The relationship of adult attachment dimensions to depression and agoraphobia

ESBEN STRODL AND PATRICIA NOLLER
University of Queensland, Australia

Abstract
We examined the unique relations between the five dimensions of the Attachment Style Questionnaire (ASQ; Feeney, Noller, & Hanrahan, 1994) and depression and agoraphobic behavior (i.e., avoidance of situations where high anxiety is experienced). In addition, we examined mediation models in an attempt to clarify the link between adult attachment and these two dimensions of psychopathology. In testing these models, we administered the ASQ, General Self-Efficacy Scale, Agoraphobic Catastrophic Cognitions Questionnaire, Beck Depression Inventory, and the Mobility Inventory for Agoraphobia (a measure of the degree to which situations are avoided that are typically anxiety provoking for people with agoraphobia) to 122 participants (44 with agoraphobia, 25 with a current major depressive disorder, and 53 with no current psychopathology). The results showed that the insecure attachment dimensions of need for approval, preoccupation with relationships, and relationships as secondary were uniquely associated with depression and that general self-efficacy partly mediated the relationship between need for approval and depression. In contrast, only preoccupation with relationships was uniquely associated with agoraphobic behavior, and catastrophic cognitions about bodily sensations partly mediated this association.

The goal of the present study was to examine the relationships between dimensions of adult attachment and two manifestations of psychopathology in adults: depression and agoraphobic behavior (i.e., avoidance of anxiety-provoking situations). We were interested in comparing how different aspects of adult attachment might be associated with these differing forms of psychopathology. As adult attachment has been conceptualized along only two to five dimensions, it is not possible for each of these dimensions to be uniquely associated with every diagnostic category of psychopathology. We wondered, however, whether certain patterns of attachment dimensions might be associated with particular dimensions of psychopathology.

Recent research (e.g., Cole-Dekte & Kobak, 1996; Fonagy et al., 1996) has indicated a relationship between attachment and adult psychopathology. One particular area of this research receiving increased attention is the association between depression and adult attachment (Murphy & Bates, 1997; Reinecke & Rogers, 2001; Roberts, Gotlib, & Kassel, 1996; Strahan, 1995). Studies in this area have found associations between attachment and depression using forced choice, as well as two, three, and four subscales of attachment. Although there is compelling evidence for a significant separation between secure and insecure attachment, there is also empirical evidence that insecure attachment can be further partitioned into four dimensions using the Attachment Style Questionnaire (ASQ; Feeney, Noller, & Hanrahan, 1994). As yet, no study has examined the relationship between a five-factor conceptualization of adult attachment and depression or agoraphobia.
Dimensions of adult attachment

The confidence dimension of the ASQ assesses the extent to which individuals are confident about themselves and about their relationships with others. Those high in confidence find it easy to trust others and to get along with others, and do not mind depending on others or having others depend on them. The four insecure dimensions of the ASQ are discomfort with closeness, need for approval, preoccupation with relationships, and relationships as secondary. Those high in discomfort with closeness have difficulty trusting others, depending on other people, or having other people depend on them. Those high in need for approval believe it is important that others like them, worry that they will not measure up to others’ standards, and avoid doing things that other people will not like. Individuals high in preoccupation with relationships worry a lot about their relationships and about being abandoned because they believe they cannot cope alone. Finally, those with high scores on the relationships as secondary factor believe that achievement is more important than relationships, and they place little importance on getting along with others.

Attachment and depression

We planned to examine the unique relationships between each dimension of the ASQ and depression. Given findings by Murphy and Bates (1997) that a negative self-representation (in terms of high scores on the fearful and preoccupied attachment scales of the Relationship Questionnaire; Bartholomew & Horowitz, 1991) is associated with depression, we expected that low levels on the confidence dimension and high levels on the need for approval dimensions of the ASQ would be most strongly associated with high levels of depression, as these dimensions incorporate a strong aspect of negative self-representation (Feeney et al., 1994). Even though the dimensions of relationships as secondary and discomfort with closeness may include some features of negative self-representation, we believed that they more strongly incorporate aspects of a negative view of others, involving a lack of trust of others, that is associated with feelings of hostility and anger rather than depression.

Attachment and agoraphobia

Bowlby (1973) postulated that agoraphobia is an adulthood extension of the childhood separation anxiety that is a manifestation of insecure attachment between a child and his or her caregiver. There is evidence to support the relationship between childhood separation anxiety and adult agoraphobia (Deltito, Perugi, Maremmani, Mignani, & Cassano, 1986; De Ruiter & van Ijzendoorn, 1992; Gittelman & Klein, 1984; Silove et al., 1995). De Ruiter and van Ijzendoorn suggested an association between childhood factors (an inconsistently responsive, overprotective caregiving style; separation anxiety; an anxious/ambivalent childhood attachment) and a preoccupied adult attachment orientation. Given that an anxious-ambivalent childhood attachment style (involving preoccupations with relationships and separation anxiety) has been suggested as a risk factor for adult agoraphobia, we would expect to find a unique association between a preoccupied adult attachment orientation and agoraphobic behavior in adults.

