared to the aerobic exercise, the comedy video produced similar increases in positive mood and decreases in emotional distress and even greater reductions in anxiety, and both comedy and exercise showed significantly stronger mood effects than did the nonhumorous control video (these results were replicated by Szabo, Ainsworth, and Danks, 2005). Taken together, these findings suggest that humor produces positive short-term emotional changes that are at least comparable if not superior to the effects of vigorous physical exercise.

There is also some evidence that humor can counteract the effects of experimentally induced depressed moods. Using a standard laboratory mood-induction technique, Amy Danzer and her colleagues (1990) induced dysphoric moods in female undergraduate students and then randomly assigned them to either humorous audiotape (stand-up comedy), nonhumorous audiotape (an interesting but unfunny geography lecture), or no tape conditions. Participants in all three groups showed significant increases in self-reported depressed moods following the mood induction, indicating that this procedure was effective, but only those in the humor condition showed a significant posttreatment reduction in dysphoria back to baseline levels, suggesting that humor counteracted the depressed mood.

Besides influencing positive and negative moods, there is experimental evidence that humor-related mirth affects one's general outlook on life. One study found that participants who watched a comedy videotape, as compared to those who viewed a nonhumorous video, reported a significantly greater increase in feelings of hopefulness (Vilaythong, Arnau, Rosen, and Mascaro, 2003). Another experiment suggested that humor can change one's perceptions of a boring task into an interesting one (Dienstbier, 1995). After watching either a comedy or nonhumorous videotape, participants engaged in several repetitive and boring proofreading tasks. Those who had viewed the comedy video, as compared to those in the control group, reported higher levels of energy and elation and rated these tasks as being more challenging and invigorating, although they did not actually achieve better performance on the tasks. Thus, the positive emotion associated with humor seems to make people more hopeful, more energetic, and less susceptible to boredom.

The preceding experiments provided fairly consistent evidence of short-term effects of humor on positive and negative moods and feelings of well-being in the laboratory. Based on these findings, one would expect that exposing people to humorous stimuli repeatedly over a number of weeks or months should result in overall improvements in their prevailing moods and general outlook on life. However, when researchers have investigated longer-term psychological effects of repeated exposure to humorous stimuli over fairly extended time periods, the results have generally been rather disappointing.

In one study, patients with chronic schizophrenia in one ward of a psychiatric hospital were shown 70 comedy movies over a three-month period, while those in another ward were shown an equal number of nonhumorous dramatic movies (Gelkopf, Kreitler, and Sigal, 1993). After these interventions, comparisons were made between the two groups on 21 measures relating to staff-rated and self-rated moods, psychiatric symptoms, physical health symptoms, physiological variables, and cognitive functioning. Significant benefits were found on only six of these variables, most of which involved perceptions of the patients by hospital staff. In particular, the patients who had watched the comedy movies, compared to those in the other group, were rated by the staff as having significantly lower levels of verbal (but not behavioral) hostility, anxiety/depression, and tension, and the patients themselves reported greater perceived social support from the staff. The authors of the study acknowledged that these rather meager findings may have had more to do with the effects of the movies on the perceptions of the hospital staff than on the actual functioning of the patients.

Even fewer psychological benefits of humor were found in other intervention studies. James Rotton and Mark Shats (1996) randomly assigned patients recovering from orthopedic surgery to watch either four feature-length comedy movies, four dramatic but nonhumorous movies, or no movies during the two days postsurgery. The results showed no differences between the humorous and non-humorous movie conditions in levels of self-rated emotional distress and pain over the two days. However, both of the movie-watching groups reported less distress and pain than did those in the no-movie control condition, indicating a beneficial effect of watching movies of any kind, but no particular benefit of humor.

Similarly, in a study of elderly residents of a long-term care facility, no significant differences in self-reported prevailing moods were found after six weeks of watching humorous versus nonhumorous feature-length movies three days per week, although both groups showed equal improvements in mood over the course of the study (E. R. Adams and McGuire, 1986). Finally, in an experiment in which undergraduate participants were randomly assigned to six weekly 1½-hour sessions of either laughter-induction exercises, relaxation training, or didactic health education presentations, the laughter-induction sessions were found to be no more effective than the nonhumorous health education lectures, and significantly less effective than the relaxation sessions, in reducing total mood disturbance and anxiety (White and Camarena, 1989).

In summary, although the experimental laboratory research indicates that humor and laughter have beneficial short-term mood effects, there is little evidence of longer-term psychological benefits of repeated exposure to humorous movies or participation in laughter sessions over a period of days or weeks. These findings raise questions about the benefits of humor interventions such as those provided by laughter clubs, in which members meet regularly to engage in laughter-induction exercises (Kataria, 2002).

Although the research in this area is still quite limited, the evidence to date suggests that simply laughing for an hour or two a few times a week has little lasting

effect on individuals' overall well-being. This may be because the humor is not integrated into the participants' day-to-day experiences. Perhaps such interventions would have greater benefits if they were designed to increase the frequency of humor and laughter arising spontaneously during people's everyday social interactions, influencing the way they respond to ongoing life experiences, and thus contributing to more effective emotion regulation. This would presumably require training people how to take a more humorous perspective on their daily experiences and to produce humor in their interactions with others.

However, very little research has investigated the degree to which people can actually be taught to increase their tendency to engage in humor in the course of their daily lives. In the only published study of this kind, Ofra Nevo and her colleagues evaluated the effectiveness of a seven-week, 21-hour training program for increasing sense of humor in high school teachers, but found only limited evidence of success (Nevo, Aharonson, and Klingman, 1998). The program led to increased peer ratings of humor production and appreciation, as well as more positive attitudes toward humor in the participants, but it did not improve their ability to produce humor, as assessed by tests of humor creativity, or their scores on self-report humor measures. Unfortunately, the effects of the intervention on psychological well-being were not examined. In view of the efforts being made by some health care professionals to promote mental and physical health by means of various interventions designed to improve people's sense of humor (e.g., McGhee, 1999), there is clearly a need for further research to determine whether it is even possible to change the quantity or quality of people's everyday use of humor.

Correlational Studies of Trait Humor and Emotional Well-Being

If humor in general is beneficial to psychological well-being, then individuals who engage in humor more frequently in their everyday lives (i.e., those with a greater sense of humor) should tend to be generally less depressed, anxious, and pessimistic, less likely to experience burnout and to develop psychiatric disorders, and they should have greater self-esteem, optimism, and overall feelings of well-being. Numerous studies have investigated these hypotheses by examining correlations between individuals' scores on various trait measures of sense of humor and a variety of measures of emotional and psychological well-being.

Studies of university students using the Coping Humor Scale (CHS), Situational Humor Response Questionnaire (SHRQ), and Sense of Humor Questionnaire Metamessage Sensitivity (SHQ-M) and Liking of Humor (SHQ-L) scales (discussed in Chapter 7) have found moderate negative correlations between some (but not all) of these humor scales and measures of neuroticism, anxiety, and depression, and positive correlations with self-esteem (Deaner and McConatha, 1993; Kuiper and Borowicz-Sibenik, 2005; Kuiper and Martin, 1993). Which humor scales are significantly correlated with which well-being measures tends to vary across studies. Research using the Multidimensional Sense of Humor Scale (MSHS) has also found significant but generally weak negative correlations between this humor test and

measures of depression, death anxiety, pessimism, and the tendency to worry about various life concerns (Kelly, 2002; Thorson and Powell, 1993b, 1994; Thorson et al., 1997).

Some studies investigating stress-moderating effects of humor (which will be described in more detail later in this chapter) have also reported significant negative correlations between various self-report humor scales and measures of depression (Anderson and Arnoult, 1989; Nezu, Nezu, and Blissett, 1988; Overholser, 1992; Porterfield, 1987; Safranek and Schill, 1982), mood disturbance (Labott and Martin, 1987; Lefcourt et al., 1995), and emotional burnout (P. S. Fry, 1995). However, some other studies found no simple correlation between sense of humor tests and anxiety (Nezu et al., 1988), mood disturbance (R. A. Martin and Lefcourt, 1983), or positive moods (Kuiper, Martin, and Dance, 1992).

To investigate the association between sense of humor and self-esteem, Nicholas Kuiper and I examined correlations between four humor scales (CHS, SHRQ, SHQ-M, and SHQ-L) and various measures of self-concept in undergraduate participants (Kuiper and Martin, 1993). All four humor tests were found to be positively correlated with a measure of self-esteem. In addition, three of them were negatively related to the discrepancy between participants' actual and ideal self-ratings on a series of 60 self-descriptive adjectives, indicating that those with higher humor scores had a greater congruence between the way they actually perceived themselves and the way they would ideally like to be. In addition, two of the humor tests were significantly related to the temporal stability of self-ratings on these adjectives over a one-month period, indicating that participants with higher humor scores had a more stable self-concept. Finally, participants with higher scores on all four humor scales were significantly less likely to endorse dysfunctional, unrealistic, and perfectionistic self-evaluative standards. Overall, this study indicated that individuals with higher scores on at least some of these humor measures tend to have a more positive, congruent, stable, and realistic self-concept.

In addition to research on university students, a study of elderly residents of assisted living facilities found that those with higher scores on the CHS tended to have higher levels of emotional health, positive mood, and zest for life (Celso, Ebener, and Burkhead, 2003). A study of well-being among noninstitutionalized elderly women and men also found that higher scores on the SHRQ and CHS were significantly associated with better morale but unrelated to overall life satisfaction (Simon, 1990). In addition, a study of the relation between humor and burnout among instructors in a school of nursing found that higher scores on the CHS were related to significantly lower levels of depersonalization and higher levels of perceived personal accomplishment, but were unrelated to emotional exhaustion (Talbot and Lumden, 2000).

Whereas the preceding research was conducted with nonclinical samples, a few studies have also investigated whether psychiatric patients have lower sense of humor scores, on average, than do people without diagnosed psychiatric disorders. One study compared a group of hospitalized adolescent psychiatric patients and a group of normal adolescents and found no differences in their average scores on the CHS or

measures of humor creation ability and humor appreciation, casting some doubt on the benefits of humor for mental health (Freiheit, Overholser, and Lehnert, 1998). Similarly, a study of defensive styles in clinically depressed patients found no difference in humor scores between those who had recently attempted suicide and those who had not (Corruble et al., 2004).

One study did report that hospitalized adult psychiatric patients diagnosed with depression or schizophrenia had significantly lower scores on at least some trait humor measures as compared to scale norms derived from university students (Kuiper et al., 1998). However, it is questionable whether this was an appropriate comparison group, due to differences in age, education level, and social background. Overall, then, although the research on this question is quite limited, there is little evidence that high humor individuals are less likely to have psychiatric disorders than are those with less of a sense of humor. Some clinicians have pointed out that clinically depressed people do not necessarily display less humor than others, but their humor tends to be rather black, cynical, hostile, and excessively self-disparaging (e.g., Kantor, 1992).

Nonetheless, there is some evidence that, within groups of individuals diagnosed with clinical depression, greater emotional disturbance is associated with lower trait humor scores. In the study of hospitalized adolescent psychiatric patients, higher scores on the CHS were associated with lower levels of depression and higher self-esteem, although they were unrelated to feelings of hopelessness (Freiheit et al., 1998). The study of hospitalized adult psychiatric patients found that higher sense of humor scores tended to be associated with lower depression and higher self-esteem and positive moods among the clinically depressed patients (Kuiper et al., 1998). However, sense of humor was unrelated to symptom severity among patients diagnosed with schizophrenia. Another study of humor in hospitalized schizophrenic patients similarly found no relation between scores on the CHS and several self-report and psychiatrist-rated measures of hostility, aggression, and anger (Gelkopf and Sigal, 1995). Thus, although a greater sense of humor seems to be related to lower severity of disturbance in clinically depressed individuals, this does not seem to be the case among persons with schizophrenia.

