CHAPTER 3

THE ROLE OF HUMOR AND THE SELF

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In a charming article entitled "A Laugh a Day: Can Mirth Keep Disease at Bay?" (Goldstein, 1982), quotations from physicians and philosophers throughout several centuries were presented as testimonies to the value of humor for retaining health. Humor has been said to be good for digestion, for recovery from surgery, for blood circulation, and for the release of tension. At the same time, Goldstein noted that certain puritanical religious figures perceived humor to be evil, a point discussed at some length by Robertson Davies (1975) in World of Wonders and Umberto Eco in The Name of the Rose (Ecco, 1983).

More recently, the therapeutic value of humor has been affirmed by Norman Cousins, who, in a brief book entitled Anatomy of an Illness (Cousins, 1979), told of his recovery from a serious disintegrative disease through the powers of humor and Vitamin C. Cousins, the former editor of the Saturday Review, has been referred to as "the man who laughed himself back to health." He described his experiences with a life-threatening collagen disorder (ankylosing spondylitis), which followed some severely frustrating and stressful experiences. He also described the procedures that he underwent during his hospitalization that seemed to be more debilitating than helpful. In response to acute pain and his self-perceived decline, Cousins took his treatment into his own hands. He began by seeking an antidote to the dysphoria that accompanied his pain and poor prognosis since he believed it would serve to worsen his already deteriorating condition. Cousins, therefore, arranged to view several comic films, including episodes from Candid Camera and various Laurel and Hardy movies, while he was hospitalized. After watching these funny films, Cousins noticed that he was able to sleep painlessly for a few hours without the use of sedative drugs. In addition, his sedimentation rate (an index of the

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severity of inflammation) declined, which was a major reversal of trends before he began watching the humorous films. Eventually Cousins enjoyed a complete recovery from this disorder, which was thought to be a fatal condition. Sometime after his recovery he began discussing his experience in print and in public forums.

Testimonials such as those offered by Norman Cousins and the many physicians and philosophers noted in the article by Goldstein (1982) encourage us to examine the role that humor may play in the health process. It is obvious that humor has had a significant impact on health for certain individuals. It will be the purpose of this chapter to examine the empirical literature concerning humor to determine whether there is much evidence in support of the assumed salutary effects of humor.

In discussing humor's effects on health, we will review research with regard to different junctures in the process that proceed from the onset of stressful experiences to the development of illness. The first phase concerns the effects of stressful experiences on the creation of what some investigators call distress, or strain. That is, stressful events often result in what is phenomenologically experienced as emotional disturbance. However, despite the robust evidence that stressful life experiences are associated with dysphoria and illness, several investigators (Johnson & Sarason, 1979; Rabkin & Stuening, 1976) have pointed out that there is a good deal of variation in the responses of individuals to similar life events, and that as a consequence the relationship between stress and illness is rarely of a high magnitude. As a result, these authors and a number of others have undertaken the next logical step, that of exploring the individual characteristics that either moderate or exacerbate the deleterious effects of stress. There have been at least two recent and extensive reviews of this stress-moderator literature (Cohen & Edwards, 1988; Wheeler & Frank, 1988), indicating the degree of activity in this research area. Our first concern, then, will be to evaluate the literature concerned with the moderation or buffering of stressful experiences.

The question to be addressed is whether a sense of humor serves to lessen the impact of stressful events, perhaps through affecting what Lazarus and Folkman (1984) term the primary appraisal process wherein people evaluate stressors for their potential threat. Another way of phrasing this question is to ask whether those people who have a good sense of humor are less likely to find stressful events threatening or distressing.

The second focus of the stress-illness connection to be explored concerns the ways in which people cope with distress or emotional upset once it has occurred following the experience of stress. That is, if an individual comes to suffer emotional turmoil following the occurrence of stressful events, does humor have a role to play in lessening that disturbance? Here we will examine the literature concerned with the relationship between humor and the ways in which individuals cope or come to terms with their personal duress. The question we will address is whether humor preserves better management of emotional experience.

The third focus concerns the relationship between mood and illness. If a person experiences distress or emotional disturbance following the advent of a stressful event, is illness inevitable? Might the presence of humor indicate a positive mood state that would render the emotional disturbance and its physiological concomitants benign? Here we will examine the relationship between humor and mood states and, in turn, the accompanying physiological changes that are likely to have some influence on health and the development of illness.

Finally, if humor is found to have salubrious effects, we may ask what it is about humor that makes it protective. Here we will share some of our recent thoughts about humor as a "distance-producing" mechanism that allows us to remain somewhat aloof from our own experiences and less vulnerable to the daily "slings and arrows" that comprise stressful events.

**HUMOR AS A MODERATOR BETWEEN STRESS AND MOOD DISTURBANCE**

Though many writers have attested to the value of humor as a stress moderator, few have offered any elaborate theoretical conceptualizations of empirical data that support their contentions. Freud (1928) is one of the few who have discussed the role of humor at length. "The essence of humour," wrote Freud (1928) "is that one spares oneself the affects to which the situation would naturally give rise and overrides with a jest the possibility of such an emotional display" (p. 216). Thus, humor is a sort of defense mechanism that allows people to face a difficult situation without.
becoming overwhelmed by unpleasant emotion. In fact, Freud referred to humor as "the highest of the defense mechanisms." Humor is "the triumph of narcissism, the ego's victorious assertion of its own invulnerability. It refuses to be hurt by the arrows of reality or to be compelled to suffer. It insists that it is impervious to wounds dealt by the outside world, in fact, that these are merely occasions for affording it pleasure" (p. 217).

