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Childhood maltreatment and maltreatment-specific inferences: A test of Rose and Abramson's (1992) extension of the hopelessness theory

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In extending the etiological chain of the hopelessness theory of depression (Abramson, Metalsky, & Alloy, 1989), Rose and Abramson (1992) proposed a developmental model by which childhood maltreatment may contribute to the development of a negative inferential style. Once developed, this negative inferential style leaves the individual vulnerable to developing hopelessness and symptoms of hopelessness depression. In the current cross-sectional study, reports of childhood emotional, but not physical or sexual, maltreatment were significantly related to undergraduates' inferential styles. In addition, results from path analyses indicated that inferences about specific experiences of childhood emotional maltreatment mediated this relationship. Testing Rose and Abramson's entire model, results from path analyses supported a partial, but not full, mediation model.

The hopelessness theory of depression (Abramson, Metalsky, & Alloy, 1989) presents an etiological chain culminating in a cognitively mediated subtype of depression, termed ''hopelessness depression''. Specifically, Abramson et al. proposed that individuals who tend to attribute negative events to stable and global causes and infer negative consequences and negative self-characteristics following the occurrence of negative life events (i.e., those who possess a negative inferential style) are vulnerable to developing hopelessness and the

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symptoms of hopelessness depression. A number of studies have supported the hopelessness theory's etiological chain as well as the construct validity of hopelessness depression (for reviews, see Abramson, Alloy, & Metalsky, 1995; Alloy et al., 1999; Joiner & Wagner, 1995).

In exploring the developmental antecedents of negative inferential styles, Rose and Abramson (1992) proposed an extension of the hopelessness theory's etiological chain. Specifically, they proposed a developmental pathway by which negative childhood events, specifically childhood maltreatment, may contribute to the development of a negative inferential style. Rose and Abramson hypothesised that when negative events, such as maltreatment, occur in a child's life, he/she seeks to determine the cause(s) of the events so that their recurrence may be avoided. Initially, the child tends to make inferences that will maintain his/her sense of hopefulness. Thus, the child will initially make unstable and specific attributions for the occurrence of the maltreatment and will not tend to infer either negative consequences or negative characteristics about him/herself. If the maltreatment is chronic and widespread, however, the child's hopefulness-inducing inferences will meet with repeated disconfirmation. When this happens, the child may begin to make hopelessness-inducing inferences. Specifically, the child may begin to view the cause of maltreatment as stable and global, and infer negative consequences and negative characteristics about him/herself following the maltreatment. Over time, these inferences may generalise to other negative events in the child's life, developing into a relatively stable negative inferential style.

Rose and Abramson (1992) hypothesised that childhood emotional maltreatment should be more likely to contribute to the development of a negative inferential style than either childhood physical or sexual maltreatment because, with emotional maltreatment, the depressogenic inferences are directly supplied to the child by the abuser. For example, a parent, teacher, or peer may tell a child that he/she is stupid, a description that is stable and global and has negative consequences and negative self-characteristics. In contrast, with either physical or sexual maltreatment, the child must supply his/her own inferences about the maltreatment's occurrence, allowing greater opportunity for the child to develop more benign explanations. Thus, although experiences of childhood physical and sexual maltreatment are often accompanied by emotional maltreatment (see Hart, Germain, & Brassard, 1987), Rose and Abramson hypothesised that the emotional maltreatment component of the experience would have the most deleterious effect upon children's inferential styles.

A number of studies have supported aspects of Rose and Abramson's (1992) developmental model. Specifically, studies have supported the relation between a history of childhood maltreatment and the presence of a negative inferential style (e.g., Cerezo & Frias, 1994; Fiering, Taska, & Lewis, 1998; Gibb et al., 2001; Gold, 1986; Mannarino & Cohen, 1996; Pritt, 1998; Rose et al., 1994;

Wenninger & Ehlers, 1998; but see also Gross & Keller, 1992; Kuyken & Brewin, 1999; Mandoki & Burkhart, 1989; Mayall & Gold, 1995). Studies have also supported the relation between a history of childhood maltreatment and both symptoms and diagnoses of depression in adulthood (e.g., Boudewyn & Liem, 1995; Braver, Bumberry, Green, & Rawson, 1992; Gibb et al., 2001; Rich, Gingerich, & Rosen, 1997; Roosa, Reinholtz, & Angelini, 1999; Silverman, Reinherz, & Giaconia, 1996; Zuravin & Fontanella, 1999).