In the correlational research described so far, the overall evidence for mental health benefits of a sense of humor is not overwhelming. Some correlations have been found between sense of humor, as measured by self-report scales, and various components of emotional well-being, but the associations often tend to be quite weak and the findings have been somewhat inconsistent across studies. Nicholas Kuiper and I (1998a) examined the results of five correlational studies to determine how sense of humor compares with another positive personality characteristic commonly thought to be important for mental health, namely optimism. These studies employed four sense of humor scales (CHS, SHRQ, SHQ-M, and SHQ-L), a test of dispositional optimism, and various measures of psychological well-being. The analyses revealed that higher scores on the sense of humor scales were only weakly associated with greater optimism. In relation to a multidimensional measure of psychological well-being, higher scores on the humor tests were associated with only one subscale assessing personal growth, but they were unrelated to self-acceptance, positive relations

with others, autonomy, environmental mastery, and purpose in life. In contrast, optimism was much more strongly related to all six of these components of psychological well-being.

The humor scales were also almost entirely uncorrelated with a measure of mental health-related assumptions about the world and other people, whereas optimism was significantly related in positive ways to most of these world beliefs. Consistent with other research, the sense of humor scales did show moderate positive correlations with self-esteem, and negative correlations with anxiety, depression, fear of negative evaluations, and social avoidance and distress. However, optimism was more strongly related to all of these well-being measures. Thus, although these sense of humor measures are associated with some aspects of emotional well-being, the correlations appear to be generally weaker and less extensive than are those with other “positive personality” constructs such as optimism.

These rather weak and inconsistent associations between trait measures of sense of humor and well-being can perhaps be explained by research (discussed in Chapter 7) showing that most self-report humor tests load primarily on the general personality factor of extraversion, but only weakly, if at all, on the neuroticism factor (Köhler and Ruch, 1996; Ruch, 1994). Extraversion has to do with the general tendency to experience positive emotions, as well as traits such as sociable, lively, and active. On the other hand, neuroticism, which is unrelated to extraversion, involves emotional instability, moodiness, irritability, and the tendency to experience negative emotions, such as depression, anxiety, and hostility. Not surprisingly, most measures of psychological well-being load primarily (negatively) on the neuroticism factor (DeNeve, 1999).

The fact that the two broad personality dimensions of extraversion and neuroticism are uncorrelated with each other may explain why the sense of humor measures (relating primarily to extraversion) tend to be only weakly associated with well-being measures (relating mainly to neuroticism). Since dispositional optimism is more strongly (inversely) associated with neuroticism than are the humor measures, it also tends to correlate more strongly with well-being measures. This begs the question of whether there are some dimensions of humor that are more strongly associated with neuroticism, either negatively or positively, which are not well measured by the self-report humor tests used in the research discussed so far. This question is addressed in the next section.

Distinguishing Potentially Healthy and Unhealthy Humor Styles

People use humor in their interactions with others in many different ways and for different purposes. As noted in Chapter 5, humor serves numerous interpersonal functions, some of which may contribute to greater social cohesiveness and enhanced communication between people, whereas others may be more coercive, disparaging, or ingratiating. Although overall sense of humor may be weakly related to emotional health, as suggested by research described in the previous section, perhaps some of

the ways people use humor are more strongly associated with well-being, whereas other forms of humor may even be associated with poorer psychological health.

This way of thinking about the connection between humor and mental health is consistent with the views of psychologists writing about this topic in the past. For example, when Sigmund Freud (1928) referred to humor as the “highest of the defense mechanisms” (p. 216) and described it as “something fine and elevating” (p. 217), he was not speaking about humor in the broad sense that we generally associate with it today, but instead he was giving it a narrow meaning, consistent with the terminology of the nineteenth century. As noted in Chapter 1, humor in this sense referred exclusively to a sympathetic, tolerant, and benevolent form of amusement, and was distinguished from wit, which was viewed as more sarcastic, biting, and cruel (Wickberg, 1998).

In a similar way, psychologists like Abraham Maslow (1954), Gordon Allport (1961), and Walter O’Connell (1976) suggested that especially well-adjusted individuals are characterized by a particular style of humor that is nonhostile, philosophical, and self-deprecating while remaining self-accepting. These authors viewed this healthy form of humor as relatively rare, in contrast with most of the humor occurring in everyday social interactions and in the media. Interestingly, they also suggested that healthy forms of humor are not necessarily extremely funny, being more likely to trigger a chuckle than a hearty laugh. Maslow (1954) even suggested that the particularly well-adjusted people that he characterized as “self-actualizing” would likely be perceived by the average person as “rather on the sober and serious side” (p. 223).

These ideas suggest that psychological health relates not only to the *presence* of certain kinds of adaptive humor but also to the *absence* of other more unhealthy forms of amusement. Rather than assuming that humor in general is beneficial for mental health and well-being, as most recent researchers seem to have done, it may therefore be important to return to earlier views which made a distinction between beneficial and detrimental forms of humor.

This view of humor as being potentially detrimental as well as beneficial to mental health was the rationale for our development of the Humor Styles Questionnaire (HSQ; R. A. Martin et al., 2003), which I described in Chapter 7. In developing this measure, we identified two styles of humor that have been discussed in the literature as being potentially unhealthy: one involving the use of humor to enhance the self at the expense of others, and the other involving the use of humor to gain approval and attention from others at the expense of one’s own psychological needs. We hypothesized that these two humor styles may capture some of the forms of humor that psychologists like Allport and Maslow viewed as less likely to be found in people who are particularly psychologically healthy.

The first of these, *aggressive humor*, is the tendency to use humor for the purpose of criticizing or manipulating others, as in sarcasm, teasing, ridicule, derision, or disparagement humor (e.g., “If someone makes a mistake, I will often tease them about it”), as well as the use of potentially offensive (e.g., racist or sexist) forms of humor.

It also includes the compulsive expression of humor even when it is socially inappropriate (e.g., “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”). Most of us know people who tend to use humor in these sorts of aggressive and domineering ways.

The other potentially unhealthy style, *self-defeating humor*, involves the use of humor to ingratiate oneself with others, attempts to amuse others by doing or saying funny things at one’s own expense, excessively self-disparaging humor, and laughing along with others when being ridiculed or disparaged (e.g., “I often try to make people like or accept me more by saying something funny about my own weaknesses, blunders, or faults”). It also involves the use of humor as a form of defensive denial (Marcus, 1990), to hide one’s underlying negative feelings or avoid dealing constructively with problems (“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”).

A prominent example of what we consider to be the use of self-defeating humor was Chris Farley, a popular American comedian in the early 1990s who honed his zany comedic skills as an overweight child with a desperate need to be liked by others. Despite the outstanding success that he achieved as a young adult through his hilarious and rather compulsive sense of humor, he seemed to harbor a deep self-loathing, destroying himself at an early age through alcohol, drugs, and overeating. Rather than contributing to effective coping, his humor seemed to be a way of denying the severity of his problems and deflecting the concerns of his friends. John Belushi, who met a similar end in the midst of a brilliant comedy career, seems to be another example of this self-defeating humor style. Interestingly, in our research with the HSQ, aggressive and self-defeating humor turned out to be significantly positively correlated with each other, indicating that people who use one potentially unhealthy style tend to use the other as well.

We also identified two styles of humor that we thought might be positively associated with psychological well-being, one having to do with the use of humor to promote positive interpersonal relationships and the other with the use of humor to cope with stress and regulate emotions. The first of these, *affiliative humor*, refers to the tendency to say funny things, to tell jokes, and to engage in spontaneous witty banter, in order to amuse others, to facilitate relationships, and to reduce interpersonal tensions (e.g., “I enjoy making people laugh”; “I don’t have to work very hard at making other people laugh—I seem to be a naturally humorous person”). We viewed this as an essentially nonhostile, tolerant use of humor that is affirming of self and others and presumably enhances interpersonal cohesiveness. However, research with the HSQ has shown that, at least in North American samples, affiliative humor turns out to be weakly correlated with aggressive humor, suggesting that it may tap into the use of teasing, which may at times be friendly and prosocial, but also risks becoming aggressive.

The second presumably healthy humor style is *self-enhancing humor*, which refers to the tendency to be frequently amused by the incongruities of life, to maintain a humorous perspective even in the face of stress or adversity, and to use humor as an

emotion-regulation mechanism (e.g., “My humorous outlook on life keeps me from getting overly upset or depressed about things”). This humor style is closely related to the construct assessed by the earlier Coping Humor Scale. Subsequent research has found that self-enhancing humor tends to be fairly strongly related to affiliative humor, a finding that emphasizes the essentially social nature of humor, but it is unrelated to aggressive and self-defeating humor, suggesting that this may be the healthiest of the four humor styles. We consider it to be the closest of the four to the traditional, narrowly defined concept of humor, which was viewed by Freud (1928) as a healthy defense mechanism or coping style.

Research examining correlations between the subscales of the HSQ and previous self-report humor scales provided support for our view that this new measure taps into distinct dimensions of humor that are not well differentiated (or not even assessed at all) by the earlier measures (R. A. Martin et al., 2003). For example, the CHS, although quite strongly related to self-enhancing (as well as affiliative) humor, has also been found to be correlated with aggressive humor, suggesting that it may not be as pure a measure of positive humor uses as the self-enhancing humor scale. Worse still, the MSHS was found to be positively correlated with all four HSQ scales, indicating that it taps into potentially unhealthy aggressive and self-defeating humor as well as potentially healthy forms of humor. This may account for the generally weak correlations with well-being measures found in research using the MSHS.

Other humor measures such as the SHRQ, SHQ, and Cheerfulness scale of the State-Trait Cheerfulness Inventory (STCI-T) were found to be positively correlated with affiliative and self-enhancing humor, but unrelated to aggressive and self-defeating humor. Thus, although there is less evidence that these earlier humor measures capture unhealthy aspects of humor, the addition of the two negative forms of humor in the HSQ might be useful for exploring these more negative aspects of humor that have not been assessed by previous scales. Interestingly, with regard to gender, whereas negligible differences have been found between men and women on the two presumably healthy styles of humor, men on average tend to have higher scores on the two potentially negative styles, suggesting that men and women do not differ in their healthy uses of humor, but men may be more likely to use humor in unhealthy ways (R. A. Martin et al., 2003).

Our initial studies with the HSQ provided general support for our view that these different humor styles are differentially related to psychological health and well-being (R. A. Martin et al., 2003). Affiliative and self-enhancing humor were found to be negatively correlated with anxiety and depression, and positively correlated with self-esteem and a measure of overall psychological well-being, the correlations with self-enhancing humor being somewhat stronger than those with affiliative humor. In contrast, higher scores on self-defeating humor were found to be associated with greater anxiety, depression, and psychiatric symptoms, and lower self-esteem and overall well-being. Aggressive and self-defeating humor styles were also both related to hostility and aggression. Thus, as expected, less use of these negative humor styles (particularly self-defeating humor) seems to be related to more healthy psychological functioning.

