A Novel Examination of Atypical Major Depressive Disorder Based on Attachment Theory

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Objective: While a large body of descriptive work has thoroughly investigated the clinical correlates of atypical depression, little is known about its fundamental origins. This study examined atypical depression from an attachment theory framework. Our hypothesis was that, compared to adults with melancholic depression, those with atypical depression would report more anxious-ambivalent attachment and less secure attachment. As gender has been an important consideration in prior work on atypical depression, this same hypothesis was further tested in female subjects only.

Method: One hundred ninety-nine consecutive adults presenting to a tertiary mood disorders clinic with major depressive disorder with either atypical or melancholic features according to the Structured Clinical Interview for DSM-IV Axis-I Disorders were administered a self-report adult attachment questionnaire to assess the core dimensions of secure, anxious-ambivalent, and avoidant attachment. Attachment scores were compared across the 2 depressed groups defined by atypical and melancholic features using multivariate analysis of variance. The study was conducted between 1999 and 2004.

Results: When men and women were considered together, the multivariate test comparing attachment scores by depressive group was statistically significant at $p < .05$. Between-subjects testing indicated that atypical depression was associated with significantly lower secure attachment scores, with a trend toward higher anxious-ambivalent attachment scores, than was melancholia. When women were analyzed separately, the multivariate test was statistically significant at $p < .01$, with both secure and anxious-ambivalent attachment scores differing significantly across depressive groups.

Conclusion: These preliminary findings suggest that attachment theory, and insecure and anxious-ambivalent attachment in particular, may be a useful framework from which to study the origins, clinical correlates, and treatment of atypical depression. Gender may be an important consideration when considering atypical depression from an attachment perspective.

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The term *atypical depression* was first used in the late 1950s to describe a clinical subgroup of depressed patients who lacked the classic symptoms of melancholia and who responded poorly to tricyclic antidepressants.[1] In the DSM-IV classification system, atypical depression is defined by mood reactivity combined with 2 or more of the following: increased appetite/weight gain, hypersomnia, leaden paralysis, and chronic rejection sensitivity, i.e., the tendency to react to even minor perceived slights with a rapid onset of dysphoric mood, feelings of abandonment, interpersonal distrust, and avoidance behavior to circumvent further rejection.[2] Some have argued for the primacy of rejection sensitivity in defining atypical depression.[3] In the latter review, Parker[3] defines *atypical depression* as a "dimensional nonmelancholic syndrome in which individuals with a personality subtype of 'interpersonal rejection sensitivity' have a tendency toward the onset of anxiety disorders and depression, thereby exhibiting a variety of dysregulated emotional

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and self-consolatory responses."[p18] Various other deficits in interpersonal functioning have been described in atypical patients, including low self-esteem,[4] high dimensional scores for neuroticism and impulsivity,[5,6] and high rates of DSM-defined personality disorders in clusters B and C.[7–9] Epidemiologic and descriptive studies have demonstrated several other clinical correlates of atypical depression, the most robust including a high proportion of female cases,[10,11] an early age at onset,[11–14] high degrees of chronicity,[12,15] and high comorbidity with social phobia and bulimia.[4,7,11,16]

While this large body of descriptive work has helped to define atypical depression and to establish its clinical correlates, there have been few attempts to integrate these various findings at a conceptual level. As a result, relatively little is known about the fundamental origins of this syndrome and how its various clinical correlates might be related. Examining the relationship between stress, personality, emotional regulation, and coping strategies may improve our understanding of atypical depression in the future.[3] The goal of the current study was to consider atypical depression from the perspective of attachment theory, which considers the links among emotional regulation, interpersonal functioning, and adaptation to stress.

Bowlby[17] first proposed the existence of an innate attachment system described as a set of behaviors intended to keep caregivers in close proximity that is triggered when an infant perceives threat or need for help. Bowlby argued that because mammalian infants are dependent upon the care and protection of adult protective figures, attachment plays an important role in natural selection and survival.[17] In addition to this protective function, the bond that develops between child and caregiver also plays a longer-term role in emotional development, shaping a child's emerging self-concept and view of the social world.[17–20] This is established through "internal working models," a set of internalized scripts containing beliefs and expectations about whether caregivers are responsive and caring and whether the self is worthy of care and attention.

Bowlby argued that attachment working models established through early relationships continue to play a major role in emotional processing and intimate relationships across the lifespan.[17–19] In support of this hypothesis, long-term longitudinal follow-up studies have found that attachment patterns established early in life do predict attachment behavior and social functioning into adulthood.[21–22] A separate discipline of adult attachment research has evolved based on the notion that the same motivational system that establishes close emotional bonds between parents and children also mediates the bond that develops in close adult relationships. Two separate traditions have evolved to study attachment in adults: one based on adults' current representations of their own childhood parental relationships[23] and the other based on perceptions of one's adult romantic relationships.[24–25] The former tradition is developmental and relies on observation and interview; the latter tradition has social and personality roots and relies on self-report. One main advantage of the self-report adult attachment scales has been their ease of administration and scoring. Counterbalancing this, however, is the question of whether self-report scales can reliably measure the core dimensions of attachment described in developmental work. Notwithstanding some discrepancies across these 2 attachment realms, self-report scales do appear to measure the key dimensions of attachment anxiety and avoidance fundamental to attachment theory.[26] Furthermore, self-report adult attachment scales are able to predict key aspects of emotional regulation, cognition, and behavior in response to real and laboratory-based challenges (see review by Shaver and Mikulincer[27]).

