

Adult Attachment and Distress: The Mediating Role of Humor Styles

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ABSTRACT - This study examined whether adaptive and maladaptive humor styles mediated or moderated the relationship between individual differences in adult attachment orientations and levels of distress in a community sample of Israeli adults ($N = 389$) using Structural Equation Modeling. The results indicated that attachment anxiety and attachment avoidance were positively related to the use of maladaptive humor styles and that maladaptive, but not adaptive humor styles mediated the relationships among both attachment anxiety and avoidance and higher levels of distress. In contrast, the use of adaptive humor was associated with lower levels of distress. Moreover, there was no evidence for any moderating effect of humor style on the relationship between adult attachment and distress. These findings have important implications for theories about stress and mood regulation, as well as for clinical interventions aimed at improving mood, reducing distress, and fostering resilience.

Research suggests that humor may play an important role in stress regulation and resilience (see Martin, 2001, 2007, for a review). Given the growing evidence for a close link between humor, interpersonal relationships, and stress regulation (Gervais & Wilson, 2005; Martin, 2007; Taber, Redden, & Hurley, 2007), there is increasing interest in the role of humor styles in the relationships among attachment, stress, and resilience (Cann, Norman, Welbourne, & Calhoun, 2008; Miczo, Averbek, & Mariani, 2009). Yet, studies that have directly investigated the relationships between attachment, humor styles, and distress are currently lacking. To address this gap, the present study aimed at investigating whether humor styles mediate or moderate the relationship between adult attachment and distress. First, we discuss theoretical conceptualizations linking humor with attachment and discuss relevant empirical research below. We then present an outline of the present study's aims and hypotheses.

Humor Styles and Affect Regulation

Martin and colleagues (Martin, Puhlik-Doris, Larsen, Gray, & Weir, 2003), distinguished between four relatively independent humor styles based on whether humor is (a) used to enhance either the self or others, and (b) adaptive versus maladaptive for the self or others. Among the adaptive styles of humor, *affiliative humor* refers to a tendency to use humor to amuse others, facilitate interpersonal relationships, and reduce interpersonal conflict and tension; whereas *self-enhancing humor* involves a tendency to maintain a humorous perspective on life, even in the face of adversity. Studies have shown the positive effects of these humor styles on mood, well-being, and relationship functioning (e.g., Butzer & Kuiper, 2008; Cann et al., 2008). Hence, the use of these forms of humor should be expected to be associated with the effective regulation of stress.

In contrast, *self-defeating humor* refers to a form of humor that involves the use of humor to amuse others by being funny at one's own expense and/or using humor to gain love and approval. *Aggressive humor* refers to a humor style that involves teasing and ridiculing others to enhance the self. Both forms of maladaptive humor styles (i.e., self-defeating and aggressive) can be expected to be associated with failure to regulate stress. The use of maladaptive humor styles has indeed been associated with increased distress (Besser, Luyten, & Blatt, 2011; Besser & Zeigler-Hill, 2011) and lower levels of well-being (Martin, 2007), loneliness (Fitts, Seby, & Zlokovich, 2009), lower levels of relationship satisfaction (Cann et al., 2008), lower self-esteem (Zeigler-Hill & Besser, 2011), and more social rejection (Kuiper & Leite, 2010).

Attachment and Affect Regulation

A growing body of empirical research has extended the study of attachment beyond childhood, suggesting that the quality of early attachments may have long-term repercussions in various areas of adult life. Adult attachment research has focused on the roles of attachment anxiety and avoidance (Brennan, Clark, & Shaver, 1998; Mikulincer & Shaver, 2003, 2007) in emotional self-regulation (e.g., Mikulincer & Shaver, 2003) and in individuals' responses to stress (e.g., Besser & Priel, 2003, 2005, 2006, 2009; Mikulincer, Birnbaum, Woddis, & Nachmias, 2000; for a review, see Mikulincer & Shaver, 2007). Individuals with high attachment-anxiety scores tend to intensify negative emotional states (hyperactivation strategies) whereas those with high attachment-avoidance scores tend to distance themselves from emotional situations (deactivation strategies), and appear to be less sensitive to stress and distress than individuals with high attachment-anxiety scores (see Mikulincer & Shaver, 2007, for a review).