We therefore hypothesized that low levels on the confidence dimension and high levels on the need for approval and the preoccupation with relationships dimensions would be uniquely associated with high levels of depression. In contrast, we also expected that only high levels of preoccupation with relationships would be uniquely associated with agoraphobia.

Adult attachment, depression, and mediating variables

The second aim of this study was to continue an emerging line of research examining possible mediating relationships to explain the associations between attachment and adult psychopathology. This
type of research aims to identify the specific belief systems, incorporated in the working models of adult attachment, that might be associated with specific forms of psychopathology. Roberts et al. (1996) have provided an example of such research in their finding that dysfunctional attitudes and low self-esteem mediate the relationship between insecure attachment and depression in a nonclinical sample. More recently, Reinecke and Rogers (2001) extended those findings to a clinically depressed sample. These studies have been very useful in highlighting that general dysfunctional beliefs about self-worth may mediate the relationship between attachment and depression. We believed it would be worthwhile to extend this research by exploring whether other, more specific beliefs might mediate the relationships, not only between adult attachment and depression but also between adult attachment and agoraphobia. Such an exploration could help to clarify why there might be links between certain attachment dimensions and certain manifestations of psychopathology.

In terms of investigating the relationship between adult attachment and depression, one construct that might prove to be useful is self-efficacy. Bandura (1997) proposed that depression might be a consequence of a low self-efficacy about achieving highly desired outcomes. In addition, there is some evidence of a link between attachment and self-efficacy. For example, Mallinckrodt (1992) found that adults’ memories of warm and responsive relationships with their parents are positively associated with a sense of social self-efficacy and perceived social support, and negatively associated with an external locus of control. Furthermore, children who experienced repeated failures at having their needs met in relationships were likely to form beliefs about themselves as being ineffective, of others as being unreliable, and of relationships as being unrewarding (Gianino & Tronick, 1988). Similarly, there is evidence that people with an insecure attachment style think they have little control over the outcomes in their lives (Collins & Read, 1990). Therefore, it is possible that there is a link between attachment, self-efficacy, and depression.

Researchers such as Sherer, Maddux, Mercandte, Prentice-Dunn, Jacobs, & Rogers (1982) and Tipton and Worthington (1984) proposed the concept of generalized self-efficacy. They posited that all past successes and failures in an individual’s life are amalgamated to form a general expectancy of mastery that guides behavior in new or ambiguous situations. Sherer et al.’s measure of self-efficacy includes two separate constructs: general self-efficacy of achievement and social self-efficacy. Although we acknowledge that social self-efficacy may be related to both depression and agoraphobia, for this study we were more interested in how a global measure of self-efficacy might mediate the link between attachment and depression. Future studies may then elucidate how more specific measures of self-efficacy relate to attachment and psychopathology.

Adult attachment, agoraphobia, and mediating variables

With respect to investigating the relationship between adult attachment and agoraphobia, a construct that might prove to be a useful mediator is catastrophic thinking about bodily sensations. Since Clark’s (1986) seminal work, the standard cognitive-behavioral formulation of panic attacks and agoraphobia involves them being triggered by catastrophic thinking about bodily sensations. For example, a person feeling dizzy or faint may catastrophize those sensations and assume that he or she is about to experience something terrible such as a stroke. This belief then triggers the fight/flight response, inducing a panic attack. In order to minimize the anxiety associated with these catastrophic cognitions, the person avoids situations that he or she believes might trigger the sensations associated with the anxiety. This avoidance generalizes and leads to what we call agoraphobic behavior. The cognitive behavioral framework presumes that catastrophic thinking is gained through one’s learning experiences.
We propose that individuals who score high on the preoccupation with relationships scale of the ASQ (a similar construct to anxious/ambivalent attachment) will be more likely to engage in worrying or catastrophic thinking about bodily sensations. This hypothesis is based on some of Guidano’s (1987) ideas linking oscillations in attachment and separation with agoraphobia. He postulated that children with these experiences often use a cognitive avoidant coping strategy that impedes the normal developmental transformation of somatic symptoms of emotion into semantic cognitive structures. As a result, when negative emotions are later triggered by perceptions of fluctuating relationships, the emotions are experienced as unexplained bodily sensations. Guidano then posited that these individuals have difficulty interpreting the sensations in the context of the interpersonal trigger and, instead, attribute the sensations to some other catastrophic cause such as physical illnesses.

