Adult attachment and couples’ verbal and nonverbal communication patterns in a stressful situation

Abstract
The present study explored the links between self-reported adult attachment and couples’ verbal and nonverbal communication patterns during a stressful situation in a sample of dating couples and in a sample of married individuals with established relationships. In Study one, a study with young dating couples, there was only partial support for expectations of the relationships between attachment styles and communication patterns. In contrast, in Study 2, a study with married couples in established relationships we found strong and significant relationships between adult attachment style and couples’ verbal and nonverbal communication patterns in the predicted direction. Analyses revealed that levels of daily (chronic) stress and satisfaction in the current romantic relationship moderate the relationship between adult attachment style and communication patterns. The implications of these findings are discussed in the context of theory and research on adult attachment.

Introduction
According to attachment theory (Bowlby, 1969, 1973, 1980) individuals have an innate tendency to seek the proximity and support of an attachment figure (i.e. someone deemed able to provide comfort and support) when they are (dis)stressed. Although the desire for support and proximity is universal, the way in which it is expressed strongly depends on the individuals’ history with caregivers in childhood. Years of interaction with caregivers, accompanied by repetitive experiences, lead to the development of mental representations or ‘internal working models of attachment’ that consist of expectations about the (emotional) availability and approachability of the caregiver in stressful situations. Eventually, a set of postulates about how close relationships operate is developed, and a perception of self and others is created accordingly. In time, internal working models of attachment become increasingly stable and resistant to change, making them more and more an element of the personality, a so-called attachment style. Thus, attachment styles are thought to develop from individuals’ experience of regulating distress with attachment figures (Kobak and Sceery, 1988).

Security of attachment develops when bids for attachment have been consistently met because the attachment figure is available and responsive to the child's attachment needs. In securely attached children, the direct and open expression of negative affect communicates distress to the caregiver, who then responds with positive action to relieve the child’s distress (Belsky & Isabella, 1988; Bowlby, 1969). Insecurity of attachment is developed as a secondary (conditional) strategy in response to rejecting or inconsistent caregiving. In case of unresponsive caregivers, a deactivating strategy may develop in which children learn to inhibit displays of distress and to restrict attempts to seek comfort and support in order to prevent rejection. In case of inconsistent caregivers, a hyperactivating strategy may develop in which children learn to maximize expressions of distress in order to maintain contact with inconsistent caregivers (Crittenden, 1995; Kobak & Duemmler, 1994; Main, 1990; Schachner, Shaver & Mikulincer, 2005).

The strategies for organizing emotional experience and handling negative affect that are learned in childhood continue to influence interactions with later attachment
adult attachment and couples’ verbal and nonverbal communication patterns in a stressful situation

figures. Indeed, there is ample evidence that adult attachment styles affect behaviours and emotions in close relationships. As adults, secure individuals report having more intimate, satisfying and enduring relationships than their insecurely attached counterparts (Collins & Read, 1990; Feeney, 1999; Hazan & Shaver, 1987). Securely attached adults are dedicated to relationships, have self confidence, feel comfortable with intimacy and expect their partners to be emotionally available and attentive to their needs. Preoccupied (anxious-ambivalent) individuals tend to have a negative perception of self but a positive, albeit guarded, perception of others. They have a strong need for approval of others, accompanied by a longing for intimacy and emotional ties. Fear of abandonment may lead to the search for intense intimacy and the loss of autonomy. Avoidant individuals may exhibit one of two different underlying motives (see Bartholomew, 1990; Bartholomew & Horowitz, 1991). Fearful avoidant individuals are characterised by both a negative perception of self and a negative perception of significant others. Although a longing for social contacts and intimacy exists, an intense fear of rejection leads to the avoidance of relationships and distrust of others. In contrast, dismissing individuals have a positive perception of self, opposed to a negative view of others. Intimacy is compromised by feelings of self-esteem and autonomy. Due to rejection in the past, emotional detachment from others is applied in order to maintain a defensive positive self-image. In time, an entirely autonomous self-image develops and dismissing individuals seem to be immune to negative experiences. Similar to preoccupied persons, both dismissing and fearful individuals tend to be involved in relationships containing frequent negative affect (Simpson, 1990) and lower levels of trust, commitment and satisfaction (Feeney, 1999).

Thus, adult attachment is inextricably linked with how individuals express their emotions and the level of intimacy in their romantic relationships. Both the degree to which people avoid closeness and the extent to which they worry about being abandoned influence the way in which they interact with romantic partners. Not surprisingly therefore, research has shown that adults with different attachment styles differ in their communication patterns. For example, Mikulincer & Nachson (1991) found that attachment style is related to patterns of self-disclosure. In conversations, secure and preoccupied individuals tend to disclose themselves more than avoidant
individuals. Secure individuals seem to give more direct signals and show more disclosure flexibility and topical reciprocity than avoidant or preoccupied individuals. Furthermore, Pistole (1989) found that secure individuals are more likely to use an integrating (problem-solving) strategy than those who are insecure when discussing a problem situation. In a longitudinal study on the links among attachment, communication and relationship satisfaction, Feeney, Noller & Callan (1994) found that husbands’ security was related to their ratings of involvement, recognition, disclosure and satisfaction. Wives' preoccupation with attachment was related to their ratings of domination, conflict, low involvement and dissatisfaction. Both husbands and wives who were high in preoccupation reported destructive patterns of marital interaction as their conflicts tended to be coercive, distressing and lacking in mutual negotiation. This finding was corroborated by the study of Roberts & Noller (1998) who found that the dysfunctional communication patterns used by insecurely attached individuals mediate the relation between attachment style and couple violence.