When the four HSQ scales were entered together into regression equations to predict the various measures of emotional well-being, sizable multiple correlations were found (averaging about .50). These correlations were considerably stronger than those typically found in earlier studies of humor and well-being, indicating that, by combining uses of humor that are negatively related to well-being with those that are positively related, we were able to account for a greater proportion of the variance in well-being variables. With regard to the broad personality dimension of neuroticism, affiliative humor was found to be unrelated, whereas self-enhancing humor was negatively related, and both aggressive and self-defeating humor were positively related to this personality factor. Thus, as expected, the different HSQ scales seem to differentiate styles of humor that are positively related, negatively related, and neutral with regard to neuroticism, suggesting that emotional stability is associated not just with the *presence* of certain styles of humor, but also with the *absence* of other styles. Humor appears to be neither inherently healthy nor unhealthy; its relation to mental health depends on how it is used in everyday life.

Several additional recent studies with the HSQ have added to these findings. Nicholas Kuiper and his colleagues (2004) found that higher scores on self-enhancing humor were associated with lower levels of depression, anxiety, and negative affect, and higher levels of self-esteem and positive affect. The pattern of correlations with affiliative humor was similar, but generally weaker. In contrast, self-defeating humor showed the exact opposite pattern of correlations: greater use of this type of humor was associated with higher levels of depression, anxiety, and negative affect, and lower levels of self-esteem. Aggressive humor, however, was unrelated to the emotional well-being measures. In another study, Vassilis Saroglou and Christel Scariot (2002) administered a French translation of the HSQ to Belgian university and high school students, and found that individuals with higher self-esteem reported greater use of affiliative humor and lower use of self-defeating humor. Self-defeating and aggressive humor were also both associated with lower levels of motivation for academic success.

Paul Frewen and his colleagues similarly found that individuals who reported higher levels of depressed moods tended to report lower use of self-enhancing and (to a lesser degree) affiliative humor, and greater use of self-defeating humor (Frewen, Brinker, Martin, and Dozois, in press). This study also looked at measures of sociotropy and autonomy, two personality dimensions that have been found to be vulnerability factors for depression. *Sociotropy* refers to the degree to which one's sense of self-worth is based excessively on one's perceived likableness to others, making one socially dependent and vulnerable to depression when experiencing interpersonal criticism or rejection. On the other hand, *autonomy* has to do with the degree to which one is invested in preserving independence and defining self-worth in terms of personal achievement, and it is associated with increased vulnerability to depression when people experience achievement-related failures. After controlling for current depression levels, sociotropy was found to be negatively related to self-enhancing humor and positively related to self-defeating humor. Autonomy, in turn, was associated with both self-defeating and aggressive humor. Thus, negative forms of humor appear to

be associated with personality traits that make people vulnerable to depression. On the other hand, self-enhancing humor, being negatively related to sociotropy, may serve to protect the individual from becoming depressed during experiences of social rejection.

Previous research has shown that individuals who engage in the cognitive style of rumination (i.e., those who tend to repeatedly go over negative events and feelings in their mind) are particularly vulnerable to depression. A recent study of university students using the HSQ found that individuals with higher scores on self-enhancing and (more weakly) affiliative humor are less likely to engage in rumination (M. L. Olson et al., 2005). Moreover, this study found evidence that these two positive humor styles can buffer the effect of rumination on depression. In particular, participants with lower scores on these two humor styles showed a strong correlation between their frequency of rumination and dysphoric mood symptoms, whereas those with higher humor scores did not show any association between these two variables.

Overall, the correlational findings obtained so far suggest that self-enhancing humor is particularly related in a positive way to emotional well-being, supporting our view that this is an especially healthy humor style. For its part, affiliative humor seems to be somewhat more weakly related to emotional health, producing correlations that are more in line with those found with previous trait humor measures. In contrast, self-defeating humor is consistently negatively associated with well-being measures, indicating that this use of humor to ingratiate oneself with others at one's own expense and deny the presence of negative emotion is particularly related to unhealthy functioning. On the other hand, aggressive humor appears to be largely unrelated to overall psychological well-being. Although earlier theorists such as Freud, Maslow, and Allport seemed to view aggressive forms of humor as being particularly problematic for overall psychological health, our research findings do not provide much support for this view. As we will see later in this chapter, however, aggressive humor seems to play a particularly negative role in regard to the quality of one's close interpersonal relationships.

Before leaving this topic, it is important to note that all of these findings are correlational, and they therefore do not permit us to determine the direction of causality between sense of humor and mental health. For example, the frequent use of self-defeating humor may cause people to be more prone to depression, have lower self-esteem, and so on, but it is equally possible that people engage in this humor style as a consequence of having low levels of psychological well-being. Similarly, although the frequent use of self-enhancing humor may cause people to be less prone to emotional disturbance, it is also possible that being more psychologically healthy causes people to use humor in this way. It may also be the case that humor styles and components of psychological health have no causal connection at all, but are both consequences of a third variable, such as neuroticism. The most we can say at the present time is that emotional well-being tends to be associated with the presence of self-enhancing and affiliative uses of humor and the absence of self-defeating humor.

One way for researchers to address these questions of causality may be through the use of daily experience methods or event-sampling procedures, in which the use of different styles of humor as well as various aspects of psychological well-being are assessed repeatedly in individuals over a period of days or weeks (Reis and Gable, 2000). By examining time-lagged associations, it may be possible to determine whether more frequent use of particular styles of humor is followed or preceded by changes in well-being over hours or days, providing some indication of the direction of causality in these associations. I will have more to say about these sorts of research methods later in this chapter.

HUMOR, STRESS, AND COPING

A second general way humor may potentially be beneficial to mental (as well as physical) health has to do with its use in coping with stressful life experiences. A considerable amount of research has shown that high levels of stressful events, such as natural disasters, relationship conflicts, work pressures, and financial problems, can have adverse effects on one's mental and physical health, producing such negative outcomes as emotional disturbance, cognitive inefficiency, and behavioral impairments (A. K. Johnson and Anderson, 1990; Sanderson, 2004).

However, these sorts of negative outcomes of stress are not inevitable. Based on the theoretical framework of Richard Lazarus and his colleagues (e.g., Lazarus and Folkman, 1984), a great deal of research has shown that psychological appraisal and coping processes play an important role in determining whether or not potentially stressful life experiences result in adverse physiological and psychological outcomes. Over the years, many theorists have suggested that the ability to respond with humor in the face of stress and adversity may be an important and effective coping skill (Freud, 1928; Lefcourt, 2001; Lefcourt and Martin, 1986). Norman Dixon (1980) even suggested that humor may have evolved in humans specifically for this purpose.

Many authors have noted that humor, because it inherently involves incongruity and multiple interpretations, provides a way for individuals to shift perspective on a stressful situation, reappraising it from a new and less-threatening point of view. As a consequence of this humorous reappraisal, the situation becomes less stressful and more manageable, and the individual is less likely to experience a stress response (Dixon, 1980). Walter O'Connell (1976) described humorous people as being "skilled in rapid perceptual-cognitive switches in frames of reference" (p. 327), an ability that presumably enables them to reappraise a problem situation, distance themselves from its immediate threat, and thereby reduce the often paralyzing feelings of anxiety and helplessness. Similarly, Rollo May (1953) stated that humor has the function of "preserving the self . . . It is the healthy way of feeling a 'distance' between one's self and the problem, a way of standing off and looking at one's problem with perspective" (p. 54).

As noted in Chapter 2, superiority theory, which views humor as a form of playful aggression, can also be seen as a basis for conceptualizing humor as a coping mechanism. By poking fun at other people and situations that would normally be viewed as threatening or constricting, one is able to gain a sense of liberation and freedom from threat and thereby experience positive feelings of well-being and efficacy. As Horace Kallen (1968) wrote, "I laugh at that which has endangered or degraded or has fought to suppress, enslave, or destroy what I cherish and has failed. My laughter signalizes its failure and my own liberation" (p. 59). Other authors, taking an existential approach, have emphasized the sense of liberation, mastery, and self-respect provided by humor in the face of adversity (Knox, 1951; Mindess, 1971). Thus, as a means of asserting one's superiority through playful aggression, humor is a way of refusing to be overcome by the people and situations that threaten one's well-being. At the same time, though, with the use of aggressive forms of humor in coping there is a risk of cynicism, hostility, and impairment of social relationships.

Although coping humor may at times involve an aggressive element, some theorists have also emphasized the importance of being able to laugh at one's own faults, failures, and limitations, while maintaining a positive sense of self-esteem. Gordon Allport (1950) stated, for example, that "the neurotic who learns to laugh at himself may be on the way to self-management, perhaps to cure" (p. 280). By not taking oneself too seriously, one is able to let go of excessively perfectionistic expectations while remaining motivated to achieve realistic goals. There is an important distinction, however, between self-deprecating humor based on a fundamental sense of self-worth and excessively self-disparaging humor arising from a negative self-concept, as measured by the self-defeating humor scale of the HSQ.

Experimental Investigations of Humor as a Stress Moderator

A number of experiments have been conducted to investigate the effectiveness of a humor manipulation in mitigating the emotional or psychophysiological effects of mildly stressful laboratory stressors. Herbert Lefcourt and I (Lefcourt and Martin, 1986) instructed university students to make up either a humorous narrative, a non-humorous "intellectual" narrative, or no narrative while they were watching a silent film entitled *Subincision*, which depicts a rather gory and evidently painful circumcision ritual performed on adolescent boys in a tribe of Australian aborigines. The results revealed that, among female participants, those who created a humorous narrative (as compared to those in the other two conditions) reported less negative emotions and displayed fewer behavioral indicators of distress (e.g., averted gaze, grimacing, hand-rubbing) while watching the film, providing evidence of a stress-moderating effect of humor. The male participants, however, showed minimal distress in all three conditions, suggesting that the film was not very stressful for them.

A similar methodology was used by Michelle Newman and Arthur Stone (1996) in an experiment in which male college students were instructed to create either a

humorous or a serious narrative while watching a film depicting gruesome accidents in a lumber mill. Compared to those in the serious narrative condition, the participants in the humorous condition reported less emotional distress and had lower skin conductance and heart rate and higher skin temperature for up to 15 minutes following the film, indicating a reduced stress response. Taken together, these studies provided some evidence that participants who actively create humor to reframe a potentially stressful situation have a lower stress response, as measured by self-rated moods, behaviors, and physiological reactions (see also Lehman et al., 2001).

Instead of having participants create humorous narratives during stressful situations in the laboratory, other researchers have used comedy videotapes as a humor manipulation. Arnie Cann and his colleagues showed male and female participants either a humorous stand-up comedy video, a nonhumorous nature video, or no video, after they had viewed a stressful segment of a movie depicting an airplane crash (Cann, Holt, and Calhoun, 1999). Analyses of self-rated moods following the intervention revealed that the humorous video enhanced positive emotions but did not reduce anxiety relative to the nonhumorous video.

In a subsequent experiment, Cann and his colleagues compared the effects of exposure to a humorous versus a neutral videotape either before or after participants watched a stressful film depicting scenes of death (Cann, Calhoun, and Nance, 2000). Regardless of whether the intervention preceded or followed the stressful film, the humorous video produced lower ratings of depression and anger and higher positive moods compared to the neutral video. For anxiety-related moods, however, the humorous intervention was only effective when it was presented before the stressful film rather than after it. The authors suggested that the elevated positive emotions associated with humor may serve to counteract feelings of depression and anger, whereas the effects of humor on anxiety may be more cognitively mediated: humor preceding the stressor might work as a cognitive prime, changing the way subsequent events are interpreted and thereby reducing subsequent anxiety.