It is interesting to note in passing that in terms of dynamics, Freud considered humor to be the action of the superego assimilated from parental attempts to comfort and reassure the anxious child. By means of humor, wrote Freud (1928), "one refuses to undergo suffering, asseverates the invincibility of one's ego against the real world and victoriously upholds the pleasure principle, yet all without quitting the ground of mental sanity" (p. 217). A sense of humor to Freud was "a rare and precious gift" that in the face of hardships and anxieties, asserted "Look here! This is all that this seemingly dangerous world amounts to. Child's play—the very thing to jest about!" (p. 220).

Freud's focus on humor as a moderator of stress is mirrored in the writings of Dixon (1980), who regarded humor as a response that evolved in our species as a means of defusing negative arousal states. Since the physiological responses attendant upon laughing and being in funny circumstances are similar to those found during emotional arousal, Dixon argued that humor and mirth are "wired-in" alternative responses that may replace anxiety and anger.

Despite these testimonies to the value of humor, there are only four empirical investigations that have examined the function of humor as a moderator of the stress-mood disturbance relationship; and these four studies do not provide the kind of consistency that permits great confidence about the value of humor as a stress moderator. As is usually the case, more research is surely required.

Safranek and Schill (1982) were the first to report on the assumed moderator role of humor. These investigators used an unknown measure of humor, the Humor Use Inventory (Angell, 1970), to predict the effects of stress measured by Sarason's Life Events Scale (LES-Sarason, Johnson, & Siegel, 1978) on Beck's Depression Inventory (BDI) (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) and Spielberger's State-Trait Anxiety Inventory (STAI) (Spielberger, Gorsuch, & Lushene, 1970). The Humor Use Inventory assesses how frequently and how funny a person tries to be in various situations. In addition, subjects were asked to rate the funniness of five types of jokes. With a fairly sizable sample (82 male and 79 female undergraduates) Safranek and Schill found the anticipated relationships between stress, anxiety, and depression. However, neither of their humor measures interacted with stress as a moderator variable. In fact, their humor appreciation measure was positively correlated with stress and depression among the female participants.

These latter findings are not terribly surprising. Some time ago Babad (1974) questioned the use of typical humor scales that make use of preferences and ratings for certain kinds of jokes because they seem to bear no relationship to validity criteria such as peer ratings of the subject's sense of humor. More recently reported studies (Mannell & McMahon, 1982) have also found humor appreciation scores unrelated to criteria of pertinence to humor, whereas laughing and noting humorous incidents were associated with such criteria as well-being. As for self-ratings of one's funniness, like those assessed by the Humor Uses Inventory, social desirability always has proven to be a major problem. When Gordon Allport (1961) attempted to study humor as a personal trait, he found that 94% of his subjects claimed to have an average or above-average sense of humor. Given the shortcomings of the devices used by Safranek and Schill (1982) to measure humor, it would seem wise not to put undue weight on their negative results.

In our own research we have developed two scales for the assessment of humor, the Situational Humor Response Questionnaire (SHRQ) (Martin & Lefcourt, 1984) and the Coping Humor Scale (CHS) (Martin & Lefcourt, 1983). The former was designed in a similar way as Endler, McV. Hunt, and Rosenstein's (1962) S-R Inventory of Anxiety. That is, subjects are not asked to directly evaluate their own sense of humor so much as to describe the magnitude of their potential humor responses to a number of situations that vary in their potential for evoking mirth. Thus, subjects describe how often and to what degree they are apt to exhibit mirth in situations that could be potentially irritating as well as funny. We have interpreted the scores on this measure as revealing a sense of bemusement, the likelihood that one will adopt a somewhat distant and humorous vantage point in situations that could be mildly irritating if they were taken as self-affronts.
The CHS, on the other hand, asks simply if the subject uses humor as a means of coping with stress. Both of these scales have been used with fair-sized samples so that there are well-established norms; and there is sufficient validity data for each scale to attest to its value as a measure of humor. Both of these scales have been used along with behavioral measures of humor and another humor questionnaire (Svebak, 1974) in the prediction of mood disturbance following stressful events.

In the first study (Martin & Lefcourt, 1983) conducted with 56 university undergraduates, the SHRQ, the CHS, and the Liking of Humor subscale from Svebak’s Sense of Humor Questionnaire were each found to produce significant interactions with a measure of life stress (Life Events of College Students [Sandler & Lakey, 1982]) in the prediction of Total Mood Disturbance Scores from the Profile of Mood States ([POMS] McNair, Lorr, & Droppleman, 1971). The stress measure assessed life changes that had occurred throughout the year while the mood disturbances were from the month immediately prior to participation in the study. In subsequent analyses of these effects, humor was found to have acted as a stress moderator. That is, subjects whose scores on each of the humor measures indicated that they had a good sense of humor were less likely than those who had a lesser sense of humor to be predictable on the POMS from the stress measure. The relationship between stress and mood disturbance was much lower for those with a good sense of humor than for others who had a lesser sense of humor.

Subsequently, we conducted a second similar study with another sample of 62 university students. The measure of stress was the Life Experiences Survey (Sarason, Johnson, & Siegel, 1978) and the mood measure was again the POMS. In this study, however, instead of relying on scales, we obtained a measure of humor productivity using a technique described by Turner (1980). Participants were seated at a table on which there were about a dozen miscellaneous objects such as an old tennis shoe, a crushed beer can, a toothbrush, an aspirin bottle, and so forth. The participants were then asked to make up a 3-minute comedy routine incorporating any or all of the objects in as humorous a way as they could. The skits that had been tape recorded were later scored for number of witty remarks and overall Wittiness. These two measures of humor were found to be strongly correlated and consequently were combined into a composite humor index.

