

Concordance in Attachment States of Mind and Styles With Respect to Fathers and Mothers

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It is believed that by adulthood, independent attachments to the mother and the father coalesce into a single state of mind with respect to attachment. If true, states of mind with respect to mothers and fathers should be concordant. Fifty-six young adults were administered two versions of the Adult Attachment Interview, each of which asked about their relationship with one parent. State of mind with respect to the father was significantly related to state of mind with respect to the mother, as were attachment styles regarding the two parents. Perceptions of attachment styles were not very related to corresponding states of mind but were related to inferred loving from a parent.

In infancy and early childhood, attachments to fathers and mothers are relatively unrelated to one another. For example, van IJzendoorn and De Wolff (1997) conducted a meta-analysis of 14 studies ($N = 950$ families) that had examined the concordance of classifications of infant attachment to fathers and mothers. They found only modest agreement (62%, $\phi = .17$) with regard to whether the infant was classified as secure or insecure in relation to the father and to the mother. An earlier meta-analysis conducted by Fox, Kimmerly, and Schafer (1991a, 1991b), which used 11 of the 14 studies analyzed by van IJzendoorn, reported similar concordance for three-way classifications (58% agreement; $\kappa = .18$).

The lack of concordance in infants' attachment classifications is presumed to reflect differences in their underlying representations of their relationships with their parents. That is, they have independent sets of expectations or rules with regard to attachment with their mothers and fathers. Attachment theorists have referred to these expectations or representations as *internal working models* (Main, Kaplan, & Cassidy, 1985) or, more recently, as *states of mind* (Main, 1999). Further support for the idea that these representations are independent comes from Verschueren and Marcoen's (1999) finding of low agreement for classifications of kindergarteners' representations of attachment to the mother and the father using an attachment story completion task.

Interestingly, it is believed that by adulthood, these independent representations of parents tend to coalesce into a single state of mind with respect to attachment (Bretherton, 1985; Main, 1999; Main & Goldwyn, 1984). As they acquire the cognitive skills of formal operations, adolescents and emerging adults are able to step back and reflect on their relationships, and it is believed that such reflections lead to the integration or coalescence of their represen-

tations of attachments. This developmental process of coalescing is a critical one because it means that security is no longer just a relationship characteristic but is also a characteristic of the individual. For example, one not only has secure or insecure relationships but also has internalized a secure or insecure state of mind.

If such coalescence has occurred, one would expect to find concordance in the states of mind regarding mothers and fathers. As yet, however, there is relatively little empirical evidence of coalescence or the concordance that would result from it.

One source of evidence for concordance comes from individuals' discourse during the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1984), the standard measure of adults' states of mind with regard to attachment. On the AAI, individuals are asked about their experiences with both parents. The nature of their discourse is used to derive classifications of secure, dismissing, or preoccupied. For example, those who describe their relationships coherently are classified as secure, whereas those who attempt to limit the influence of their relationships by idealizing, derogating, or failing to remember their experiences are classified as dismissing. Preoccupied individuals may be vague, passive in speech, confused, angry, or absorbed with frightening experiences. Except in unusual circumstances, the general characteristics of the discourse seem relatively consistent throughout the interview, suggesting that there is a single state of mind with respect to both parents. Thus, adults are assigned a single classification of secure, dismissing, or preoccupied rather than separate classifications for the father and the mother (Main & Goldwyn, 1984). A single classification is usually viable even when experiences with fathers and mothers are very different.

However, it is not necessary that the discourse about one parent be fully consistent with the discourse about the other parent for one to be considered to have a single state of mind and receive one of the standard classifications (Main & Goldwyn, 1984). For example, the discourse about each parent does not have to be rated as high in involving anger for someone to be classified as preoccupied. A high rating of involving anger in the discourse about one parent is sufficient. Interviews are not considered unclassifiable unless the discourse about the two parents is strikingly different. For example, a "cannot classify" categorization does not necessarily occur if the ratings of involving anger are high for only one

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Preparation of this article was supported by National Institute of Mental Health Grant 50106 awarded to Wyndol Furman.

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parent. It would occur only if ratings of involving anger were high for one parent, and the ratings of the indices for one of the other insecure classifications were high for the other parent. Thus, the fact that almost all AAIs can be classified into one of the standard categories does not mean that the discourse about the two parents is fully consistent. In summary, significant limitations exist in inferring concordance from the discourse and classification on a single, standard AAI.