In addition to the use of emotionally distressing films, researchers interested in the effects of humor on stress have employed various types of frustrating tasks, such as unsolvable anagrams and difficult mental arithmetic problems, to produce mild stress in the laboratory. One study found that exposure to humorous cartoons mitigated the performance-impairing effect of working on unsolvable anagrams (Trice, 1985). Another experiment similarly found that exposure to a humorous videotape, compared to a nonhumorous video, was effective in reducing anxiety following an unsolvable anagram task, but only among male participants (Abel and Maxwell, 2002). However, a study using a 10-minute mental arithmetic task to induce a mild state of anxiety found no differences among comedy, relaxation, and neutral videotapes on state anxiety, heart rate, or skin conductance (White and Winzelberg, 1992). Although this study failed to demonstrate a stress-moderating effect of humor, this may have been due to the minimally stressful nature of the arithmetic task.

In an experiment by Nancy Yovetich and her colleagues, stress was induced by falsely informing participants that they would receive a painful electric shock 12 minutes later (Yovetich, Dale, and Hudak, 1990). While waiting for the supposed

shock, the participants listened either to a humorous audiotape, a nonhumorous tape, or no tape. Overall, the participants showed increasing levels of self-rated anxiety and heart rate across the 12-minute period, indicating increased anticipatory anxiety. However, those in the humorous tape condition showed a less steep increase in self-reported anxiety (but no difference in heart rate) as compared to those in the other two conditions, providing some evidence of a stress-buffering effect of humor.

In summary, although the results have not always replicated, these experimental laboratory studies provide some support for the hypothesized stress-buffering effects of humor. When participants actively create humor during mildly stressful experiences, or when they are exposed to comedy before or after such events, they tend to report more positive and less negative moods and show less stress-related physiological arousal as compared to participants in control groups. These studies extend the findings of the laboratory experiments described earlier, indicating that the general effects of humor on moods also occur in mildly stressful conditions.

Although these lab experiments allow researchers to identify the direction of causality between humor and stress responses, their rather artificial nature makes it difficult to generalize the findings to everyday experiences. In particular, the stressors used in these experiments are much milder and of shorter duration than real-life stressors, and the humor manipulations with solitary subjects in the laboratory are only an approximation of the way humor is typically experienced in everyday life. It is therefore important to augment these laboratory findings with more naturalistic types of research examining the use of humor in coping with real-life stressors. I will discuss this sort of research in the following sections.

Correlational Studies of Sense of Humor and Coping Styles

As we saw earlier, theorists have suggested a number of possible ways in which humor might serve to mitigate the effects of stress. For example, taking a humorous perspective on a stressful situation might enable individuals to alter their frame of reference, changing appraisals of negative threat into ones of positive challenge, and increasing feelings of mastery and control over the situation. Other potential coping-related functions of humor include enhancing social support, denying reality, venting aggressive feelings, and providing distraction. A number of studies have explored these different hypotheses by examining correlations between various sense of humor scales and measures assessing the types of cognitive appraisals and coping styles participants typically use when dealing with stress.

In one study, Nick Kuiper and colleagues (1993) examined the relationship between the Coping Humor Scale and university students' cognitive appraisals of their first midterm examination in an Introductory Psychology course. The results showed that, prior to the exam, students with higher scores on the CHS appraised it as more of a positive challenge rather than a negative threat. Following the exam, those with high CHS scores reappraised the exam as being more important and positively challenging if they had done well on it, but lowered their importance and challenge ratings if they had done poorly. They also adjusted their expectations of how well they would

do on the next exam in a realistic manner, based on their performance on the previous one. In contrast, those with low CHS scores rated the exam as being more important if they did poorly rather than well on it, and failed to adjust their expectations about the next exam according to their past performance.

Higher CHS scores were also found to be associated with lower scores on a measure of dysfunctional attitudes involving unrealistic and perfectionistic expectations about achievement and social relationships. These findings provide some support for the idea that one way a sense of humor may relate to better coping with stress has to do with the types of cognitive appraisals that individuals make about potential stressors. Those with a greater tendency to use humor in coping with stress appear to appraise potentially stressful situations as more challenging rather than threatening, and to evaluate their own performance and adjust their expectations for future performance in a less perfectionistic and more realistic and self-protective manner.

The relation between sense of humor and appraisal processes was also investigated in other research by Nicholas Kuiper and his colleagues (Kuiper, McKenzie, and Belanger, 1995). In one study they had participants complete a negative life events measure for the past month, and then asked them questions about the degree to which they were able to change their perspective or point of view when attempting to cope with these stressful events. Individuals with high scores on the CHS, in comparison with low scorers, reported that they were more likely to make a conscious effort to view their problems from alternate perspectives and were better able to do so, and that these changes in perspective resulted in more positive perceptions of the events. In a second study, they examined subjects' cognitive appraisals while completing a challenging picture-drawing task. Participants with higher sense of humor scores appraised the task as being more of a positive challenge and less of a negative threat and reported putting more effort into accomplishing it, providing further evidence that individual differences in humor are related to different ways of appraising potentially stressful events.

Several studies have also examined correlations between sense of humor scales and measures of people's typical styles of coping with stress. One study (Kuiper et al., 1993) found that the CHS was positively correlated with both emotional distancing (e.g., "Don't let it get to me;" "Refuse to think too much about it") and a confrontive coping style (e.g., "Stand my ground and fight for what I want"), suggesting that the use of humor in coping involves both emotional self-protection and active confrontation of problems. A study of humor and coping in women business executives (P. S. Fry, 1995) found that the CHS and SHRQ were positively associated with both emotion-focused (i.e., regulation of one's emotional reactions) and existential (i.e., taking a detached, philosophical approach to problems) coping orientations. Specific coping strategies associated with humor included seeking practical and emotional social support, expressiveness (venting emotions), tension-reduction (e.g., use of relaxation techniques), and acceptance ("Accept each day as it comes;" "No matter how bad things are, they could always be worse").

In another study examining correlations between several self-report humor scales (CHS, SHRQ, and SHQ) and a measure of defensive coping styles, these sense of humor measures were generally found to be related to the coping styles of minimization (denial), replacement (sublimation), substitution (displacement), and reversal (reaction formation), although the pattern of correlations differed for different humor scales and for males and females (Rim, 1988). Finally, a study using the MSHS found that higher scores on this humor scale were associated with greater use of planful problem solving, positive reappraisal, distancing oneself, and emotional self-management (Abel, 2002).

Overall, these studies suggest that high-humor individuals tend to have more realistic and flexible and less threat-related cognitive appraisals of potentially stressful situations, and that they tend to deal with stress using a variety of coping strategies and defenses, particularly those involving self-protective cognitive reframing and emotional management. Once again, however, it is important to note that the correlational approach of these studies does not permit us to determine the direction of causality. It may be that humor directly contributes to these cognitive appraisal and coping styles, but it is also possible that humor is simply a by-product of these styles of coping, or that both humor and associated coping styles are independent consequences of some other traits (e.g., extraversion). Also, this trait approach to measuring humor and coping styles does not provide much insight into the actual processes involved when humor is used in coping, or the context in which this occurs.

Humor in Coping with Specific Life Stressors

There is a great deal of anecdotal evidence, as well as some empirical research, indicating that humor can be beneficial for emotional survival in dealing with extreme and uncontrollable stressful situations such as prisoner of war and concentration camps. One study evaluated the psychological health of 82 surviving crew members of the *USS Pueblo* shortly after their release from 11 months of imprisonment in North Korea in 1969 (C. V. Ford and Spaulding, 1973). Humor was one of several coping strategies that were found to be significantly associated with better psychological adjustment. Coping humor in this stressful situation took the form of joking about the characteristics of captors, giving funny nicknames to the guards and fellow prisoners, and telling jokes to one another.

More recently, Linda Henman (2001) reported a qualitative study based on interviews with more than 60 American servicemen who had been prisoners of war (POWs) in Vietnam. Despite being in captivity for over seven years and enduring isolation, starvation, torture, and beatings, these individuals showed a remarkable level of adjustment. When asked about their methods of coping, most of the participants emphasized the importance of humor in maintaining their resilience. Humor was described as a way of eliciting positive emotions, maintaining group cohesion and morale, and fighting back at the captors. By cracking jokes about the guards and about the

hardships they endured, the POWs were able to gain a sense of mastery and invincibility in a situation over which they had no real control. It is worth noting that the use of humor in coping occurred primarily during interactions among the POWs, rather than while they were alone. One participant observed that “the larger the group, the more lighthearted things were. The smaller the group, the more intense things were” (p. 86). Some of the prisoners even risked torture to tell a joke through the walls to another prisoner who needed cheering up.

The importance of humor in coping with atrocities has also been emphasized by concentration camp survivors. In recounting his experiences as a prisoner in a Nazi concentration camp during World War II, Viktor Frankl (1984) described humor as “another of the soul’s weapons in the fight for self-preservation” (p. 63). Recognizing the importance of humor in maintaining morale, he and his fellow prisoners agreed to tell each other amusing stories every day. One favorite form of humor involved joking about the ways their experience of imprisonment might affect them after their liberation. For example, one prisoner joked that at future dinner engagements they might forget themselves and ask the hostess to ladle the soup from the bottom of the pot to get the treasured vegetables instead of the watery broth on top. Their jokes also included a good deal of mockery of the guards, which gave them a feeling of superiority over their captors. Such uses of humor were also depicted in Roberto Benigni’s 1997 movie, *Life is Beautiful*, in which a Jewish father engages in humorous antics to shield his son from the horrors of a Nazi death camp, denying reality by pretending that the Holocaust is nothing but a game in which the winner gets to ride in a tank.

Although humor appears to be an effective way of coping with the extreme and uncontrollable horror of being a prisoner of war, research on the use of humor in less severe and more controllable stressful situations has been less clear-cut. For example, studies investigating the use of humor in coping with high-stress occupations have produced mixed results. One study provided evidence for the effectiveness of humor in coping with stress among soldiers undergoing an intensive combat training course in the Israeli army (Bizi, Keinan, and Beit-Hallahmi, 1988). Humor production and appreciation were assessed using both self-report measures and peer ratings, and the quality of coping under stress was evaluated using ratings by peers and commanding officers. Greater peer-rated (but not self-rated) humor was found to be significantly related to higher peer ratings of performance under stress and higher commander ratings of initiative and responsibility. This was especially true for active humor (generating joking comments rather than merely laughing at others’ humor). These findings were interpreted as providing support for the view that a sense of humor is associated with better coping during stressful military training.

In contrast, however, a recent study of health care staff working with AIDS and cancer patients suggested that the use of humor as a coping strategy may actually have *negative* rather than positive consequences (Dorz et al., 2003). The coping styles of 528 physicians and nurses in 20 hospitals in northern Italy were assessed using a measure called the Coping Orientations to Problem Experiences (COPE) (Carver, Scheier, and Weintraub, 1989), which contains a scale assessing the use of humor in

coping. In addition, the participants completed measures of anxiety, depression, and emotional burnout. Surprisingly, the data analyses revealed that higher levels of humor in coping were associated with *greater* emotional exhaustion and feelings of depersonalization. Since this study was correlational, the direction of causality between humor use and burnout is unclear. Nonetheless, the results cast some doubt on the overall effectiveness of humor in coping in a high-stress health care setting.