Table 1. Attachment Classification Labels by Age Group and Measurement Methodology

Age Group	Method	Major Attachment Categories
Infant	Strange situation	Avoidant, secure, and ambivalent/resistant
Adult	Self-report	Avoidant, secure, and anxious-ambivalent
Adult	Adult Attachment Interview[a]	Dismissing, autonomous, and preoccupied

[a]George C, Kaplan N, Main M, unpublished data, 1996.

ATTACHMENT THEORY AS A POTENTIAL FRAMEWORK TO UNDERSTAND ATYPICAL DEPRESSION

While the overall syndrome of atypical depression has not been linked to attachment theory historically, it is of note that many individual features of atypical depression have been associated with particular attachment styles. As reviewed below, a very consistent association between anxious-ambivalent attachment and several key correlates of atypical depression have been demonstrated in prior research. Furthermore, there has been strong convergence of the developmental and social/personality attachment literatures in finding these associations. To help interpret and integrate findings from these different attachment literatures, Table 1 summarizes the 3 major attachment categories first delineated in infant developmental work and the closest corresponding categories used in the adult social/personality and the adult developmental attachment areas. As shown in Table 1, Ainsworth[20] first described the core attachment categories labeled "avoidant," "secure," and "ambivalent/resistant" in infants. The adult social/personality attachment literature, which is based on self-report questionnaires, uses the terms *anxious-avoidant*, *secure*, and *anxious-ambivalent* for similar phenomena. The corresponding attachment styles in the adult developmental

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literature are "dismissing," "autonomous," and "preoccupied," respectively. While other attachment styles have been described in the adult attachment literature over time, the current study will focus on the 3 main constructs outlined in Table 1 on the basis of their fundamental importance.

The most striking example of this convergence relates to the construct of chronic rejection sensitivity, which is both a DSM-IV-TR criterion for atypical depression and a central aspect of anxious-ambivalent attachment.[28] As outlined above, a major tenet of attachment theory is that children develop mental models of themselves and of their relationships and that these models vary depending on the consistency and degree of caregiver responsivity. When exposed to caregivers who are unreliably sensitive, children develop ambivalent working models that lead them to fear rejection and abandonment in later relationships. Rejection sensitivity involves perceptual biases toward rejection, defensiveness toward others, overreactions to perceived slights, and usually a recurrent pattern of actual rejection that reinforces this negative cycle.[29,30] In contrast, anxious-avoidant individuals have a high threshold for detecting rejection.[30] These considerations are consistent with a unique relation between anxious-ambivalent attachment (and *not* anxious-avoidant attachment) and rejection sensitivity, a core defining feature of atypical depression.

Atypical depression is usually experienced as a chronic illness that is highly sensitive to external events, a pattern highly suggestive of a deficit in affect regulation.[3] High levels of neuroticism, which includes negative affect and affective instability by definition, have been found in atypical subtypes relative to other depressive subtypes.[5,6] Bowlby's original theory emphasized the fundamental role of the attachment system in the regulation of emotions,[17–19] and this has been a major area of attachment research since that time.[31–35] A defining feature of anxious-ambivalent attachment is the hyperactivation of emotion. In infancy, ambivalent children show high levels of distress at the caregiver's departure and have difficulty downregulating emotion on the caregiver's return.[20,31] In adulthood, anxious-ambivalent individuals tend toward anger, jealousy, and a belief that others are insensitive to their needs,[28] a pattern highly reminiscent of atypical depression. By contrast, far from the hyperactivation of emotion, a hallmark of avoidant attachment involves the suppression of emotional display in infancy[20,31] and adulthood.[28] It is thus highly plausible that anxious-ambivalent attachment (and *not* anxious-avoidant attachment) contributes to the basic deficit in emotional regulation so often seen in atypical depression patients.

Attachment theory can also shed new light on the increased appetitive symptoms of atypical depression, particularly at a functional level. It has been suggested that patients with atypical depression use a variety of behavioral strategies to cope with daily stressors because of deficits in affect regulation.[3] These behaviors take on the function of regulating affect when more adaptive, attachment-based strategies are not available.[36] The use of food to regulate moods has been well documented in atypical forms of depression.[37–39] Specific links between ambivalent/preoccupied attachment styles and various forms of disordered eating have also been described in prior research.[40,41]

Other correlates of atypical depression of relevance to attachment theory include low self-esteem[4] and a history of childhood abuse,[14,42] both of which have a particularly strong association with anxious-ambivalent/preoccupied attachment.[43,44]

Yet another correlate of atypical depression that lends itself well to an attachment model is an early age at onset. Insecure attachment has been strongly linked to the development of depression in childhood[20,45,46] and to intergenerational transmission of depression risk.[47,48] Internal working models associated with a negative view of the self and a perception that the world is hostile and rejecting are thought to contribute to the onset of depression in childhood, similar to what has been described for rejection sensitivity per se.[49] Conversely, one might expect that the state of depression would interfere with internal working models of intimate relationships by activating these same negative views of the self and others. In this way, attachment theory may be a useful framework from which to understand the complex interplay of relationship difficulties and depressed mood that characterizes atypical depression.