Thus far, however, only one study has examined the mediational component of Rose and Abramson's model. In this study, Gibb et al. (2001) examined the relation between reports of childhood maltreatment (emotional, physical, and sexual), cognitive risk for depression, hopelessness, and hopelessness depression in a sample of undergraduates at high versus low cognitive risk for depression as defined by both the hopelessness theory (Abramson et al., 1989) and Beck's (1967, 1987) theory of depression. Controlling for initial depressive symptom levels, high risk participants reported significantly more childhood emotional, but not physical or sexual, maltreatment than did low risk participants. Similarly, reports of childhood emotional, but not physical or sexual, maltreatment were directly related to average levels of hopelessness and to diagnoses of hopelessness depression over the 2.5 year follow-up. Supporting Rose and Abramson's model, participants' cognitive risk status partially mediated the relation between reported childhood emotional maltreatment and average levels of hopelessness and fully mediated the relation between childhood emotional maltreatment and diagnoses of hopelessness depression. Finally, average levels of hopelessness partially mediated the relation between cognitive risk and diagnoses of hopelessness depression.

Despite the strengths of Gibb et al.'s (2001) study, it also was characterised by several limitations. First, participants were selected on the basis of the presence versus absence of cognitive vulnerability to depression as specified by *both* the hopelessness theory (Abramson et al., 1989) and Beck's (1967, 1987) theory. Therefore, the relationship between childhood maltreatment and negative inferential styles, specifically, was not assessed. Second, the study did not explore the mechanism by which Rose and Abramson (1992) hypothesised childhood maltreatment would contribute to the development of negative inferential styles. That is, inferences for specific experiences of childhood maltreatment were not assessed. Third, Gibb et al. used hierarchical regression analyses to evaluate the mediational models, which do not provide indices of fit for the models evaluated. Thus, although the analyses met criteria for mediation, there was no measure of how well the model fitted overall.

The current study sought to replicate and extend Gibb et al.'s (2001) findings by examining more closely the mechanism by which childhood maltreatment may contribute to the development of negative inferential styles. The primary goal of the current study was to examine the relation between reported

experiences of childhood maltreatment (emotional, physical, and sexual), inferences about specific experiences of childhood maltreatment, and individuals' inferential styles. Consistent with Rose and Abramson (1992), we hypothesised that childhood maltreatment (especially childhood emotional maltreatment) would be related to participants' inferential styles, and that maltreatment-specific inferences would mediate this relation. A secondary goal of the current study was to test Rose and Abramson's extended hopelessness model as a whole. Thus, we tested a mediational model consistent with the etiological chain of Rose and Abramson's extended hopelessness theory (see Figure 1). In using path analyses, we were able to determine how well the data fitted the hypothesised models.

It should be noted at the outset that the current study employed a cross-sectional design. As such, we tested for statistical, as opposed to temporal, mediation. Despite the inherent limitations of a cross-sectional design, this type of examination is important for the initial evaluation of developmental theories to determine the feasibility of larger scale longitudinal studies.

METHOD

Participants

A total of 220 undergraduates (164 women and 56 men) participated in the current study. Of these, 126 (57.3%) were Caucasian, 53 (24.1%) were African-American, 21 (9.5%) were Asian, 8 (3.6%) were Hispanic, and the remaining 12 (5.5%) participants either were from other ethnic groups or did not report their ethnicity. The mean age of the participants was 18.79 (SD = 1.40; range = 17–26).