Some qualitative research on the use of humor in stressful occupations helps to shed some light on these puzzling findings. Using a participant observer approach, Joan Sayre (2001) observed the use of humor among staff in a psychiatric unit. She found that it could be divided into two broad categories, a fairly benign “whimsical” type (incongruous witticisms, bravado, and self-denigrating humor) and a more aggressive “sarcastic” type (discounting, malicious, and gallows humor). Sarcastic humor was more common than whimsical humor among the staff, and most of the humor was directed at making fun of patient behaviors when out of earshot of the patients. Although the relative benefits of the different types of humor were not directly tested in this study, the author suggested that, whereas some of these uses of humor seemed to be beneficial in managing anxiety in a socially acceptable manner, the more aggressive forms appeared to promote negative, cynical attitudes toward patients, which might actually have impaired therapeutic effectiveness and contributed to morale problems.

A similarly mixed view of the benefits of humor emerged in a qualitative study in which emergency personnel were interviewed about their methods of coping with the stress of handling dead bodies following major disasters such as airplane crashes and explosions (McCarroll et al., 1993). Although some participants viewed humor as an important tension reducer, others expressed reservations about its appropriateness. Similar reservations were also expressed in a review of research relating to the potential benefits and risks of the use of humor for coping in emergency work (C. Moran and Massam, 1997). Overall, then, the use of humor in coping with work-related stress seems to have mixed benefits. As we have seen earlier in this chapter, probably not all forms of humor are beneficial for coping; instead, whether or not it contributes to better coping likely depends on the style or type of humor used.

Research on the use of humor in coping with life-threatening illness has also yielded somewhat equivocal findings. In one study, 59 women who had been diagnosed with breast cancer were asked to complete measures of moods and coping strategies (using the COPE) before surgery, immediately after surgery, and at 3-, 6-, and 12-month follow-ups (Carver et al., 1993). Greater use of humor in coping was found to be associated with reduced emotional distress, but this relation was significant at only two of the five assessment times (three-month and six-month follow-up).

In a larger study of coping with breast cancer, 236 patients completed the COPE as well as measures of emotional distress (Culver et al., 2004). No significant correlations were found between humor in coping and any of the measures of emotional distress, raising questions about the overall effectiveness of humor as a means of

coping with breast cancer. However, a limitation of both of these studies, as well as some of the research on coping with work-related stress described earlier, was the use of the COPE humor scale. This test has been shown to be positively correlated with all four subscales of the Humor Styles Questionnaire, indicating that it does not distinguish between potentially beneficial affiliative and self-enhancing humor and potentially detrimental aggressive and self-defeating humor styles (R. A. Martin et al., 2003).

Using observational methods instead of relying on self-report humor scales, a longitudinal study of bereavement by George Bonanno and Dacher Keltner (1997) provided evidence for a beneficial effect of benign humor in coping with the death of one's spouse. Men and women who had lost their spouse six months previously were videotaped during an interview about their relationship with their deceased partner. The tapes were subsequently coded for Duchenne and non-Duchenne smiles and laughter, and measures of emotional adjustment and physical health were obtained at 14 and 25 months postloss. Analyses showed that a greater frequency of Duchenne smiling and laughter (indicating genuine amusement) during the interview was a significant predictor of fewer grief symptoms (e.g., intrusive memories of the deceased, emotional numbness, inability to part with the deceased person's possessions, depressed mood) at 14 and 25 months, even after controlling for moods at the time of the interview. Thus, the ability to experience humor early in bereavement, as demonstrated by smiling and laughter showing genuine mirth while talking about the deceased spouse, was associated with better emotional adjustment more than a year later. Further analyses of the same data by Keltner and Bonanno (1997) found that individuals who displayed more frequent Duchenne (but not non-Duchenne) laughter during the interview reported more positive and less negative moods and showed a greater dissociation between verbal reports of distress and autonomic arousal, suggesting that one of the benefits of genuine humor in coping may be that it enables the individual to dissociate from negative emotions.

In summary, although many authors have proposed that humor may be a beneficial way of coping with occupational stress, bereavement, illness, and other major stressors (e.g., Sumners, 1988; van Wormer and Boes, 1997), empirical evidence for such benefits is limited and somewhat mixed. Once again, the inconsistent findings may be due to a failure on the part of researchers to distinguish among different uses of humor, some of which may be effective for coping in some types of situations but less so in others, while other uses of humor may actually be detrimental in coping with certain stressors. For example, highly aggressive or macabre gallows humor may be almost essential to survival in the nearly hopeless situation of a prison camp, but may contribute to feelings of cynicism, alienation, and burnout in a stressful work environment where other more constructive forms of coping are available. In addition, mildly self-deprecating and whimsical uses of humor might enhance group morale and cohesiveness in a work setting, but frequent teasing and practical jokes might impair morale. Because of the multifaceted functions of humor and their widely varied social and emotional effects, it seems to be overly simplistic to view humor in

general as a purely beneficial method of coping. Further research is clearly needed to investigate in more detail the potential benefits and pitfalls of different styles of humor in coping with particular stressors.

Sense of Humor as a Stress Moderator

The idea that humor is beneficial for coping with stress suggests that people with a greater sense of humor should be less likely to suffer the adverse emotional and physiological consequences of stressful life events. Although high-humor individuals may be just as likely as their low-humor counterparts to experience stressors such as financial losses, occupational pressures, unemployment, death of a loved one, and relationship breakups, their more frequent use of humor might enable them to appraise these stressors as less threatening, garner more social support, and generally cope more effectively, resulting in less likelihood of becoming emotionally distressed and physically ill as a consequence of the stressors.

A popular way of testing this hypothesis is the stress-moderator paradigm (Cohen and Edwards, 1989), in which researchers use questionnaires and other testing procedures to assess three types of variables: (1) some aspect of sense of humor measured as a personality trait; (2) the frequency of major stressful life events or minor daily hassles experienced over a specified period of time in the recent past, such as the preceding six months; and (3) current levels of particular adaptational outcomes, such as prevailing levels of depression or anxiety or the number of different illness symptoms experienced recently. By using hierarchical multiple regression analyses with a stressor \times sense of humor interaction term, researchers can determine whether the strength of the association between the frequency of stressors and adaptational outcomes varies as a function of level of sense of humor. The stress-buffering hypothesis is supported when the correlation between stressors and negative outcomes is found to become weaker as sense of humor increases across participants, and when high levels of stressors are associated with less disturbance among high-humor as compared to low-humor individuals (Figure 7). A number of studies using this paradigm have been conducted over the past two decades, using a variety of different sense of humor tests, stressor measures, and outcome variables.

Herbert Lefcourt and I reported three studies that employed different methods of assessing sense of humor and found fairly consistent evidence of a stress-moderating effect of humor (R. A. Martin and Lefcourt, 1983). In each of these studies, we used a life events checklist to assess the number of major life stressors that our undergraduate participants had experienced during the preceding year, and a test of overall mood disturbance (depression, anxiety, tension, anger, fatigue) as our outcome measure. Each study employed different methods of assessing sense of humor. In the first study, using self-report trait humor measures, we found a significant stress-buffering effect with the SHRQ, CHS, and SHQ-L, indicating that individuals with higher scores on these measures were less likely to report disturbed moods after experiencing high levels of stressful experiences.

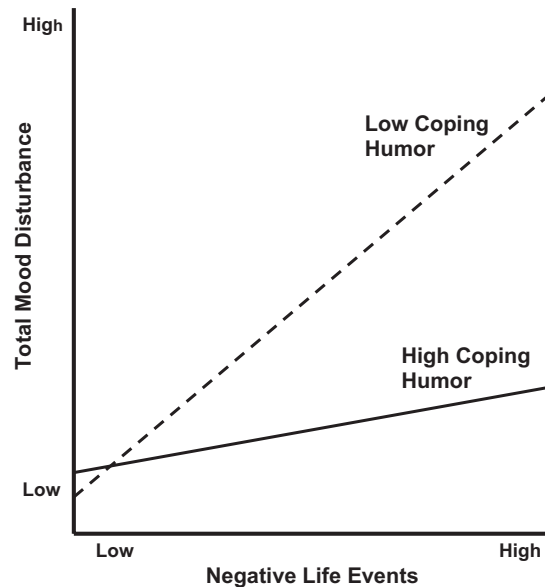


FIGURE 7 Stress-moderating effect of sense of humor. As the number of stressful life events increases, individuals with higher scores on the Coping Humor Scale show a less steep increase in mood disturbance as compared to those with lower scores on this humor measure (from Martin & Lefcourt, 1983).

In the second study, we assessed sense of humor using a behavioral measure of humor production ability. Participants were asked to make up a humorous narrative in the laboratory, describing a number of objects in a funny way, and these monologues were subsequently rated for overall funniness. Once again, the results revealed a significant stress-moderating effect: individuals who were better able to make up a funny monologue on demand in this rather difficult task showed less likelihood of becoming emotionally distressed following high levels of life stress.

The third study employed a similar humor-production approach, this time involving an even more stressful laboratory situation. The participants were instructed to create a humorous narrative while watching the *Subincision* film, and when the rated funniness of their narratives was used as the measure of humor in regression analyses, the results once again revealed a significant stress-buffering effect of humor production ability. We speculated that those individuals who were able to create funnier narratives in these mildly stressful conditions in the laboratory might also be the ones who tend to engage in humor more frequently during times of stress in their everyday lives, enabling them to cope more effectively and therefore become less emotionally distressed.

These encouraging initial findings were subsequently followed up in a number of similar studies by various researchers, some of which replicated our stress-moderator findings while others did not. One study using both cross-sectional (within one time

period) and prospective analyses (assessing stressors and sense of humor at one time point to predict prevailing moods two months later), found a significant stress-moderating effect of the CHS and SHRQ in the prediction of depression but not anxiety (Nezu et al., 1988).

A study of coping among women business executives also found significant stress-buffering effects of the CHS and SHRQ using a measure of minor daily hassles as the stressor measure and tests of self-esteem and emotional burnout as the outcome measures (P. S. Fry, 1995). Another study found a significant stress-moderating effect of the MSHS in the prediction of illness symptoms and anxiety, although the anxiety finding was only significant for male participants (Abel, 1998). In addition, my student James Dobbin and I found stress-buffering effects of three self-report humor scales on the negative relationship between daily hassles and levels of salivary immunoglobulin-A, a measure of immunity, indicating that high-humor individuals, compared to those with less of a sense of humor, were less likely to have reduced immunity after experiencing high numbers of stressful hassles (R. A. Martin and Dobbin, 1988).

Taking a somewhat different approach, Nicholas Kuiper, Kathy Dance, and I (1992) used the stress-moderator paradigm to examine interactions between sense of humor measures and both positive and negative life events in predicting positive rather than negative moods. Consistent with the stress-buffering hypothesis, we found significant interactions between the frequency of stressful negative life events and the CHS, SHRQ, and SHQ-M in predicting positive affect. Among individuals with low scores on these humor scales, more frequent negative events were associated with lower levels of positive moods, whereas those with high humor scores tended to maintain high levels of positive moods regardless of the number of negative events they had experienced. Analyses using the frequency of recent positive life events (e.g., enjoyable experiences, successful achievements) in the place of negative stressors also revealed significant interactions with the two subscales of the SHQ in predicting positive affect, indicating that the frequency of positive events was more strongly related to increased positive moods for high-humor as compared to low-humor individuals. These results suggested that, besides helping one to maintain one's positive moods during times of stress, a sense of humor seems to enhance the enjoyment of positive events.