Attachment and Humor Styles

Self-defeating humor was found to be typical of individual adults with insecure, especially anxious, attachment; whereas the use of self-enhancing humor has been associated with secure attachment. Additionally, insecure attachment, particularly attachment avoidance, has been found to be negatively related to the use of affiliative humor and positively related to the use of aggressive humor (Cann et al., 2008; Kazarian & Martin, 2004; Martin, 2007; Miczo et al., 2009; Saroglou & Scariot, 2002; Taher, Kazarian, & Martin, 2008). Moreover, the use of maladaptive humor styles has been

associated with disruptions in early attachment experiences (Dozois, Martin, & Bieling, 2009; Kazarian, Moghnie, & Martin, 2010). Yet, as noted, no study to date has investigated whether humor styles mediate or moderate the relationship between adult attachment and distress.

The Present Study

In light of recent research concerning the mediating role of humor in outcomes associated with personality vulnerability factors, such as grandiose and vulnerable narcissism (Besser & Zeigler-Hill, 2011; Zeigler-Hill & Besser, 2011) and self-criticism and neediness (Besser et al., 2011), we were interested in examining whether humor styles mediate the associations among insecure attachment-related anxiety and avoidance orientations and distress. To the best of our knowledge, this is the first study to explore the possible mediating or moderating role of humor in the relationship between individual differences in adult attachment (i.e., attachment avoidance and anxiety) and distress (i.e., severity of depression and perceived stress).

We first tested a mediational model. We hypothesized that both attachment anxiety and attachment avoidance would be positively related to the use of maladaptive humor styles and negatively related to the use of adaptive humor styles. From the above, it can be hypothesized that individuals with high levels of attachment anxiety and avoidance primarily use maladaptive humor styles in their attempts to regulate stress. Individuals using hyperactivation strategies can be expected to primarily use self-defeating humor styles, depicting the self as inferior in their attempts to receive care, love, and attention (e.g., “I let people laugh at me or make fun at my expense more than I should”). Moreover, although individuals with high levels of attachment anxiety may be expected to avoid using aggressive humor for fear of alienating others, they may also use aggressive humor defensively to deny feelings of rejection and assert the self (Martin, 2007). Likewise, although individuals using deactivating strategies can be expected to primarily use aggressive humor to assert their autonomy and independence, they may also use self-defeating strategies in an attempt to gain approval and recognition. Hence, both maladaptive humor styles may be associated with both attachment anxiety and attachment avoidance. Moreover, because attachment insecurity has been related to ineffective stress-regulation strategies (Fredrickson, 2001), we expected both attachment anxiety and attachment avoidance to be negatively related to the use of adaptive humor styles.

Furthermore, in this model, maladaptive humor styles were expected to be positively related to distress and adaptive humor styles were expected to be negatively related to distress, in line with previous findings. Finally, we expected adaptive and maladaptive humor styles to mediate the relationship between adult attachment dimensions and distress.

We then investigated whether the use of high levels of adaptive and maladaptive humor interact with attachment anxiety and avoidance in the prediction of distress, and thus potentially moderate these relationships. More specifically, we expected that individuals with high levels of attachment anxiety and avoidance would exhibit high levels of distress only when they also used low levels of adaptive or high levels of maladaptive humor.