While the above review suggests that many individual correlates of atypical depression are themselves associated with anxious-ambivalent (preoccupied) attachment, and not with avoidant (dismissing) attachment, adult attachment styles have not been studied in atypical depression per se. To examine adult attachment styles in atypical depression more directly, in the current study, we administered a self-report adult attachment scale to consecutive depressed individuals attending a tertiary mood disorders clinic. On the basis of the above review, our primary study hypothesis was that—relative to subjects with classic, melancholic depression—subjects with atypical depression would report higher levels of anxious-ambivalent attachment. Secure attachment, which is a broad measure of interpersonal functioning, was predicted to be lower in atypical subjects. Avoidant attachment, which is associated with a de-escalation of emotions in response to stress and a high threshold to detect rejection, was not expected to differ in the 2 depressive subgroups.

While attachment theory has not had a major emphasis on gender differences historically, gender has been a critical issue in the atypical depression literature per se.[12,14] In light of this and the relatively low number of men with atypical depression, we also tested our hypotheses in female subjects only.

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METHOD

Study Sample

The current study sample consisted of 199 individuals with a primary diagnosis of major depressive disorder with either atypical (N = 48) or melancholic (N = 151) features, who presented to the Mood Disorders Clinic at the Centre for Addiction and Mental Health over a 3-year period. The study was conducted between 1999 and 2004. The strategy of using melancholic depression as a comparator group for atypical depression extends from prior studies finding several fundamental differences between these 2 depressive subtypes.[3,6,42,50]

Subjects were recruited from 2 separate subsamples, which, together, established a diverse study population. Ninety-six subjects were consecutive patients presenting for a consultation regarding treatment of depression and were referred by either a family doctor or a psychiatrist in the community. As a group, these referrals tend to have a relatively chronic and complex clinical presentation. The other 103 subjects were undergoing an initial assessment as part of a research study looking at cognitive reactivity and the prediction of depressive relapse.[51] The majority of these subjects were recruited via advertisements in local newspapers, while a minority were recruited through the clinic. As a group, these study patients would be expected to have a less complicated and less chronic course of illness than the consultation patients described above.

To be designated "atypical," subjects had to meet full Columbia group criteria,[2] which include both mood reactivity and at least 2 other symptoms from among the following: increased appetite/weight gain, hypersomnia, leaden paralysis, and rejection sensitivity. To be designated melancholic, subjects had to have anhedonia and/or lack of mood reactivity, and 3 symptoms from among the following: distinct quality of mood, feeling worst in the morning, marked psychomotor changes, appetite or weight loss, and excessive guilt.

All subjects provided informed consent administered by a research assistant. The study protocol was approved by the institutional review board at the Centre for Addiction and Mental Health.

Assessments

DSM-IV diagnoses. Largely on the basis of historical choices made by the 2 separate clinics, the consultation service participants were administered a patient version of the Structured Clinical Interview for DSM-IV Axis-I Disorders (SCID-I),[52] while the cognitive-behavioral therapy (CBT) study participants were given the clinician version[53] of this same instrument. This was not problematic as the diagnostic criteria for the various depressive subtypes are identical in these 2 SCID-I versions.

State depression scores. State depression was assessed using the Hamilton Rating Scale for Depression (HAM-D).[54] While all 96 consultation clinic participants were administered a 29-item version of the HAM-D, which includes an 8-item addendum for atypical symptoms,[55] only 69 of 103 subjects (67.0%) in the cognitive study group received this same 29-item version; i.e., 34 were given the original 17-item HAM-D. This reflects a later adoption of the 29-item version in the CBT clinic.

Adult attachment. The main attachment instrument used for the current study was the Adult Attachment Scale (AAS) developed by Collins and Read,[25] a self-report scale administered to all subjects as part of their initial assessment package. This dimensional scale, derived from the adult attachment categories first proposed by Hazan and Shaver,[24] includes 18 items describing core feelings about close relationships in adulthood. Each item is rated from 0 (not at all characteristic) to 5 (very characteristic). We chose this scale in order to generate scores on the most robust dimensions of adult attachment that have been observed over time: secure, anxious-ambivalent, and avoidant attachment.[56] Questionnaire items related to secure attachment describe a positive sense of self, an ability to depend on others, and a sense of personal efficacy in dealing with life stress. Items related to anxious-ambivalent attachment assess a fear of rejection and abandonment in the face of life stress and a tendency to activate negative emotions when faced with an acute challenge. Items related to attachment avoidance describe a fear of closeness and dependency on others; avoidantly attached individuals tend to distance themselves from potential attachment figures and deactivate emotions when stressed. Using the AAS,[25] one can derive scores on these 3 basic dimensions. All assessments were completed at intake while subjects were in a depressed state.

Statistics

As a first step, continuous demographic and clinical variables were compared across the 2 depressive groups (atypical and melancholic) using unpaired t tests. Gender and rates of both early onset depression (before age 18 years) and chronic depression (current episode at least 2 years in duration) were compared across groups using Pearson χ^2.

To test our main study hypothesis, we compared secure, anxious-ambivalent, and avoidant attachment scores across the 2 depressive groups using multivariate analysis of variance (MANOVA). As alluded to above, in a secondary analysis, we repeated this same comparison in female subjects only.