Measures

Childhood maltreatment. The Life Experiences Questionnaire (LEQ; Rose, Abramson, & Kaupie, 2002) is a 92-item self-report measure that assesses a history of childhood emotional, physical, and sexual maltreatment, as well as emotional and physical neglect, committed by both peers and adults. Although the LEQ was modelled on Cicchetti's (1989) Child Maltreatment Interview, the LEQ is both more comprehensive and specific with respect to the events it assesses than its predecessor. Consistent with the suggestions made by Brewin, Andrews, and Gotlib (1993), the LEQ assesses a broad range of specific events rather than asking individuals for global

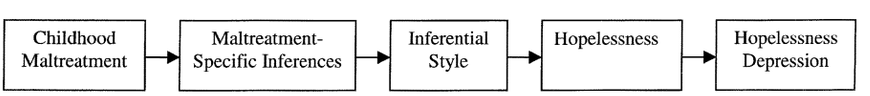

Figure 1. Rose and Abramson's (1992) extension of the hopelessness theory's etiological chain.

estimates of maltreatment and neglect. For the current study, only the maltreatment items from the LEQ were used. In addition, given that we were interested in childhood maltreatment specifically and not maltreatment occurring in either adolescence or adulthood, we included only those events endorsed as occurring before age 15. Forms of childhood emotional maltreatment assessed by the LEQ include rejecting, degrading, terrorising, isolating, and denying emotional responsiveness (cf. Hart et al., 1987). Forms of physical maltreatment assessed include being hit either with a fist or object, being choked, and being the victim of deliberate physical pain. Forms of sexual maltreatment assessed include both contact and noncontact sexual behaviours (e.g., unwanted intercourse and exposure to pornography).

Examples of items from the emotional maltreatment subscale (20 items) include ''Did any of your caretakers ever say they wished they were not parents or that you had never been born?''; ''Did anyone ever humiliate or demean you in the presence of other people (e.g., a teacher saying that you were stupid in the presence of other students or a parent saying you were ugly in front of your boy/girlfriend)?''; and ''Did anyone ever try to get you to do what he/she wanted by threatening you or someone you loved with physical harm?'' Examples of items from the physical maltreatment subscale (9 items) include: ''Did anyone ever deliberately cause you serious physical pain (e.g., burn you with a cigarette, break a bone, or cut you)?''; ''Were you ever hit hard with a fist, kicked, or slapped really hard?''; and ''Did anyone ever try to choke, strangle, or smother you?'' Examples of items from the sexual maltreatment subscale (20 items) include: ''Did any adult or someone more than five years older than you ever force you to have sexual intercourse against your will?''; ''Did any adult or someone more than five years older than you ever expose him/herself to you sexually (e.g., show you that they had no clothes on under their coat)?''; and ''Did anyone about your own age, or up to 5 years older than you, ever insist that you touch him/her in a sexual way?''

For each LEQ item, participants indicate if they have ever experienced that event, the age of onset and offset of the event described, its frequency of occurrence, and who the perpetrator was. Continuous levels of each form of maltreatment were determined by summing the number of different maltreatment experiences endorsed for each of the three forms of maltreatment (emotional, physical, and sexual). The maltreatment subscales of the LEQ (emotional, physical, and sexual) have been found to correlate highly with levels of emotional, physical, and sexual maltreatment reported in structured clinical interviews (*r*s = .78, .79, and .87, respectively; Kaupie & Abramson, 1999). In addition, the childhood emotional maltreatment subscale of the LEQ has shown predictive validity for episodes of depression (Gibb et al., 2001). In the current study, the LEQ exhibited adequate internal consistency for the childhood emotional (α = .75), physical (α = .62), and sexual (α = .81) maltreatment subscales.