Based on this supposition, we believe it is reasonable to expect that catastrophic cognitions about bodily sensations may mediate the relationship between the preoccupation with relationships dimension and agoraphobic behavior. In other words, because of the developmental mechanisms suggested by Guidano (1987), adults who score high on preoccupation with relationships, when distressed by fears of abandonment and separation anxiety, will be more likely to experience their distress in the form of unexplained bodily sensations. As they cannot easily attribute these bodily sensations of distress to an interpersonal context, they attribute the sensations to catastrophic events such as having a heart attack or stroke, choking to death, going crazy, and so forth. These fears then trigger a flight/fight response and, consequently, a panic attack. These individuals then begin to avoid the external situations where these panic attacks occur.

H1: Using the ASQ, low levels on the confidence dimension and high levels on the need for approval and preoccupation with relationships dimensions will be uniquely associated with high levels of depression. In contrast, the relationships as secondary and discomfort with closeness dimensions will be unrelated to levels of depression.

H2: General self-efficacy will mediate the relationship between these three specific dimensions of adult attachment and depression.

H3: Using the ASQ, high levels on the preoccupation with relationships dimension will be uniquely associated with high levels of agoraphobic behavior, but the other four dimensions of the ASQ will be unrelated to levels of agoraphobic behavior.

H4: Catastrophic cognitions of bodily sensations will mediate the association between preoccupation with relationships and agoraphobic behavior.

Method

Participants

As data analysis was based on correlation and regression analyses, we attempted to maximize the validity of the results by minimizing problems of range restriction (that might be seen by using a solely clinical or a solely nonclinical sample) by recruiting participants with agoraphobia and participants with depression as well as a nonclinical sample. This procedure allowed an excellent range of responses from high levels of agoraphobic behavior or depression to very low levels of agoraphobic behavior or depression, and allowed enough variability in the responses to permit statistically significant associations with a relatively small sample size. An explanation of how the assumptions of correlational/regressional analysis were met is given in the Results section.
Participants with agoraphobia were recruited through advertisements in local newspapers and through centers specializing in the treatment of anxiety disorders. To confirm that potential participants were experiencing genuine agoraphobic behavior, each was interviewed using the Structured Clinical Interview for DSM-IV (SCID; First, Spitzer, Gibbon, & Williams, 1995). First et al. have reported good inter-rater reliability for all current diagnoses with a kappa value of .61 and for all lifetime diagnoses with a kappa value of .68. The SCID was administered by one of two trained postgraduate students in clinical psychology, with one interviewer recruiting four participants and the other interviewer recruiting the remainder. As clinical diagnoses were not used as variables, it was not considered necessary to calculate inter-rater reliability data for this study. The inclusion criterion was a diagnosis of panic disorder with agoraphobia. The exclusion criteria involved a current major depressive episode, bipolar disorder, a psychotic disorder, or dementia. Fifty-two individuals met the criteria for the study; however, six declined to participate and two did not return the questionnaire. This left a final sample of 44 agoraphobic participants (13 men and 31 women). The mean estimated duration of their agoraphobic behavior was 10.2 years ($SD = 10.2$ years; range $= 0.5$–33 years).

Participants with depression were recruited as in-patients from a private psychiatric hospital. They were first screened using a computerized version of the Composite International Diagnostic Interview (CIDI; Robins, Wing, Wittchen, & Helzer, 1988). The SCID was not used with these patients because the CIDI was the standard measure used at the private hospital. The CIDI has been shown to have perfect inter-rater reliability, with kappas of 1.0 for all disorders (Andrews, Peters, Guzman, & Bird, 1995). The inclusion criterion was the current presence of a major depressive episode. Exclusion criteria were the presence or past history of psychotic symptoms, bipolar disorder, agoraphobia, or dementia. Unfortunately due to the severity of the depression of patients admitted to the clinic and to their high levels of comorbidity, which included those problems listed as exclusion criteria, only 38 participants could be recruited over an 18-month period. Of this group, five declined to participate and eight were discharged before the questionnaires could be collected from them, yielding a final sample of 25 participants with depression (13 men and 12 women).

As identified by the use of structured clinical interviews, and despite the strict exclusion criteria, both clinical groups exhibited high comorbidity. For example, of the 44 participants with agoraphobia, only 6 did not have a current comorbid diagnosis. Examples of these comorbid diagnoses include social and specific phobias, generalized anxiety disorder, post-traumatic stress disorder, various forms of substance abuse, hypochondriasis, obsessive compulsive disorder, body dysmorphic disorder, pain disorder, and binge eating disorder. Nevertheless, our clinical samples were quite representative of patients with agoraphobia or major depression, as comorbidity is usually very high in clinical groups. Reinecke and Rogers (2001), for example, who looked at mediation analysis between attachment and depression, also found that a large proportion of their sample of patients with depression had comorbid DSM IV diagnoses.