RESULTS

Demographics and Clinical Variables

Table 2 summarizes the key demographic and clinical variables by depressive group. As shown, melancholic

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Table 2. Means and Standard Deviations for Clinical and Demographic Variables by Depressive Subtype

	Atypical			Melancholic			Statistic[a]		
Variable	N	Mean	SD	N	Mean	SD	t	df	p Value
Age, y	48	36.8	10.6	151	39.8	11.7	1.59	197	.11
HAM-D (17-item)	48	18.8	4.1	151	20.8	5.0	2.56	197	.01
HAM-D (29-item)	38	32.1	7.8	127	31.8	8.9	–0.14	163	.89
No. of episodes	39	1.9	1.3	127	2.3	2.7	0.96	164	.34
	N/N	%		N/N	%		χ^2	df	p Value
Female gender	38/48	79.2		87/151	57.6		7.24	1	.007
Age at onset < 18 y	19/42	45.2		38/138	27.5		4.66	1	.03
Chronic depression (current episode ≥ 2 y)	14/45	31.1		41/144	28.5		0.12	1	.73

[a]Discrepancies in Ns and degrees of freedom exist due to missing data.
Abbreviation: HAM-D = Hamilton Rating Scale for Depression.

Table 3. Marginal Means and Standard Errors for Attachment Subscale Scores by Depressive Subtype (both genders)

	Atypical[a]		Melancholic[b]		Statistic, Between-Subjects Effects[c]		Effect Size
Attachment Subscale	Mean	SE	Mean	SE	F	p Value	Partial r^2
Secure	15.5	0.6	17.4	0.3	7.34	.007	.039
Anxious/ ambivalent	19.3	0.8	17.6	0.4	3.56	.06	.019
Avoidant	20.6	0.7	19.4	0.4	2.11	.15	.012

[a]N = 42.
[b]N = 140.
[c]df = 1,180.

subjects scored significantly higher on the 17-item HAM-D (which does not assess "atypical" vegetative symptoms), however, no group difference in severity of depression was found based on the 29-item HAM-D. There was no significant difference in age or in the number of prior depressive episodes across the 2 depressive subtypes. The atypical depression group had a significantly greater proportion of female subjects and more cases of early onset depression than did the melancholic group.

A MANOVA test indicated a significant difference in attachment scores by depressive subtype (F = 2.92, df = 3,178; p = .035). Table 3 summarizes the between-groups marginal means and standard errors for the attachment subscale scores by depressive subtype.

As shown, between-subjects testing indicated that atypical depression was associated with significantly lower secure attachment scores, with a trend toward higher anxious-ambivalent attachment scores, than was

Table 4. Marginal Means and Standard Errors for Attachment Subscale Scores by Depressive Subtype (women only)

	Atypical[a]		Melancholic[b]		Statistic, Between-Subjects Effects[c]		Effect Size
Attachment Subscale	Mean	SE	Mean	SE	F	p Value	Partial r^2
Secure	14.9	0.7	17.9	0.4	12.56	.001	.103
Anxious/ ambivalent	19.8	0.9	17.3	0.6	4.90	.029	.043
Avoidant	21.2	0.9	19.5	0.6	2.72	.102	.024

[a]N = 32.
[b]N = 79.
[c]df = 1,109.

melancholia. Avoidant attachment scores did not differ significantly across the 2 depressed groups.

Secondary Analysis in Women

Table 4 summarizes the MANOVA results for the female subjects considered separately. Restricting the analysis to women appeared to accentuate the attachment score differences between the atypical and melancholic groups (multivariate F = 4.71, df = 3,107; p = .004). As shown, between-groups effects indicated that secure attachment scores were again significantly lower in the atypical group. In contrast to the earlier results across both sexes, anxious-ambivalent attachment was significantly greater in women with atypical depression than in women with melancholia. Avoidant attachment did not differ significantly across the 2 groups, though it did approach a trend level of significance.

DISCUSSION

This study provides at least partial preliminary support for our working hypothesis that atypical depression is associated with more anxious-ambivalent attachment and less secure attachment than is classic melancholic depression. Our secondary analysis suggests that these attachment differences may be more pronounced when women are considered separately from men, although a larger group of men would be needed to test this conclusively. Pending replication in other samples, these initial data suggest several new avenues for research on atypical depression and have important implications for the interpretation and design of attachment-based studies of depressive disorders overall.

While the purely descriptive DSM approach to psychiatric diagnosis helps us to define the boundaries of various disorders, it tells us little about etiology and comorbidity. This is well exemplified in the atypical depression literature, which has produced a large number of epidemiologic and descriptive studies but has made minimal effort to integrate these various findings conceptually. Understanding how chronic rejection sensitivity could be

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part of the definition of a mood disorder has been particularly vexing to researchers in this area. Insecure/anxious-ambivalent attachment may be quite useful as a unifying construct for many of the defining and associated features of atypical depression, including rejection sensitivity, social anxiety, emotional dysregulation, low self-esteem, and early onset among others. It is not suggested that insecure and anxious-ambivalent attachment in and of themselves *cause* atypical depression. Rather, these attachment styles may be a risk factor that, in combination with other risk factors (e.g., childhood trauma, key genetic variants), predisposes an individual to develop atypical depression and 1 or more of its clinical correlates as listed above.

Attachment theory may also inform new interpretations of prior research on atypical depression. For example, in the Sequenced Treatment Alternatives to Relieve Depression cohort, mothers with atypical depression were much more likely to have children with depression and anxiety disorders than were mothers with non–atypical depression.[57] In light of the current results, we speculate that these findings could reflect the intergenerational transmission of vulnerability to atypical depression via insecure/anxious-ambivalent attachment. As maternal attachment behavior is strongly influenced by a mother's own attachment experiences early in life,[58,59] one might further expect this vulnerability to be passed on to multiple generations. If so, atypical depression would be an ideal focus for attachment-based interventions during all phases of development, with the greatest benefits most likely occurring during pregnancy and the postpartum period.