More convincing evidence for concordance would involve independent assessments of individuals' states of mind with respect to attachment to mothers and fathers (Main, 1999). One approach to this task would involve having separate raters code individuals' AAIs for state of mind about each parent. Although this approach maintains the integrity of the original, validated instrument, it cannot distinguish between genuine concordance and artificially inflated concordance that might result from having participants talk about both parents during the same interview. For instance, it is possible that discourse about experiences with one parent could influence discourse about experiences with the other parent when these are assessed in the same interview. Often individuals refer to both their parents in the standard interview (e.g., "They were there"), and it is not clear whether such comments actually apply equally to each parent. Even if the individual's discourse is not affected in this manner, it is likely that a coder's perceptions of discourse about one parent could be influenced by the discourse about the other parent. Although this is not a problem when one is rating overall states of mind, it is problematic if one wants to derive an independent assessment of states of mind regarding mothers and fathers separately. Similarly, comments referring to both parents would be factored into the ratings for both parents, rendering the two sets of ratings nonindependent and relying on the same discourse.

Administering separate interviews about mothers and fathers could circumvent these methodological issues without significantly altering the original instrument. In this way, coders would only be privy to a participant's discourse about a single parent. If there is a coalesced, overall state of mind with respect to attachment, it should affect responses on the interviews about both fathers and mothers, and the classifications should be relatively concordant. If there is not a coalesced, overall state of mind with respect to attachment, the responses on the two interviews would be relatively independent and not very concordant.

Thus, a demonstration of concordance on separate interviews not only would provide validation support for the coding of the AAI when a single classification is typically obtained but would also have important theoretical implications. A high degree of concordance would provide evidence of an overall state of mind with respect to attachment to parents. An absence of concordance would provide counterevidence. Hesse (1999) has emphasized that the AAI does not assess the security of attachment to a particular figure, but the absence of concordance would suggest that the discourse on the AAI is strongly influenced by the attachment to a particular person. In addition, the demonstration of concordance could also serve as a stepping-stone for research on the process of coalescence—that is, how such concordance came about.

Finally, such an examination would provide information about the organization of representations. Several theorists have proposed that cognitive representations of attachment relationships or close relationships are hierarchically organized (Collins & Read,

1994; Furman & Simon, 1999). That is, individuals may have cognitive representations about attachment relationships in general, about particular types of attachment relationships (e.g., relationships with parents or romantic partners), and about specific relationships. To date, there is relatively limited information about how generalized representations are or how specific they are to types of relationships or particular people. State of mind on the AAI is moderately related to state of mind on a similar interview assessing the representation of the premarital or marital relationship, another type of attachment relationship (Dickstein, Seifer, St. Andre, & Schiller, 2001; Owens et al., 1995). These findings are consistent with the idea that representations of different types of attachment relationships are interrelated but somewhat distinct. As yet, the degree to which individuals have representations of their parents in general or representations of each parent separately is not known.

The first purpose of this study was to examine the degree of concordance when states of mind were assessed in separate interviews at different times. Consistent with a hierarchical model of representations, a moderate level of concordance was anticipated.

A second purpose of this study was to examine the degree of concordance in self-perceptions of attachment styles with parents. Although controversy exists regarding the interpretation of self-report measures of attachment (see Shaver & Mikulincer, 2002), such questionnaires are commonly used to assess adolescents' and adults' *attachment styles* (e.g., Armsden & Greenberg, 1987; Furman & Wehner, 1994). Styles for mothers and fathers have been found to be moderately related to each other in several studies, suggesting that there may be some degree of concordance (Asendorpf & Wilpers, 2000; Furman & Wehner, 1994; Markiewicz, Doyle, & Brendgen, 2001). The measures of attachment styles with mothers and fathers, however, were collected at the same time in these studies. Accordingly, responses on one questionnaire could affect responses on the other and inflate the degree of concordance. Thus, another purpose of this study was to examine the degree of concordance when attachment styles were assessed at different times. We also included attachment style measures so that we could look at the concordance in both attachment states of mind and attachment styles in the same study. It seems quite possible that individuals could report either greater similarities or greater differences between parents on self-report measures than may be observed through less overt assessments, such as the AAI. In general, however, we anticipated a moderate level of concordance in attachment styles as well as states of mind.

Finally, we examined the pattern of relations between the attachment style scores and the states-of-mind and experience ratings. Past work has found relatively low relations between states of mind assessed by interviews and attachment styles assessed by self-report questionnaires (see Crowell, Fraley, & Shaver, 1999; Waters, Crowell, Elliot, Corcoran, & Treboux, 2002). For example, Crowell et al.'s (1999) review of 11 studies revealed an average correlation of .27. In many of these studies, the attachment interview referred to parents, and the questionnaire measures referred to romantic partners; thus, the relatively low covariation could stem from the difference in the person being discussed rather than from the methodology per se. The present study is one of the few providing an opportunity to examine the links between methods when the parents are the focal individuals in both methods. We also capitalized on the focus on parents to explore the role of

experiences (coder rated) in attachment representations, as both attachment styles and states of mind are presumed to emanate from one's evaluations of experiences with parents.

We chose to examine these questions in a sample of emerging adults in light of several developmental considerations. In childhood, states of mind are thought to change only in response to changes in actual experiences (Main et al., 1985). With the onset of the stage of formal operations, emerging adults are expected to be able to alter states of mind by thinking about the nature of their relationships. We also chose a sample of emerging adults because their parents are still likely to be their primary attachment figures at this age (Hazan & Zeifman, 1994; Trinke & Bartholomew, 1997), whereas later in adulthood, a romantic partner would likely be the primary figure and may significantly affect the individual's overall state of mind with regard to attachment.