The nonclinical participants were recruited through advertisements in local newspapers. They were matched as closely as possible on age, sex, and education to the participants with depression and agoraphobia. Nonclinical participants were asked to report whether they had ever been diagnosed or treated for an anxiety, mood, or psychotic disorder; they were excluded if they gave a positive response to this question. Of the 60 people who inquired about the study, 54 were included and 53 returned the questionnaires (15 men and 38 women). This then gave a total sample for the study of 122 participants.
Measures

Five measures were administered to the participants.

1. **Mobility Inventory for Agoraphobia (MI).** The MI is a 27-item inventory devised by Chambless, Caputo, Jasin, Gracely, and Williams (1985). It asks participants to rate, on 5-point scales, their level of avoidance for 26 situations (such as supermarkets, restaurants, buses, standing in lines), both when accompanied by a trusted companion and when alone. Only the alone scale was used in the data analysis for this study. The scale has been shown to have a high test-retest reliability ($r = .89$) and has acceptable concurrent and construct validity. The Cronbach alpha for the alone scale in the present study was .98.

2. **Beck Depression Inventory (BDI).** The BDI is a widely used 21-item self-report measure of depression (Beck, 1978). Participants rate on a 4-point scale symptoms of depression (e.g., “I feel sad,” “I feel I have failed more than the average person,” “I have lost interest in sex completely”). The Cronbach alpha for the present study was .95.

3. **Agoraphobic Catastrophic Cognitions Questionnaire (ACCQ).** This 14-item questionnaire, devised by Chambless, Caputo, Bright, and Gallagher (1984), asks participants to rate on a 5-point scale the frequency with which 14 catastrophic thoughts occur to them when they have bodily sensations of anxiety. Examples of catastrophic thoughts include, “I will have a heart attack,” “I am going to have a stroke,” and, “I am going to pass out.” The test-retest reliability has previously been shown to be .86. The Cronbach alpha for the present study was .92.

4. **Attachment Style Questionnaire (ASQ).** This questionnaire, developed by Feeney et al. (1994), asks participants to rate on a 6-point scale the degree to which they agree with 40 statements concerning their perceptions of themselves and their relationships. Examples of questions include “I prefer to depend on myself than other people,” “My relationships with others are generally superficial,” and, “I wonder why people would want to be involved with me.” Factor analysis suggested that five dimensions could be extracted from this scale. The reliability coefficients over a period of approximately 10 weeks were .74 (both confidence and discomfort with closeness), .78 (need for approval), .72 (preoccupation with relationships), and .67 (relationships as secondary). The validity of the scale was supported by good correlations with previous measures of attachment style, predictable patterns of correlations with measures of family functioning and personality, and the lack of correlation with a Lie scale (the Eysenck Personality Questionnaire). The Cronbach alphas for the present study were .86 (confidence and need for approval), .74 (relationships as secondary), .83 (preoccupation with relationships), and .87 (discomfort with closeness).

5. **The Self-Efficacy Scale.** This scale was developed by Sherer et al. (1982) and is partitioned into two factors: general self-efficacy and social self-efficacy. As noted earlier, only the construct on general self-efficacy of achievement was used in this study. Participants are asked to rate on a 5-point scale the degree to which they agree with 17 statements. Items include “I am a self-reliant person,” “I avoid facing difficulties,” and “When I make plans, I am certain I can make them work.” The Cronbach alpha for the present study was .93.
Procedure

After completion of the structured interviews, the participants with agoraphobia were given the battery of questionnaires, together with a self-addressed envelope. They were asked to complete the questionnaires in their own time and return them via mail. All instructions were given verbally to this group.

The participants with depression were taken through the CIDI as part of their admission to the psychiatric hospital. Those patients who agreed to participate in the study were contacted in person and the study was explained to them. They were then left with the questionnaire that was collected a few days to a week later.

The nonclinical participants, who had responded to advertisements placed in local newspapers, were contacted by telephone and given a brief explanation of the study. Those who qualified for the study were sent a copy of each questionnaire, together with a self-addressed envelope. Participants who returned the questionnaires were sent $15 as payment.

Results

Examination of the assumptions

Because we were combining data from three different samples, we wanted to ensure that the assumptions of regression analysis were not severely violated and that the samples could be combined. Examining skewness and kurtosis, as well as normal probability plots, for each variable tested the assumption of normality. With respect to kurtosis, there was no significant deviation on any of the variables. With respect to skewness, only three of the variables were significantly skewed: agoraphobic behavior, depression, and catastrophic cognitions about bodily sensations. The skewness in agoraphobic behavior and catastrophic cognitions was rectified using logarithmic transformations, and the skewness in depression was rectified to an adequate degree using square root transformation. The statistical analyses presented here are based on the transformed data. Linearity was examined using scatterplots comparing each pair of variables. There was no sign of nonlinear relationships. We also tested for homogeneity of variance across the three samples using Levene’s test for homogeneity of variance (Tabachnick & Fidell, 2001). There were no violations of that assumption on any of the variables except depression, where the assumption was only mildly violated ($F[2, 116] = 3.76, p = .03$). However Tabachnick and Fidell have suggested that a violation of this assumption does not invalidate the use of regression analysis, but only weakens the analysis. As this variable was of theoretical importance, it was retained in the data analysis.