In a later study, Kuiper and I (1998b) employed a daily diary approach to investigate the stress-buffering hypothesis. In this study, adult men and women from the community were asked to keep a three-day record of each time they laughed, as well as completing measures of the number of stressful events they experienced over the course of each day and their levels of positive and negative moods each evening. Interestingly, correlational analyses revealed that people who laughed more frequently over the three days did not necessarily experience more positive or less negative moods overall. Instead, the relationship between laughter and moods depended on their levels of daily stress. In particular, a significant stress-moderating effect revealed that greater numbers of stressful life events were associated with more negative moods, but only among individuals with a low frequency of laughter. In contrast, individuals with a

higher frequency of daily laughter had relatively low levels of negative moods regardless of their stress levels. Similar effects were found with positive moods, but only among men.

A recent study examined the potential role of humor in coping with the effects of mathematics performance anxiety in women (T. E. Ford et al., 2004). Female college students were administered a mathematics test in either high- or low-threat conditions. In the high-threat condition, they were told that this test assesses mathematical aptitude and has been found to be more difficult for women than men; in the low-threat condition, they were told that it assesses the process of general problem solving and that men and women tend to perform equally well on it. In support of the stress-buffering hypothesis, the results revealed a significant interaction between scores on the CHS and threat condition in predicting performance on the test and self-reported anxiety. Whereas all participants performed well on the test and had low anxiety scores in the low-threat condition, greater coping humor was related to better test performance and lower anxiety in the high-threat condition. These results suggested that the use of humor in coping with stress may reduce the effects of stereotype threat on women's mathematics-related anxiety and performance.

Although the foregoing research was generally quite supportive of the hypothesis that a sense of humor may buffer the adverse psychological effects of stress, some other investigations have failed to replicate these findings. One early study found no evidence of a stress-buffering effect of humor on depression or anxiety (Safranek and Schill, 1982). However, sense of humor was assessed in this study by means of a humor appreciation test in which participants were asked to rate the funniness of several categories of jokes. The null results may have been due to the fact that the enjoyment of various types of jokes likely has little to do with the degree to which individuals actually use humor in coping with life stress (Lefcourt and Martin, 1986).

A more serious challenge to the stress-buffering hypothesis came from a study by Albert Porterfield (1987) with more than 200 participants that did not find any evidence of stress-moderating effects of humor using the CHS and SHRQ as humor measures, the same test of major life stressors that Lefcourt and I had used in our original studies, and measures of depression and physical illness symptoms as the outcome variables. Another study with more than 700 participants also failed to find a stress-moderating effect of the CHS in predicting physical illness symptoms (Korotkov and Hannah, 1994). Similarly, a study of 334 undergraduates did not find a significant stress-moderating effect of coping humor on mood disturbance (Labott and Martin, 1987).

Even more confusing results were found in a study by Craig Anderson and Lynn Arnoult (1989). In this study, undergraduates completed the CHS, a measure of major life stressors, and tests of negative affect, depression, insomnia, physical illness symptoms, and an overall health rating. No evidence of a stress-moderating effect of coping humor was found on negative affect, depression, or illness symptoms. On the other hand, the interaction between CHS and stressors was significant in the prediction of overall wellness and insomnia. However, closer examination of the interaction revealed that the results for wellness were in the wrong direction: high-humor

individuals showed a *stronger* association between stressful events and poor health than did low-humor individuals. Only the results for insomnia were in the predicted direction.

A study by James Overholser (1992) also produced some results contradicting the stress-buffering hypothesis. Undergraduate participants completed three different types of humor measures: the CHS, humor appreciation (participants' funniness ratings of a set of cartoons), and humor production ability (rated funniness of cartoon captions created by participants). The outcome measures were tests of depression, loneliness, and self-esteem. Regression analyses using the CHS revealed a significant interaction with major life stressors only in the prediction of depression, among females but not males. However, the correlation tables reveal that this effect was in the wrong direction: females with high CHS scores showed a stronger association between stress and depression than did those with low scores on this humor test. A few significant interactions were also found between stressors and humor production ability in predicting loneliness (for both males and females) and self-esteem (for females only). However, since the direction of these effects was not reported, it is unknown whether they also were in the wrong direction.

In summary, the stress-moderator research using the multiple regression approach has yielded some rather inconsistent evidence for stress-buffering effects of a sense of humor. Nine studies found at least some significant stress-moderating effects, three obtained no significant results, and two produced results in the wrong direction. There does not seem to be any clear pattern to the particular humor scales, stressor measures, or outcome variables that did and did not produce significant findings. Although there are enough positive findings in this research to warrant some optimism about the stress-buffering potential of a sense of humor, it is difficult to discern from this research which particular uses of humor are beneficial for coping with which sorts of stressors to produce which types of outcomes.

Process Approaches to Investigating Humor in Coping

The inconsistent patterns of findings from the stress-moderator studies described in the previous section may be due in part to several inherent weaknesses of this research methodology (Sommerfield and McCrae, 2000). These include reliance on trait measures of humor, retrospective assessment of stressors occurring over a period of time, and use of a between-person, cross-sectional design. Since the variables are typically assessed at only one point in time, this stress-moderator paradigm provides only a static "snapshot" of what is an inherently dynamic coping process. Furthermore, a high score on a trait measure of sense of humor does not necessarily mean that an individual actually used humor to cope with the particular stressors that are measured by the life events checklists. Consequently, this approach does not allow researchers to examine directly how particular types of humor are used on a day-to-day basis to cope with specific ongoing stressors.

Howard Tennen and colleagues have advocated the use of a more "real-time" approach to stress and coping research, assessing proximal stressors, coping efforts,

and adaptational outcome variables repeatedly in individuals as they occur over a period of days or weeks (Tennen et al., 2000). By capturing these variables closer to their actual occurrence, researchers can minimize recall error while studying coping processes within individuals over time. Such data can be analyzed using multilevel analysis procedures such as Hierarchical Linear Modeling (HLM; Bryk and Raudenbush, 1992), which combine the advantages of both an idiographic and a nomothetic approach. This approach to analyzing stress-moderating effects of humor is conceptually similar to the multiple regression method described in the previous section, but the focus is on changes within individuals over time rather than differences between individuals at one time. In other words, the methodology enables researchers to examine whether individuals show evidence of higher or lower levels of well-being on days when they engage in particular styles of humor to cope with particular types of stressors, relative to other days when they experience similar stressors but do not use those humor styles.

So far, this process-oriented approach has been used in only one study examining potential stress-buffering effects of humor, which was conducted by my former graduate student, Patricia Doris (2004), as part of her PhD research. Twice a week for three weeks, university students participating in this study were asked to log onto an Internet website at the end of the day and complete a brief questionnaire, recording their stressful experiences, negative moods, and uses of humor during that day. The humor questions were modified items from the Humor Styles Questionnaire, asking participants how frequently they had engaged in affiliative, self-enhancing, aggressive, and self-defeating styles of humor that day. Thus, humor was assessed in terms of the frequency with which individuals engaged in various humor behaviors on a particular day, rather than their typical or habitual humor tendencies, as in trait measurement approaches. Stressful events and moods were also assessed for the same day, rather than being measured retrospectively over weeks or months. HLM analyses were used to examine the interactions between day-to-day stressors and humor use in relation to daily negative moods both within and between participants concurrently.

The results revealed significant stress-moderating effects for self-enhancing, aggressive, and self-defeating humor, but not affiliative humor. In each case, a higher number of stressful events was associated with more negative moods on days when participants did not engage in these types of humor, whereas stressful events did not result in such negative moods on days in which participants engaged more frequently in these three humor styles. Although these findings will need to be replicated before we can place much confidence in them, they provide preliminary evidence for the stress-buffering effects of three of the four HSQ humor styles.

The results with self-enhancing humor were exactly as expected, suggesting that the use of this healthy style of humor to cope with stress is an effective way of regulating one's moods when experiencing daily stressors. The finding of similar results with both aggressive and self-defeating humor may at first seem surprising, but they also make some sense. As suggested earlier, although aggressive uses of humor may be potentially injurious to relationships in the long run, aggressively making fun of people and situations that are perceived as threatening to one's well-being may be a

way of reducing immediate feelings of threat and associated negative moods. Similarly with self-defeating humor, on days when one is experiencing a great deal of stress, the use of humor to ingratiate oneself with others and deny one's feelings may be a way of boosting one's spirits and mitigating the negative emotional effects of stress, at least in the short run. Moreover, the temporary alleviation of negative emotion may act as a reinforcer for the use of these aggressive and self-defeating types of humor, even though the longer-term effects may be detrimental to well-being, explaining why these potentially maladaptive uses of humor tend to be maintained in some individuals as habitual coping styles. Thus, although aggressive and self-defeating humor styles may mitigate the emotional effects of stress in the short term, they may be more maladaptive in the longer run.

Interestingly, the use of affiliative humor did not appear to moderate the effects of daily stress on negative moods. Instead, this type of humor showed a direct mood effect, with greater uses of daily affiliative humor being associated with less negative and more positive moods regardless of stress levels. It is worth noting that in this study, Doris also used the traditional cross-sectional multiple regression paradigm to examine stress-moderating effects of humor, using several trait measures of humor including the HSQ, CHS, and SHRQ, major life events assessed retrospectively over six months, and prevailing moods. The failure to find any significant stress-moderating effects in these analyses further underscores the weaknesses of the cross-sectional trait approach.

The process-oriented repeated measures approach, using multilevel analysis procedures such as HLM, appears to be a promising methodology for further research on the role of humor in coping with stress. Future research could also examine the relative benefits of particular styles of humor in coping with different types of stressors. For example, stressors could be categorized on the basis of whether they involve conflicts with close friends or acquaintances, problems at work, failures to achieve an academic or work goal, and so on, as well as the participant's degree of perceived control over the events. Different styles of humor may be more or less effective with different types of stressors.

Researchers might also wish to consider other potentially relevant styles of humor besides those assessed by the HSQ. Other adaptational outcomes should also be examined, including specific mood states, psychophysiological arousal levels, illness symptoms, and so forth. In addition, different sampling procedures could be used over different time periods. For example, the availability of small handheld computers now makes it possible to collect ongoing data relating to stressors, humor use, moods, and even physiological arousal in "real time" over the course of the day. These methods may enable researchers to examine the process of humor use in coping in a more fine-grained manner.

INTERPERSONAL ASPECTS OF HUMOR IN MENTAL HEALTH

As we have seen throughout this book, humor typically occurs in the context of social interaction. Until recently, however, as in other areas of the psychology of

humor, much of the research on humor and mental health has tended to ignore its inherently social nature. Viewing humor as a form of interpersonal interaction allows us to think about how it may contribute to social relationships, which in turn may have an impact on the individual's psychological health.

There is a great deal of research indicating that social relationships have a profound influence on one's level of happiness and general psychological well-being (for a review, see Berscheid and Reis, 1998). Summarizing the research in this area, Harry Reis (2001) stated that "there is widespread evidence that socially involved persons are happier, healthier, and live longer than socially isolated persons do" (p. 58). For example, married people, on average, tend to have better mental and physical health than do unmarried people. Research has also shown that people with better social skills, enabling them to form close and satisfying relationships, are less likely to experience depression, anxiety disorders, and other forms of psychological disturbance (Segrin, 2000). Meaningful relationships with others are also important for the provision of social support, which can protect the individual from the adverse effects of stress (Berscheid and Reis, 1998). On the other side of the coin, there is an abundance of research showing that loneliness is related to unhappiness and a range of mental and physical problems (Berscheid and Reis, 1998).