Although there have been several studies on the links between attachment and verbal communication patterns, adult attachment researchers have not paid much attention to the relationship between attachment and nonverbal communication patterns (Schachner, Shaver & Mikulincer, 2005). Considering the fact that nonverbal communication is a major, if not the primary vehicle for expressing emotions, we would expect attachment style differences in the ability of individuals to encode, or express, and decode, or understand nonverbal messages of their partners (Mikulincer & Shaver, 2003). Indeed, the few studies that examined how adult attachment is related to nonverbal communication found that individuals with a secure attachment style are more capable of understanding their partner’s nonverbal messages than insecurely attached individuals (Noller & Feeney, 1994; Feeney, Noller & Callan, 1994; Tucker & Anders, 1998).

Attachment styles, stress and affect regulation

Conversational analysis of couples’ communication patterns may be especially relevant in stressful situations, as it is in these situations that the behavioural properties associated with attachment styles should be most clearly evident (Kobak & Duemmler, 1994). Working models of attachment may play an especially important
role in the way couples communicate because they are automatically activated in response to stressful events and should act as interpretative filters through which individuals evaluate and appraise their interactions with their spouse. Working models of attachment contain both implicit and explicit expectations about the likelihood that the romantic partner will be emotionally available in response to need (Bowlby, 1973; Collins & Read, 1994).

Stressful circumstances form a necessary prerequisite for attachment system activation and previous research has shown that securely attached individuals react differently to stress than insecurely attached individuals (Mikulincer & Florian, 1998; Pielage, Gerlsma & Schaap, 2000; Simpson & Rholes, 1994). Securely attached individuals openly acknowledge feelings of stress and seek support with significant others when stress occurs. Insecurely attached individuals seem to be hampered in their support-seeking behaviour by a lack of confidence and trust in the supportiveness of their spouse (Collins & Feeney, 2004; Simpson, Rholes & Nelligan, 1992). Preoccupied individuals seem to cope with stress by directing attention towards distress in a hypervigilant manner and by mentally ruminating on negative thoughts, memories and emotions. By engaging in dependant relationships these negative emotions are enhanced even more. Dismissing individuals have learnt to deal with stress by denying the importance of relationships. The idea exists that others cannot contribute to or are not necessary for decreasing stress; they can manage by themselves (Carpenter & Kirkpatrick, 1996; Mikulincer, Birnbaum, Woddis & Nachmias, 2000; Mikulincer & Florian, 1998; Simpson & Rholes, 1994). Simpson, Rholes and Nelligan (1992) studied support-seeking and support giving within couples in an anxiety-provoking situation. Their study showed that women who are securely attached seek out more support as the stress level increases, whereas avoidantly attached women seek less support as the stress level increases. Furthermore, securely attached men gave more support as the stress level of their partner increased, whereas dismissing men gave less support as the stress level of their partner increased. No results were found for preoccupied individuals in this study. Other studies confirm these results (Carpenter & Kirkpatrick, 1996; Feeney & Kirkpatrick, 1996; Rholes, Simpson & Stevens, 1998).
Taken together, these studies indicate that adults with different attachment styles differ in the way they interact with their partner, especially in a stressful situation. However, the focus of these studies has generally not been on communication pérse, let alone on the verbal and nonverbal communication patterns between partners in a stressful situation. Although some studies have examined the relationships between attachment and verbal communication and others have examined the relationships between attachment and nonverbal communication patterns, few studies have examined the interrelationships between adult attachment, verbal and nonverbal communication in a stressful situation. The present study attempts to address this issue.

The present study
The present study explored the links between self-reported adult attachment and couples’ verbal and nonverbal communication patterns during a stressful situation in a sample of dating couples and in a sample of married individuals with established relationships. In line with the above review, two key issues were addressed: (1) to examine the relationships between self-reported adult attachment style and couples’ verbal and nonverbal communication patterns (2) To investigate if and how satisfaction with the current romantic relationship and levels of daily stress, moderate the association between adult attachment style and couples’ verbal and nonverbal communication patterns.

The following hypotheses were formulated:
H1: In stressful circumstances secure individuals (who have both positive perceptions of themselves and others) will engage in direct and open communication with their partner and discourse will remain constructive and coherent. Therefore, we expected attachment security to be positively related to positive verbal and positive nonverbal communication and negatively to negative verbal and negative nonverbal communication.

H2: Preoccupied individuals are expected to feel anxious and angry towards their partner when experiencing stress. Their heightened anxiety about loss of control over the partner and fear of abandonment may lead them to maximize expressions of distress. However, because they do not wish to jeopardize their relationship they
might also express many positive feelings towards the partner. In view of the above, we expected preoccupation with attachment to be related to both positive and negative verbal communication. Because the nonverbal system tends to operate outside of conscious awareness we expected preoccupation of attachment to be positively related to negative nonverbal communication.

H3: Although fearful individuals are afraid of relationships, they do long for intimacy. In order to keep from rejection fearful individuals might consciously interact as positively as they can. However, unconsciously these individuals might express anger and anxiety towards their partner. In view of the above, fearful attachment was expected to be positively related to positive verbal communication and positively related to negative nonverbal communication.

H4: Dismissing individuals tend to inhibit activation of their attachment system and divert attention away from emotional topics. They skirt around attachment related issues and during a stressful encounter behave somewhat detached from their partner. Therefore, we expected dismissing attachment to be related to verbal neutral communication. Because their attempts to inhibit their attachment system have become rather successful, and dismissing individuals report relatively little anxiety and distress during stress, we also expected dismissing attachment to be related to nonverbal neutral communication.

H5: Attachment theory predicts that stressful events influence the extent to which the attachment system is activated and as a result influences the motivation to seek support from attachment figures. Therefore, we would expect levels of daily (chronic) stress to moderate the relationship between attachment style and verbal and nonverbal communication.

H6: Given the relationships between attachment and relationship quality on the one hand and the relationships between communication and relationship quality on the other hand, we expected satisfaction in the current romantic relationship to moderate the association between attachment and verbal and nonverbal communication.
Study one

Method

Participants
Fifty-one young heterosexual dating couples were asked to participate in a study on ‘autobiographical memory and close relationships’. Couples were recruited on campus at the University of Groningen. At least one member of each couple was an undergraduate student at the University of Groningen. Participants were initially screened on the telephone to ensure that the couple had been dating exclusively for at least three months. The mean duration of the relationship was 2.14 years (SD = 1.62, range .8 to 6.5 years). Male participants ranged in age from 20 - 27 years (M = 23.10, SD = 1.92) and female participants ranged in age from 17 - 26 (M = 21.62, SD = 2.00).