To ensure that it was appropriate to combine males ($n = 41$) and females ($n = 81$) into one sample, $t$ tests were used to check for gender differences on each of the variables. The only variable where a significant gender difference was found was in the relationships as secondary dimension of the ASQ. This dimension has been shown in other studies to differentiate between males and females (Feeney et al., 1994).

Examination of bivariate correlations

A precursor to examining our models for depression and agoraphobia was to first show that there were significant correlations between all of the predictor variables and the two dependent variables: depression (i.e., BDI) and agoraphobic behavior (i.e., MI-alone). As can be seen from Table 1, agoraphobic behavior was associated with catastrophic cognitions and the five attachment dimensions of the ASQ. Depression was correlated with general self-efficacy, as well as with the five attachment dimensions. Although, as predicted, there were associations between catastrophic cognitions about bodily sensations and agoraphobic behavior and between general self-efficacy and depression, we also found significant bivariate associations between catastrophic cognitions and depression, as well as between general self-efficacy and agoraphobic behavior. However, the association between general self-efficacy...
and agoraphobic behavior was nonsignificant \((r = -0.14)\) after adjusting for the shared variance with catastrophic cognitions about bodily sensations; and the association between catastrophic cognitions and depression was reduced \((r = 0.30, p = 0.001)\) after adjusting for general self-efficacy.

As agoraphobic behavior and depression were correlated \((r = 0.39, p < 0.001)\), all analyses involving these two variables were first adjusted for their shared variance. That is, in the following analyses, the variable agoraphobic behavior refers to agoraphobic behavior after the shared variance with depression has been removed. Similarly, depression refers to the variable after the shared variance with agoraphobic behavior has been removed. Thus the \(R^2\) stated refers to \(R^2\) after first adjusting for either agoraphobic behavior or depression in a hierarchical regression analysis.

In the following analyses, checks were carried out for multivariate outliers using Mahalanobis Distance. These cases were removed from the relevant analyses, with no more than three cases removed from any one analysis.

Hypothesis 1: Unique associations between adult attachment and depression

A regression analysis was carried out that used all five dimensions of the ASQ as the independent variables, and scores on the BDI as the dependent variable. The results of a multiple regression \((R^2 = 0.50, p < 0.001)\) showed that the dimensions of relationships as secondary \((\beta = 0.26, p < 0.001)\), need for approval \((\beta = 0.32, p < 0.001)\), and preoccupation with relationships \((\beta = 0.25, p < 0.001)\) were all uniquely associated with depression.\(^1\) However, neither the secure attachment

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1. If untransformed data are used in the analyses then we gain slightly different results that align more closely with our hypotheses. For the depression model, confidence is also uniquely associated with depression in addition to relationships as secondary, need for approval, and preoccupation with relationships. In addition, general self-efficacy then completely mediates the relationships between need for approval and confidence on the one side and depression on the other.
dimension termed confidence nor the insecure attachment dimension termed discomfort with closeness was uniquely associated with depression. This lack of unique association for these two dimensions seemed to be related to the high intercorrelations between confidence and the measures of insecure attachment, which ranged from −.37 (relationships as secondary) to −.71 (discomfort with closeness).

**Hypothesis 2: Mediation model for depression**

Analysis of the mediation model was performed using the four steps suggested by Kenny, Kashy, and Bolger (1998). As the first step has already been described in the test of Hypothesis 1, we will continue by describing Steps 2 to 4. The second regression analysis supported the hypothesis that general self-efficacy (beta = −.63, p < .001) was negatively associated with depression ($R^2 = .33$, $p < .001$). The third regression analysis indicated that confidence (beta = .28, $p < .05$) and need for approval (beta = −.38, $p < .001$) were both independently associated with general self-efficacy ($R^2 = .53$, $p < .001$) and that relationships as secondary, preoccupation with relationships, and discomfort with closeness were not.

The fourth regression analysis looked at the possible mediating influence of general self-efficacy. Table 2 highlights that the addition of the hypothesized mediating variable of general self-efficacy to the hierarchical regression did not result in any of the attachment dimensions losing their significant unique association with depression. Hence, we cannot say that general self-efficacy completely mediated the relationship between these attachment dimensions and depression (Kenny et al., 1998). However, comments from these authors have suggested that because need for approval was uniquely associated with general self-efficacy and depression, and general self-efficacy was associated with depression, there was a partial meditational relationship. Although confidence was not directly related to depression, it was associated with general self-efficacy, which was, in turn, associated with depression. These relationships are shown in Figure 1.