Like the previous study, we found a significant interaction between stress and humor in predicting total mood disturbance on the POMS. In the analysis of that interaction, we once again found humor to operate as a moderating variable. Participants who were able to produce humor showed less of a relationship between stress and mood disturbance than did those who were less able to be humorous on this difficult and demanding task.

Finally, 25 of those who had participated in our first study and who had volunteered for further experimentation comprised the sample for our third investigation. The same life stress and mood disturbance scores were used. For humor scores, we again relied on a humor productivity measure, this time one that was most like producing humor in a stressful situation. Subjects watched the film Subincision, which had been used as a stressor in laboratory research conducted by Lazarus (1966). They were then asked to create a humorous monologue to accompany the film, which portrays ritual genital mutilation among the aborigines in Australia. The monologues they created while watching the film were recorded and later scored for witiness in the same way as humor productivity had been scored in the second study.

Once again, a significant interaction was obtained between stress and humor in the prediction of mood disturbance. When the interaction was further examined, the pattern of the results was the same as in the previous studies. Those who were unable to produce humorous monologues evinced a strong relationship between stress and mood disturbance scores. Mood disturbance scores for subjects who could produce humor in this exceedingly difficult situation, on the other hand, were unpredictable from the measure of stress.

The results of these studies provided considerable support for the hypothesized stress moderator role for humor. Five different measures of humor produced consistent effects: stress had less of a uniform impact among subjects who had a good sense of humor than it did for those bereft of humor. In other words, some of the subjects with a good sense of humor showed little emotional impact from stressful experiences while others did reveal mood disturbance. Among those with a lesser sense of humor, stressful experiences were more likely to arouse negative emotions in the larger number of subjects.

Following the presentation of our research, two
other investigations were published that found mixed results regarding the stress-moderator role of humor. Porterfield (1987) attempted to replicate our studies using both the SHRQ and CHS as measures of humor and the College Student Life Events Schedule (Sandler & Lakey, 1982), which we had used as the measure of stress. On the other hand, Porterfield used the depression scale from the Center for Epidemiological Studies Scales (CES-D) Radloff, 1977) as opposed to the POMS. The sample size was also larger than ours: 220 Oberlin undergraduates.

The results in Porterfield's study were quite different from what we found in our investigations. First of all, both humor measures were found to produce main effects in the prediction of depression, with humor scores being inversely related to depression. In none of our samples did we obtain main effects between humor and mood disturbance. In addition, there were no interactions to be found between stress and humor and, therefore, no moderator effect to be attributed to humor. Porterfield concluded that the moderator effect of humor was questionable. There was one other difference, however, in Porterfield's study that might help to account for the discrepancies between the results found in his study and ours. Porterfield's sample had a rather high mean on the depression measure ($M = 19.42$), which was more than one standard deviation above that of Radloff's (1977) normative sample ($M = 9.25, SD = 8.58$). Quite conceivably, humor may not be an operative moderator for those who are at least moderately depressed. While there is no definitive way to interpret the negative findings in Porterfield's study, sample differences lead us to evaluate his findings with caution.

The one other major study which attempted to test the moderator effects of humor (Nezu, Nezu, & Bliss, 1988) did offer some support for the findings that we had obtained earlier. This study was particularly valuable because the investigators obtained both concurrent and prospective data in the prediction of depression and anxiety. Eighty-seven college undergraduates were administered the BDI, STAI, and LES twice with a 2-month interval. During the first testing they were also administered the CHS and SHRQ.

In the concurrent analysis, both the CHS and SHRQ produced significant main effects in the prediction of depression along with the LES. In addition, the product or interaction between the stress measure and each of the humor scales also was significant, adding predictive power beyond that produced by each variable itself. In a close examination of these results it was evident that while negative life experiences were associated with depression, and an absence of humor also betokened depression, it was particularly the less humorous individual undergoing highly stressful experiences who seemed most destined to become depressed.

When the prospective data were examined, similar findings were in evidence. With depression assessed during the first testing period parcelled out, depression at the second testing session was predictable from LES scores for events that had transpired between the two assessments, from the humor measures obtained during the first session, and from the interactions between LES scores and each of the humor scales. Depression seemed most likely to occur among those who had the greater number of negative life experiences and who had a lesser sense of humor. In essence, the data from the concurrent investigation were replicated in the prospective data set.

In complete contrast, nothing was found in the data concerned with anxiety. Anxiety, like depression, was predictable following the experience of negative life events in both the concurrent and prospective data sets. However, humor, although negatively correlated with anxiety scores at both the first and second testing sessions, failed to add significant variance to that of stressful events in regression analyses predicting to anxiety.

The authors offered an interpretation for the divergent findings with anxiety and depression in temporal terms. They suggested that if anxiety may be regarded as an affect associated with the anticipation of negative events and depression can be considered a response to events that have already occurred, then the role of humor would be more of an aid in the coming to terms with past events. The absence of similar findings with anxiety may indicate that humor is not as much a tool for dealing with ongoing or upcoming threats as it is a means of coming to terms with stressful events once they have transpired. In other words, humor in this study would seem to reflect what has been termed emotion-focused coping as opposed to the more instrumentally focused type of coping that would be more useful in warding off potentially anxiety-arousing circumstances.

Finally, in a brief article Trice and Price-Greathouse (1986) reported that among 40 patients who had been assessed for humor with the
CHS and were observed for joking and laughter before dental surgery, those who gave greater evidence of humor had less stressful subjective experiences during surgery.