Procedure
Couples were invited to come to the department of clinical psychology where they individually responded to a series of questionnaires on attachment, relationship satisfaction and daily hassles (chronic stress). After responding to the questionnaires, couples were brought together for a 'video-session' with their partner. To ensure the requirement of attachment system activation couples were told they would have to individually take part in a presentation task. The presentation consisted of a 10 minute talk on their flaws and bad habits. Individuals were told their presentation would be video-taped and judged on both content and presentation style. The experimenter then left the room under the pretense of setting up the materials. This stress-invoking procedure resembles the one used by Collins & Feeney (2004). Couples were told they were free to talk about anything they wanted, the experimenter would be back in about ten minutes but they were made aware of the fact they would be video-taped. Couples were paid € 20,- for their participation.

Measures
The Relationship Questionnaire (RQ; Bartholomew and Horowitz, 1991; Griffin & Bartholomew, 1994) consists of four short paragraphs characterizing four attachment styles; i.e. ‘Secure’ (with positive models of both self and others), ‘Preoccupied’ (with a
negative self-model and a positive other-model), ‘Dismissing’ (with a positive self-model and a negative other model), and ‘Fearful’ (with negative models of both self and others). The RQ is most commonly used with the instruction to think of ‘others’ but can be reworded to measure specific domains of attachment (i.e. partner, best friend). For this study we used the RQ to measure attachment quality in the current romantic relationship. For example, the prototypical description of the Fearful attachment pattern reads as follows: ‘I am uncomfortable getting close to my partner. I want an emotionally close relationship with my partner, but I find it difficult to trust my partner completely, or to depend on my partner. I worry that I will be hurt if I allow myself to become too close to my partner’. Participants were asked to read each paragraph and choose the one that best described their thoughts and feeling in their current romantic relationship. Subsequently, participants were asked to rate on a 7-point Likert scale (ranging from 1, ‘not at all like me’, to 7 ‘very much like me’) the extent to which each of the paragraphs was an accurate description.

A Dutch version of the Survey of Recent Life Experiences (SRLE; De Jong, Timmerman & Emmelkamp, 1996; Kohn & McDonald, 1992) was used to measure daily hassles, a measure of chronic life stress. The SRLE consists of six scales (social and cultural difficulties, work, time pressure, finances, social acceptability and social victimization) which measure various kinds of daily stressors that people may have encountered over the last month. Respondents rate on a four-point scale the extent to which these stressors have been a part of their life over the last month. Examples of items are: ‘too many things to do at once’; ‘being let down or disappointed by friends’ and ‘financial burdens’. The SRLE is considered to be relatively free of contamination with psychological distress (see: De Jong et al., 1996; Kohn & McDonald, 1992). Reliability in terms of internal consistency was good (Cronbach’s $\alpha = .87$).

The Relational Interaction Satisfaction Scale (RISS; Buunk, 1990) was used to measure satisfaction in the current romantic relationship. The RISS has eight items which can be answered on a 5 point-scale ranging from 1 (never) to 5 (always). In this study one item (I regret being married to my partner) was omitted as almost none of the students were currently married. Reliability in terms of internal consistency was good (Cronbach’s $\alpha = .76$).
The *Kategoriensystem für Partnerschaftliche Interaktion* (KPI; Coding system for marital/family interaction; Hahlweg, Reisner, Kohli, Vollmer, Schindler & Revenstorf, 1984) is a coding system for marital and family interaction. Verbal and nonverbal communication patterns are assessed on the basis of couples’ videotaped discussions. Usually, couples are instructed to discuss a (major) relationship problem. To ensure a more spontaneous interaction and not influence the direction of the conversation, couples in this study were free to discuss anything they wished, no instruction was given to the couples. The basic coding unit of the KPI is a verbal response that is homogeneous in content or theme without regard to its duration or syntactical structure. During the interaction the person speaking is coded. The code ends when the speaker voluntarily stops speaking or the partner successfully interrupts. Only one code per partner is assigned per speaker turn. If the speaker talks for extended periods, a new code is assigned every 30 sec.

The KPI consists of 10 verbal categories that are organized into three summary categories: (a) verbal positive, (b) verbal neutral and (c) verbal negative.

The verbal positive categories include self-disclosure (SD; direct expression of feelings, wishes and needs), positive solution (PS; constructive solutions and compromise), acceptance of the other (AC; making the partner feel accepted and understood, active listening and positive feedback), and agreement (AG; direct agreement, acceptance of responsibility, and assenting).

The verbal neutral categories are constructive problem discussion (neutral description of a problem or neutral questions) and metacommunication (clarification requests and metacommunication related to the topic).

The verbal negative codes include criticism (CR; rejection and specific criticism), negative solution (NS; describing something one would like the other not to do in order to solve a problem or putting forward unacceptable proposals), justification (JU; excuses for one's own behaviour and denial of responsibility), and disagreement (DG; short or extended direct disagreement, yes, but.. statements and blocking).

In non-clinical samples base rates of some of the individual codes (i.e. criticism, positive solution) tend to be low. In order to maximize predictive power, individual codes are reduced to three summary scores, a verbal positive communication score, verbal negative communication score and a verbal neutral communication score.
Summary codes are calculated by summing the respective codes in each category and dividing by the total number of codes assigned to each partner.

In addition to the verbal codes, a nonverbal rating is assigned to each content code. In a hierarchical order, first the facial cues of the speaker or listener are evaluated as positive, negative or neutral. If the coder is unable to code the utterance as positive or negative, the tone of voice is evaluated, followed by the body cues. Then the appropriate rating is applied.