**Hypothesis 3: Unique association between preoccupation with relationships and agoraphobia**

A multiple regression analysis ($R^2 = .10$, $p < .05$) was performed using all five dimensions of the ASQ as independent variables and agoraphobic behavior, after adjusting for depression, as the dependent variable.

### Table 2. Hierarchical regression analysis for depression using general self-efficacy at Step 2 and the five dimensions of the Attachment Style Questionnaire at Step 3

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total $R^2$</th>
<th>$R^2$ change</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2</td>
<td>.71***</td>
<td>.33***</td>
<td>−.62***</td>
</tr>
<tr>
<td>General self-efficacy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td>.84***</td>
<td>.19***</td>
<td>−.31***</td>
</tr>
<tr>
<td>General self-efficacy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationships as secondary</td>
<td></td>
<td></td>
<td>.24***</td>
</tr>
<tr>
<td>Need for approval</td>
<td></td>
<td></td>
<td>.19*</td>
</tr>
<tr>
<td>Preoccupations with relationships</td>
<td></td>
<td></td>
<td>.21**</td>
</tr>
<tr>
<td>Confidence</td>
<td></td>
<td></td>
<td>−.04</td>
</tr>
<tr>
<td>Discomfort with closeness</td>
<td></td>
<td></td>
<td>.08</td>
</tr>
</tbody>
</table>

*Note. Relationships as secondary, Need for approval, Preoccupation with relationships, Confidence, and Discomfort with closeness are dimensions from the Attachment Style Questionnaire.

*p ≤ .05. **p ≤ .01. ***p ≤ .001.*
Results of this analysis confirmed our hypothesis that only preoccupation with relationships (beta = .29, p < .05) would be uniquely associated with agoraphobic behavior.2

Hypothesis 4: Mediation model for agoraphobia

In order to examine whether catastrophic cognitions mediated the relationship between preoccupied attachment and agoraphobic behavior, we carried out the following steps, based on the principles suggested by Kenny et al. (1998). As the first step has already been described in the test of Hypothesis 1, we will continue with Steps 2 to 4. The second step involved regressing catastrophic cognitions onto agoraphobic behavior. This regression analysis ($R^2 = .48$, $p < .001$) showed that catastrophic cognitions about bodily sensations (beta = .80, $p < .001$) were significantly associated with agoraphobic behavior.

We then regressed the five dimensions of the ASQ onto catastrophic cognitions about bodily sensations. This regression analysis ($R^2 = .30$, $p < .001$) showed that two dimensions, the preoccupation with relationships (beta = .27, $p < .001$) and relationships as secondary (beta = .18, $p < .05$), were significantly associated with catastrophic cognitions about bodily sensations.

Finally we carried out a hierarchical regression analysis, regressing catastrophic cognitions onto agoraphobic behavior, after adjusting for depression, and adding the five dimensions of the ASQ at Step 3. The results of the hierarchical regression analysis are shown in Table 3. The finding that the addition of the hypothesized mediating variable, catastrophic cognitions, did not cause the beta value of preoccupation with relationships to become nonsignificant does not support our mediation model. Nonetheless the comments from Kenny et al. (1998) suggest that as preoccupation with relationships was uniquely associated with catastrophic cognitions about bodily sensations and agoraphobic behavior, and catastrophic cognitions was associated with agoraphobic behavior, there was a partial mediational relationship. Although relationships as secondary was not directly related to agoraphobic behavior, it was associated with catastrophic cognitions about bodily sensations, which was, in turn, associated with agoraphobic behavior. The relationships between these variables are shown in Figure 2.

Discussion

This study examined four hypotheses about the relationship between attachment (as assessed using the ASQ) and depression and agoraphobic behavior. Our first hypothesis stated that scores on the dimensions of confidence, need for approval, and preoccupation with relationships would be uniquely associated with levels of depression, as measured by the BDI. This hypothesis was partly confirmed. It was found that scores on the need for approval and preoccupation with relationships would be uniquely associated with levels of depression, as measured by the BDI. This hypothesis was partly confirmed. It was found that scores on the need for approval and preoccupation with relationships dimensions were indeed uniquely related with levels of depression. This finding supports Murphy and Bates’s (1997) suggestion that attachment dimensions involving a negative view of self are associated with depression. Both confidence and discomfort with closeness were associated with depression in the bivariate analyses, but because of their high negative intercorrelation they were not uniquely associated with depression in the regression analysis.