Method

Participants

Participants were 389 (169 men and 220 women) Jewish Israeli community adults, who each reported being currently involved in a serious and committed intimate romantic relationship. Participants were unmarried young adults in their mid-20s ($M = 24.56$, $SD = 5.34$) who participated in a broader study concerning attachment, mood, and stress regulation in romantic relationships. Participants responded to a call for volunteers to take part in a study of "Personality and Humor", which was posted in various public areas (e.g., clubs, hotels, restaurants, shops). Only those who were currently involved in a serious committed romantic relationship and who agreed to take part in the study were invited to participate. Research assistants met the participants individually in their homes. Participants had, on average, more than 12 years of formal education ($M = 12.72$, $SD = 1.06$).

Measures

The Experience of Close Relationships-Revised (ECR-R; Fraley, Waller, & Brennan, 2000) was used to assess attachment anxiety and attachment avoidance. This scale contains 36 items derived from an item response theory analysis of existing self-report measures of adult attachment and assesses two dimensions underlying adult attachment: attachment avoidance (18 items; e.g., "I don't feel comfortable opening up to romantic partners") and attachment anxiety (18 items; e.g., "I'm afraid that I will lose my partner's love."). All items are scored using a 7-point Likert-type scale. Estimates of internal consistency in this study were $\alpha = .89$ and $\alpha = .88$ for attachment avoidance and attachment anxiety, respectively.

The Humor Styles Questionnaire (HSQ; Martin et al., 2003) is a 32-item measure comprised of four 8-item scales that assess the use of different styles of humor: Affiliative (e.g., "I laugh and joke a lot with my friends"), Self-Enhancing (e.g., "My humorous outlook on life keeps me from getting overly upset or depressed about things"), Aggressive (e.g., "If someone makes a mistake, I will often tease them about it"), and Self-Defeating (e.g., "I let people laugh at me or make fun at my expense more than I should"). Respondents indicate the extent to which they agree with each statement on a seven-point (1 = *totally disagree*; 7 = *totally agree*) Likert-type scale. Higher scores on this measure indicate that a particular style of humor is more descriptive of the respondent. Martin et al. (2003) reported internal consistencies Cronbach's of .80 for Affiliative, .81 for Self-Enhancing, .77 for Aggressive, and .80 for Self-Defeating humor. In the present sample, estimates of internal consistency were $\alpha = .71$, .76, .70, and .80 for Affiliative, Self-Enhancing, Aggressive, and Self-Defeating humor, respectively.

Distress. To assess mood and distress, participants were asked to complete the *Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977)* and the *Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983)*. The CES-D is a 20-item scale designed to measure severity of depression in the general population. In the present sample, the estimate of internal consistency value was $\alpha = .88$. The PSS is a self-report instrument that evaluates the level of perceived stress over the last month. It consists of 14 items that are scored using a 5-point Likert-type scale (0 = *never*, 1 = *almost never*, 2

= *once in a while*, 3 = *often*, 4 = *very often*). In the present sample, the internal consistency reliability coefficient was $\alpha = .91$.

Procedure

The current study was approved by the Ethical Committee of the Department of Behavioral Sciences of Sapir Academic College, Israel. All respondents provided written informed consent and were provided the opportunity to discontinue the study at any time. None chose to do so. Upon the interviewer's arrival, participants completed the questionnaire package individually. After participants completed the background questionnaire, they completed the ECR-R, HSQ, CES-D, and PSS. Potential order effects were controlled for by the randomized presentation of the questionnaires within and between participants. After they had completed the questionnaires, participants were given a written debriefing. Participation in the study was voluntary and participants were not paid or compensated for their participation.

Results

Data Analysis

We used Structural Equation Modeling (SEM; Hoyle & Smith, 1994) to investigate the proposed mediation model in two stages. We first conducted Confirmatory Factor Analysis (CFA; Anderson & Gerbing, 1988) to investigate the fit of a model with two correlated latent factors (i.e., Adaptive Humor and Maladaptive Humor), each defined by two observed variables, as previously confirmed and demonstrated using a CFA strategy in a sample of community adults (Besser et al., 2011) as well as in samples of university students (Besser & Zeigler-Hill, 2011; Zeigler-Hill & Besser, 2011).

