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Abstract

Employing one correlational and two experimental studies, this paper examines the influence of attachment styles (secure, anxious, avoidant) on a person's experience of equity in intimate relationships. While one experimental study employed a priming technique to stimulate the different attachment styles, the other involved vignettes describing fictitious characters with typical attachment styles. As the specific hypotheses about the single equity components have been developed on the basis of the attachment theory, the equity ratio itself and the four equity components (own outcome, own input, partner's outcome, partner's input) are analysed as dependent variables. While partners with a secure attachment style tend to describe their relationship as equitable (i.e. they give and take extensively), partners who feel anxious about their relationship generally see themselves as being in an inequitable, disadvantaged position (i.e. they receive little from their partner). The hypothesis that avoidant partners would feel advantaged as they were less committed was only supported by the correlational study. Against expectations, the results of both experiments indicate that avoidant partners generally see themselves (or see avoidant vignettes) as being treated equitably, but that there is less emotional exchange than is the case with secure partners. Avoidant partners give and take less than secure ones.

Key words: Attachment Theory, Equity Theory, Close Relationships

Attachment Theory

Bowlby's (1982) attachment theory, dealing with the attachment between children and their principal caregiver, has also been applied to adult relationships (Bartholomew, 1990; Hazan & Shaver, 1987). In situations involving fear, illness, or loneliness children seek proximity to their primary caregiver, who then responds with a certain level of sensitivity. As a reaction to the perceived sensitivity of such responses, children become trustful or distrustful with respect to the availability of the caregiver and behave in a secure, anxious or avoidant way in future attachment-relevant situations. Children learn how available and approachable others are and how amiable they are themselves, depending on nurturing, inconsistent or dismissive treatment (Ainsworth, Blehar, Waters & Wall, 1978). According to Bowlby (1980) attachment also plays an important role in adult partnerships, although the two partners do not engage in complementary interactions where one is the caregiver and the other is the caretaker. Instead, adult partners mutually support and depend upon each other. Mental models about self and others, which are learned at an early age, are assumed to be stable over a lifetime (Bowlby, 1973), but are in theory changeable, when an individual comes in contact with very different caregivers, such as stepmothers, teachers or romantic partners. The stability of attachment styles is still controversial. Although some determinants of change were studied, i.e. stable vulnerability factors (Davila, Burge & Hammen, 1997; Davila, Karney & Bradbury, 1999), there is some evidence that a person's attachment style is much more stable than his/her position on scales measuring aspects of the quality of relationships, e.g. trust (Schmohr, Küpper & Rohmann, 1999). The attachment style exhibited in any current relationship depends on early experiences in childhood, later relationships in adolescence, and specific characteristics of the current relationship (Owens et al., 1995).

In several studies employing scales to measure different facets of attachment in adults (Brennan, Clark & Shaver, 1998; Grau, 1999), two factors have been repeatedly found that can be interpreted as attachment anxiety and attachment avoidance. The anxiety dimension includes the fear of being abandoned by the partner and the feeling of not being loved enough. The avoidance dimension encompasses the tendency to limit closeness in relationships. Theoretically, individuals can be categorised into four attachment-style groups if the two dimensions anxiety and avoidance are dichotomised (see Table 1). A low score in both dimensions represents a secure attachment style, a high score in the anxiety dimension an anxious style, and a high score in the avoidance dimension an avoidant style. A high score in both dimensions represents an anxious-avoidant style, with such persons avoiding intimacy not because of a lack of interest but because of their distrust and fear of negative consequences (for further descriptions of the four styles see Bartholomew, 1990). Yet, cluster analyses employed in studies with participants living in stable relationships and not attending therapy only generated the three attachment styles described by Hazan and Shaver (1987), i.e. secure, anxious-ambivalent, and avoidant attachment styles (Grau & Vogel, 1998). For this reason the following three studies focus on these three attachment styles. In study 1 and 2, results regarding the two attachment dimensions are also given, as some authors judge a dimensional approach as being more precise than a typological one (Fraley & Waller, 1998). In Study 3 three vignettes have been constructed to represent the three attachment styles.

Table 1
Relationship between attachment dimensions and attachment styles according to Grau (1999, first line), Hazan & Shaver (1987, second line) and Bartholomew (1990, third line).

	not anxious	anxious
not avoidant	secure	anxious
	secure	anxious-ambivalent
	secure	preoccupied
avoidant	avoidant	anxious-avoidant
	avoidant	
	dismissing	fearful

Note. Anxious-avoidant style will not be considered in this study because it was not found in cluster analyses with subjects living in partnerships.