It should be noted, however, that scores on relationships as secondary were also related to depression but that scores on confidence were not. The relationships as secondary dimension may be related to depression because it is primarily a defensive stance, allowing the individual to cope with an unfulfilled innate need for an intimate relationship.
Rather than basing self worth on intimate relationships, these individuals base their self worth on achievements. When achievements are not met at the standard desired by the individual with such an attachment orientation, it seems plausible that self criticism and a feeling of low self worth, the basis of depression, may follow. The seemingly paradoxical finding that both preoccupation with relationships and relationships as secondary are related to depression actually fits well with a previous proposition that the constructs of sociotropy and autonomy are both risk factors for depression (Beck, 1983). Individuals with a sociotropic style tend to base their sense of self worth on relationships, and individuals with an autonomous style tend to base their sense of self worth on achievements. Individuals who experience loss consistent with their sociotropy/autonomy styles are likely to be at greater risk for depression. An example of research in this area is that by Giordano, Wood, and Michela (2000) who found that social comparisons consistent with the participants’ respective sociotropic/autonomous style are predictive of dysphoric feelings.

Murphy and Bates (1997) suggested that the sociotropy scale, as defined by the Personal Style Inventory (PSI; Robins, Ladd, Welkowitz, Blaney, Diaz & Kutcher, 1994), is similar to the concept of a preoccupied attachment style. The sociotropy scale of the PSI is composed of three subscales: concern for what others think, dependency on relationships, and preoccupation with relationships.

Table 3. Hierarchical regression analysis for agoraphobic behavior using catastrophic cognitions about bodily sensations at Step 1 and preoccupied with relationships and mother’s worry about her health at step 2

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total $R^2$</th>
<th>$R^2$ change</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catastrophic cognitions</td>
<td>.78***</td>
<td>.43***</td>
<td>.77***</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catastrophic cognitions</td>
<td>.80***</td>
<td>.04†</td>
<td>.73***</td>
</tr>
<tr>
<td>Relationships as secondary</td>
<td></td>
<td></td>
<td>.06</td>
</tr>
<tr>
<td>Need for approval</td>
<td>.06</td>
<td></td>
<td>.18*</td>
</tr>
<tr>
<td>Preoccupations with relationships</td>
<td>.18*</td>
<td></td>
<td>.17</td>
</tr>
<tr>
<td>Confidence</td>
<td>.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discomfort with closeness</td>
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</tbody>
</table>

Note. Maternal health anxiety = participant’s rating on a 5-point scale the degree to which his or her mother worried about her health. Relationships as secondary, Need for approval, Preoccupation with relationships, Confidence, and Discomfort with closeness are dimensions from the Attachment Style Questionnaire. $p \leq .05$, $**p \leq .01$, $***p \leq .001$, $\dagger \leq .055$
others for support, and pleasing others. The autonomy scale, as defined by the PSI, involves perfectionism and self-criticism, as well as independence and self-reliance in the pursuit of achievement. This construct therefore overlaps with relationships as secondary. As such, in hindsight, it seems plausible to us that both preoccupation with relationships and relationships as secondary might be associated with depression.

Our second hypothesis suggested that scores on the general self-efficacy scale would mediate the association between the measures of the ASQ and depression. The results indicate that the general self-efficacy scale may only partially mediate the relation between need for approval and depression. This relationship might describe an underlying dependency in those who score high in a need for approval that is manifest by low self-efficacy to achieve desired outcomes, resulting in depression. However, there also appear to be independent associations between need for approval, preoccupation with relationships, relationships as secondary, and depression. These associations suggest that there are other belief systems that are also involved in explaining the relationship between these attachment dimensions and depression. For example, perhaps this might include beliefs of worthlessness due to not having needs for intimate relationships met.

Our third hypothesis stated that there would be a unique relation between the preoccupation with relationships dimension and agoraphobic behavior, and that none of the other ASQ dimensions would show an independent association with agoraphobic behavior. This hypothesis was confirmed.

Our fourth hypothesis proposed that catastrophic cognitions about bodily sensations would mediate the relation between preoccupation with relationships and agoraphobic behavior. This hypothesis was partly confirmed. It appears that catastrophic cognitions about bodily sensations do not fully mediate, but may partly mediate, the association between preoccupation with relationships and agoraphobic behavior. In addition, although relationships as secondary is not directly associated with agoraphobic behavior, it is associated with catastrophic cognitions about bodily sensations, which in turn are related to agoraphobic behavior. Perhaps this is reflective of an associated generalized worry, or catastrophic cognitions, held by those high on the relationships as secondary dimension.