In the present study, young adults were administered a modified version of the AAI about one parent, and approximately 4 months later, they were administered a similar version about the other parent. Similarly, at each session, participants completed a mother or father version of the Behavioral Systems Questionnaire (BSQ; Furman & Wehner, 1999), a self-report measure of attachment styles.

Method

Participants

The final sample comprised 56 college students, ranging in age from 17 to 26 years ($M = 19.11$ years). Six other students completed only the first session. In four of these cases, we were unable to complete the second interview within the allotted time frame. A fifth student left the university before the second interview, and we had problems in recording the sixth interview. We also reviewed the demographic information and transcripts to ensure that the participants had had an ongoing relationship with both parents during childhood, the period inquired about in the AAI. Two participants' parents had divorced when they were younger than 11, and they had only infrequent contact with their fathers subsequently (e.g., custody for part of the summer). In addition, a third participant's father had died when the participant was a young adult. Although each of these participants had been able to answer the questions, and the transcripts were readily codable, we decided to delete them as the meaning of their states of mind may have been different from those of the other participants in the study. Finally, 2 other participants described their relationships with their biological mothers and stepfathers, who had married before the participants were 5 years old. These 2 participants were retained, as they each had a constant father figure during the time being assessed.

In the final sample, 29 participants were women, and 27 were men. The sample comprised 79% European Americans, 5% Hispanic Americans, 7% Asian Americans, and 9% "others." Thirty-four percent of the participants came from nonintact families, and most were adolescents at the time of their parents' divorce ($M = 13.41$ years, $SD = 4.51$). Participants received extra credit and \$10 for participating.

Procedure

Separate AAIs were conducted to assess states of mind with respect to mothers and fathers. The two interviews were administered by two different female interviewers and spaced approximately 4 months apart ($M = 130$ days; range = 84–178 days) in order to minimize potential carryover effects from the first to the second interview. Similarly, one of the two versions of the BSQ was administered in each of the two sessions. To minimize carryover across instruments within a session, we administered

the AAI about the mother and the BSQ about the father in one session and the AAI about the father and the BSQ about the mother in the other session. To control for carryover or practice effects, the order of the two interviews was counterbalanced across participants.

Measures

Adult Attachment Interview. The AAI (George et al., 1984) is a semi-structured interview that assesses inferred childhood experiences and current states of mind with respect to attachment. Participants are asked to describe their childhood relationships with their parents and to support their descriptions by providing particular memories. They are asked about instances of separation, rejection, threatening behavior, and being upset, hurt, or ill. In addition, they are asked to explain their parents' behavior, how these experiences influenced their personality, and what they learned from the experiences.

In the present version, most of the questions were modified to refer to one parent rather than to both parents. For example, participants were only asked to describe their childhood relationship with one parent. Similarly, they were asked about instances of being separated from, rejected by, or threatened by that one parent. They also were asked to explain one parent's behavior and what they had learned from their experiences with that parent. Questions with an ambiguous referent were asked in their original form; for example, the questions asking what they did when they felt upset, hurt, ill, or frightened were asked without referring to a specific parent, but only material referring to the relevant parent was coded. The questions concerning which parent they were closest to, whether there were other adults they were close to, their wishes for their child, and how they reacted to being separated from that child were deleted, as they did not directly pertain to experiences with respect to a specific parent.

The interviews were audiotaped and transcribed verbatim. The parents' backgrounds, occupations, location of residences, and other identifying information were concealed. Using Main and Goldwyn's (1984) scoring system, we coded the transcripts to obtain measures of inferred relationship experiences and states of mind. The ratings of inferred experiences were based on the coders' assessment of the participants' childhood relationships, whereas the ratings of states of mind focused on the coherence of the discourse.

Transcripts were classified as secure, dismissing, preoccupied, or "cannot classify" on the basis of the states-of-mind scales and the characteristic descriptions of the categories. Transcripts were also categorized as unresolved if a marked lapse in reason or discourse occurred when describing a loss or abusive experience. The questions about loss were the same in the two interviews and do not refer to mothers and fathers per se; thus, the inclusion of this classification seemed less pertinent to the questions being examined in this study. Moreover, only 4% of the transcripts were categorized as unresolved. Accordingly, all analyses were conducted using the three primary categories.

Coding process. For each pair of participant interviews, one coder coded one parent interview, and the other coder coded the other. The number of mother and father interviews was equally distributed between the coders. We were the two coders; both of us had attended Main and Hesse's Adult Attachment Workshop, and both of us successfully completed Main and Hesse's reliability certification procedure. As an additional check of interrater agreement, one coder coded the second transcript for 22% of the participants. To minimize the influence of having coded the other parent, we always allowed a significant length of time to elapse before coding this second transcript. The level of interrater agreement for the overall classification was 100%. For the coherence of transcript and inferred loving scores—the two scale scores used in the primary analyses—the correlations between the two coders' scores exceeded .80.