A number of studies have examined how the quality of relationships is determined by an individual's attachment style. Secure persons are happy and trusting (Hazan & Shaver, 1987), are ready to enter a relationship, make a considerable investment (Bierhoff, Grau & Ludwig, 1993), and have constructive strategies at hand to solve conflicts (Pistole, 1989). Anxious-ambivalent persons wish for more intimacy than they receive (Grau & Vogel, 1998), tend to fall in love at first sight (Hazan & Shaver, 1987), and are very jealous and clingy (Bierhoff et al., 1993). They have exceptionally little trust (Grau, 1999; Simpson, 1990), idealise their partner, are dependent on her/him (Feeney & Noller, 1990), are often angry at their partner (Grau, 1999), and in disputes they demand more affection (Grau & Vogel, 1998). Avoidant persons do not accept their partner as she/he is (Hazan & Shaver, 1987), need to be self-sufficient and solve their problems without help (Bierhoff et al., 1993), and avoid close emotional ties (Grau, 1999; Simpson, 1990). As their level of commitment in the partnership is low, they often feel guilty (Grau, 1999). In disputes they call for more freedom and autonomy (Grau & Vogel, 1998).

Less is known about the influence of attachment styles on power, equity, equality and exchange of resources in ongoing relationships. We assume that the development of inequitable relationships can be explained to a certain extent in terms of the insecure attachment styles of the partners, as will be outlined in the next section.

Equity Theory

Various fairness norms have been distinguished in literature (Lerner, 1977). The best known and most frequently studied theory of fairness is equity theory (Walster, Berscheid & Walster, 1973), which focuses on how an individual perceives the relationship between the outcomes produced by both partners in proportion to their input into the relationship. There are four components involved in evaluating equity. Firstly, to what extent does one's partner have positive traits or exhibit positive behaviour (partner's input: A); secondly, how much benefit does one derive from this input (own outcome: B); thirdly, to what extent does one exhibit positive behaviour oneself (own input: C); and finally, how much does the partner benefit from this input (partner's outcome: D). According to Adams (1965), equity exists if (B / C) - (D / A) = 0. This

means that a total score of zero designates a subjectively fair relationship, a score above zero designates an overbenefitted and a score below zero an underbenefitted position. Various types of contributions (input) and rewards (outcomes) have been distinguished, with equity having been measured and studied in terms of personal, emotional and day-to-day contributions (Hatfield, Utne and Traupmann, 1979), education (Taylor, 1997), financial control (Burgoyne & Lewis, 1994), household tasks such as food preparation and housekeeping (Keith, Schafer & Wacker, 1992/93) and finally as a global evaluation of fairness.

Equity theory predicts that persons who perceive their relationship as being unfair experience distress and, more specifically, that persons who feel they are being treated equitably should be content in their partnership. Overbenefitted as well as underbenefitted persons should be less happy and experience more distress than persons treated equitably. Persons in an underbenefitted position should feel angry as they lack what they deserve and persons in an overbenefitted position should feel guilty for taking advantage of their partner (Sprecher, 1986).

Most studies examining the relationship between equity and satisfaction have generated results confirming this expectation (Hatfield, Greenberger, Traupmann & Lambert, 1982; Utne, Hatfield, Traupmann & Greenberger, 1984; Traupmann, Hatfield & Wexler, 1983; VanYperen & Buunk, 1990, 1994). One longitudinal study suggests that it is the perception of being in a fair relationship which results in satisfaction and not vice versa (VanYperen & Buunk, 1990). Persons perceiving their relationship to be equitable ascribe it higher stability (Utne et al., 1984), show more relationship enhancing behaviour (Messman et al., 2000), and develop more benign attributions (Hegtvedt et al., 1993). Only a few studies have produced results that do not fit the expected pattern involving equity and relationship quality (e.g. Lujanski & Mikula, 1983). [1]

A point of criticism about Adams' equity measure is that it is not only the ratio of resources exchanged but also the quantity of exchanged resources (the total amount of rewards) that accounts for the degree of satisfaction in partnerships (Cate, Lloyd & Henton, 1985; Reynolds, Remer & Johnson, 1995). Thus, it may be fruitful to study the four components of the equity ratio separately in addition to the ratio, just as belief outcomes and outcome evaluations are studied together with the product-sum in the domain of attitudinal expectancy-value models (e.g. Fishbein & Ajzen, 1975).