Though there obviously has been some variation in the results obtained in the aforementioned investigations, there is reason to believe that humor does play a role in the moderation of stress. In our studies, that we obtained interactions indicating stress moderation with five different measures of humor in two separate samples, lends substantial support for the hypothesized value of humor as a stress-moderating personality characteristic.

The results obtained by Nezu et al. (1988) likewise support the stress-moderating role of humor in the development of depression. That these investigators found support in both concurrent and prospective data adds substantially to the claims for the efficacy of humor as a stress moderator. On the other hand, that their results held true only for depression and not anxiety suggests that humor may indicate a style of coping that is more effective for coming to terms with already experienced events than it is for dealing with ongoing threatening circumstances.

Whereas these studies afford positive evidence in support of the stress-moderating role of humor, the studies by Porterfield (1987) and by Safranek and Schill (1982) at least give us reason to question the universality of these findings. Despite the sampling problems in one and the questionable instruments in the other study, the failure to find stress moderator effects in these investigations indicates that the moderator effects that have been reported are not always to be found. The nature of the measuring devices and the characteristics of the subject sample may serve to limit or enhance the likelihood of finding the moderator effects noted in the other studies.

HUMOR AND COPING WITH EMOTIONAL DISTRESS

The literature concerned with humor as a means of dealing with emotional duress is somewhat slender. However, in those studies that have explored the impact of humor on mood, the results are fairly consistent: Those who laugh more readily and are more apt to respond with humor to life's circumstances seem more likely to emerge from emotional duress and enjoy a restoration of positive mood states.

Among the earliest studies concerned with the power of humor to alter mood states were those by Dworkin and Efran (1967) and Berkowitz (1970). In the former, subjects were demeaned by an experimenter for the way in which they had completed autobiographical sketches that they had been asked to write. Following this deliberate arousal of anger, subjects completed a mood adjective checklist on which they readily acknowledged their anger. Subjects in the experimental condition were then asked to listen to one of two humor tapes; one that contained decidedly hostile and the other nonhostile humorous skits that subjects were to rate for humorousness. The control group, in contrast, listened to nonhumorous tapes that were to be rated for "interest level." A second measure of mood states was then obtained.

The resulting data revealed that there were significant decreases in hostility scores for subjects listening to either set of humor tapes, while no changes were found among those who had listened to the control tapes. Contrary to the investigators' hypotheses, hostile humor did not differ from nonhostile humor in serving to lessen the hostility scores. Similar effects were also found for anxiety scores obtained from the mood adjective checklist. That is, the humorous tapes served to lessen the anxiety reported by subjects after they had been berated by the experimenter. These findings led the authors to conclude that humor mitigates feelings of hostility and anxiety.

Berkowitz's (1970) study likewise dealt with the role of humor in the lessening of anger. In his study, the subjects who were female university students memorably listened to a job applicant who spoke rather disdainfully about college women. Given a ruse that the experimenter had to leave to get the correct forms to continue the study, subjects were asked as a favor to listen either to a tape of skits by a hostile (Don Rickles) or nonhostile (George Carlin) comedian, and to rate it for humor. These tapes were presumably going to be used in another study. After rating these tapes, the experimenter reappeared and gave the subject the correct forms on which she was to make judgments about the job applicant and then to record her affect states on the Nowlis Mood Scale (Nowlis, 1965).

The findings revealed that the subjects became more unfavorable to the irritating job applicant following their exposure to the hostile humor presentation. Descriptions and ratings were decidedly more negative. Most importantly, on the mood
measure subjects who had listened to the hostile humor tape were characterized as forgiving-kindly, and refreshed-pleased in contrast to those who had heard the nonhostile humor tape, and were equivalent moodwise to those control subjects who had been exposed to a nonirritating job applicant. The hostile comedy skit then was seen as relatively tension reducing for the girls who had been angered.

More recently, Martin, Labott, and Stote (1987) reported similar findings about the effectiveness of humor as a mood reverser in a study of crying. In this investigation, subjects completed a depression adjective checklist and a measure of anger derived from the POMS before and after watching the movie Brian's Song. Following the presentation of the movie, subjects either waited for 15 minutes, listened to humorous skits by George Carlin and Robin Williams, or saw the last 15 minutes of the movie again.

As could have been anticipated, crying persisted the most if subjects were exposed to the climax of the movie for a second time. Those who simply had to wait for 15 minutes showed a partial recovery; that is, there were still some signs of sniffing and tears. The humor group, on the other hand, recovered completely, ceasing to cry at all. These findings also were borne out in mood measures. All subjects showed an increase in depression following the movie presentation. Only those subjects who had listened to the humorous sketches, however, evinced a complete recovery of premovie mood states.

Findings such as these have been found elsewhere as well. For example, Singer (1968) found a decrease in tension among black adults following the presentation of a humorous tape recording in which white segregationists were the targets of humorous monologues. Thus, in most studies, humor seems capable of altering prevailing negative mood states, eliminating feelings of depression, and decreasing feelings of anger or tension in the others.

Despite the consistency with which humor is found to alter mood states, there has been little work done that would elucidate the ways in which humor serves to relieve people from negative feelings. Assumably, emotion-focused coping skills would be involved, and it could be hypothesized that persons who more readily respond with humor are usually better able to cope with their own emotional responses than are persons less given to humorous responses. There has been some research concerned with the relationship between humor and coping processes that may help to shed some light on the processes by which a sense of humor may help alter mood states.