Inferential styles. The Cognitive Style Questionnaire (CSQ; Abramson, Metalsky, & Alloy, 2002), a revised version of the Attributional Style Questionnaire (ASQ; Peterson et al., 1982), is a questionnaire used to assess individuals' tendency to make internal, stable, and global attributions and to infer negative consequences and negative self-characteristics following the occurrence of negative life events. The CSQ contains 24 hypothetical events (12 positive and 12 negative). In the current study, only the negative events were used because previous studies have shown that inferences for negative events are more strongly related to depressive symptoms than are inferences for positive events (e.g., Alloy et al., 2000; Lapkin, 1997). In response to each of the hypothetical events (e.g., ''You want to be in an intimate, romantic relationship, but aren't.''), the participant is asked to indicate what he/she believes would be the major cause of the event if it happened to him/her. In addition, the participant is asked to answer a series of questions about the cause and consequences of each event, as well as what the occurrence of the event would mean for his/her self-concept. In the current study, a composite score was created by averaging participants' stability, globality, consequences, and self-implication ratings for each of the hypothetical negative events. For this composite, higher scores indicate more negative inferential styles. The CSQ composite for negative events has shown good retest reliability over a year (r = .80; Alloy et al., 2000) and predictive validity for episodes of depression (Alloy, Abramson, Murray, Whitehouse, & Hogan, 1997; Alloy et al., 2000, 2002). In the current study, the CSQ composite demonstrated excellent internal consistency (α = .94).

Maltreatment-specific inferences. An LEQ event description sheet was created for the current study and was used to assess participants' attributions and inferences about specific instances of childhood maltreatment endorsed on the LEQ. This measure was modelled after the CSQ and used an identical format. For each event endorsed on the LEQ, participants were asked to think of the single time the event occurred that stood out most in their memory and remember how they thought about the event right after it occurred. Participants were then asked to describe what they thought had caused the event at the time they experienced the maltreatment (rather than what they currently believe was the cause). They were then asked to rate the cause generated on the dimensions of stability and globality and to rate the meaning of the event on the dimensions of consequences and self-implication. For example, someone endorsing the item ''Did anyone ever say they wished you were dead?'' (emotional maltreatment) as occurring before the age of 15 would then complete an LEQ event description sheet for this item. On this sheet, they would describe the cause of this event and then rate the cause on the dimensions of stability, globality, consequences, and self-implications. Consistent with the CSQ, composite scores were created for inferences (stability, globality, consequences, and self-implication) generated in

response to the childhood emotional, physical, and sexual maltreatment events endorsed on the LEQ (EM-inferences, PM-inferences, and SM-inferences, respectively).[1]

Hopelessness. The Beck Hopelessness Scale (HS; Beck, Weissman, Lester, & Trexler, 1974), a 20-item true-false self-report questionnaire, was used to assess participants' negative expectations regarding the future. Total scores range from 0 to 20, with higher scores indicating more severe levels of hopelessness. Beck et al. found that scores on the HS were significantly correlated with clinicians' ratings of hopelessness ($r = .74$, $p < .001$ in an outpatient sample; $r = .64$, $p < .001$ in a sample of hospitalised suicide attempters). Furthermore, Holden and Fecken (1988) reported a 3-week retest reliability of $r = .85$ in a sample of undergraduates. The hopelessness scale exhibited excellent internal consistency in the current study ($\alpha = .92$).

Symptoms of hopelessness depression. The Hopelessness Depression Symptom Questionnaire (HDSQ; Metalsky & Joiner, 1997), a 32-item self-report questionnaire, was used to assess symptoms of hopelessness depression. Factor analytic results suggest that the eight subscales of the HDSQ reflect distinct symptoms of hopelessness depression and that these symptoms load onto a single higher order construct (Metalsky & Joiner, 1997). The HDSQ exhibited excellent internal consistency in the current sample ($\alpha = .93$).

Procedures

Participants completed each of the questionnaires in groups ranging in size from 1 to 20 people. All of the measures were administered in counterbalanced order to control for order effects. The only exception was that the questionnaires assessing maltreatment-specific inferences for each LEQ item endorsed were always administered immediately after the LEQ. Students received course credit for their participation.