The importance of social connectedness for well-being likely has a biological basis. Evolutionary psychologists view social relationships as one of the most important factors responsible for the survival of the human species (D. M. Buss and Kenrick, 1998). The evolutionary significance of close relationships is also emphasized by attachment theory (Bowlby, 1982), which suggests that the ability to form secure interpersonal attachments originates in the relationship between infants and their caregivers, and continues to play an important role in one's close relationships and in the ability to regulate emotions throughout one's life.

In view of the social functions of humor discussed previously in this book, it seems reasonable to propose that humor may play a role in the initiation and maintenance of satisfying and enduring social relationships, such as those with close friends, marriage partners, and colleagues at work (Shiota et al., 2004). These relationships, in turn, can contribute in positive ways to the individual's level of mental health. Besides enhancing partners' enjoyment of the relationship through playful interactions, socially skilled uses of humor may aid in confronting and resolving difficulties and facilitate the resolution of conflicts that inevitably occur in all relationships.

In addition, the humor that is shared by relationship partners during times of life stress may be an important way they help each other to cope. Thus, humorous interactions between partners can be a way of regulating emotion, augmenting positive enjoyment and reducing feelings of distress originating either within or outside the relationship itself. On the other hand, maladaptive uses of humor, such as aggressive teasing or self-defeating humor, may have detrimental effects on relationships. In particular, individuals who use humor in these unhealthy ways may have difficulty initiating and maintaining close relationships, leading to adverse consequences for well-being.

Humor as a Facilitator of Healthy Relationships

Some correlational studies have examined associations between trait measures of humor and several variables relevant to personal relationships. For example, self-report humor scales have been found to be positively correlated with measures of intimacy (Hampes, 1992, 1994), empathy (Hampes, 2001), social assertiveness (Bell et al., 1986), and interpersonal trust (Hampes, 1999). As noted in Chapter 5, studies of dating and married couples have shown that individuals who perceive their partner to have a good sense of humor tend to be more satisfied with their relationship, as compared to those who view their partner as less humorous (Rust and Goldstein, 1989; Ziv and Gadish, 1989). Moreover, people who are happily married often attribute their marital satisfaction, at least in part, to the humor they share with their spouse (Lauer et al., 1990; Ziv, 1988a). Researchers observing styles of interaction between married spouses during discussions of problems in their marriage have found that spouses who are more satisfied with their marriage, as compared to those who are unhappily married, show higher levels of humor and laughter and more reciprocated laughter during these problem discussions (Carstensen et al., 1995; Gottman, 1994).

However, there is also some evidence that humor may play a negative as well as a positive role in close relationships, particularly in men. Herbert Lefcourt and I found that, among women, scores on the CHS were positively correlated with marital satisfaction and positive engagement in a problem discussion between spouses, whereas for men higher CHS scores were associated with lower marital satisfaction and greater destructiveness (negative affect and verbal negativity) during the discussion (Lefcourt and Martin, 1986). A study of newly married couples (described in Chapter 5) found that greater humor expression by husbands during a problem discussion, when accompanied by higher levels of major stressful events in the couple's life, predicted a greater likelihood that couples would be separated or divorced 18 months later (Cohan and Bradbury, 1997). The authors suggested that husbands' use of humor during times of stress may be a way for them to temporarily deflect problems and avoid the anxiety associated with talking about them, but without actively confronting and resolving them. Hence, humor expressed by the husband in the context of major life stress might be associated with less distress in the short term but not with longer-term marital stability.

The possibility of negative as well as positive effects of humor in relationships is consistent with our discussion throughout this chapter. It is only quite recently, however, that researchers have begun to address these issues in the context of relationships, attempting to identify negative as well as positive forms of humor. In a qualitative study of dating relationships, for example, Amy Bippus (2000b) drew a distinction between humor that serves a bonding function and more negative types, such as cruel, inappropriate, and overbearing humor that may be injurious to the relationship. In addition, the recently developed Relational Humor Inventory, which was designed for studying humor in close relationships, contains separate scales for assessing positive, negative, and instrumental uses of humor by each

partner (de Koning and Weiss, 2002). Preliminary data indicate that these different scales are differentially associated with marriage partners' levels of relationship satisfaction.

A few recent studies have also made use of the HSQ to examine associations between these potentially healthy and unhealthy humor styles and variables having to do with close relationships. For example, in our initial studies with the HSQ (R. A. Martin et al., 2003), we found that individuals with higher scores on affiliative humor and lower scores on self-defeating humor tended to report higher levels of intimacy in their close relationships. In addition, self-enhancing humor was positively related to the degree to which participants felt satisfied with the social support provided by their friends, whereas self-defeating humor was negatively correlated with this variable.

One of my graduate students, Gwen Dutrizac, and I found that higher affiliative and self-enhancing humor scores were associated with lower levels of loneliness and interpersonal anxiety, whereas higher self-defeating humor was related to higher levels of these negative feelings (R. A. Martin and Dutrizac, 2004). Some studies have also examined associations between the HSQ scales and measures relevant to attachment. In a study of Lebanese university students, Shahe Kazarian and I found that participants with higher scores on the self-defeating humor scale were significantly more likely to report anxious attachment in their relationships with close friends (Kazarian and Martin, 2004). On the other hand, those with higher affiliative humor scores were significantly less likely to report avoidant attachment styles.

Similarly, in their study of Belgian high school and university students, Saroglou and Scariot (2002) reported a correlation between self-defeating humor and insecure attachment in participants' relationships both with their friends and with their mothers. Self-defeating humor was also associated with more fearful-avoidant and anxious-ambivalent models of the self. Overall, these findings indicate that affiliative and self-enhancing humor are associated with a variety of positive relationship indicators, whereas self-defeating humor is particularly related to more negative experiences of relationships in general.

Other studies have examined associations between humor styles on the HSQ and participants' satisfaction with specific relationships. As part of her doctoral dissertation, Patricia Doris (2004) asked university students who were in a dating relationship to rate their own and their partners' humor styles using the HSQ, as well as their satisfaction with the relationship. Self-ratings and partner ratings of affiliative and self-enhancing humor were found to be associated with greater relationship satisfaction. On the other hand, greater use of aggressive humor in oneself or one's partner was associated with greater dissatisfaction with the dating relationship.

Similarly, in a study of humor in the initiation and maintenance of same-sex friendships among university students, another one of my students, Jennie Ward (2004), found that individuals who engaged in more affiliative and less aggressive humor were rated by their friends as being more enjoyable to interact with, and as fulfilling more positive friendship functions, such as companionship, intimacy, emotional security, and affection. These studies suggest that the use of affiliative and (to

a somewhat lesser extent) self-enhancing humor may be beneficial for relationship satisfaction, whereas aggressive humor in either partner seems to be particularly associated with relationship dissatisfaction.

These differential correlations between HSQ scales and satisfaction in close relationships suggest that healthy humor styles may be viewed as a type of social competence, whereas unhealthy humor styles may be related to social skills deficits. To test this hypothesis, Jeremy Yip and I examined the HSQ, as well as the trait form of the STCI, in relation to subscales of the Interpersonal Competence Questionnaire (ICQ) (Buhrmester et al., 1988), a measure of the degree to which participants perceive themselves to have various social skills needed to initiate and maintain satisfying relationships (Yip and Martin, in press). The results showed that higher scores on affiliative and self-enhancing humor and trait cheerfulness were associated with greater reported abilities in both initiating relationships (e.g., "Finding and suggesting things to do with new people whom you find interesting and attractive") and personal disclosure (e.g., "Confiding in a new friend and letting her or him see your softer, more sensitive side").

In contrast, greater use of aggressive humor was related to lower reported abilities both in providing emotional support (e.g., "Helping a close companion cope with family or roommate problems") and conflict management (e.g., "When angry at a companion, being able to accept that he or she has a valid point of view even if you don't agree with that view"), whereas trait cheerfulness was positively associated with both of these abilities. Finally, greater use of self-defeating humor was associated with lower ability to engage in negative assertion (e.g., "Telling a companion you don't like a certain way she or he has been treating you").

Similar patterns of correlations between the HSQ and the ICQ were also reported by Nicholas Kuiper and his colleagues (2004). Overall, these findings provide support for the idea that the positive forms of humor may be viewed as a type of social skill, whereas aggressive and self-defeating humor may be considered to be social skills deficits. These correlational findings need to be followed up with further research exploring in more detail the appropriate and inappropriate ways humor is actually used in each of these social skill domains.

The studies discussed so far have examined correlations between humor scales and overall ratings of relationship satisfaction. This approach to measuring satisfaction requires participants to make generalizations about a large number of interactions with another person that have taken place over an extended period of time, and to summarize this complex process in a single rating. To obtain more process-oriented and proximal assessments of the quality of social interactions, two recent studies have employed daily diary methods, obtaining repeated assessments of participants' positive and negative experiences with daily social interactions as they occurred over a period of several weeks.

John Nezlek and Peter Derks (2001) had participants keep a daily record every day for two weeks, recording all of their social interactions lasting more than 10 minutes, and rating each one for enjoyment, level of intimacy, and feelings of self-confidence. Using HLM to analyze the data, the researchers found that participants

with higher scores on the Coping Humor Scale rated their daily social interactions as being more satisfying and they also reported feeling greater self-confidence during these interactions. However, coping humor was unrelated to the total number of people interacted with each day or to the perceived intimacy of interactions. The authors suggested that people who use humor to cope may be more enjoyable to be with, providing others with more positive forms of support through their humor, resulting in greater enjoyment and efficacy in interactions.

In the other study of this kind, Gwen Dutrizac and I conducted a similar daily diary study of social interactions using the HSQ as our measure of humor (R. A. Martin and Dutrizac, 2004). We had undergraduate participants keep a diary of daily social interactions two days a week for three weeks. We focused only on interactions with “close others,” such as close friends, romantic partners, parents, and siblings. At the end of each day, the participants indicated how many close others they interacted with that day, the number of positive and negative verbal interactions and activities they had with these people, and the frequency of both giving and receiving empathic responses in these interactions.

HLM analyses revealed that higher affiliative humor on the HSQ was associated with more frequent daily positive activities with close others (doing enjoyable things together), while self-enhancing humor was correlated with more frequent positive verbal interactions (engaging in enjoyable conversations). On the other hand, both aggressive humor and self-defeating humor were related to more frequent negative verbal communications and activities (e.g., arguments and criticism). In addition, self-enhancing humor was associated with more giving and receiving of empathic responses, whereas aggressive humor was related to less giving and receiving of empathy. Like Nezelek and Derks (2001), we found no correlation between HSQ scales and the overall frequency of interactions with others, suggesting that humor is related to the quality but not the quantity of social interactions. Taken together, these two studies provide further evidence that greater use of adaptive humor styles and less use of aggressive and self-defeating humor styles are related to more satisfying day-to-day interactions with others.

Another approach to investigating the role of different humor styles in relationships is to observe directly individuals' humor while they are interacting with relationship partners. We have recently developed a reliable observational coding system for rating the degree to which individuals engage in each of the four styles of humor identified by the HSQ during social interactions. This method was used in a recent study to rate the degree to which each member of pairs of heterosexual dating couples used affiliative and aggressive humor during a 10-minute discussion of a problem in their relationship (Martin, Campbell, and Ward, 2006). The results indicated that, although both styles of humor were positively correlated with observer ratings of funniness (demonstrating that both are indeed humorous), they had very different relationship outcomes. The more an individual was observed to use affiliative humor during the discussion, the more his or her partner reported increased feelings of closeness, less emotional distress, greater perception that the problem had been resolved, and greater overall satisfaction with the relationship. In contrast, the more individuals were observed to use aggressive humor, the less their partners felt the problem

had been resolved and the less satisfied they were with the relationship overall. Thus, this study was able to show a direct link between these positive and negative styles of humor and relationship partners' subsequent feelings and perceptions, demonstrating that humor can have both positive and negative effects on close relationships, depending on whether it is used in affiliative or aggressive ways.