Behavioral Systems Questionnaire. The Attachment subscale from the BSQ (Furman & Wehner, 1999) was used to measure self-perceptions of attachment styles for relationships. One version of the questionnaire asked about participants' relationship with their mothers, whereas a second

version asked about their relationship with their fathers (Furman & Wehner, 1999). For each type of relationship, secure, dismissing, and preoccupied styles were each assessed with five to seven 5-point Likert items. For example, one of the secure items was "I consistently turn to my (mother/father) when upset or worried," and one of the dismissing items was "Not having contact with my (father/mother) for a while doesn't really bother me." Finally, a sample preoccupied item was "I worry that my (father/mother) thinks I need to be comforted too much." These scales for parents have been found to be moderately to highly related to parallel scales on a version of Hazan and Shaver's (1987) attachment style measure that asked about relationships with parents (see Furman & Wehner, 1999). Internal consistencies of the three style scores for the father and mother versions were all satisfactory (all Cronbach's alphas $> .70$; $M = .85$).

Results

Preliminary Analyses

Potential order effects for the mother and father interviews were examined in a series of analyses. First, we examined whether the ratings for a parent varied as a function of whether the interview pertaining to that parent had been administered first or second; significant differences were found for only 1 of the 24 mother and father scales that were scored as part of the coding process. Similarly, the six BSQ scores did not vary as a function of order of questionnaire administration. We also examined whether corresponding pairs of ratings for the mother and father were influenced by the order of administration; for example, it is possible that individuals may have been more coherent in their second interview regardless of which parent it concerned. The 12 different scales that were coded as part of the classification process were subjected to a series of repeated measures analyses of variance in which the ratings for the two interviews were a within-subject factor, and type of interview administered first (father or mother) was a between-subjects factor; only 1 of the 24 main effects and interactions with type of interview was significant. Similarly, only one of the six effects for the BSQ variables was significant. Finally, if there was a carryover effect, one might expect that interviews administered more closely together would have more similar ratings. We correlated the time between administrations of the interviews with the absolute difference in the ratings of corresponding variables in the two interviews. We found a significant correlation on only 1 of the 12 interview scales and none of the three BSQ variables. Although one can never completely rule out carryover effects, these analyses suggest that they did not have a major effect on the scores.

Concordance of Classifications and Scale Scores

Next, we examined the degree of concordance in the classification for the interviews regarding the mother and the father. As shown in Table 1, 68% of the participants received the same classification with respect to their mother and father, $\chi^2(1, N = 56) = 32.81, p < .01, \kappa = .33$. When the interviews were categorized as either secure or insecure, there was a similar degree of concordance (68% agreement; $\phi = .30, p = .025$). Of the 18 instances of different classifications, 7 were instances in which one parent was classified as a D3 (Dismissing—Restricted in feeling) and the other as an F2 (Secure—Somewhat dismissing or restricting of attachment). From a dimensional perspective, these two subclassifications can be viewed as falling on the border between

Table 1
Concordance of Classifications of States of Mind With Respect to Mothers and Fathers

Mother classification	Father classification		
	Secure	Preoccupied	Dismissing
Secure	48% (27)	0% (0)	16% (9)
Preoccupied	2% (1)	2% (1)	0% (0)
Dismissing	14% (8)	0% (0)	18% (10)

Note. The pairs of numbers represent the percentage and (in parentheses) the number of participants in each cell. $\chi^2(1, N = 56) = 32.81, p < .01$; $\kappa = .33, p < .01$.

dismissing and secure and primarily differing in the degree to which the person is dismissing.

We conducted a parallel set of analyses to examine the correspondence on the coherence scores of the transcripts. Coherence is a composite index of one's state of mind and is highly predictive of the security of the classification (father $r = .78$, mother $r = .80, ps < .01$). In fact, we could predict whether the classification was secure or not with over 90% accuracy using the coherence score alone. Moreover, the coherence scores have the statistical appeal of being continuous variables, unlike the classifications. Overall level of coherence scores regarding the mother and the father were also substantially related to each other ($r = .50, p < .01$).

We correlated the corresponding attachment style scores on the mother and father versions of the BSQ. Scores for the dismissing styles with respect to mothers and fathers were related to each other ($r = .39, p < .01$). Similarly, the scores for preoccupied styles were related to each other ($r = .50, p < .01$). Scores for the secure styles were not significantly related to each other, although the correlation was in the expected direction ($r = .20, p = .14$).