SEM was then used to examine the combined direct associations between the attachment orientations (anxiety and avoidance) and distress¹. Finally, SEM was used to examine the proposed mediating model, in which we specified adaptive and maladaptive humor as mediators (controlling for their shared variance) of the association between the attachment orientations (anxiety and avoidance) and distress, following Baron and Kenny's (1986) criteria for mediation. Using this strategy, we first analyzed the direct associations between attachment and distress. Then, we specified the models of the direct and indirect associations. The following fit indices were used: the χ^2/df ratio, the Root Mean Square Error of Approximation (RMSEA and two-sided 90% confidence intervals), the Comparative Fit Index (CFI), and the Non-Normed Fit Index (NNFI). A model in which χ^2/df was ≤ 3 , the CFI and NNFI values were greater than .90, and the RMSEA index was between .00 and .06 with confidence intervals between .00 and .08 (Hu & Bentler, 1999) was considered acceptable. All analyses were conducted in AMOS (Version 18; Arbuckle, 2009) using the maximum-likelihood method. The zero-order correlations between the study variables are summarized in Table 1.

We evaluated the proposed mediational models by studying the sampling variability of estimates of the indirect associations using the bootstrapping method. Using AMOS, we implemented this procedure in the direct and mediational models, which involved

drawing 1,000 bootstrap samples (*SE* and 95%CI values based on the bias-corrected bootstrap are reported in parentheses). Moderation models were tested using hierarchical multiple regressions with interactions represented by product terms (Aiken & West, 1991) and ensured all of the conditions for omnibus regression analysis, substantially reducing the likelihood of Type I errors.

Table 1
Zero-Order Correlations Among the Study Variables

Variables	1	2	3	4	5	6	7	<i>M</i>	<i>SD</i>
Attachment Dimensions									
1. Avoidance	----							2.40	0.91
2. Anxiety	.25***	----						3.69	1.06
Humor Styles									
3. Affiliative	-.19***	-.02	----					43.35	6.62
4. Self-Enhancing	-.01	-.09	.38***	----				37.02	8.30
5. Aggressive	.13**	.06	.14**	.15**	----			27.49	7.62
6. Self-Defeating	.19***	.23***	.07	.18***	.29***	----		23.35	8.37
Distress									
7. Perceived Stress	.17***	.29***	-.15**	-.24***	-.01	.12*	----	23.33	6.98
8. Depression	.20***	.32***	-.19***	-.21***	.03	.19***	.62***	16.63	9.90

Note. *N* = 389. **p* < .05, two-tailed. ***p* < .01, two-tailed. ****p* < .001, two-tailed.

Confirmatory Factor Analysis – Scale Structure

The model with two latent factors (Adaptive Humor and Maladaptive Humor) had an acceptable fit [$\chi^2(1) = 2.4, p > .12, \chi^2/df = 2.4, NNFI = .98, CFI = .99, RMSEA = 0.05, 95\% (CI 0.000, 0.08)$]. All of the factor indicators and path-loadings were substantial and statistically significant in the expected directions. We also examined whether we could rule out the possibility of subsuming Adaptive Humor and Maladaptive Humor into one large Humor Styles construct, but this single latent construct model did not fit the data: [$\chi^2(2) = 27, p < .0001, \chi^2/df = 13.26, NNFI = .77, CFI = .77, RMSEA = .18, 95\% CI (0.12, 0.24)$] and had a significantly worse fit than the model with two latent constructs [$\Delta\chi^2(1) = 24.6, p < .001$]. Hence, we used the two-latent-factors model, each with two indicators, as previously confirmed and demonstrated using a CFA strategy in a sample of community adults (Besser et al., 2011) as well as in samples of university students (Besser & Zeigler-Hill, 2011; Zeigler-Hill & Besser, 2011).