There is a significant body of empirical research showing that self-report adult attachment scores predict cognitive, affective, and behavioral responses to a wide variety of real world and laboratory situations.[27] Anxious-ambivalent attachment in particular has been associated with a tendency to focus on one's own distress, to ruminate on negative thoughts, and to use emotion-focused coping strategies in response to interpersonal stress.[60,61] It would be of great interest in future research to empirically demonstrate these same vulnerabilities in atypical depression relative to melancholia. This could point the way to novel treatment approaches to address these specific deficits.

Further to this point, a key clinical issue for attachment theory is whether early attachment behaviors predict impaired interpersonal functioning over the lifespan and to what extent interventions can promote more adaptive attachment behaviors. While there is evidence for stability of attachment behaviors over time,[21,22] it has also been established that novel attachment-based strategies can change attachment style classifications early in development.[62] It is not unreasonable to speculate that such interventions may have particular relevance for prevention of early-onset atypical depression. Regarding the treatment of atypical depression in adults, attachment theory can provide a useful foundation to define the target of change in psychotherapy (e.g., internal working models related to fear of rejection and hyperactivation of negative emotion), to understand the process of change (e.g., by establishing a secure base and encouraging exploration of working models), and to conceptualize a given case as it unfolds over time.[63] Recent evidence further suggests that an individual's attachment patterns may be an important consideration when choosing what mode of psychotherapy to use.[64]

Regarding biologic treatments for atypical depression, there is emerging evidence that early attachment experiences can have profound effects on neurodevelopment.[65–73] As new research on the biologic sequelae of early attachment emerges over time, new biologic targets for atypical depression, and/or a better understanding of the mechanism of action of currently available treatments, may also begin to emerge. This may have particular relevance for the monoamine oxidase inhibitors, a class of medications with a unique efficacy for atypical depression of early onset.[74]

Implications for Attachment Studies of Depression

Historically, one common criticism of attachment theory has been the inability of particular attachment styles to consistently discriminate between different types of psychopathology. Prior attachment studies of depression have exemplified this problem to some extent.[75–77] One unique strength of the current model is that it includes both predictive specificity (from insecure and anxious-ambivalent attachment to atypical depression) and discriminant validity (by distinguishing depressive subtypes and excluding avoidant attachment). The current study thus demonstrates how a more careful consideration of phenotype can help to resolve the problem of specificity when studying depression from an attachment perspective.

The potential confounding effect of state depression on the self-reporting of adult attachment styles has also been a potential problem for prior work in this area.[78] A unique aspect of the current study is that all subjects were significantly depressed at the time of completion of the attachment questionnaires. Importantly, the atypical group reported less secure and more anxious-ambivalent attachment than did the melancholic group *despite having lower or equivalent depression scores* (based on the 17- item and 29-item HAM-D, respectively). This suggests that state depression may have masked rather than exaggerated group differences in attachment measures to some extent. The finding of attachment style differences independent of depression severity is an important strength of the current dataset, establishing a further rationale for considering depressive subtypes in future work of this type.

Another way that the current results can contribute to the adult attachment literature relates to the different ways

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that attachment classifications have been implemented in prior research. While Brennan et al.[26] propose that anxiety and avoidance are the key dimensions to consider when assessing attachment in adults, Stein et al.[79] suggest that security-insecurity of attachment forms a unique dimension on its own, reflecting an individual's overall ability to relate to close others. Importantly, self-reported attachment insecurity is associated with a greater likelihood of psychopathology, including onset of depression per se.[79,80] This is highly pertinent to the current results in that insecure attachment, and not anxious or avoidant attachment, was the style most differentiated across depressive subtypes. This would suggest that future studies of attachment in (atypical) depression should assess a separate security-insecurity dimension.

Limitations

A number of limitations of the current findings merit consideration. While our data suggest that insecure and anxious-ambivalent attachment might be risk factors for the onset of atypical depression, this cannot be established using a cross-sectional design. An alternative explanation is that because atypical depression tends to strike relatively early in life, it is more likely to promote negative working models of the self and others at key points in social development. If so, atypical depression might be a cause rather than a result of an insecure attachment style. Ultimately, prospective studies in high-risk children and adolescents may demonstrate that various developmental trajectories are relevant in this regard and can lead to the complex phenotype of atypical depression over time. The role of poor family functioning, which has been associated with both attachment insecurity[62] and atypical depression,[11,14,42] will be an important consideration in work of this type.

As reviewed above, 2 separate traditions have emerged to study attachment in adults. It would be of great interest to validate and extend the current model using developmentally based measures of adult attachment, such as the Adult Attachment Interview (AAI)[81] (also C. George, N. Kaplan, M. Main, unpublished data, 1996). The AAI assesses internal working models of the self while probing memories of one's own childhood experiences. If future work finds that internal working models associated with rejection sensitivity and depression are present during the remitted state in atypical but not other depressed patients, this would strengthen the argument that insecure/anxious-ambivalent attachment has a more causal relationship with this disorder. Also of great interest is the strong relation between parental AAI classifications and infant attachment classifications,[58] an important consideration if we are to suggest that atypical depression is transmitted via sociobiological means across generations.