In sum, 6 codes were applied: 3 verbal communication codes—positive, negative and neutral, and 3 non-verbal communication codes positive, negative and neutral.

In the present study, 46 of the 51 couple discussions were coded. Five videotaped interactions could not be analysed due to technical disturbances during taping making it either too difficult to see the couples’ facial expressions or making it too difficult to hear what the couple said. A total of five coders coded the interactions after intensive training by the first author. Upon completion of the training, coders’ ratings were compared to that of a criterion rater. Percentage of agreement among the coders and the criterion coder for the summary codes ranged from 88% (verbal negative) to 63% (nonverbal neutral). Reliability checks were periodically done on approximately 10% of the interactions coded. Percentage of agreement on the summary codes averaged 61% for verbal communication and 78% for nonverbal communication.

Results

Overview of the analyses
As a preliminary analysis, the potential influence of gender on the relationship between attachment and verbal and nonverbal communication patterns was examined. A Multivariate Analysis of Variance, with gender and the preferred attachment style as the independent and verbal and nonverbal communication as dependent variables proved non-significant. Moreover, the estimated effect size was 0.05, indicating that there was hardly any influence of gender. The data for men and women were therefore analyzed jointly. Biographical variables, such as age and level of education did not relate to attachment and communication variables and neither did the duration of the romantic relationship. Therefore, results will be reported for the entire sample.
Attachment style and communication patterns

To assess the relationship between adult attachment and communication, Pearson correlations were computed between individuals’ attachment ratings and verbal and nonverbal communication patterns after experimentally induced stress. Contrary to our expectations, there were hardly any significant relationships between individuals’ attachment styles and their communication patterns. Only one marginally significant correlation was found: Fearful attachment and verbal negative communication were positively related (r=.20, p=.055; see Table 4.1). Consistent with past research we did find significant associations between attachment and levels of daily stress and between attachment and satisfaction in the current romantic relationship (see Table 4.1).

Table 4.1: Pearson correlations between attachment styles (RQ) and observed verbal and non-verbal communication patterns (KPI), relationship satisfaction (RISS) and levels of daily stress (SRLE) in Study one.

<table>
<thead>
<tr>
<th></th>
<th>RQ-secure</th>
<th>RQ-preoccupied</th>
<th>RQ- fearful</th>
<th>RQ-dismissing</th>
</tr>
</thead>
<tbody>
<tr>
<td>KPI Verbal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>positive</td>
<td>.03</td>
<td>-.03</td>
<td>-.04</td>
<td>.01</td>
</tr>
<tr>
<td>negative</td>
<td>.06</td>
<td>-.10</td>
<td>.20+</td>
<td>.11</td>
</tr>
<tr>
<td>neutral</td>
<td>-.05</td>
<td>.07</td>
<td>-.11</td>
<td>-.09</td>
</tr>
<tr>
<td>KPI Nonverbal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>positive</td>
<td>.09</td>
<td>.04</td>
<td>-.01</td>
<td>-.08</td>
</tr>
<tr>
<td>negative</td>
<td>-.03</td>
<td>-.11</td>
<td>.01</td>
<td>.02</td>
</tr>
<tr>
<td>neutral</td>
<td>-.12</td>
<td>.11</td>
<td>.00</td>
<td>.08</td>
</tr>
<tr>
<td>RISS</td>
<td>.16</td>
<td>-.33**</td>
<td>.25*</td>
<td>-.17+</td>
</tr>
<tr>
<td>SRLE</td>
<td>-.30*</td>
<td>.42**</td>
<td>.36**</td>
<td>.15</td>
</tr>
</tbody>
</table>

+p<.10; *p<.01; **p<.001

Conclusion

Study one examined the relations between self-reported adult attachment style and couples’ communication patterns. Contrary to our expectation, hardly any significant relationships were found between attachment and verbal and nonverbal communication, with the exception of a marginally significant relationship between
fearful attachment and negative verbal communication. Consistent with past research we did find strong relationships between attachment and satisfaction in the current romantic relationship and between attachment and daily stress. Because of the lack of findings, and the apparent non-existing relationship between attachment and verbal and nonverbal communication patterns, we refrained from analyzing potential moderation effects of satisfaction in the relationship and levels of daily stress.

Study one has several limitations; First, although we tried to ensure activation of the attachment system it is possible that the stress-induction did not provoke stress. Furthermore, we used a sample of students that had only been together for a short while. Perhaps they had not been dating long enough to in order for their attachment style to influence their communications patterns. And third, it must be noted that the KPI is usually used with the instruction to talk about a relationship problem. In order to ensure a more spontaneous interaction we deliberately refrained from giving the couples an instruction prior to their videotaped conversation, they were free to talk about anything they wanted. The result was, however, that most conversations tended to be fairly neutral which might have caused the lack of findings. Study 2 was designed to address these limitations.

**Study two**

In order to refine Study one, Study two had three major assets: First, we chose a sample of married couples that had been married for at least one year. Second, in order to ensure attachment system activation, couples were instructed to discuss a major relationship problem. Kobak & Duemmler (1994) suggest that conflict increases an individuals’ need for emotional support from his or her attachment figure. This need, however, produces a psychological bind in which individuals require support from the person with whom they are in conflict, and this in return should make working models of attachment more accessible. Third, letting couples discuss a relationship problem allows us to adhere more closely to the principles of the KPI and other marital interaction coding systems (i.e. MICS; Heyman, Weiss & Eddy, 1995; RMICS; Crowell, Treboux, Gao, Fyffe, Pan & Waters, 2002; Heyman & Vivian, 1993; CISS; Notarius & Markman, 1981).
Method

Participants
Thirty-four heterosexual couples from the general population participated in Study two. Participants were recruited through newspaper advertisements and on a local radio-station. To ensure a large range in relationship quality and attachment styles we solicited both distressed and non-distressed couples. Couples responded to advertisements inviting both happy and distressed couples to participate in a research study on close relationships. Of the thirty-four couples that were included in the study, 16 couples considered themselves to be happy and 18 couples indicated they were distressed. No differences were found between the distressed and non-distressed couples in marital status, education, relationship duration or number of children. To ensure that participants were involved in established relationships, only individuals that had been together for at least one year prior to participation were included (mean duration of the romantic relationship was 24.3 (range 1 year to 66 years; SD=15.7 years). Of the 34 couples, 83.6% were married, 13.1% were cohabiting and 3.3% were living apart together. The majority of couples (82%) had children (M=1.92, SD=1.27, range 0-5). Mean level of education was average (M=4.44, S.D. =2.09) on a continuum that ranged from 1 (primary school only) to 8 (completed university education).