One of the more consistent findings concerned with individual differences in humor is that children who are adjudged or self-rated as having a good sense of humor are more likely to be assertive in their interactions with peers and in their social and academic activities. In some studies assertiveness has consisted of verbal and physical aggression, dominance, and talkativeness (McGhee, 1980; Bell, McGhee, & Duffey, 1986), whereas in others it has consisted of engagement in the school milieu, popularity, sociability, leadership (Masten, 1986; Pelligrini, Masten, Garvey, & Ferrarese, 1987; Sherman, 1988) and communicative competence (Carson, Sharpness, Schultz, & McGhee, 1986). This association between humor, assertiveness, and activity level mirrors earlier findings that linked humor with locus of control (Lefcourt, Sordoni, & Sordoni, 1974; Lefcourt, Antrobus, & Hogg, 1974). In those studies, humor was more likely to be found in tense situations among people who perceived themselves to be active determiners of their own experiences (internals) than it was among more fatalistic people. Because internals are more likely to be active in pursuit of their purposes than externals, these earlier results seem to cohere with those from more recent studies focusing on children's assertiveness.

These observations indicate that individuals with a good sense of humor are more likely to take an active stance toward their own experiences than are those with a lesser sense of humor. Therefore, it is reasonable to assume that people with a good sense of humor also would be more active in attempting to alter their unpleasant mood states rather than to endure them passively. This assumption is supported in the above-mentioned studies in that children with a lesser sense of humor were found to be more shy, less engaged, and more socially distant from their peers, characteristics that seem to suggest passive endurance.

Further indications that humor is associated with more activity, or "approach" rather than "avoidance" coping styles, are found in two studies that have linked humor with self-monitoring. Turner (1980) found that high self-monitoring college students, who are presumed to be more socially astute and to have greater mastery of interpersonal skills than low self-monitors, were better
able to produce humor on demand in one study; in a second study, where subjects engaged in group interactions, high self-monitoring subjects were most likely to make humorous remarks and to be adjudged as funny by their peers. Similarly, Bell, McGhee, and Duffey (1986) found that among college students, those who commonly engage in self-monitoring of their expressive behavior were more likely to describe themselves as frequent initiators of humor. In a regression analysis of their data, these investigators found self-monitoring to be their strongest predictor of humor.

From other studies directly concerned with coping styles associated with humor and/or positive affect, further evidence accrues regarding the relationship between activity levels and humor. Positive mood states have been found to be related to humor. Mannell and McMahon (1982), for example, found evidence that the number of humorous incidents and frequency of overt laughter recorded in a "humor diary" were positively correlated with elation and surgey and negatively with anxiety, fatigue, and hostility on the Nowlis Mood Adjective Check List (Nowlis, 1965). In our work with humor and moods (Lefcourt & Martin, 1986), we have repeatedly found our humor scales positively related to the Vigor subscale of the POMS (McNair et al., 1971). Therefore, humor may often be a correlate of positive affect, although positive affect states also may occur without any incident of humor.

Viney (1986) examined the coping behaviors of more than 500 patients undergoing medical treatment in Australian hospitals. She found that patients who scored higher on a measure of positive emotions were more competent and more likely to be engaged in satisfying social relationships despite their illness. Positive emotionality was also associated with less depression, or indirectly expressed anger. Viney raised the question of whether the expression of positive emotion among the physically ill was evidence of defensiveness (avoidance) or coping (approach) behavior. Though she found some evidence for both interpretations, Viney concluded from the balance of her findings that positive emotions can more easily be regarded as coping behavior because they help individuals preserve their psychological integrity, which, in turn, helps to sustain physical integrity.

In Viney's approach, coping seemed to be defined in terms of competence and effectiveness in the encounter with stress, whereas defensiveness was inferred from a less than competent response to life ordeals. Viney then found evidence to the effect that positive emotions were related to more effective or competent reactions to illness, reactions that would offer better prognosis for recovery from illness.

In laboratory experimentation where positive affects were induced by humor or the receipt of small gifts, Isen, Daubman, and Nowicki (1987) found that subjects exhibited improved performance on tasks that required creative ingenuity for their solution: Duncker's (1945) candle task and the Remote Associates Test (Mednick, Mednick, & Mednick, 1964). In contrast, the arousal of negative affect or periods of physical exercise wherein affectless arousal occurred failed to have a similar impact. Positive affect, then, seems to be associated with more flexibility and/or ingenuity in problem-solving, which would mirror the findings of Viney regarding competence in the encounter with stressor.

In another study of coping styles associated with humor, Rim (1988) examined the relationships between an extensive measure of coping and both the SHRO and CHS (Lefcourt & Martin, 1986) measures of humor. More than 100 students completed a measure of coping styles deriving from Plutchik's (1980, 1981) work on emotions as well as the two humor measures. Among the coping styles evaluated were "minimization," whereby people minimize the magnitude of their problems, "suppression," which denotes the avoidance of even thinking about displeasing things, and "replacement," which indicates flexibility when thwarted in the pursuit of usual activities. Five other coping styles also were described, but it was on the three aforementioned coping strategies that the results for both sexes and both humor scales were the most uniform. The humor scales were positively associated with minimization and replacement, and negatively with suppression.

These findings complement those described earlier. Minimization and replacement reflect a "carrying on" despite adversity, whereas suppression reflects an avoidance or failure to contend with the details of one's stressful experiences. Rim's findings, then, mirror the approach versus avoidance and activity versus passivity dimensions that characterized persons differing in their sense of humor in other investigations.