Research on equity theory has studied reactions of subjects to inequity in real interactions as well as in laboratory situations in which equity is mostly conceptualised and studied as an independent variable. Yet, the determinants of why someone lives in fair or unfair relationships are still unclear. Only few studies have treated equity as a dependent variable (Kollock, Blumstein & Schwartz, 1994; Sprecher & Schwartz, 1994; vanYperen & Buunk, 1990; 1994). In present research the determinants of perceived equity are studied. It is hypothesised that existing attachment styles predetermine from the outset whether a person will be involved in an equitable relationship or find herself/himself in an over- or underbenefitted position.

[1] In order to find conditions which modify the relationship between equity and satisfaction, different moderator variables of the relationship between the two variables have successfully been studied, such as exchange orientation (Buunk & VanYperen, 1991), nationality (VanYperen & Buunk, 1991), type of relationship, i.e. family or business situation (Wagstaff et al., 1993), and attribution of imbalances (Holmes & Levinger, 1994).

Attachment Styles and Perceptions of Equity: A Causal Relationship?

Although it cannot be assumed that attachment styles persist over a person's lifespan, they are much more stable than other aspects of the quality of relationships (Schmohr, Küpper & Rohmann, 1999). Perceptions of equity or inequity develop from the actual exchange with a partner and depend on current processes within the partnership (Buunk & Mutsaers, 1999). Therefore, the hypothesis is that the attachment style (as a more stable variable) exerts a causal influence on the experience of equity in partnerships (as a less stable variable).

More specifically, a high score on the attachment dimension of anxiety should correlate with an individual feeling underbenefitted. An important characteristic of anxiously-attached persons is their fear of being abandoned or neglected. Anxious persons blame their partner for being unsupportive and for not fulfilling their emotional needs. They experience less intimacy than they desire and blame their partner for it. In disputes they demand more affection, intimacy, common activities, and other important rewards (Grau & Vogel, 1998). Thus, anxious persons are hypothesised to perceive themselves as occupying an underbenefitted position. In line with this hypothesis, a person with an anxious attachment style is often angry at his/her partner (Grau, 1999), as is the case with underbenefitted persons (Sprecher, 1986). Anxious persons focus their attention on their partner and persistently assess whether their partner is showing enough affection. In particular, it is hypothesised that two of the equity-ratio components postulated by Adams (1965) are most influenced by anxious attachment: the perceived partner's contributions (A) and one's own perceived outcome (B). Low scores on these two components lead to low scores on Adams' equity ratio.

It is further hypothesised that a high score on the attachment avoidance dimension leads individuals to see themselves as being overbenefitted. Avoidant persons invest less than others in the partnership as they do not expect a workable attachment or the partner's support (Bartholomew, 1990). They value their autonomy and experience a low level of intimacy in their relationship. Furthermore, their ideal level of intimacy is low (Grau & Vogel, 1998) and they are not motivated to alter their level of intimacy in either direction. Nevertheless, they report frequent conflicts with their partners as their partners demand more intimacy. We hypothesise that avoidant persons are aware of their low commitment and low intimacy contribution, an important reward missed by their partners. Therefore, avoidant persons could be expected to exhibit especially low own perceived input (C) and low partner's perceived outcome (D) levels in the equity ratio, resulting in an overbenefitted position. In line with this hypothesis, avoidant persons have often been found to feel guilty (Grau, 1999), as do persons who are overbenefitted (Sprecher, 1986).

Persons with low scores on both of the attachment dimensions are securely attached. Due to their generally high level of satisfaction with the relationship and their effective problem solving strategies, they are more likely to be involved in a fair relationship and score highest in all four equity ratio components.

The present studies were designed to measure the impact of attachment styles on perceptions of equity. Study 1 correlates the two attachment dimensions (anxious, avoidant) with equity, providing a prerequisite for studying the causal influence of the former on the latter. Study 2 employs a priming technique to manipulate the saliency of

the two attachment dimensions. The critical test of causality in this study is whether the relationship between the primed dimension and equity is strengthened in the expected direction after priming. Study 3 employs a vignette technique which involves descriptions of the behaviours and perceptions of fictitious persons which are prototypical of one of each of the three attachment styles (secure, anxious, avoidant). The critical test of causality in this case is whether the equity appraisal made from the perspective of the person with the prototypical attachment style fits the expected pattern.