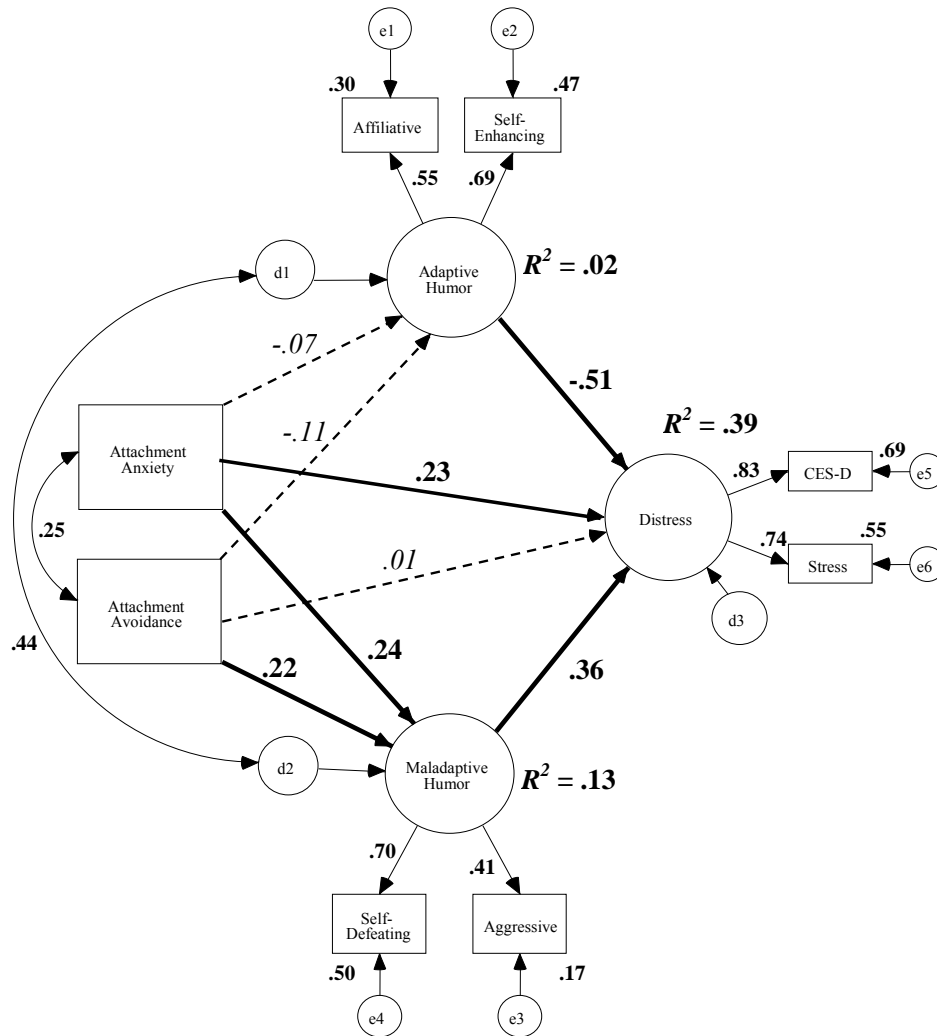
Direct-Association Models

The direct-associations model fit the observed data very well [$\chi^2(1) = 0.05, p > .82, \chi^2/df = 0.05, NNFI = 1.0, CFI = 1.0, RMSEA = .000, 95\% (CI 0.000, 0.08)$]. As expected, when controlling for the shared variance between Attachment Anxiety and Attachment Avoidance ($r = .25$), both dimensions were significantly associated with Distress [$\beta = .35, t = 6.08, p < .0001; SE = 0.45, CI (1.70, 3.68), p < .002$ and $\beta = .15, t = 2.64, p < .01; SE = 0.51, CI (0.35, 2.36), p < .01$, respectively]. This model significantly explained 17 % of the variance in Distress.