What may we conclude from these investigations with regard to the ways in which people
come to terms with the affective consequences of stress? It seems as though people with a good sense of humor are less likely to passively accept the negative affects that accompany stressful experiences. Humor seems to signify an active and assertive orientation that augurs a readiness to change feelings and, perhaps, an impatience with negative affects such as anxiety and depression. The tendency to minimize and replace one pursuit with another suggests that the person with a good sense of humor does not as easily accept the experiencing of negative emotions for a lengthy time as might their less mirthful peers.

It is still somewhat mysterious and perhaps beyond the purview of psychological methods to know what exactly occurs when people deal with their immediate experience of negative affects. We are most often left with self-reports of events and experiences that have already transpired. To examine the moment in which a person shifts from one affective state to another, or to closely observe the process of recovery from mourning, for example, might more clearly reveal to us how humor plays a role in the response to emotional experiences.

**HUMOR AND THE DEVELOPMENT OF ILLNESS**

Stress has been implicated as a source of illness for a considerable length of time, and in the past two decades there has been much research reported indicating that negative life events, comprising the definition of stress, are often precursors of illness. However, as noted in the introduction to this chapter, although the relationship between stress and illness is significant and reliable, there is still considerable room for variation, which has provoked researchers to explore the effects of a number of moderator variables, such as beliefs about control and social support, that could account for differential susceptibility to illness.

Because negative life experiences assumably create dysphoric moods that in turn are said to eventuate in illnesses, it occurred to Norman Cousins (1979) that positive moods associated with humor might have the reverse effect of somehow strengthening people’s resistance to and aiding in the recovery from illness. In his self-experimentation he found some supporting evidence to the effect that laughter served to ease his pain and enabled him to sleep. In addition, the sedimentation rates assessed from his blood samples, which indicate inflammation, decreased following laughter, when it had been steadily increasing before his therapeutic use of humor.

Recent evidence offers some support for the analgesic qualities of humor. Cogan, Cogan, Waltz, and McCue (1987) found that thresholds for pressure-induced discomfort increased following the presentation of a humorous tape recording that produced laughter among subjects. The humorous tape was contrasted with relaxing and boring tapes in one study, and with an interesting narrative, a boring narrative, a multiplication task, or simply waiting in a second investigation. In the first study both humor and relaxation had positive effects upon pain thresholds; in the second study it was only humor that served to raise the threshold for pain.

A study by Pniest and Ruma (1987) presented data suggesting that humor could play a role in facilitating muscle relaxation. In this investigation, which was designed to find facilitators of biofeedback, subjects who had looked at any of three series of cartoons showed a marked decrease in muscle tension as measured by electromyogram, and an increase in relaxation as the session progressed, compared with a control group that viewed slides that depicted forest scenery. On mood measures (Nowlis-Green Mood Adjective Checklist, Nowlis, 1965) administered after the relaxation experience, control subjects reported fatigue, whereas subjects exposed to humor reported elation and vigor. In these two studies, then, some evidence was found that at least indirectly supports Norman Cousin’s conjectures regarding humor, pain, and relaxation.

In our own labs we have found some preliminary evidence suggesting that humor as a personality characteristic, measured by the SHRQ and CHS, affords some prediction of blood pressure changes among subjects undergoing stressful tasks. Throughout a set of tasks, including the Stroop Test (Manuck & Krantz, 1986), the Favorable Impressions Task (Borkovec, Stone, O’Brien, & Kaloupek, 1974), in which the subject is supposed to impress a nonresponsive member of the opposite sex, and the Mental Arithmetic Task (Williams, Lane, Kuhn, Melosh, White, & Schanberg, 1982), 20 measures of systolic and diastolic blood pressure were obtained. Thus far, we have found that our SHRQ has an average negative correlation of .30 with the 20 measures of blood pressure that were taken during these tasks. The results seem to be even more marked with females,
among whom correlations have averaged in the .40 range.

Where the first two studies indicate that humor can help relieve pain and muscle tension, our developing work suggests that humor may also serve to lessen the arousability that can occur during stressful situations. The implications for health are apparent here. In the work with blood pressure we may be examining early indications of hypertension, which is a condition responsible for the development of various circulatory problems.

Another set of research findings have drawn attention to the role of humor and positive affect in the functioning of the immune system. In attempting to explain the relationship between stress, mood disturbance, and illness, immune system failure often is cited as the intervening step between mood and illness. A number of investigators have reported that distress and emotional upset can depress the functioning of the immune system, which would leave an individual more susceptible to illness (see, i.e., Glaser, Kiecolt-Glaser, Speicher, & Holliday, 1985; Jemmott & Magloire, 1988; Kiecolt-Glaser, Fisher, Ogorcki, Stout, Speicher, & Glaser, 1987; Kiecolt-Glaser, Kennedy, Malkoff, Fisher, Speicher, & Glaser, 1988; McClelland, Floor, Davidson, & Sarson, 1980; McClelland, Ross, & Patel, 1985). Because negative mood states following stressful experiences have been found to be associated with a decline in immune system functioning and illness, it is not surprising that certain investigators recently have begun to explore the opposite side of the coin: the possible beneficial effects of humor and positive mood states on immune system functioning.