### Depression and agoraphobia models

Based on these results we propose that ASQ dimensions may be uniquely associated with two dimensions of psychopathology: depression and agoraphobic behavior. In particular, the dimensions of need for approval, relationships as secondary, and preoccupation with relationships appear to be uniquely associated with depression, but only preoccupation with relationships seems to be uniquely associated with agoraphobic behavior. We also propose that it is helpful to better understand what some of the mechanisms are that link these dimensions of attachment with these manifestations of psychopathology. From the results of this study it appears that general self-efficacy and catastrophic cognitions about bodily sensations might partly help to explain these associations. It appears, however, that these potential mediators are not sufficient to explain the total associations and that future research needs to examine other possible mediators.

As these findings were based on cross-sectional data it is not possible to assert the direction of causality. From theoretical considerations, however, we believe that it is sensible to suggest a causal influence from attachment to psychopathology. This of course would need to be tested using a longitudinal study or preferably an interventional study (discussed in more detail below). Confirmation of such a causal link would have beneficial clinical implications in terms of clarifying targets for intervention.

### Clinical implications

In terms of clinical implications, although research suggests that after treatment some
individuals with panic disorder with agoraphobia experience long intervals of symptom remission, many others experience a chronic course of the disorder with intermittent periods of acute exacerbation and continued residual distress (Pollack et al., 1990). Thus it may be that, although current cognitive-behavioral treatments are successful in treating the symptoms over a relatively short period, they may not be totally effective in dealing with the underlying factors associated with the symptoms in all who have this disorder. If this is the case, then the consideration of attachment issues may highlight some important underlying constructs for therapists to target, such as being high on the preoccupation with relationships dimension.

Chambless and Goldstein (1980) observed that agoraphobia often occurs within the context of interpersonal conflict, and that the presence of a trusted companion decreases avoidance behavior. This observation is consistent with our finding of a unique association between preoccupation with relationships and agoraphobic behavior. On that ground, it is possible that interpersonal conflict increases fears of abandonment and so increases separation anxiety, and agoraphobic behavior, in individuals who score high on preoccupation with relationships. If this is the case, then preoccupation with relationships would be an important target of intervention in order to reduce the occurrence of agoraphobic behavior. Hafner’s (1981) study of two subgroups of men with agoraphobia supports this contention. Hafner found one group in which separation anxiety, extreme dependence on the spouse, denial of hostility, and hypochondriasis were prominent. These men responded poorly to behavioral treatments. The other subgroup contained men with a fear of loss of control of aggressive impulses, and generalized anxiety. These men apparently responded well to behavior therapy.

The association between dimensions of attachment and depression might help to explain why interpersonal psychotherapy (IPT) has been found to be effective in the treatment of depression in children, adolescents, and adults (Blatt, Zuroff, Bondi, & Sanislow, 2000; Curry, 2001; Rossello & Bernal, 1999). Interpersonal psychotherapy aims to improve interpersonal functioning by identifying interpersonal problems and relating them to current emotional experiences such as depression. To our knowledge there is no published study that has examined whether IPT is effective in changing an individual’s scores on the attachment dimensions of the ASQ. It would be a good test of a possible causal link between the ASQ and depression to examine whether IPT could effectively improve scores on the ASQ dimensions of need for approval, relationships as secondary, and preoccupation with relationships, and whether these changes would be associated with changes in depression. If this were the case then important targets for intervention in individuals with depression would be clarified.

Limitations

Several limitations in our study may mitigate the strength of the results. One limitation is the relatively small sample size for the number of variables studied. In addition, the slight problem with heterogeneity of variance for the depression variable presumably weakened the analysis. It would be beneficial to confirm our findings with a much larger sample that would allow the use of structural equation modeling to simultaneously adjust for all of the intercorrelations between the variables assessed.

The results of the study are limited also by the correlational nature of the data analysis. Nonetheless, these results provide reassurance that a larger longitudinal or interventional study examining our hypotheses is warranted.

This study compared the attachment dimensions associated with depression and agoraphobic behavior. Depression and agoraphobic behavior were compared to previous research and theoretical considerations suggesting that there may well be a difference in the attachment dimensions associated with these two manifestations of psychopathology. Although significant differences were noted, it remains to be seen whether other dimensions of
psychopathology also manifest different combinations of active attachment dimensions.

Conclusions

We believe that attachment theory can provide a useful vehicle to help explain the development and maintenance of adult psychopathology. Even after adjusting for the interrelationships between depression and agoraphobic behavior, the five dimensions of the ASQ accounted for 50% of the variance of depression and 10% of the variance of agoraphobic behavior. In order to be clinically useful, it would be helpful to illustrate the specific mechanisms relating attachment with particular manifestations of psychopathology. The results of this study suggest that there may be unique relationships between particular attachment dimensions (as measured by the ASQ) and certain manifestations of psychopathology (such as depression and agoraphobia). In addition, it seems that self-efficacy and catastrophic thinking about bodily sensations might be two useful constructs that are congruent with attachment themes of protection and safety and that can help to explain the relationship between attachment and depression or agoraphobic behavior.

References