Mediation Models

The mediation model fit the observed data well [$\chi^2(12) = 29.14, p < .004, \chi^2/df = 2.43$, NNFI = .95, CFI = .96, RMSEA = .06, 95% (CI (0.03, 0.08))]. As shown in Figure 1, and as expected, Attachment Anxiety and Attachment Avoidance were significantly

Figure 1
The Combined Direct and Mediation Associations Between Adult Attachment Orientations and Distress



Note. Rectangles indicate measured variables and the large circles represent latent constructs. Small circles reflect residuals (e) or disturbances (d); bold numbers above or near endogenous variables represent the amount of variance explained (R^2). Bidirectional arrow depicts covariance and unidirectional arrows depict hypothesized directional links. Standardized maximum-likelihood parameters were used. Bold estimates are statistically significant.

associated with Maladaptive Humor [$\beta = .24$, $t = 3.02$, $p < .002$; $SE = 0.26$, $CI (0.27, 1.26)$, $p < .003$, and $\beta = .22$, $t = 2.57$, $p < .01$; $SE = 0.35$, $CI (0.22, 1.62)$, $p < .002$, respectively], which, in turn, was associated with Distress [$\beta = .36$, $t = 2.79$, $p < .005$; $SE = 0.37$, $CI (0.39, 2.03)$, $p < .002$]. Moreover, the relationship between Attachment Anxiety and Distress was partially mediated by Maladaptive Humor [$SE = 0.46$, $CI (1.076, 2.484)$, $p < .004$; $z = 2.11$, $p < .03$], as indicated by the finding that the direct path from Attachment Anxiety to Distress decreased in comparison with the direct-effects model, but still remained significant [$\beta = .23$, $t = 3.43$, $p < .001$; $SE = 0.62$, $CI (0.38, 2.9)$, $p < .02$].

As shown in Figure 1, the association between Attachment Avoidance and Distress was fully mediated by Maladaptive Humor [$SE = 0.82$, $CI (0.040, 3.011)$, $p < .05$; $z = 1.97$, $p < .05$], as the direct path from Attachment Avoidance to Distress after we included the humor styles as mediators approached zero and was no longer significant [$\beta = .01$, $t = 0.18$, ns ; $SE = 0.87$, $CI (-1.83, 1.48)$, ns]. Contrary to our expectations, Attachment Avoidance and Attachment Anxiety were not significantly associated with Adaptive Humor [$\beta = -.11$, $t = -1.22$, ns ; $SE = 0.55$, $CI (-1.71, 0.33)$, ns and $\beta = -.07$, $t = -0.97$, ns ; $SE = 0.28$, $CI (-0.80, 0.30)$, ns respectively]. Yet, there was a strong negative association between Adaptive Humor and Distress [$\beta = -.51$, $t = -4.20$, $p < .0001$; $SE = 0.35$, $CI (-2.00, -0.63)$, $p < .001$]. This model significantly explained 39 % of the variance in Distress. Thus, when humor styles (the mediators), were included in the model they added a significant 22% to the explained variance in Distress.

Moderation Models

We also performed a series of regression analyses to investigate possible competing models: (a) whether the use of high levels of adaptive and/or low levels of maladaptive humor interact with attachment anxiety and attachment avoidance in the prediction of distress and thus could possibly moderate these relationships and (b) whether individuals with high levels of attachment anxiety and attachment avoidance and high levels of distress tend to report greater use of maladaptive humor and less use of adaptive humor (i.e., investigating the possibility that distress levels interact with attachment anxiety and attachment avoidance to predict high levels of maladaptive humor and/or low levels of adaptive humor). None of the interaction terms was found to be significant in any of these analyses.