Procedure
Couples were requested to participate in an assessment which entailed being videotaped during a problem solving discussion and individually filling out an extensive battery of questionnaires about attachment, relationship satisfaction, communication, daily hassles (chronic stress) and mental health. Couples were first videotaped for approximately ten minutes during a discussion on how they first met, in order to help them adjust to the videotaping situation. Couples were then requested to discuss a major relationship problem for an additional ten minutes and to try to come to a mutually satisfying solution. After the assessment, distressed couples were offered an intervention consisting of 12 sessions BMT and non-distressed couples were given a popular Dutch book on close relationships in appreciation of their participation.
Measures
The Relationship Questionnaire (RQ; Bartholomew and Horowitz, 1991; Griffin & Bartholomew, 1994), the Survey of Recent Life Experiences (SRLE; De Jong, Timmerman & Emmelkamp, 1996; Kohn & McDonald, 1992) and the Relational Interaction Satisfaction Scale (RISS; Buunk, 1990) are described in more detail in the Method section of Study one.

The Communication Skills Inventory (CSI; Schaap, Buunk & Kerkstra, 1988) was used to assess the quality of communication within couples. The questionnaire is made up of three empirically based subscales: destructive communication (18 items), avoidance (11 items) and intimacy (11 items). Each item is rated on a five-point scale ranging from ‘never’ to ‘very often’. Cronbach’s alpha’s in this study were adequate (α = .95 for destructive communication; α = .93 for avoidance and α = .85 for intimacy).

The Kategoriensystem für Partnerschaftliche Interaktion (KPI; Coding system for marital/family interaction; Hahlweg, Reisner, Kohli, Vollmer, Schindler & Revenstorf, 1984) is described in the Method section of Study one. In the present study, 29 of the 34 couple discussions were coded. Five videotaped interactions could not be analysed due to technical disturbances during taping making it either too difficult to see the couples’ facial expressions or making it too difficult to hear what the couple said. A total of nine coders coded the interactions after intensive training by the first author. All of the videotaped interactions were scored independently by a second coder; disagreements were resolved through discussion and consensus. About 10% of the tapes were then used for reliability checks with a third criterion coder. Interrater agreement ranged from 74% to 94%. Percentage of agreement ranged from 73% (nonverbal neutral) to 94% (verbal positive), with an average percentage of agreement of 80% for the verbal and 75% for the nonverbal codes.

Results
As a preliminary analysis, the potential influence of gender on the relationship between attachment and verbal and nonverbal communication patterns was examined. A Multivariate Analysis of Variance, with gender and the preferred attachment style as the independent and verbal and non-verbal communication as dependent variables proved non-significant. Moreover, the estimated effect size was 0.08, indicating that
there was hardly any influence of gender. The data for men and women were therefore analyzed jointly. Biographical variables, such as age and level of education did not relate to attachment and communication variables and neither did the duration of the romantic relationship. Therefore, results will be reported for the entire sample.

To examine the relationship between attachment and couples’ communication patterns Pearson correlation coefficients were computed. It should be noted that two communication measures (i.e. a self-report and an observational measure) were included to provide a more complete picture of participant’s communication patterns. As can be seen from Table 4.2, the CSI subscales (destructive communication, avoidance and intimacy) were significantly correlated with the summary scales of the KPI (verbal positive, negative and neutral, non-verbal positive, negative and neutral) in expected ways. Convergence was generally moderate, ranging from .54 for intimacy with negative nonverbal communication to .19 for avoidance and positive nonverbal communication.

Table 4.2: Pearson correlations between self-reported communication patterns (CSI) and observed verbal and non-verbal communication patterns (KPI)

<table>
<thead>
<tr>
<th></th>
<th>Destructive Communication</th>
<th>Avoidance</th>
<th>Intimacy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>KPI Verbal:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>positive</td>
<td>-.35**</td>
<td>-.27*</td>
<td>.27*</td>
</tr>
<tr>
<td>negative</td>
<td>.47**</td>
<td>.46**</td>
<td>-.52**</td>
</tr>
<tr>
<td>neutral</td>
<td>-.19</td>
<td>-.24</td>
<td>.31*</td>
</tr>
<tr>
<td><strong>KPI Nonverbal:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>positive</td>
<td>-.19</td>
<td>-.19</td>
<td>.39**</td>
</tr>
<tr>
<td>negative</td>
<td>.38**</td>
<td>.45**</td>
<td>-.54**</td>
</tr>
<tr>
<td>neutral</td>
<td>-.29*</td>
<td>-.39**</td>
<td>.28*</td>
</tr>
</tbody>
</table>

*p<.05; **p<.01

To assess the relationship between attachment and self-reported communication patterns Pearson correlations were calculated between the RQ and the CSI. As can be seen from Table 4.3, self-reported adult attachment and self-reported communication patterns were very strongly related. Security of attachment was negatively related to destructive communication and avoidance but positively related to intimacy. In
contrast, insecurity of attachment was positively related to both destructive communication and avoidance but negatively related to intimacy. The three insecure attachment styles (dismissing, preoccupied and fearful) did not differ from each other in the pattern of findings but the results were strongest for fearful attachment.