Study 1: Correlational Analysis of Interrelationships Between Attachment and Equity

Study 1 is a correlational analysis of the relationship between attachment and perceptions of equity. Hypotheses and analyses are derived from a dimensional and a typological approach. The advantage of the dimensional approach is the greater precision of measurement, and the advantage of the typological approach is additional information about securely attached individuals.

Integrating the rationale of both attachment theory and equity theory, the first hypothesis is that the equity ratio should correlate negatively with the anxious attachment dimension and positively with the avoidant attachment dimension. Second, all four components of the equity ratio should correlate negatively with both attachment dimensions. Third, the anxious attachment dimension correlates more negatively with the partner's input (A) and with one's own outcome (B) than the avoidant attachment dimension correlates with these equity components. The reversed correlational pattern is hypothesised for the anxious attachment dimension and one's own input (C) and the partner's outcome (D).

For testing the hypotheses regarding secure persons, participants were divided into three attachment styles. Secure persons should perceive relationships to be more equitable and give (C, D) and take (A, B) more in relationships than both insecure groups. Anxious persons should perceive themselves as being in an underbenefitted position, rating their partner's input (A) and their own outcome (B) lower than secure and avoidant persons. Avoidant persons should perceive themselves as being in an overbenefitted position, rating their own input (C) and their partner's outcome (D) lower than secure and anxious persons. These hypotheses will be tested by univariate between-subjects analyses of variance, with the three attachment styles as independent variables and the equity ratio and four equity-ratio components as separate dependent variables.

Method

Participants

One hundred and ninety six participants were recruited from lecture groups or from the social circles of those conducting the research, with some of these participants agreeing to recruit further subjects. 54% of the questionnaires were returned (53 men, 53 women). The 106 participants, none of whom received any payment, ranged in age from 20 to 61 years (M = 27, SD = 6). They all were involved in intimate relationships ranging from 6 to 360 months duration (M = 49, SD = 54). Most were students (n = 75) and the remainder were employed. They filled out the questionnaire at home and returned it in sealed envelopes.

Questionnaire

The questionnaire included Grau's (1999) attachment scales and items from scales by Simpson (1990) and Brennan & Shaver (1995). Some new items were added. The two scales, one measuring anxiety (e.g. "I am afraid my partner could break up with me") and the other avoidance (e.g. "If I don't feel good, I'd rather not see my partner"), each consisted of 10 items. Participants were asked to indicate their responses on 9-point Likert rating scales with extreme points marked 1 (completely untrue) and 9 (completely true). The reliability of the scales (Cronbach's alpha) was .90 for anxiety and .84 for avoidance. The correlation between the two scales was $r = .17$ (n.s.). To assign individuals to the attachment styles, the z-transformed scale values were used to compute a Ward cluster analysis with squared Euclidean distances. Sixty persons scored low on both scales and were assigned to the secure attachment style. Twenty-four persons with high values on the anxiety scale and low levels on the avoidance scale were assigned to the group of anxious persons, and twenty-two persons with the opposite tendency were assigned to the group of avoidant persons.

Next, we employed Grau's (1997) abbreviated German version of the equity questionnaire originally developed by Hatfield, Utne and Traupmann (1979). This questionnaire addresses nine positive characteristics (e.g. caring, giving warmth, fairness, open-mindedness). Items serving one's own purposes rather than those of one's partner, such as attractiveness and intelligence, were excluded. In a study by Grau (1997), the nine characteristics selected constituted one common factor. The short scale proved more reliable and valid than the full scale comprising 22 items. Participants responded to the items on 7-point Likert rating scales with extreme points marked 1 (completely untrue) and 7 (completely true). Each item contains four questions measuring the four equity components; the first concerns the extent to which one's partner has the particular quality (A) and the second the extent to which one benefits from that quality (B). These are also asked in a reciprocal manner, i.e. whether one has this quality oneself (C) and the extent to which one's partner benefits from this quality (D). According to Adams' (1965) equation, suitable for equity measurements with only positive contributions, the ratio difference (B / C) - (D / A) is computed for each item and aggregated to the total equity score: $\sum^{k}_{i=1} ((B_i / C_i) - (D_i / A_i)) / k$ (alpha = .73). The reliability of the four single components was .82 (A), .83 (B), .86 (C) and .87 (D).