RESULTS

Preliminary analyses

To test for possible gender and/or ethnic differences in reported levels of childhood emotional, physical, and sexual maltreatment, inferential styles, hopelessness, and symptoms of hopelessness depression, a series of 2 (Gender: Male vs. Female) $\times$ 2 (Ethnicity: Caucasian vs. Non-Caucasian) ANOVAs was

[1] Because maltreatment-specific inference composite scores were created ideographically for each participant based on the maltreatment items endorsed, the internal consistencies of these three measures could not be computed.

conducted. None of the main effects or interactions was significant. Therefore, all analyses were conducted collapsing across gender and ethnic groups.

Descriptive statistics for participants' reports of childhood emotional, physical, and sexual maltreatment are presented in Table 1. Consistent with previous studies, we found that the three forms of childhood maltreatment were highly related. Specifically, reports of childhood emotional maltreatment were significantly related to reports of childhood physical, $r(217) = .54$, $p < .001$, and sexual, $r(217) = .36$, $p < .001$, maltreatment. Reports of childhood physical maltreatment were also significantly related to reports of childhood sexual maltreatment, $r(217) = .45$, $p < .001$. In addition, of those reporting childhood maltreatment ($N = 188$), 48 reported only emotional maltreatment, 17 reported only physical maltreatment, 1 reported only sexual maltreatment, 83 reported both emotional and physical maltreatment, 4 reported both emotional and sexual maltreatment, 2 reported physical and sexual maltreatment, and 33 reported emotional, physical, and sexual maltreatment.

Before testing the mediation models, correlational analyses were used to examine the relations between inferential styles and the three forms of reported childhood maltreatment. These analyses suggested that the number of childhood emotional, $r = .23$, $p < .001$, but not physical, $r = .08$, $p = .22$, or sexual, $r = .04$, $p = .52$, maltreatment experiences reported was significantly related to the negativity of participants' inferential styles.[2,3] The mediational models, therefore, were examined only for emotional maltreatment.[4] Given the central role of EM-inferences in these models, only those participants reporting inferences for

[2] Analyses were repeated using only contact forms of childhood sexual maltreatment and the results were virtually identical to those obtained when both contact and noncontact forms of childhood sexual maltreatment were included.

[3] To facilitate comparisons between the current and previous studies, these analyses were also conducted using dichotomous classifications of childhood emotional, physical, and sexual maltreatment, from which effect sizes could be calculated. The inferential styles of participants reporting at least one experience of childhood emotional maltreatment were significantly more negative than those reporting no experiences of childhood emotional maltreatment, $t(218) = 3.47$, $p < .001$, $r_{\text{effect size}} = .23$. In contrast, reports (yes vs. no) of childhood physical, $t(218) = 1.23$, $p = .22$, $r_{\text{effect size}} = .08$, or sexual, $t(218) = 1.10$, $p = .27$, $r_{\text{effect size}} = .07$, maltreatment were not significantly related to participants' inferential styles.

[4] We also conducted an omnibus ANOVA to determine whether there were differences in the inferential styles among three groups of participants: (1) those reporting no childhood maltreatment; (2) those reporting only one form of childhood maltreatment (i.e., emotional, physical, or sexual); and (3) those reporting two or more forms of childhood maltreatment. This analysis was significant, $F(2, 217) = 5.27$, $p = .01$. Student–Newman–Keuls *post-hoc* analyses revealed that the inferential styles of the multiple maltreatment group were significantly more negative than those of the no maltreatment group ($p < .05$). The inferential styles of the single maltreatment group did not differ significantly from those of the multiple and no maltreatment groups. However, given our interest in inferences made in response to specific forms of childhood maltreatment, and the finding that, considered individually, only reports of childhood emotional maltreatment were significantly correlated with attributional styles, we chose to test the models only for emotional maltreatment.