To assess the relationship between attachment and observation of couples’ verbal and nonverbal communication patterns Pearson correlations were calculated between the RQ and the KPI. As can be seen from Table 4.3, attachment security was negatively related to nonverbal negative communication and positively to positive nonverbal communication. Contrary to our expectation we did not find any significant associations between attachment security and verbal communication patterns, although the negative association between attachment security and verbal negative communication was marginally significant. As we had expected, preoccupation of attachment was positively related to negative verbal and negative nonverbal communication, but contrary to our expectation preoccupation of attachment was not related to positive verbal communication. Fearful attachment was, as expected, related to negative verbal and negative nonverbal communication, but there was no significant association between fearful attachment and positive verbal communication. Contrary to our expectation there were no associations between dismissing attachment and neutral verbal and neutral nonverbal communication.

Next, we examined whether attachment style was associated with levels of daily stress and relationship satisfaction. Consistent with past research, there was a significant association between attachment and relationship satisfaction. Security of attachment was positively related to relationship satisfaction whereas preoccupied, fearful and dismissing attachment were negatively related to relationship satisfaction. Furthermore, fearful and preoccupied attachment were positively related to levels of daily stress (see Table 4.3).
Table 4.3: Pearson correlations between attachment styles (RQ) and self-reported (CSI) and observed (KPI) communication patterns, relationship satisfaction (RISS) and levels of daily stress (SRLE) in Study two.

<table>
<thead>
<tr>
<th></th>
<th>RQ-secure</th>
<th>RQ-preoccupied</th>
<th>RQ-fearful</th>
<th>RQ-dismissing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CSI</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Destructive com.</td>
<td>-.66**</td>
<td>.56**</td>
<td>.72**</td>
<td>.36**</td>
</tr>
<tr>
<td>- Avoidance</td>
<td>-.62**</td>
<td>.60**</td>
<td>.68**</td>
<td>.35**</td>
</tr>
<tr>
<td>- Intimacy</td>
<td>.60**</td>
<td>-.63**</td>
<td>-.69**</td>
<td>-.41**</td>
</tr>
<tr>
<td><strong>KPI Verbal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>positive</td>
<td>.21</td>
<td>-.18</td>
<td>-.17</td>
<td>-.02</td>
</tr>
<tr>
<td>negative</td>
<td>-.25+</td>
<td>.46**</td>
<td>.43**</td>
<td>.25+</td>
</tr>
<tr>
<td>neutral</td>
<td>.07</td>
<td>-.30*</td>
<td>-.28*</td>
<td>-.21</td>
</tr>
<tr>
<td><strong>KPI Nonverbal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>positive</td>
<td>.31*</td>
<td>-.18</td>
<td>-.13</td>
<td>-.05</td>
</tr>
<tr>
<td>negative</td>
<td>-.49**</td>
<td>.30*</td>
<td>.41**</td>
<td>.22</td>
</tr>
<tr>
<td>neutral</td>
<td>.31*</td>
<td>-.21</td>
<td>-.40**</td>
<td>-.24</td>
</tr>
<tr>
<td><strong>RISS</strong></td>
<td>.67**</td>
<td>-.57**</td>
<td>-.67**</td>
<td>-.49**</td>
</tr>
<tr>
<td><strong>SRLE</strong></td>
<td>-.23</td>
<td>.38**</td>
<td>.44**</td>
<td>.18</td>
</tr>
</tbody>
</table>

*p<.10; *p<.05; **p<.01

Moderator analyses
To investigate whether relationship quality and levels of daily stress moderate the association between attachment and communication patterns, a series of multiple regression analyses were conducted, using verbal and nonverbal communication patterns as dependent variables. As predictors, attachment style and the interaction between attachment style and stress, and attachment style and relationship quality were used. All scores were standardized and the interaction effect was subsequently computed by multiplying the standardized attachment scores with stress or relationship quality.

The results indicate that levels of daily stress moderate the relationship between attachment and communication patterns. As can be seen from Figure 4.1, stress moderates the relationship between preoccupation of attachment and verbal negative
communication (b = .31; p<.05). In low stress conditions highly preoccupied individuals do not differ from individuals low in preoccupation on their verbal negative communication but in high stress conditions highly preoccupied individuals communicate more verbally negative.

As can be seen from Figures 4.2 and 4.3, levels of daily stress moderate the association between dismissing attachment and verbal positive (b = -.32;p<.05) and verbal neutral communication (b= .37;p<.01). In low stress conditions highly dismissing individuals communicate less verbally neutral and more verbally positive than individuals low in dismissing attachment. However, in high stress conditions highly dismissing individuals communicate more verbally neutral and less verbally positive than individuals low in dismissing attachment (see Figures 4.2 and 4.3).
Relationship quality also seems to moderate the relationship between attachment and communication patterns. As can be seen from Figure 4.4, satisfaction in the current romantic relationship influences the association between fearful attachment and verbal negative communication ($b = -.39; p<.05$). Fearful individuals tend to express themselves less verbally negative compared to those low in fearful attachment. However, this is especially the case if they are satisfied in their current romantic relationship.
Figures 4.5 and 4.6 show that satisfaction in the current romantic relationship also moderates the relationship between dismissing attachment and communication patterns. Highly dismissing individuals tend to be more verbally positive than those low in dismissing attachment (b = .34; p<.05). This is especially so when they are satisfied in their current romantic relationship. Highly dismissing individuals are also more verbally neutral compared to those low in dismissing attachment (b = -.42; p<.01). However, this is especially the case when highly dismissing individuals are not satisfied in their relationship. If highly dismissing individuals are very satisfied in their relationship they are equally neutral in their verbal communication compared to those low in dismissing attachment but when highly dismissing individuals are unsatisfied in their relationship they become more verbally neutral than those low in dismissing attachment.
Conclusion
The results found in Study 2 help to resolve some of the ambiguities of Study One. In particular, it was found that self-reported adult attachment was very strongly related to couples’ communication patterns in the predicted direction. On a self-report communication inventory there were strong and highly significant relationships between attachment and couples’ communication patterns. Secure attachment was negatively related to destructive communication and avoidance but positively related
to intimacy. In contrast, insecurity of attachment was positively related to both destructive communication and avoidance but negatively related to intimacy. The three insecure attachment styles (dismissing, preoccupied and fearful) did not differ from each other in the pattern of findings but the results were strongest for fearful attachment.