Results and discussion

According to equity theory, the higher the equity ratio, the more one is in an overbenefitted position. As expected, the equity ratio correlates negatively with the anxiety scale ($r = -.31$, $p < .01$) and positively with the avoidance scale ($r = .28$, $p < .01$), suggesting that anxious persons are in an underbenefitted and avoidant persons in an overbenefitted position. Both correlations are significantly different ($z = 4.38$).
As expected, all four components of the equity ratio correlate negatively with both attachment dimensions, and all correlations are significant. The level of significance for all statistical tests is set to $p \leq 0.05$.

Next, differences between the correlations of the two attachment dimensions with each equity component are tested for significance. Partner's input (A) correlates significantly higher with the anxiety scale ($r = .-76$) than with the avoidance scale ($r = -.30$, $z = 4.94$). The same is found for one's own outcome (B) which correlates significantly higher with the anxiety scale ($r = -.71$) than with the avoidance scale ($r = -$

.34, $z = 3.83$). The correlation between one's own input (C) and avoidance ($r = -.53$) is slightly higher than the correlation between one's own input and anxiety ($r = -.41$), but the difference between the two correlations does not reach significance ($z = 1.11$). The same is true for the correlations between the partner's outcome (D) and avoidance ($r = -.48$), and anxiety ($r = -.48$, $z = 0.05$), respectively.

Table 2 shows how the groups (attachment styles) differ from each other and which components of the equity equation underlie these differences.

Table 2
Study 1: Means and standard deviations of equity ratio and equity components by attachment style

	secure	(n=60)	anxious	(n=24)	avoidant	(n=22)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*F (2, 103)*
Equity ratio	.04 a	.17	-.09 b	.32	.16 a	.38	5.39 **
A input partner	6.5 a	.38	5.5 b	.74	6.0 c	.74	29.89 ***
B outcome self	6.5 a	.40	5.4 b	.88	5.8 c	.77	30.07 ***
C input self	6.4 a	.47	5.8 b	.73	5.5 b	.93	19.11 ***
D outcome partner	6.4 a	.49	5.5 b	.83	5.5 b	1.07	19.45 ***

Note. Different letters indicate significant differences in Student-Neuman-Keuls tests. Theoretical range of equity ratio is -6.86 to +6.86, range of rating scales used to measure A, B, C, D is 1-7.
$mF(10, 196) = 15.61$ ***.
** $p < .01$, *** $p < .001$.

Secure subjects tended to produce an equity ratio averaging around zero, i.e. they experience equitable relationships. They give and receive extensively, with all components of the equity ratio being significantly higher than for insecure attachment styles. Anxious subjects showed a significantly lower and negative equity ratio, meaning they feel underbenefitted. As expected, they differ significantly from the two other groups with respect to components A and B, i.e. they receive less from their partner than others. Avoidant persons exhibit a positive equity ratio, thus feeling slightly overbenefitted. Their ratio is significantly higher than for anxious persons, but not higher than for secure persons. We expected particularly low C and D values, yet these values do not lie significantly below those for anxious persons. Both insecure groups judge their own input (C) and their partner's outcome (D) at a similarly low level. Overall, the hypotheses regarding securely and anxiously attached persons are confirmed. The only result which was not expected is that avoidant persons do not perceive very low levels in their own input (C) and their partner's outcome (D).

Study 2: Causal Test of Attachment / Equity Interrelationship Using a Priming Technique

To test the causal nature of the interrelationships established in Study 1, the accessibility of one attachment dimension was increased for subjects before rating their equity level. This particular priming method is described by Bohner, Reinhard, Rutz, Sturm, Kerschbaum & Effler (1998) and Schwarz & Strack (1981). Subjects answering

items in a questionnaire tend not to recall all potentially relevant information when making judgements, but only search for information as long as it takes to answer questions with sufficient certainty. Therefore, they use information which is cognitively accessible. The cognitive accessibility of a feature or concept can be increased by drawing a person's attention toward it by employing a priming technique. If anxious attachment has a causal effect on equity appraisal and this concept has been primed beforehand, it is likely to be cognitively accessible and considered when equity is being assessed (for other attachment style priming techniques see Mikulincer et al., 2001). Therefore, a causal effect can be demonstrated if the relationship between anxiety and equity is more negative (and the relationship between avoidance and equity is more positive) when the respective attachment dimension is answered before the equity questionnaire rather than afterwards. In contrast, priming equity should influence the participants judgement of attachment scale items to a lesser extent. Participants are only given one of the attachment scales to complete as otherwise the expected priming effect would be neutralised.