Next, we tried to identify the factors associated with whether the classifications regarding mother and father were the same or different. Gender of the participant was not predictive of congruence of classification: Men's rate of congruence was 69%, and women's rate of congruence was 67%, $\chi^2(1, N = 56) = 0.04, p = .85$. Similarly, the rate of congruence was the same (68%) among those from either intact or nonintact families, $\chi^2(1, N = 56) = 0.002, p = .97$. Although neither difference even approached significance, we did not interpret these null effects in light of the sample size.

States of Mind and Styles

The third purpose of the study was to examine the links between states of mind and styles. We correlated the BSQ attachment style scores with the corresponding AAI security of classification, coherence, and inferred loving behavior scores. As shown in Table 2, none of the attachment style scores were significantly related to the security of classification. The attachment style scores were slightly more related to the coherence scores, with two of the six correlations reaching statistical significance. Interestingly, the attachment style scores for each parent were highly related to the inferred loving behavior scores for that parent ($rs > \pm .42, ps < .01$).

This pattern of results suggested that the existing correlations between the coherence scores and attachment style scores might be

Table 2
Correlations of BSQ Attachment Style Scores With Selected AAI Scores

BSQ attachment style	Security	Coherence	Inferred loving behavior
Father scores			
Secure style	.02	.02	.47**
Dismissing style	-.14	-.14	-.47**
Preoccupied style	-.15	-.25†	-.56**
Mother scores			
Secure style	.25†	.30*	.65**
Dismissing style	-.21	-.22	-.61**
Preoccupied style	-.13	-.32*	-.42**

Note. BSQ = Behavioral Systems Questionnaire; AAI = Adult Attachment Interview.

† $p < .10$. * $p < .05$. ** $p < .01$.

attributed to the fact that they are both related to the scores for inferred loving behavior. To examine this possibility, we conducted a series of hierarchical regression analyses in which we predicted each of the attachment style scores. In the first step, we entered the loving scores for that parent. Then we entered the coherence scores for that parent in a second step. The inferred loving behavior scores for fathers and mothers always provided a significant contribution to the prediction of the style scores (R^2 s = .17–.42, $ps < .01$; see Table 3). Coherence with respect to the father provided a significant increment above inferred paternal loving behavior in the prediction of secure attachment styles ($\Delta R^2 = .08$, $p = .02$). The coherence scores did not provide a significant increment to the prediction of either dismissing or preoccupied style scores with respect to fathers. Coherence with respect to mothers provided a significant increment above inferred maternal loving behavior in the prediction of secure and dismissing attachment styles ($\Delta R^2 = .09$, $p < .01$; $\Delta R^2 = .14$, $p < .01$, respectively). However, in all three cases in which the coherence score provided a significant increment, the valence of the beta was in the opposite direction of what would be predicted or what would be expected from the correlations. In other words, if one were to predict secure styles with respect to mothers from the regression equation, inferred maternal loving behavior would be positively weighted, but coherence would be negatively weighted. If only coherence were in the equation, it would be positively weighted ($\beta = .30$). In effect, coherence acted as a suppressor variable when in the same equation with inferred maternal loving behavior. A similar set of regression analyses to determine whether security of classification provided an increment in the prediction of attachment styles yielded virtually identical results (details are available from the authors upon request). Finally, we conducted a series of analyses in which inferred loving behavior was entered after either the coherence score or the security of classification score in predicting the attachment style score. In all cases, the loving variable provided a significant increment in prediction ($\Delta R^2 = .07$ –.45, mean $\Delta R^2 = .29$).

Discussion

This study examined the commonly held belief that representations of relationships with parents are concordant in adulthood. To

determine whether this were the case, we assessed individuals' states of mind about each parent in separate AAIs (George et al., 1984). States of mind for mothers and fathers were found to be moderately concordant ($\kappa = .33$). Sixty-eight percent of the participants received the same classification. Coherence scores with regard to fathers and mothers were substantially related to each other ($r = .50$).

These results provide evidence for an overall state of mind with respect to attachment with parents. They rule out the possibility that the single state of mind typically observed with the AAI is an artifact of either coder bias or the influence of the discourse about one relationship on the discourse about the other relationship.

In some respects, the degree of concordance in the interview classifications is an underestimate of the true degree of concordance. Our interviews about the mother and the father were separated by an average of 4 months. Estimates of the stability of attachment classifications over 2 to 3 months (kappas) ranged from .63 to .79 (Bakermans-Kranenburg & van IJzendoorn, 1993; Sagi et al., 1994). Changes in attachment classification—be they temporary or long-standing—would reduce the degree of correspondence obtained.