Discussion

This study not only confirms the findings of earlier studies (Cann et al., 2008; Kazarian & Martin, 2004; Martin, 2007; Miczo et al., 2009; Saroglou & Scariot, 2002; Taher et al., 2008) that have demonstrated that attachment anxiety and avoidance are positively related to maladaptive humor styles, but also extends those studies by showing that maladaptive humor styles mediate the relationships between attachment anxiety and avoidance, and distress. Hence, although anxiously and avoidantly attached individuals attempt to regulate distress through the use of humor, their use of inappropriate (i.e., aggressive and self-defeating) humor does not effectively reduce their distress. Actually, the use of maladaptive humor styles was associated with increased levels of distress. In particular, maladaptive humor styles fully mediated the relationship between attachment

avoidance and distress. Thus, inappropriate humor may not only be related to increased stress levels, but may also put relationships under (further) strain (Butzer & Kuiper, 2008; Cann et al., 2008), thereby inhibiting so-called broaden-and-build cycles (Fredrickson, 2001).

Although further research concerning this latter assumption is clearly needed, our findings are congruent with a body of research showing that both attachment anxiety and attachment avoidance are associated with so-called vicious maladaptive interpersonal cycles (Mikulincer & Shaver, 2007). This assumption is also congruent with recent studies showing that the use of maladaptive humor mediates the relationship between insecure attachment and interpersonal problems in close relationships (Cann et al., 2008), as well as the relationship between shyness and feelings of loneliness (Fitts et al., 2009). Moreover, further studies should test a theoretical model that might explain the processes involved. For example, do humor styles affect social interaction such that persons with more positive styles have more positive social interactions, more friends, and/or higher levels of social support? Or does humor affect the perception of interpersonal relationships and/or the interpretation of stressful events?

Second, and perhaps equally important, contrary to our expectations, attachment anxiety and avoidance were not associated with the use of adaptive humor styles. The finding that the use of adaptive humor does not moderate the associations between insecure attachment dimensions and distress suggests that even when individuals with high levels of attachment avoidance and anxiety use more adaptive humor styles, their use of these styles of humor is not associated with decreased levels of distress. Yet, congruent with recent theoretical speculations (Gervais & Wilson, 2005), the use of adaptive humor styles was associated with reduced levels of distress.

From a clinical perspective, the results of this study suggest that clinicians may attempt to model and encourage the use and appreciation of more adaptive styles of humor (i.e., self-enhancing, affiliative), which may lead to improvements in mood and reductions in distress and reduce attachment anxiety and avoidance, thereby fostering broaden-and-build cycles associated with attachment security (e.g., Lemma, 2000). Moreover, the findings of the present study indicate the importance of helping clients to recognize that their use of humor may be maladaptive and counterproductive. Further research is needed to substantiate these assumptions and to investigate the potential role of humor – including the lack of humor and inappropriate use of humor – in psychotherapy and psychosocial intervention strategies more generally. Despite a number of studies (e.g., Kidd, Miller, Boyd, & Cardena, 2009) suggesting the benefits of a focus on humor in clinical interventions, the role of humor in psychotherapy remains a neglected area of research.

The limitations of this study include its cross-sectional design. Further longitudinal studies are needed to disentangle the interactions among attachment styles, humor, and distress. Moreover, this study was conducted in a non-clinical community sample and the results may not generalize to other samples. Future research should address the effects of humor in clinical samples, particularly its effects on treatment outcome. Finally, this study relied exclusively on self-report measures and further observational and experimental research in this area is clearly needed.

Despite these limitations, our findings suggest that secure attachment is related to the use of adaptive humor styles, which lead to decreased distress, most likely reflecting the effective regulation of stress. These findings may have important consequences for theories about mood and resilience, as well as the role of humor in psychotherapy and clinical interventions more generally.

Footnote

1. We examined the normality of the distributions of the variables in the present study using the Kolmogorov-Smirnov test (K-S test), the Lilliefors test, and the Shapiro-Wilk test. The results of these tests indicated that the distributions of these measures were relatively normal (p values $> .45$). We also examined whether multicollinearity was a concern among attachment orientations, humor styles, stress and depression. Eigenvalues of the scaled and uncentered cross-products matrix, condition indices, and variance decomposition proportions, along with variance inflation factors (VIF) and tolerances from multicollinearity analyses, indicated the absence of multicollinearity.

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