Observation of couples communication patterns yielded similar findings, although the associations tended to be less pronounced. In accordance with hypothesis one, security of attachment was positively related to positive nonverbal communication and was negatively related to nonverbal negative communication. Contrary to our expectation there were no significant associations between secure attachment and verbal communication patterns, although the negative relationship between secure attachment and verbal negative communication was marginally significant.

As predicted in hypothesis 2, preoccupied attachment was related to negative verbal and negative nonverbal communication, but contrary to our expectation preoccupied attachment was not associated with positive verbal communication.

Hypothesis 3 proposed that fearful attachment would be related to positive verbal and to negative nonverbal communication. As we had expected fearful attachment was related to negative nonverbal communication but contrary to our prediction fearful attachment was not related to positive but rather to negative verbal communication.

On the basis of hypothesis 4, we had expected dismissing attachment to be related to neutral verbal and neutral nonverbal communication. Contrary to our expectation, dismissing attachment was not significantly related to neutral verbal or neutral nonverbal communication.

As predicted in hypothesis 5, levels of daily stress moderated the relationship between attachment and verbal and nonverbal communication patterns. Indeed, we found that levels of daily stress moderated the relationship between preoccupied attachment and verbal negative communication. Moreover, levels of daily stress also moderated the relationship between dismissing attachment and verbal positive and verbal neutral communication.

Hypothesis 6 predicted that satisfaction in the current romantic relationship would moderate the relationship between attachment and verbal and nonverbal
communication patterns. The results indicated that satisfaction in the current relationship moderated the association between fearful attachment and verbal negative communication. Satisfaction in the current romantic relationship also moderated the relationship between dismissing attachment and verbal neutral and verbal positive communication.

**Discussion**
The present study set out to examine the relationship between adult attachment styles and couples’ communication patterns in a stressful situation. In Study One, a study with young dating couples, hardly any significant association were found between adult attachment style and couples’ verbal and nonverbal communication patterns. In contrast, in Study Two, a study with married couples in established relationships there were strong and significant relationships between adult attachment style and couples’ verbal and nonverbal communication patterns in the predicted direction. It is possible that the student couples in Study One had not been dating long enough to in order for their attachment style to influence their communication patterns and their relationship satisfaction. Most couples start out their relationship with great optimism and hope, and it is only later on that problems regarding communication and relationship quality emerge. It is also possible that in the face of a long enduring relationship such as marriage, working models of attachment change. Although attachment theory proposes that attachment style is relatively stable and exerts a continuing influence on relationship behaviour, attachment theory also suggests that working models of attachment may be influenced by relationship events, since working models accommodate and assimilate new information and thus, can change over time. In other words, attachment style may be a product of both earlier and current interpersonal circumstances (Bowlby, 1969, 1973, 1980; Davilla, Burge & Hammen, 1997; Davilla, Karney & Bradbury, 1999).

On the other hand, the lack of findings in Study One may have been the result of us not adhering to the principles of the KPI. In order to ensure a more spontaneous interaction we deliberately refrained from giving the couples an instruction prior to their videotaped conversation, they were free to talk about anything they wanted. Unfortunately, this resulted in fairly neutral conversations between the couples.
Adult attachment and couples' verbal and nonverbal communication patterns in a stressful situation

Couples generally refrained from talking about emotional topics and low frequencies of verbal positive and verbal negative communication were the result. When coding couple interactions, couples are usually instructed to discuss a (major) relationship problem, which enhances the range of communication patterns. Indeed, research by Simpson, Rholes and Philips (1996) shows that attachment style differences in conflict resolution behaviours are more pronounced when couples are asked to discuss issues of major importance to their relationships.

According to Kobak & Duemmler (1994) three types of situations tend to activate the attachment system: fear-provoking situations (which motivate people to seek out significant others as safe havens), challenging situations (which lead people to make contact with those who provide a secure base), and conflictual interactions (which activate concerns about an attachment partners’ availability). It is possible that our manipulation of stress in Study One did not heighten attachment related thoughts and behaviours concerning the current relationship, resulting in the lack of findings. Although stress was manipulated in both studies to ensure attachment system activation, the specific source of distress differed in Study One and Study Two. In Study One, anxiety about a video-taped presentation task was a stressor that was external to couples’ relationships. In the conflict resolution task of Study Two, distress mainly emanated from within couples’ relationship, which perhaps activated relationship specific thoughts and feelings regarding attachment. In future studies it will be important to continue to investigate which types of situations activate the attachment system and what the behavioural consequences are. Along a similar vein, contemporary theory in social and personality psychology emphasizes the critical importance of Person* Situation interactions in understanding social and personal outcomes (Mischel & Shoda, 1999).

In Study Two, we found that self reported adult attachment is very strongly related to couples’ communication patterns in the predicted direction. On a self-report inventory of couples’ communication patterns, secure attachment was negatively related to destructive communication and avoidance but positively related to intimacy. In contrast, insecurity of attachment was positively related to both destructive communication and avoidance but negatively related to intimacy. Interestingly, the three insecure attachment styles (dismissing, preoccupied and fearful) did not differ
from each other in the pattern of findings. Contrary to what we would expect from attachment theory, preoccupied attachment was strongly related to avoidance. Perhaps preoccupied individuals have learned to use a variety of strategies in order to maintain contact with their attachment figures, avoidance being one of them.

Observation of couples communication patterns yielded similar, albeit less pronounced findings. Security of attachment was expected to be positively related to positive verbal and positive nonverbal communication but negatively to negative verbal and negative nonverbal communication (hypothesis 1). The results indicated that security of attachment was positively related to both positive and neutral nonverbal communication, and was negatively related to nonverbal negative communication, indicating that in this study, security of attachment was more related to nonverbal than to verbal communication patterns.