TABLE 1
Descriptive statistics for reports of childhood maltreatment

	Mean	SD	%
Emotional	2.75	2.71	76.4
Physical	1.28	1.41	61.4
Sexual	0.50	1.45	18.2

Note: Means refer to the mean number of maltreatment experiences reported. Percentages refer to the percentage of participants reporting at least one experience of childhood maltreatment within each maltreatment category.

at least one experience of childhood emotional maltreatment were included in the remainder of the analyses (n = 153). Correlations among the variables included in the models for these individuals are presented in Table 2. Means and standard deviations for each of the variables are presented along the diagonal of Table 2.

Mediational role of maltreatment-specific inferences

The primary goal of the current study was to explore the structural relations among emotional maltreatment, EM-inferences, and inferential styles. Therefore, path analyses, conducted using AMOS 4.0 (Arbuckle, 1999), were used to test the hypothesis that EM-inferences would mediate the relation between

TABLE 2
Means (standard deviations), and correlations among variables for participants reporting inferences for childhood emotional maltreatment (n = 153)

	1	2	3	4	5
1. EM	3.81 (2.57				
2. EM-inferences	.32***	3.13 (1.39)			
3. CSQ	.14*	.43***	3.49 (1.02)		
4. HS	.32***	.24**	.32***	2.15 (3.81)	
5. HDSQ	.34***	.29***	.42***	.65***	15.38 (11.77)

EM, childhood emotional maltreatment; EM-inferences, inference composite for specific experiences of childhood emotional maltreatment; CSQ, Cognitive Style Questionnaire-Composite for Negative Events; HS, Hopelessness Scale; HDSQ, Hopelessness Depression Symptom Questionnaire. Significance levels are one-tailed. Means (and standard deviations) for each of the variables are presented along the diagonal.

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

reports of childhood emotional maltreatment and inferential styles.[5] The results of the path analysis supported this model, $\chi^2(1) = 0.00$, $p = .99$, standardised root mean square residual (SRMR) = .00, comparative fit index (CFI) = 1.00, root mean square error of approximation (RMSEA) = .00, suggesting that it provided an excellent fit to the data (cf. Hu & Bentler, 1999).

Despite the strength of this model, and given the cross-sectional design of the current study, it is possible that an alternative model specifying a different structural relation among the variables, would provide an equivalent or better fit to the data. Specifically, it may be that inferential styles mediate the relation between emotional maltreatment and maltreatment-specific inferences. When we tested this alternate hypothesis in a second path analysis, however, the model provided a poor fit to the data, $\chi^2(1) = 13.82$, $p < .001$, SRMR = .11, CFI = .71, RMSEA = .29.

Testing Rose and Abramson's full model

A path analysis was next used to test Rose and Abramson's entire model. Thus, we specified a full mediation model consistent with Figure 1. This full mediation model provided a poor fit to the data, $\chi^2(6) = 32.40$, $p < .001$, SRMR = .13, CFI = .85, RMSEA = .17. Given these results, we tested a partial mediation model consistent with the findings of Gibb et al. (2001). Specifically, we specified a path analytic model in which EM-inferences and inferential style partially mediated the relation between emotional maltreatment and hopelessness, and hopelessness partially mediated the relation between inferential styles and hopelessness depression. In contrast to the full mediation model, this partial mediation model provided a good fit to the data, $\chi^2(4) = 5.44$, $p = .25$, SRMR = .04, CFI = .99, RMSEA = .05 (see Figure 2).

In addition to evaluating the absolute fit of these two models, we also evaluated their relative fit. First, because the models were nested, we could directly compare their relative degree of fit. This comparison suggested that the partial mediation model provided a significantly better fit to the data than did the full mediation model, $\chi^2(2) = 26.97$, $p < .001$. Second, a comparison of the Akaike Information Criterion (AIC), a linear combination of the χ^2 value and the degrees of freedom, of the two models also supported the superiority of the partial mediation model, which had a smaller AIC (full mediation model: AIC = 50.40; partial mediation model: AIC = 27.44).