Another strong rationale to replicate this study with the AAI is that the AAI assesses a fourth attachment dimension, i.e., unresolved (disorganized), that cannot be assessed with inventories. Individuals with unresolved states of mind describe significant childhood losses or traumas incoherently. For example, the unresolved AAI narrative may reveal that the respondent is reexperiencing a loss or trauma or it may show other dramatic changes in discourse style. Because these phenomena take the form of delimited intrusions in the discourse, the unresolved classification is always coupled with an alternate classification, i.e., dismissing, autonomous, or preoccupied.[82] Based on the high rate of early trauma known to exist in atypical depression,[14,42] one prediction for future AAI work is that, on average, atypical patients will have higher rates of unresolved-preoccupied attachment than will patients with melancholia.

The lack of a normal control group makes it difficult to fully assess the relative degree of attachment insecurity manifest in these clinical patients. While atypical subjects appeared to have less secure and more anxious-ambivalent attachment than melancholic subjects, we did not assess possible attachment style differences in patients with melancholia relative to controls. While prior studies[77,78] have demonstrated insecure attachment styles in depressed subjects relative to normal controls, depressive subtypes were not considered in this prior work. The current results suggest that this is an important consideration for the future.

Notwithstanding these limitations, the current results suggest that attachment theory in general and insecure/anxious-ambivalent attachment in particular may be a useful framework from which to understand many aspects of atypical depression. This may in turn inform future prevention and treatment approaches for this important and complex group of depressed patients.

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REFERENCES

1. West ED, Dally PJ. Effects of iproniazid in depressive syndromes. Br Med J 1959;1(5136):1491–1494
2. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition. Washington, DC: American Psychiatric Association; 1994
3. Parker GB. Atypical depression: a valid subtype? J Clin Psychiatry 2007;68(suppl 3):18–22
4. Sullivan PF, Kessler RC, Kendler KS. Latent class analysis of lifetime depressive symptoms in the national comorbidity survey. Am J Psychiatry 1998;155(10):1398–1406
5. Chopra KK, Bagby RM, Dickens S, et al. A dimensional approach to personality in atypical depression. Psychiatry Res 2005;134(2):161–167
6. Angst J, Gamma A, Benazzi F, et al. Melancholia and atypical depression in the Zurich study: epidemiology, clinical characteristics, course, comorbidity and personality. Acta Psychiatr Scand Suppl 2007;(433):72–84
7. Alpert JE, Uebelacker LA, McLean NE, et al. Social phobia, avoidant