Moreover, the categorical nature of the AAI classification system could significantly reduce the observed degree of concordance. Significant questions exist about whether attachment patterns should be conceptualized as categories or dimensions (Fraleley & Spieker, 2003; Fraley & Waller, 1998). Ainsworth, Blehar, Waters and Wall's (1978) and Main and Goldwyn's (1984) emphasis on attachment patterns as coherent dynamic systems has proved highly beneficial to the development of the field, but such dynamic concepts do not inherently require typological models of individual differences. If states of mind are actually dimensional, then the assignment of classifications would likely yield an underestimate of the degree of convergence in states of mind regarding the mother and the father (MacCallum, Zhang, Preacher, & Rucker, 2002). After all, almost half of the instances in which the

Table 3
Summary of Hierarchical Regression Analyses for Loving and Coherence Scores Predicting Attachment Styles

Variable	<i>B</i>	<i>SE B</i>	β	ΔR^2
Father secure style				
Step 1: Paternal loving	.35	.08	.68	.22**
Step 2: Coherence	-.22	.09	-.35	.08*
Father dismissing style				
Step 1: Paternal loving	-.28	.07	-.61	.22**
Step 2: Coherence	.12	.09	.22	.03
Father preoccupied style				
Step 1: Paternal loving	-.22	.05	-.60	.31**
Step 2: Coherence	.03	.06	.08	.00
Mother secure style				
Step 1: Maternal loving	.53	.08	.99	.42**
Step 2: Coherence	-.26	.08	-.46	.09**
Mother dismissing style				
Step 1: Maternal loving	-.50	.07	-1.03	.37**
Step 2: Coherence	.30	.08	.56	.14**
Mother preoccupied style				
Step 1: Maternal loving	-.12	.06	-.40	.17**
Step 2: Coherence	-.01	.06	.02	.00

* $p < .05$. ** $p < .01$.

classifications differed fell on the border between dismissing and secure (D3 vs. F2). Even if the patterns of attachment are actually categorical, a dimensional measurement is likely to have stronger statistical power (Gangestad & Snyder, 1991).

These considerations underscore the difficulties in identifying the underlying level of correspondence from this or any set of observed correlations. What does seem apparent is that the degree of correspondence between states of mind is at least moderate, and perhaps greater, depending on the level of instability present and whether attachment should be conceptualized dimensionally or taxonomically. Regardless of what the magnitude of correspondence ultimately proves to be, the present interview results provide evidence for an overall state of mind with respect to attachment with parents.

Similarly, the attachment styles referring to mothers and fathers were also moderately related overall. Specifically, two of the three pairs of attachment style scores for fathers and mothers were substantially correlated, and the correlation of the third pair was in the expected direction, but nonsignificant. These findings are consistent with the results of past studies (Asendorpf & Wilpers, 2000; Furman & Wehner, 1994; Markiewicz et al., 2001). The present study rules out the possibility that the past studies' correlations between attachment questionnaires concerning fathers and mothers had simply stemmed from the fact that the measures had been administered simultaneously. Thus, the present results provide evidence for an overall attachment style with respect to parents.

At the same time, there is evidence that states of mind and styles are also somewhat specific to each parent. Only 68% of the classifications were the same, and the kappa was .33. The correlations between the attachment style scores regarding mothers and fathers ranged from .20 to .50. Although we would not expect 100% concordance or perfect correlations because of measurement error and the other factors previously discussed, we might expect somewhat higher concordance if these interviews and questionnaires only reflected an overall state or style and did not contain some component that was relationship specific. As noted previously, when the AAI itself was readministered 2–3 months later, the kappas were .63 and .79 (Bakermans-Kranenburg & van IJzendoorn, 1993; Sagi et al., 1994). Such estimates are influenced by the same factors of instability and the use of categorical classifications that influence the concordance of the mother and father interviews here, but analyses revealed that these kappas are significantly higher than the kappa of .33 obtained here ($ps < .03$). Similarly, Asendorpf and Wilpers (2000) found the correlations of security of attachment styles regarding mothers and fathers to be very stable over an 18-month period ($rs = .72$ and $.78$). These correlations are higher than the correlation of secure styles in this study ($r = .20, p < .01$). (We have been unable to locate comparable comparisons of the stability of preoccupied and dismissing styles, for which we obtained seemingly higher cross-parent relations in the present study.) In effect, it appears that the moderate relations in the present study do not seem to have occurred simply because of instability but because states of mind and styles are somewhat relationship specific.

In summary, we believe that the present study provides evidence both for an overall state of mind with respect to attachment with parents and for relationship-specific states of mind, as hierarchical models of representations would predict (Collins & Read, 1994;

Furman & Simon, 1999). The evidence for both overall and relationship-specific states of mind is consistent with classic attachment theory (Bowlby, 1973). For example, Bowlby (1973) discussed how a working model accommodates itself to the characteristics of the other person. If the characteristics of the relationships with the two parents were different, working models (states of mind) regarding the two parents would be expected to be different. The presence of some relationship specificity in states of mind is also implicit in the standard coding of the AAI, in which the scales for idealization, derogation, and involving anger are scored separately for mother and father. When states of mind regarding the mother and the father are very different, a “cannot classify” category may be assigned (Main & Goldwyn, 1984).