Given their strong desire for intimacy, coupled with negative affect and fear of rejection, we expected a complex pattern of verbal and nonverbal communication for preoccupied and fearful individuals. We expected preoccupation of attachment to be related to both negative and positive verbal communication and also to negative nonverbal communication (hypothesis 2). Fearful attachment was expected to be related to positive verbal communication but to negative nonverbal communication (hypothesis 3). The results partially supported these hypotheses. Rather than engaging in positive verbal communication, both preoccupied and fearful attachment were strongly related to negative nonverbal and negative verbal communication, indicating that individuals high in anxiety communicate more negatively than either secure or dismissing individuals.

The generally weak and non-significant associations between dismissing attachment and neutral verbal and neutral nonverbal communication is not what we had expected on the basis of attachment theoretical principles. Dismissing individuals tend to inhibit activation of their attachment system and divert attention away from emotional topics. In conversations they repress the expression of negative feelings in order to reduce conflict. Indeed, dismissing individuals have been found to refrain from discussing conflictual issues that are of importance to the relationship (Jang, Smith & Levine, 2002). Contrary to our expectation, no significant relationships were
found between dismissing attachment and neutral verbal and nonverbal communication patterns in this study, thereby rejecting hypothesis 4.

Furthermore, the results of Study two seem to indicate that levels of daily (chronic) stress and relationship satisfaction moderate the relationships between attachment and communication patterns. Thereby lending partial support to hypotheses 5 and 6. As predicted in hypothesis 5, levels of daily stress moderated the relationship between preoccupied attachment and verbal negative communication. In low stress conditions highly preoccupied individuals do not differ from individuals low in preoccupation on their verbal negative communication but in high stress conditions highly preoccupied individuals communicate more verbally negative. Moreover, levels of daily stress also moderated the relationship between dismissing attachment and verbal positive and verbal neutral communication. In low stress conditions highly dismissing individuals communicate less verbally neutral and more verbally positive than individuals low in dismissing attachment. However, in high stress conditions highly dismissing individuals communicate more verbally neutral and less verbally positive than individuals low in dismissing attachment. These findings fit nicely with the attachment theoretical framework which predicts that in stressful situations dismissing individuals will inhibit displays of distress and restrict attempts to seek comfort and support whereas preoccupied individuals will maximize expressions of distress in order to maintain contact with their attachment figure.

Consistent with hypothesis 6 we found that satisfaction in the current relationship moderated the association between fearful attachment and verbal negative communication. Fearful individuals tend to express themselves less verbally negative compared to those low in fearful attachment. However, this is especially the case if they are satisfied in their current romantic relationship. Satisfaction in the current romantic relationship also moderated the relationship between dismissing attachment and verbal neutral and verbal positive communication. Highly dismissing individuals tend to be more verbally positive than those low in dismissing attachment. This is especially so when they are satisfied in their current romantic relationship. Highly dismissing individuals are also more verbally neutral compared to those low in dismissing attachment. However, this is especially the case when highly dismissing individuals are not satisfied in their relationship. If highly dismissing individuals are
satisfied in their relationship they are equally neutral in their verbal communication compared to those low in dismissing attachment but when highly dismissing individuals are unsatisfied in their relationship they become more verbally neutral than those low in dismissing attachment. These findings again lend support to attachment theoretical principles which predict that fearful individuals refrain from expressing negative feelings in order to avoid rejection and dismissing individuals avoid talking about emotional topics especially when the relationship is not going as well as planned.

The various methodologies (i.e. self-report and observation) used in this study complement each other in a useful way, and the relations between attachment and communication were generally consistent across methods. However, the associations between attachment and observed communication patterns were generally weaker and less compelling when compared to self-reported communication patterns. Considering the small sample size, the strong associations we found between self-reported attachment and self-reported communication patterns were quite remarkable, with some associations even reaching the .70. Unlike global self-report measures, observation methods do not require participants to make highly subjective evaluations of behaviours and therefore are unlikely to be influenced strongly by general patterns of expectation and inference that sometimes can be found using self-reports. Future research might benefit from using both observation and self-report methods when studying the links between attachment and communication patterns.

There are several limitations to the present study. First, sample sizes were relatively small. In particular, this may have accounted for the lack of findings in Study One. Nonetheless, despite the small sample size we found remarkably strong and clear-cut relationships between attachment and communication in Study Two. Second, couples in study one were generally young, intelligent, securely attached and very satisfied with their relationship resulting in a restriction of range which may have influenced the lack of findings. Replication in other groups and preferably in clinical populations is necessary to investigate the ways in which attachment and verbal and nonverbal communication patterns are related. Third, the use of a cross-sectional design makes it difficult to establish developmental trends in marriages. More longitudinal research is needed to empirically determine if and how working models of attachment change as
a result of relationship quality or conversely, whether attachment style determines later relationship quality. In their study Feeney, Noller and Callan (1994) found that attachment styles predicted later relationship quality. However, relationship quality (as defined by measures of communication and satisfaction) also predicted later attachment security for husbands. This finding supports the idea that working models of attachment may be revised on the basis of experiences within the current romantic relationship. Clearly, more longitudinal research is needed in this area. Fourth, as with any study of behaviour in a laboratory situation, the extent to which the behaviours exhibited in our laboratory situation reflect the behaviour of these couples when they are interacting in a more private or natural setting remains unclear. In particular, the awareness of being videotaped may have inhibited verbal and nonverbal expressiveness, thus underestimating the true association between attachment style and verbal and nonverbal communication patterns. Despite these limitations the results of this study mark an important step forward in using both observational methods and self-reports to determine the relationships between attachment and couples’ verbal and nonverbal communication patterns.

In conclusion, studying communication between couples holds considerable promise as a means of understanding how internal models of attachment are played out in current attachment relationships.
Adult attachment and couples' verbal and nonverbal communication patterns in a stressful situation