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personality disorder and atypical depression: co-occurrence and clinical implications. Psychol Med 1997;27(3):627–633
8. Perugi G, Akiskal HS, Lattanzi L, et al. The high prevalence of "soft" bipolar (II) features in atypical depression. Compr Psychiatry 1998;39(2): 63–71
9. Posternak MA, Zimmerman M. Partial validation of the atypical features subtype of major depressive disorder. Arch Gen Psychiatry 2002;59(1): 70–76
10. Davidson JR, Miller RD, Turnbull CD, et al. Atypical depression. Arch Gen Psychiatry 1982;39(5):527–534
11. Novick JS, Stewart JW, Wisniewski SR, et al. Clinical and demographic features of atypical depression in outpatients with major depressive disorder: preliminary findings from STAR*D. J Clin Psychiatry 2005; 66(8):1002–1011
12. Stewart JW, McGrath PJ, Rabkin JG, et al. Atypical depression: a valid clinical entity? Psychiatr Clin North Am 1993;16(3):479–495
13. Horwath E, Johnson J, Weissman MM, et al. The validity of major depression with atypical features based on a community study. J Affect Disord 1992;26(2):117–125
14. Matza LS, Revicki DA, Davidson JR, et al. Depression with atypical features in the National Comorbidity Survey: classification, description, and consequences. Arch Gen Psychiatry 2003;60(8):817–826
15. Angst J, Gamma A, Sellaro R, et al. Toward validation of atypical depression in the community: results of the Zurich cohort study. J Affect Disord 2002;72(2):125–138
16. Thase ME. Recognition and diagnosis of atypical depression. J Clin Psychiatry 2007;68(suppl 8):11–16
17. Bowlby J. Attachment and Loss: Vol 1: Attachment. New York, NY: Basic Books; 1969
18. Bowlby J. Attachment and Loss: Vol 2: Separation: Anxiety and Anger. New York, NY: Basic Books; 1973
19. Bowlby J. Attachment and Loss: Vol 3: Loss: Sadness and Depression. New York, NY: Basic Books; 1980
20. Ainsworth MDS, Blehar MC, Waters E, et al. Patterns of Attachment: A Psychological Study of the Strange Situation. Hillsdale, NJ: Erlbaum; 1978
21. Rothbard JC, Shaver PR. Continuity of attachment across the lifespan. In: Sperling MB, Berman WH, eds. Attachment in Adults: Clinical and Developmental Perspectives. New York, NY: Guilford Press; 1994:31–71
22. Waters E, Merrick S, Treboux D, et al. Attachment security in infancy and early adulthood: a 20-year longitudinal study. Child Dev 2000;71: 684–689
23. Main M, Kaplan N, Cassidy J. Security in infancy, childhood, and adulthood: a move to the level of representation. Monogr Soc Res Child Dev 1985;50(1-2):66–104
24. Hazan C, Shaver P. Romantic love conceptualized as an attachment process. J Pers Soc Psychol 1987;52(3):511–514
25. Collins NL, Read SJ. Adult Attachment, Working Models, and Relationship Quality in Dating Couples. J Pers Soc Psychol 1990;58(4):644–663
26. Brennan KA, Clark CL, Haver PR. Self-report measurement of adult attachment: an integrative overview. In: Simpson JA, Rholes W, eds. Attachment Theory and Close Relationships. New York, NY: Guilford Press; 1998:46–76
27. Shaver PR, Mikulincer M. Attachment-related psychodynamics. Attach Hum Dev 2002;4(2):133–161
28. Fraley CR, Shaver PR. Adult romantic attachment: theoretical developments, emerging controversies, and unanswered questions. Rev Gen Psychol 2000;4:132–154
29. Sloman L. The syndrome of rejection sensitivity. In: Gilbert P, ed. Genes on the Couch: Explorations in Evolutionary Psychology. London, England: Routledge; 2000:257–275
30. Downey G, Freitas AL, Michaelis B, et al. The self-fulfilling prophecy in close relationships: rejection sensitivity and rejection by romantic partners. J Pers Soc Psychol 1998;75(2):545–560
31. Cassidy J. Emotion regulation: influences of attachment relationships. Monogr Soc Res Child Dev 1994;59(2–3):228–249
32. Mikulincer M, Florian V. The association between spouses' self-reports of attachment styles and representations of family dynamics. Fam Process 1999;38(1):69–83
33. Kobak RR, Sceery A. Attachment in late adolescence: working models, affect regulation, and representations of self and others. Child Dev 1988;59(1):135–146
34. Schore AN. Attachment and the regulation of the right brain. Attach Hum Dev 2000;2(1):23–47
35. Crawford TN, Shaver PR, Goldsmith HH. How affect regulation moderates the association between anxious attachment and neuroticism. Attach Hum Dev 2007;9(2):95–109
36. Maunder RG, Hunter JJ. Attachment and psychosomatic medicine: developmental contributions to stress and disease. Psychosom Med 2001;63(4):556–567
37. Schuman M, Gitlin MJ, Fairbanks L. Sweets, chocolate, and atypical depressive traits. J Nerv Ment Dis 1987;175(8):491–495
38. Møller SE. Serotonin, carbohydrates, and atypical depression. Pharmacol Toxicol 1992;71(suppl 1):61–71
39. Dallman MF, Pecoraro N, Akana SF, et al. Chronic stress and obesity: a new view of "comfort food." Proc Natl Acad Sci U S A 2003;100(20): 11696–11701
40. Cole-Detke H, Kobak R. Attachment processes in eating disorders and depression. J Consult Clin Psychol 1996;64(2):282–290
41. Salzman JP. Ambivalent attachment in female adolescents: association with affective instability and eating disorders. Int J Eat Disord 1997; 21(3):251–259
42. Levitan RD, Parikh SV, Lesage AD, et al. Major depression in individuals with a history of childhood physical or sexual abuse: relationship to neurovegetative features, mania, and gender. Am J Psychiatry 1998; 155(12):1746–1752
43. Feeney JA, Noller P, Patty J. Adolescents' interactions with the opposite sex: influence of attachment style and gender. J Adolesc 1993;16(2): 169–186
44. Stalker CA, Davies F. Attachment organization and adaptation in sexually-abused women. Can J Psychiatry 1995;40(5):234–240
45. Cicchetti D, Schneider-Rosen K. An organizational approach to childhood depression. In: Rutter M, Izard C, Read P, eds. Depression in Young People: Clinical and Developmental Perspectives. New York, NY: Guilford; 1986
46. Rose D, Abramson LY. Developmental predictors of depressive cognitive style: research and theory. In: Cicchetti D, Toth S, eds. Rochester Symposium on Developmental Approaches to Affective Disorders. Rochester, NY: University of Rochester Press; 1992:323–349
47. Teti DM, Gelfand DM, Messinger DS, et al. Maternal depression and the quality of early attachment: an examination of infants, preschoolers, and their mothers. Dev Psychol 1995;31:364–376
48. Graham CA, Easterbrooks MA. School-aged children's vulnerability to depression: the role of quality of attachment, maternal mental health, and economic risk. Dev Psychopathol 2000;12:201–213
49. Cummings EM, Cicchetti D. Toward a transactional model of relations between attachment and depression. In: Greenberg MT, Cicchetti D, Cummings EM, eds. Attachment in the Preschool Years: Theory, Research, and Intervention. Chicago, Ill: University of Chicago Press; 1990:339–372
50. Kendler KS, Eaves LJ, Walters EE, et al. The identification and validation of distinct depressive syndromes in a population-based sample of female twins. Arch Gen Psychiatry 1996;53(5):391–399
51. Segal ZV, Kennedy S, Gemar M, et al. Cognitive reactivity to sad mood provocation and the prediction of depressive relapse. Arch Gen Psychiatry 2006;63(7):749–755
52. First MS, Spitzer RL, Gibbon M, et al. Structured Clinical Interview for DSM-IV Axis-I Disorders-Patient Edition (SCID-I/P, Version 2.0). New York, NY: Biometrics Research, New York State Psychiatric Institute; 1995
53. First MS, Spitzer RL, Gibbon M, et al. Structured Clinical Interview for DSM-IV Axis I Disorders, Clinician Version (SCID-CV). Washington, DC: American Psychiatric Press; 1996
54. Hamilton, M. A rating scale for depression. J Neurol Neurosurg Psychiatry 1960;23:56–62
55. Williams JBW, Link MJ, Rosenthal NE, et al. Structured Interview Guide for the Hamilton Depression Rating Scale, Seasonal Affective Disorders Version (SIGH-SAD). New York, NY: New York State Psychiatric Institute; 1988
56. Mikulincer M, Shaver PR. The attachment behavioural system in adulthood: activation, psychodynamics, and interpersonal processes. In: Zanna MP, ed. Advances in Experimental Social Psychology, Vol 35. San Diego, Calif: Academic Press; 2003:53–152
57. Pilowsky DJ, Wickramaratne PJ, Rush AJ, et al. Children of currently depressed mothers: a STAR*D ancillary study. J Clin Psychiatry 2006; 67(1):126–136