This interpretation of our findings presumes that the observed concordance reflects the presence of a generalized state of mind that was elicited in each of our single parent interviews. That is, regardless of which single parent interview was administered, the resulting discourse was influenced by a state of mind with respect to that parent and a general state of mind with respect to parents and/or a general state of mind with respect to attachment overall. That is, the concordance across the interviews implies that the relatively independent representations of attachment to the mother and the father found in childhood have coalesced to some degree into a more general state of mind. However, evidence of concordance is a necessary, but not sufficient, condition to demonstrate coalescence. Concordance could occur in the absence of a generalized or coalesced state of mind. It is possible that our single parent interviews tap relationship-specific representations of attachment to mothers and fathers that simply tend to be concordant. This interpretation, however, would need to explain how the representations of mother and father have become concordant when they were relatively independent in childhood (van IJzendoorn & De Wolff, 1997).

It should be noted that we interpreted our findings as providing evidence for an overall state of mind with respect to attachment with parents, rather than as evidence for an overall state of mind with respect to attachment. We do not mean to imply that there is not an overall state of mind with respect to attachment, but we believe that the present interpretation is more precise because the present interview measures only included questions about parents and not other potential attachment figures such as romantic partners. Similarly, the questionnaire measure of attachment style only focused on parents. Past work using either interview or self-report measures has found representations of relationships with parents and those with romantic partners to be moderately related to each other (Armsden & Greenberg, 1987; Dickstein et al., 2001; Owens et al., 1995). Such findings are consistent with the idea that there are overall representations of attachment and representations of specific types of attachment relationships. Coupled with the present findings, there is support for a hierarchical model in which there are overall representations, representations of particular types of relationships, and representations of particular relationships.

Further work is needed, however, to determine the heuristic value of different hierarchical models of representations. We have focused on representational models of attachment relationships, but hierarchical models may incorporate other types of close relationships as well. For example, representations of parent-adolescent relationships measured by interview or self-report measures are related to corresponding representations of friendships

(Furman, Simon, Shaffer, & Bouchey, 2002). Most friendships, however, are not commonly conceptualized as attachment relationships. Accordingly, these links in the representations between friendships and parent–adolescent relationships suggest that the hierarchical models incorporate close relationships in general and not just attachment relationships; if so, these hierarchical models may be organized around intimacy and closeness, rather than the attachment system per se (Furman & Simon, 1999).

States of Minds and Styles

Modest relations were found between states of mind and attachment styles. Past work has found similar relations (see Crowell et al., 1999), but typically the state-of-mind measure (the AAI; George et al., 1984) primarily focused on parents, and the style measures concerned romantic partners. The present study demonstrates that the relations are still modest when the focal persons are the same.

Another contribution of the present study is that we examined styles' links with inferred loving behavior as well as states of mind, whereas most past work has only examined the links with states of mind. In fact, when states of minds and styles' mutual association with inferred loving behavior of the parent is controlled for, there is either no link between coherence and attachment style or it is in the opposite direction of what one would expect. If anything, individuals who have more coherent states of mind are likely to report on questionnaires that they are less secure than one would expect from the experiences they seem to have had. Such individuals may be more aware of their own limitations or uncertainties regarding others or more open to processing negative information (van Emmichoven, van IJzendoorn, de Ruiter, & Brosschot, 2003). Accordingly, the state-of-mind and style measures seem conceptually distinct from each other.

In effect, the style measures may be more closely linked to loving behavior or experiences with parents rather than security per se. Such findings may shed light on a long-standing puzzle in the field. Although style and state-of-mind measures are not very related to each other, research with each type of measure has a rich history of findings consistent with each other and attachment theory; often, in fact, the findings are similar. Perhaps the similarity in findings stems from the fact that they are both related to and perhaps influenced by loving behavior or perceptions of loving behavior. In fact, loving behavior or perceptions of loving behavior, rather than representations, may be the underlying mechanism in some instances. Certainly, further work is needed to determine the specific nature of the similarities and differences among the style, state-of-mind (working model), and relationship quality constructs, and we would encourage researchers to incorporate all three types of measures to move toward an integrated field of research on adult attachment.

Limitations and Future Directions

As the first systematic investigation of adult concordance in attachment to parents, the present study is an important and necessary first step in understanding coalescence, which has been described as “probably the most important research issue for the attachment field” (Steele, Steele, & Fonagy, 1996, p. 552). Many

important questions remain about the nature of concordance and the process of coalescence itself.

The magnitude of concordance observed here is open to different interpretations. The relationships vary from small to medium-to-large by standard conventions of reporting effect sizes (Cohen, 1988); the unattenuated relations would be larger. However, the confidence intervals for the magnitude of these relations are large; larger samples are needed to provide more precise estimates of the degree of concordance.

Studies of concordance among different populations could shed light on the role of family experiences. Ratings of inferred loving behavior of the parents in this sample indicate many did not have very loving, stable families, and there was wide variation in the quality of their family experiences (mothers: $M = 5.14$, $SD = 1.91$; fathers: $M = 4.45$, $SD = 1.91$). However, studies targeting individuals with difficult or even traumatic experiences are needed to examine concordance for attachment categories with lower base rates in normative samples, such as the preoccupied and unresolved classifications. Studies of individuals with markedly discrepant experiences between mothers and fathers could reveal if concordance only occurs when experiences were relatively similar or if it still occurs when experiences were atypically discrepant.