[5] Although it would have been ideal to test these models using structural equation modelling focusing on the relations between latent variables representing the constructs of interest rather than path analyses focusing on the relations between observed variables, the sample size of the current study was insufficient for a latent variable analysis.

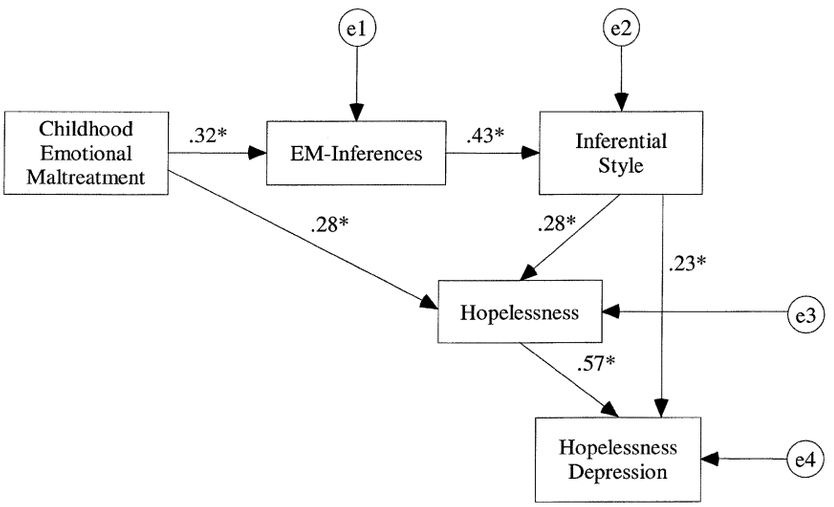

Figure 2. Partial Mediation Model: Structural model examining the etiological chain of the extended hopelessness theory. Numbers represent standardised coefficients. EM-inferences = inference composite for specific experiences of childhood emotional maltreatment. E1, e2, e3, and e4 represent error terms in the model. * $p < .001$.

DISCUSSION

In the current study, we evaluated the hypotheses of Rose and Abramson (1992), who proposed an extension of the hopelessness theory of depression's (Abramson et al., 1989) etiological chain. Consistent with Rose and Abramson's hypothesis, reported childhood emotional maltreatment was more strongly related to inferential styles than was childhood physical or sexual maltreatment. These results extend those of Gibb et al. (2001) by suggesting that childhood emotional maltreatment is related to inferential styles specifically rather than simply to cognitive vulnerability to depression defined more generally [i.e., as defined by *both* the hopelessness theory (Abramson et al., 1989) and Beck's (1967, 1987) theory]. Thus, despite the strong overlap among the three forms of maltreatment, only childhood emotional maltreatment, considered individually, was significantly related to participants' inferential styles. This may be because, although emotional maltreatment often accompanies physical and sexual maltreatment, it does not always do so. If, as Rose and Abramson (1992) hypothesised, emotional maltreatment is the key aspect of maltreatment that contributes to the development of negative inferential styles, the relations between childhood physical and sexual maltreatment and inferential styles would be attenuated to the extent that they occur without emotional maltreatment.

The current results were also consistent with Rose and Abramson's (1992) developmental model of the relations among childhood maltreatment, mal-

treatment-specific inferences, and inferential styles. Specifically, inferences for specific experiences of childhood emotional maltreatment mediated the relation between childhood emotional maltreatment and inferential style. It should be noted, however, that structural equation modelling only tests the structural relations among variables, not the direction of influence. Therefore, an alternative model specifying the same relations among the variables, but with the direction of influence reversed would have fit the data equally well. Despite this limitation, we did rule out a model specifying an alternative structural relation among the variables. Specifically, our data did not support the hypothesis that inferential style mediated the relation between emotional maltreatment and inferences about specific instances of emotional maltreatment, thus strengthening our confidence in Rose and Abramson's model.