In summary, the research on social relationships using the HSQ, although as yet quite limited, has provided general support for the view that these positive and negative styles of humor are differentially correlated with a number of variables having to do with individuals' experiences of close relationships, which in turn are important for mental health. Higher levels of both affiliative and self-enhancing humor tend to be associated with greater skill in initiating relationships and self-disclosure of personal information, more positive interactions with close others, more satisfying relationships with friends and dating partners, and lower levels of loneliness and interpersonal anxiety. Affiliative humor is also related to lower levels of avoidant attachment and greater intimacy in relationships, while self-enhancing humor is associated with greater perceived social support and giving and receiving of empathy.

In contrast, greater use of aggressive humor is related to more frequent negative interactions with others, less giving and receiving of empathy, reduced ability to manage conflict and provide empathy in social relationships, and lower satisfaction with dating relationships and friendships, both for oneself and one's partner. Thus, although aggressive humor is less strongly related to overall emotional well-being variables (as we saw previously), it seems to be particularly associated with social skills deficits and maladaptive social interaction styles and therefore more unsatisfactory relationships.

Finally, greater use of self-defeating humor tends to be associated with a reduced ability to assert oneself in relationships, more negative interactions with close others, higher levels of loneliness, interpersonal anxiety, and anxious and insecure attachment, and lower perceptions of intimacy and social support. Overall, then, the neuroticism-related characteristics of self-defeating humor that were seen with general well-being variables seem to carry over into one's feelings about social relationships as well, although, unlike aggressive humor, this negative style of humor does not seem to be related to negative feelings and dissatisfaction in one's relationship partners.

It is important to note, however, that many of these studies were correlational, using trait measures of humor, and were therefore unable to determine the direction of causality between humor and relationship satisfaction. Additional research using observational methods is needed to determine whether different styles of humor have causal effects on relationship outcomes. Also, further research using event-sampling procedures might be useful for studying humor use in everyday social events as they occur in natural contexts (for a discussion of this methodology, see Reis, 2001).

Interpersonal Aspects of Coping Humor

While humor appears to play a role in facilitating healthy personal relationships, it is also important to note that social relationships likely play a significant role in the

use of humor in coping with life stress, which I discussed earlier. As we have seen throughout this book, humor typically occurs in the context of social interactions, and this is also likely true of the use of humor in coping. As seen in the study of POWs in Vietnam (Henman, 2001), individuals usually do not begin laughing or cracking jokes about their problems when they are all by themselves. Instead, coping humor typically takes the form of joking comments and other types of playful communication among individuals during or shortly after the occurrence of stressful events.

For example, by cracking jokes with one another during the course of a particularly stressful work situation, coworkers may be able to alter their appraisals of the situation and thereby minimize the amount of negative emotion that might otherwise be elicited. Alternatively, while sitting together in a coffee shop at the end of a stressful day, they might begin jesting and laughing about some of the day's events, enabling them to relieve tension and manage residual emotions. Similarly, coping humor can arise when one person is describing his or her experiences of a recent or ongoing stressful situation to a close friend or romantic partner. Humor may be introduced into the discussion either by the individual who experienced the stressor or by the listener who is providing emotional support. In either case, the humor may provide the stressed individual an alternative way of looking at the stressor, alleviating feelings of distress and enhancing positive emotions. Thus, as sociologist Linda Francis (1994) pointed out, humor may be used to manage other people's emotions as well as one's own.

To date, only a few studies have examined these interpersonal aspects of humor as a coping mechanism. In one recent study, Sharon Manne and her colleagues (2004) observed 10-minute interactions between women who were undergoing treatment for breast cancer and their spouses. These dyads were instructed to discuss a cancer-related issue identified by the patient as being a problem and about which she wanted support from her partner. Each turn of speech during the discussion was coded for various types of social interaction, including benign, nonsarcastic humor. Sequential analyses showed that when husbands responded with humor to the cancer patients' self-disclosures, the patients subsequently tended to report significantly lower levels of distress about their cancer. These findings suggest that a husband's sensitive use of humor in response to his wife sharing her worries and concerns about breast cancer may lessen the threat of the cancer, helping her to gain perspective and reduce feelings of distress.

Research by John Gottman and his colleagues (1998), which was discussed in Chapter 5, also shows how humor may be a way of regulating emotions in one's marriage partner. This study found that, when married couples were engaged in discussions about problems in their marriage, the use of nonsarcastic humor by wives was predictive of greater marital stability over the following six years, but only when the wives' humor led to a reduction in their husbands' heart rate during the conversation. This finding suggests that humor may be beneficial during times of marital stress when it is used as a way of emotionally calming one's spouse and thereby enabling him to remain engaged in problem-solving efforts.

Amy Bippus (2000a) also investigated the outcomes experienced by individuals when their friends use humor in attempting to comfort them during times of stress. In this study, university students were asked to complete a questionnaire about a recent time when they confided to a friend about an emotionally upsetting experience or problem and the friend responded with humor. The results indicated that the effectiveness of the friend's humorous response (i.e., the degree to which it resulted in increased positive moods and feelings of empowerment, and decreased rumination about the problem) depended on the quality (i.e., funniness and appropriate timing) of the humor, its relevance to the problem, and the degree to which it seemed to be given purposefully. In addition, humor responses appeared to be most effective when they were given in the context of a relationship in which humor is a typical part of the interactions between the partners, where both partners normally use humor in coping with stress (as shown by high scores on the CHS), and when the humor was presented in a way that conveyed feelings of concern and a lack of negative criticism or disparagement, and provided an alternate perspective on the problem.

In summary, a limited amount of research has examined the interpersonal context in which humor is used to cope with stress, and the processes of social interaction that are involved. This is a potentially very fruitful topic for future investigation. For example, future research could investigate the effects of humor when it is introduced by the person who is experiencing stress as compared to when it is introduced by the person providing social support, as well as the relative benefits of different styles and topics of humor with different types of stressors.

CONCLUSION

As we have seen in previous chapters of this book, humor is a complex process involving cognitive, emotional, and interpersonal aspects. All of these facets of humor have implications for mental health and emotional well-being. When people joke with one another about their problems or about a potentially threatening life situation, they are able to change their perceptions of the situation, their emotional state, and the nature of their relationships with each other. However, the research reviewed in this chapter suggests that the link between humor and psychological health is more complex than it might first seem.

Experimental laboratory research has provided a considerable amount of support for the view of humor as an emotion-regulation mechanism. At least in the short term, humor produces an increase in positive feelings of exhilaration and well-being, along with perceptions of mastery and control, and a reduction in negative feelings such as anxiety, depression, and anger. There is also research evidence that humor can mitigate the negative emotions, physiological arousal, and behavioral impairments that often occur as a result of stressful life experiences.

While humor may be a useful mechanism for regulating emotions and coping with stress in the short term, however, correlational research using trait measures of sense of humor suggests that the longer-term implications for mental health may

depend on the way people use humor in their daily lives. Individuals who use humor to cope in ways that are sensitive to their own and other people's broader psychological needs are likely to experience enhanced feelings of self-esteem and emotional well-being and more satisfying relationships with others in the longer term. On the other hand, if humor is used to temporarily boost one's positive emotions and mitigate stress at the expense of others by means of sarcasm, teasing, or other types of aggressive humor, it may lead in the longer term to interpersonal difficulties and conflicts, and generalized feelings of alienation from others. Similarly, if humor is used at one's own psychological expense by ingratiating oneself with others, excessively disparaging oneself, or avoiding dealing constructively with the underlying causes of one's problems, it may produce temporary feelings of well-being, but at the cost of less healthy functioning in the longer term.

Overall, then, it would appear that humor is inherently neither psychologically healthy nor unhealthy. Just because someone is very funny and able to make others laugh does not necessarily mean that he or she is particularly well-adjusted psychologically. As suggested by earlier psychologists such as Maslow (1954) and Allport (1961), the role of humor in mental health seems to have as much to do with the kinds of humor an individual does *not* display as the kinds of humor he or she *does* express.

Another way of putting this is that a healthy sense of humor is an important component of overall mental health. People who are psychologically well-adjusted, with satisfying personal relationships, tend to use humor in ways that enhance their own well-being and closeness to others. For example, they may engage in friendly joking to communicate an optimistic outlook on a stressful situation, to encourage others during times of distress, or to express underlying feelings of acceptance and affection in the midst of an argument. However, less well-adjusted individuals who are aggressive and hostile, or those with low self-esteem and a vulnerability to negative emotionality, tend to use humor to communicate their aggression and cynicism, to manipulate, demean, or control others, to ingratiate themselves, or to hide their true feelings from others. Indeed, since no one is completely psychologically healthy or completely unhealthy, most people likely use humor to some degree in all of these ways at different times and in different contexts.

Throughout this chapter, I have noted several limitations of the existing research as well as promising questions and methodologies for future research. A major limitation of much of the research in this area is the use of correlational methodologies, which do not allow researchers to determine the direction of causality between humor and well-being. It is unclear from the existing research whether more healthy forms of humor contribute to greater psychological health or whether different styles of humor are merely a consequence of healthy and unhealthy psychological functioning. Other methodological limitations include the use of cross-sectional designs, self-report trait measures of sense of humor, retrospective assessments of stressors, and general, traitlike evaluations of well-being and relationship satisfaction. All of these preclude the possibility of studying the ongoing processes involved in the use of humor in coping with stress and negotiating interpersonal interactions. These approaches also tend to ignore the interpersonal nature and functions of humor.

Rather than merely seeking to find simple correlations between sense of humor scales and various aspects of mental health, or interactions between sense of humor and life stress measures in predicting overall well-being, future research should attempt to determine which types of humor in which social contexts are beneficial and detrimental for which aspects of mental health. Some humor styles, such as aggressive humor, may be beneficial for some aspects of mental health (e.g., short-term regulation of one's own emotions) but deleterious for others (e.g., long-term maintenance of close relationships). They may also be more beneficial for coping with some types of stressors (e.g., being a prisoner of war) than others (e.g., dealing with difficult patients in a psychiatric ward).

To address these kinds of questions, I have suggested that future research could make use of daily experience methods or event-sampling procedures, in which the actual use of different styles of humor during the course of the day is evaluated in "real time" over a period of days or weeks (Reis and Gable, 2000). This approach could be used to study humor as a coping mechanism by including repeated assessments of stressful events and ongoing indicators of emotional and physical well-being. The role of humor in social relationships could also be examined by including measures of various aspects of daily social interactions. Another potentially useful approach for further research is the use of observational methods to study the processes of humor in interpersonal interactions. For example, the social functions of humor, as well as its effect on coping with stress, could be examined during conversations between dyads (friends, married partners, or even strangers) while they are discussing a stressful situation that has recently been experienced by one or both of them.

Finally, there has been little research examining the question of whether individuals can improve their sense of humor and learn to use it in more healthy and less unhealthy ways. To address this question, intervention studies are needed, making use of role-playing procedures, creativity exercises, and other techniques over multiple sessions to train individuals in effective humor skills. Outcome measures could be used to examine the effectiveness of such humor-training sessions, relative to other non-humorous interventions, in improving humor usage and enhancing aspects of psychological well-being. This type of research is necessary before we can begin to advocate the use of humor and laughter to promote mental health.