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58. van Ijzendoorn MH. Adult attachment representations, parental responsiveness and infant attachment: a meta-analysis on the predictive validity of the Adult Attachment Interview. Psychol Bull 1995;117(3): 387–403
59. Champagne F, Diorio J, Sharma S, et al. Naturally occurring variations in maternal behavior in the rat are associated with differences in estrogen-inducible central oxytocin receptors. Proc Natl Acad Sci U S A 2001;98(22):12736–12741
60. Mikulincer M. Adult attachment style and affect regulation: strategic variations in self-appraisals. J Pers Soc Psychol 1998;75(2):420–435
61. Crawford TN, Shaver PR, Goldsmith HH. How affect regulation moderates the association between anxious attachment and neuroticism. Attach Hum Dev 2007;9(2):95–109
62. Toth SL, Rogosch FA, Manly JT, et al. The efficacy of toddler-parent psychotherapy to reorganize attachment in the young offspring of mothers with major depressive disorder: a randomized preventive trial. J Consult Clin Psychol 2006;74(6):1006–1016
63. Davila J, Levy KN. Introduction to the special section on attachment theory and psychotherapy. J Consult Clin Psychol 2006;74(6):989–993
64. McBride C, Atkinson L, Quilty LC, et al. Attachment as moderator of treatment outcome in major depression: a randomized control trial of interpersonal psychotherapy versus cognitive behavior therapy. J Consult Clin Psychol 2006;74(6):1041–1054
65. Levine S. Primary social relationships influence the development of the hypothalamic–pituitary–adrenal axis in the rat. Physiol Behav 2001; 73(3):255–260
66. Plotsky PM, Meaney MJ. Early, postnatal experience alters hypothalamic corticotropin-releasing factor (CRF) mRNA, median eminence CRF content and stress-induced release in adult rats. Brain Res Mol Brain Res 1993;18(3):195–200
67. Liu D, Diorio J, Tannenbaum B, et al. Maternal care, hippocampal glucocorticoid receptors, and hypothalamic-pituitary-adrenal responses to stress. Science 1997;277(5332):1659–1662
68. Hertsgaard L, Gunnar M, Erickson MF, et al. Adrenocortical responses to the strange situation in infants with disorganized/disoriented attachment relationships. Child Dev 1995;66(4):1100–1106
69. Spangler G, Grossmann KE. Biobehavioral organization in securely and insecurely attached infants. Child Dev 1993;64(5):1439–1650
70. Gunnar MR, Brodersen L, Nachmias M, et al. Stress reactivity and attachment security. Dev Psychobiol 1996;29(3):191–204
71. Nachmias M, Gunnar M, Mangelsdorf S, et al. Behavioral inhibition and stress reactivity: the moderating role of attachment security. Child Dev 1996;67(2):508–522
72. Pruessner JC, Champagne F, Meaney MJ, et al. Dopamine release in response to a psychological stress in humans and its relationship to early life maternal care: a positron emission tomography study using [11C] raclopride. J Neurosci 2004;24(11):2825–2831
73. Diamond LM. Contributions of psychophysiology to research on adult attachment: review and recommendations. Pers Soc Psychol Rev 2001; 5(4):276–295
74. Stewart JW. Treating depression with atypical features. J Clin Psychiatry 2007;68(suppl 3):25–29
75. Murphy B, Bates GW. Adult attachment style and vulnerability to depression. Pers Ind Diff 1997;22(6):835–844
76. McCarthy G. Attachment style and adult love relationships and friendships: a study of a group of women at risk of experiencing relationship difficulties. Br J Med Psychol 1999;72(pt 3):305–321
77. Mickelson KD, Kessler RC, Shaver PR. Adult attachment in a nationally representative sample. J Pers Soc Psychol 1997;73(5):1092–1106
78. Bifulco A, Moran PM, Ball C, et al. Adult attachment style, 1: its relationship to clinical depression. Soc Psychiatry Psychiatr Epidemiol 2002;37(2):50–59
79. Stein H, Koontz AD, Fonagy P, et al. Adult attachment: what are the underlying dimensions? Psychol Psychother 2002;75:77–91
80. Bifulco A. Attachment style measurement: a clinical and epidemiological perspective. Attach Hum Dev 2002;4(2):180–188
81. Hesse E. The Adult Attachment Interview: historical and current perspectives. In: Cassidy J, Shaver PR, eds. Handbook of Attachment: Theory, Research, and Clinical Applications. New York, NY: Guilford; 1999:395–433
82. Goldberg S. Attachment and Development. London, United Kingdom: Arnold; 2000

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