Finally, the current results were consistent with Rose and Abramson's (1992) extension of the hopelessness theory's etiological chain. Although we did not find support for a full mediation model, we did find support for a partial mediation model. In so doing, the current results replicated those of Gibb et al. (2001). Thus, it appears that the etiological chain of the hopelessness theory mediates only part of the relation between emotional maltreatment and symptoms of hopelessness depression. Future studies should seek to explore other possible mediators of the childhood emotional maltreatment—adult depression link (e.g., dysfunctional attitudes, social support, etc.).

Despite the contributions of this study, it is also characterised by several limitations. Most importantly, the design of the current study was cross-sectional. Therefore, as mentioned previously, the results speak to statistical, not temporal, mediation. That is, although the current results are consistent with the developmental models tested, they cannot speak to causality. The current results are suggestive, however, and merit examination in future longitudinal research. These studies should more closely examine the relations between the components of the expanded hopelessness theory's etiological chain. Specifically, studies should examine whether inferences for specific experiences of emotional maltreatment do indeed become more negative over time as the child experiences repeated emotional maltreatment. In addition, future studies should examine whether levels of emotional maltreatment prospectively predict changes in inferential styles over time and whether changes in maltreatment-specific inferences mediate this relationship.

A second limitation of the current study is that all of the data were collected using self-report questionnaires. It is possible, therefore, that participants with elevated depressive symptom levels or negative inferential styles simply recalled more negative childhood experiences. Two lines of evidence argue against this possibility, however. First, based on their review of the literature, Brewin et al. (1993) concluded that adults' recall of specific childhood events is relatively accurate. Second, of the three forms of childhood maltreatment examined, only childhood emotional maltreatment was significantly related to participants'

inferential styles. If the current results were due to a recall bias, there should not have been this type of specificity in the forms of negative childhood experiences reported. It should be noted, however, that reports of emotional maltreatment may be more subject to recall biases than either physical or sexual maltreatment given the greater ambiguity of the events considered (e.g., being humiliated vs. being beaten or raped). Given that participants were asked to recall inferences made for maltreatment occurring a number of years in the past, it is also possible that participants' recall of these inferences may have been influenced by their current inferential styles or beliefs about the maltreatment. Although there is some evidence that inferences for specific events are relatively stable over time (e.g., Raniere, 2000), future studies would benefit from the repeated assessment of maltreatment-specific inferences over time in close proximity to the experience of the maltreatment. Finally, the similarity in format between the CSQ and the measure of maltreatment-specific inferences could have inflated the relation between them. Given these concerns, future studies would benefit from the use of multimethod assessments of maltreatment as well as inferential styles, hopelessness, and hopelessness depression (e.g., multiple respondents or the use of both interviews and questionnaires).

A third limitation is that participants in the current study were university undergraduates. As such, they represent a fairly high functioning sample, which may limit the generalisability of the current findings to other populations. Indeed, studies have provided more consistent support for the relation between a history of childhood sexual maltreatment and negative attributional styles in community and patient samples (e.g., Gold, 1986; Pritt, 1998; Rose et al., 1994) than in samples of undergraduates (e.g., Gibb et al., 2001; Mandoki & Burkhart, 1989; Mayall & Gold, 1996). Although the hopelessness theory is proposed as a model for all levels of dysfunction, future studies should seek to replicate the current findings in other samples (e.g., patients and individuals with severe levels of maltreatment).

Despite these limitations, the current study represents an initial step in exploring the possible developmental antecedents of negative inferential styles. As such, it provides preliminary support for the developmental model proposed by Rose and Abramson (1992). The current study also adds to the growing body of research and theory suggesting the psychopathological correlates of childhood emotional maltreatment (see also Boudewyn & Liem, 1995; Braver et al., 1992; Gibb et al., 2001; Hart et al., 1987; Langhinrichsen-Rohling, Monson, Meyer, Caster, & Sanders, 1998; Rich et al., 1997). Future studies should continue to explore not only the relation between childhood emotional maltreatment and psychopathology, but also the process by which childhood emotional maltreatment may contribute to the development of psychopathology.

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