The first study to directly link humor with immune system activity was reported by Dillon, Minchoff, and Baker (1985). In this investigation with only nine subjects, humor was found to be associated with the production of salivary immunoglobulin A (S-IgA). S-IgA is often regarded as the body's first line of defense and is thought to defend against viral and bacterial infections, especially of the upper respiratory tract (Tomasi, 1976). In previous research, S-IgA concentrations have been found to be depressed when persons were undergoing stressful experiences such as examinations (Jemmott, Borysenko, Borysenko, McClelland, Chapman, Meyer, & Benson, 1983; Linn, Linn, & Jensen, 1984). Because S-IgA concentrations were found to be depressed following stressful experiences, Dillon et al. reasoned that positive moods activated by laughter or a sense of humor are associated with elevations in S-IgA concentrations. As the first of their findings, Dillon et al. found a rather high correlation ($r = .75$, $p < .02$) between the CHS measure of humor and levels of S-IgA from each of four saliva samples obtained during this experiment. Following the presentation of a humorous film (Richard Prior Live) there was also a significant increase in S-IgA concentrations. In contrast, S-IgA concentrations did not vary at all when a control tape was presented which offered a didactic discussion about anxiety. This investigation, though limited in value because of the small number of subjects used, was exciting in that it showed the first positive linkage between humor and the kinds of physiological processes that could have implications for the development of illness.

Following this report by Dillon et al. (1985), Martin and Dobbin (1988) examined the role of humor as a moderator of the relationship between stressful experiences and S-IgA suppression. In their experiment, the Daily Hassles Scale (Kanner, Coyne, Schaeffer, & Lazarus, 1981) was used as the measure of stress, with S-IgA concentrations obtained during a second test session, $1\frac{1}{2}$ months later, serving as the dependent measure. Humor was assessed by the SHRQ, CHS, and scales from Svebak's Sense of Humor Questionnaire (Svebak, 1974). The first point of interest to be noted was that S-IgA concentration levels obtained during the first testing session were not significantly related to the Daily Hassles scores obtained at the same time. However, the Daily Hassles scores from the first testing session were related to the concentration levels of S-IgA obtained at the second testing session some 45 days later ($r = -.32$, $p < .05$).

Most importantly, both the SHRQ and CHS measures of humor interacted with the Daily Hassles scores in regression analyses predicting the concentration levels of S-IgA. These results also were found with one of the two scales of Svebak's humor measure (Meta-Message Sensitivity scale). In each case, it was found that subjects with low scores on the humor scales revealed a stronger negative relationship between hassles and S-IgA concentrations than did those with high humor scores.

Martin and Dobbin (1988) therefore found evidence to the effect that humor serves to moderate the physiological effects of stress in the same way
that Lefcourt and Martin (1986) found humor to moderate the mood effects of stressful experiences: those who had a lesser sense of humor showed the greatest immunosuppressive effect following the experience of negative live events. Those with a good sense of humor, on the other hand, seemed to be less predictable from measures of stressful experiences.

In our own labs we also found evidence concerning the relationship between humor and S-IgA concentration levels (Lefcourt, Davidson-Katz, & Kueneman, 1989). We have thus far conducted three studies in which S-IgA has been assessed from salivary samples obtained before and after listening to or watching humorous tapes. We also have examined S-IgA responses as a function of sense of humor assessed by the SHRQ and CHS scales. In all three studies we have found S-IgA concentrations increased following the presentation of humorous tapes, whereas S-IgA levels remained stable in control conditions. In two of the three studies, subjects who scored higher on the humor scales showed larger increases in S-IgA concentrations following the exposure to the humorous tapes.

Although there is some dispute among investigators as to the ways in which S-IgA should be assessed, there are questions as to the value of S-IgA itself as an indicator of immune system activity, these findings are impressive in linking paper-and-pencil measures of a phenomenon such as humor with physiological processes associated with health.

Although there are no other articles directly linking humor to immune system functioning, there are some investigations that provide indirect evidence of this relationship by examining the association between positive mood states and the activation of the immune system. As noted earlier, humor and positive mood states are usually correlated with one another in a positive direction.

Stone, Cox, Valdimarsdottir, Jandorf, and Neale (1987) found that the Nowlis Mood Adjective Check List completed thrice weekly for 8.5 weeks by dental students was significantly related to concentrations of S-IgA that were measured in a more elaborate fashion than had been done in the previous investigations. Antibody responses were found to be lower on days when high negative moods were reported in comparison with days when less negative moods were noted. Conversely, S-IgA antibody responses were higher on days when there were highly positive moods recorded relative to days when less positive moods were recorded.

Although there have been no other studies directly linking humor, positive affect, and immune system activity, and there is a dearth of research using more profound immune system activity markers (natural killer cells, suppressor T lymphocytes, etc.), the studies described above are promising. Further work using a range of immune system markers, as in the research of Kiecolt-Glaser and her colleagues, may help to shed more light on the relationships between affect and immune system activity. In her studies of stressed individuals, Kiecolt-Glaser has found evidence indicating that husbands and wives in happier marriages have more active immune system responses than those experiencing discord or separation (Kiecolt-Glaser et al., 1987, 1988). Though her work is mostly concerned with immunosuppression among the distressed, the control groups who can be assumed to be happier are usually found to evince stronger immune system responses.

In sum, although we are only at the preliminary stages of exploration, there is reason to be optimistic regarding the role of humor in the relationship between mood and health. People with a better sense of humor, who are more likely to find things to laugh about, seem better equipped to survive the ordeal of pain and to resist intrusive illnesses, at least insofar as the data regarding immune system activity seems to indicate. Obviously, much more research is necessary before this assertion can be regarded as reliable. However, early indications would suggest that humor may prove to be valuable in the struggle to sustain health.