As noted previously, evidence of concordance is a necessary, but not sufficient, condition for demonstrating that coalescence has occurred. Longitudinal research is required to articulate the developmental process of coalescence, including the formation of generalized or relationship-specific representations. Ideally, one may be able to obtain separate assessments of states of mind regarding mother and father before much coalescence has occurred and later when it has. For example, one might expect to see the beginnings of coalescence during adolescence, as requisite abstract cognitive skills emerge and more autonomous parent–child relationships are negotiated. Coalescing of states of mind might also require some time, resulting in increased concordance with age. Longitudinal research could not only articulate general developmental trends but also predict individual differences in the timing and outcome of coalescence on the basis of quality and similarity of experiences with mothers and fathers over time.

Such longitudinal work could also address other limitations of the present study. Although we found no evidence of carryover or order effects in the present study, it is always possible that some participants' discourse was influenced by having previously been interviewed 4 months later. The possibility of such effects would be less likely if the time intervals were greater.

Although considered by many individuals to be the best assessment of states of mind, the AAI (George et al., 1984), like any instrument, has some limitations. As alternative methods of assessing representations are developed, it will be important to examine the degree of concordance with these methods as well as the AAI.

Finally, future research should compare the results obtained from the separate interviews about mothers and fathers with those obtained from the standard AAI (George et al., 1984), which asks about both parents (Main, 1999). When single parent interviews are concordant, we would expect to find a similar state of mind on the standard combined interview. It is not clear, however, what one might find on the combined interview when the states of mind regarding the two parents are different on the separate interviews. States of mind regarding each parent may influence the general

state of mind on the standard AAI; for example, if the degree of coherence regarding the two parents were different, the coherence on the standard AAI may fall somewhere in between the two. Alternatively, state of mind with respect to one parent may play a greater role in determining the general state of mind on the standard AAI if experiences with respect to that parent are more influential (M. Main, personal communication, July 1993). Some research suggests that experiences with mothers may override the experiences with fathers in shaping children's overall state of mind with respect to parents (Main et al., 1985). Such studies of non-concordant cases may prove to be an intriguing approach for understanding the developmental, experiential, and relationship conditions promoting or inhibiting the development of more generalized representations of parents or attachment. These issues of how states of mind with regard to mother and father are incorporated are particularly intriguing, as Main (1999) observed, because the overall state of mind on the AAI not only reflects whom one talks in terms of but also is predictive of one's caretaking behavior with one's children.

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Received September 19, 2003

Revision received June 30, 2004

Accepted July 14, 2004 ■

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Developmental Psychology invites manuscripts for a special section on Children, Adolescents, and the Internet. The guest editors are Patricia Greenfield and Zheng Yan. The goal of the special section is to address one broad question: What important developmental factors, processes, and mechanisms contribute to child and adolescent development in the Internet age? Suggested topics for empirical papers include, but are not limited to, (a) cognitive development and the Internet (e.g., age differences in children's ability to navigate on the Internet, search for information, and evaluate content; cognitive implications of multitasking on the Internet; cognitive effects of Internet gaming); (b) social or emotional development and the Internet (e.g., the construction of social behaviors and moral values in Internet communication; effects of online gaming on emotional regulation); (c) the development of language and communication on the Internet (e.g., the creation, by children and adolescents, of new linguistic codes in chat, instant messaging, and e-mail); and (d) physical development and the Internet (e.g., effects of increasing Internet use on the development of vision, muscles, and manual skills). Within these four broad areas of developmental study, the editors would particularly welcome empirical papers that document the online world of children and adolescents, compare the Internet with other media in influencing developmental processes, analyze developmental issues as they are played out on the Internet, or implement innovative research methods for collecting and analyzing online data. The submission of recently completed doctoral dissertations is encouraged.

The submission deadline is **December 31, 2004**. The main text of each manuscript, exclusive of figures, tables, references, and/or appendixes, should not exceed 20 double-spaced pages (approximately 5,000 words). Initial inquiries regarding the special section may be sent to Patricia Greenfield at greenfield@psych.ucla.edu or Zheng Yan at zyan@uamail.albany.edu. Manuscripts must be submitted electronically through the Manuscript Submission Portal of *Developmental Psychology* at <http://www.apa.org/journals/dev.html> and a hard copy sent to Cynthia García Coll, Incoming Editor, *Developmental Psychology*, Center for the Study of Human Development, Brown University, Box 1831, Providence, Rhode Island 02912. Please be sure to specify in the cover letter that your submission is intended for this special section. For instructions to authors and other detailed submission information, see the journal Web site at <http://www.apa.org/journals/dev.html>.