WHY HUMOR HAS BENEFICIAL EFFECTS ON HEALTH

Earlier in this chapter we alluded to the writings of Freud concerning humor as a means of perceiving our conundrums as "child's play." In his article on humor, Freud (1928) drew sharp differentiation between jokes, wit, the comic, and what he referred to as humor. The former kinds of humor more often seem to involve invidious comparisons and hostile expressions toward others. Humor, on the other hand, seems to be of a gentler sort, where the joke, if there is one, is self-directed; and it is this sort of humor that we have come to believe has the greatest potential for affecting health status. If witty joking does indeed contain
the barbs of anger and hostility, then such forms of humor are probably abrasive and serve to solidify negative relationships between persons. The joker affirms his position with his joking and ascribes the targets of the joke to their positions. Much of the sociological study of joking reflects the role-maintaining behavior that is implicit in joking (Coser, 1959, 1960; Kaplan & Boyd, 1965).

In contrast, the discussion of humor as consisting of self-directed jesting offers a form of cognitive and affective activity that seems to be more congruent with the findings noted above than are the more hostile forms of humor comprising much of wit and joking. Humor may be viewed as an expression of not taking oneself terribly seriously. That is, humor may be in evidence when some stressful events, variations of moods, and our fates in general are regarded from a somewhat remote position wherein bemusement can also be experienced.

Rollo May (1953) described this form of humor:

It is an expression of our uniquely human capacity to experience ourselves as subjects who are not swallowed up in the objective situation. It is the healthy way of feeling a "distance" between oneself and the problem, a way of standing off and looking at one's problems with perspective. One cannot laugh when in an anxiety panic, for then one is swallowed up, one has lost the distinction between himself as subject and the objective world around him. (p. 54)

A similar position is advanced by the writer, George Mikes (1971):

There is nothing self-effacing in a sense of humor. Laughing at oneself does not mean that one is inferior to others; it means that we accept ourselves as erratic, foolish and bungling as all our fellow creatures are . . . to laugh at oneself does not mean to be modest, insecure, unsure. A man who is unsure usually takes himself deadly seriously and is given to watching himself anxiously at all times. (p. 36)

The SHRQ that we originally developed to assess humor as a kind of tendency to be bemused was designed to reflect the kinds of sentiments offered by Freud, May, and Mikes. In the scale we asked whether the subject would feel bemused by odd situations that might be embarrassing or annoying. One question, for example, dealt with the event of a waiter in a restaurant accidentally spilling a glass of water on the subject. It is quite acceptable to become upset at such a circumstance, and some people might become furious at such a turn of events. But what if one can instantly see the event from afar, adapting a "Why me?" kind of expression. As May suggested, this would indicate that one is not totally caught up in this objective situation; and Mikes might interpret our momentary victimhood as somehow personifying the victimhood of us all for a person with a good sense of humor, and therefore not being as arousing as it would be for a more self-serious person.

Following these considerations, Rob Shepherd (1989) explored the role of humor in allowing us to tolerate thoughts about our own mortality. We have been examining the relationship between humor and a number of activities that concern death, such as agreeing to donate body parts following death, writing wills, visiting dying persons, and so forth. We have found evidence to the effect that people with a better sense of humor as measured by the SHRQ are less emotionally disturbed by thinking about death and are consequently more inclined to donate body parts and to be willing to do things that remind us of our own transience.

We have regarded thoughts about our own deaths as one of the missing items from most measures of life stress, and we have considered humor to be a moderating variable that can account for differential responses to that threat. Thus far, we have been encouraged by our results. It seems that humor may reflect our not regarding ourselves as overly important, despite the central position we occupy in our own lives. Such humility, in turn, may enable us to engage in potentially stressful circumstances as are inherent in considering our own mortality.

In our attempts to better measure this kind of self-directed humor, we have created another device that assesses whether subjects comprehend the meaning of certain cartoons from Gary Larson's The Far Side. The cartoons selected all depict the absurdity of human conceit. We have developed a battery consisting of six of these cartoons, and have discovered that persons who can laugh and talk about the absurdity of human pretensions vis-a-vis other species reflected in the cartoon battery are less disturbed by exercises that make their own deaths quite salient (filling out one's own death certificate, writing an obituary for oneself, etc.).

Assumably, if we can accept our own mortality, if we are more tolerant and less serious about
many of the absurd, embarrassing, or demeaning circumstances that we are bound to endure, we should experience less ire and negative affect, which exacts such a high price from our health status.

CONCLUSIONS

While the data we have presented indicates that humor may have an important and positive role to play with regard to health, it is obvious that much more needs to be known before we can join those nurses and clinicians who advocate the use of humor in medical and therapeutic settings (Fry & Salameh, 1987). It seems obvious, if only from the fact that people seek out exposure to comedians and generally prefer to be with people who have a good sense of humor, that humor is something good and desirable.

From the research described in this chapter, the liking of humor seems to be related to the fact that we feel better and enjoy more positive feeling states when we laugh and find things funny. In turn, these positive affect states seem to be associated with feelings of well-being and health. At each juncture of the process that begins with stress and ends with illness, there is evidence that positive affect states associated with humor play a facilitative role in enabling us to survive, if not totally unscathed, then at least less perturbed. There is evidence that mood disturbance may not follow as inevitably from stress among persons who have a good sense of humor; likewise, there is evidence that humor can reverse the affects in situations where stress has resulted in a degree of anguish; and finally, there is some evidence that humor and positive affective states have a physiological counterpart that seems to be positive in our resistance to illness. However, despite the optimism that such evidence can produce, we must remember that the evidence is all quite preliminary, and much more needs to be understood before we become too sanguine about the effectiveness of humor in affecting our health.

REFERENCES