We expect the results from the correlational Study 1 to be replicated, i.e. that attachment anxiety correlates negatively and attachment avoidance positively with the equity ratio. Second, both attachment dimensions are expected to correlate negatively with all components of the equity ratio. Third, attachment anxiety is expected to correlate higher negative with the partner's input (A) and one's own outcome (B) than attachment avoidance. The reverse pattern is expected regarding one's own input (C) and the partner's outcome (D). The critical causal test regarding the priming effect is that the correlations between attachment anxiety (and avoidance) and the equity measures should increase if the respective attachment dimension is primed before the equity questionnaire is completed.

Method

Participants

The priming study involved 218 medical and psychology students aged between 18 and 41 (M = 25, SD = 4 years). They completed questionnaires during lectures and did not receive any payment. Answering the questionnaire took 15 to 20 minutes. Most participants were involved in a partnership at the time (n=166). Their relationships were between one and 431 months in length (M = 40, SD = 48 months). Forty-nine participants had no partner at the time, answering the questions with reference to their last partnership. As their results do not differ significantly in any way from the results of the other participants, all data were analysed together. Three persons had never had an intimate relationship and were excluded, leaving 215 participants (102 men, 113 women). Participants completed the equity scale and either the anxiety scale (n = 99) or the avoidance scale (n = 116).

Questionnaire and procedure

The questionnaires are identical to those in Study 1. The reliabilities are alpha = .90 (anxiety), alpha = .86 (avoidance) and alpha = .55 (equity ratio). Considering the low reliability of the equity ratio and the theoretical reasons outlined above, the overall equity ratio is analysed together with the equation's individual components. The reliability of the four components ranged between .79 and .83.

The sequence of the attachment dimensions and equity appraisal was varied to manipulate priming. Participants were assigned at random to the experimental conditions. Fifty participants participated in the "anxiety - equity" condition (anxiety priming), forty-nine participants in the "equity – anxiety" condition (equity priming), fifty-six participants in the "avoidant – equity" condition (avoidant priming), and sixty in the "equity – avoidant" condition (equity priming).

Results and Discussion

Table 3 shows correlations between the attachment dimensions and the equity measures, with the order of questionnaires not being taken into account. As expected, attachment anxiety correlates negatively with the equity ratio and with all four equity components. The correlation between anxiety and the partner's input (r = -0.67, p < .001) is higher (in negative direction) than the correlation between avoidance and the partner's input (r = -0.44, p < .001). Expectations regarding attachment avoidance were only confirmed in part. Though the expected significantly negative correlations with all equity components were found, the predicted positive correlation with the equity ratio did not occur. Unexpectedly, avoidant persons do not only judge their own input and their partner's outcome as being low, but also their partner's input and their own outcome. They tend to live in relatively equitable relationships, yet the perceived exchange, the mutual give and take, occurs at a lower level compared with not avoidant subjects.

Table 3
Study 2: Correlations between equity ration, equity components and attachment dimensions

	anxiety (n=99)	avoidance (n=116)	z
Equity ratio	-.48 ***	-.02	3.62 *
A input partner	-.67 ***	-.44 ***	2.44 *
B outcome self	-.58 ***	-.49 ***	0.91
C input self	-.32 **	-.47 ***	1.28
D outcome partner	-.43 ***	-.46 ***	0.27

Note. * p < .05, ** p < .01, *** p < .001.

Expectations concerning the causal relationship between the anxiety attachment dimension and the equity ratio were confirmed. The anxiety scale correlates with the equity ratio at r = -.73 (p < .001) when the anxiety scale was completed first and at only r = -.19 (n.s.) when the equity questionnaire was completed first. The difference between the two correlations is significant at z = 3.55 (p < .001). When answering the equity questions in the anxious attachment priming condition the highly anxious participants have considered the idea that their partner might break up with them or does not love them enough. Depending on the context, this is why their assessment of exchange levels in their relationship can change; with them feeling underbenefitted to a greater extent than when they do not have this background information. The correlation between anxious attachment and the underbenefitted position can be attributed to the causal impact of this anxiety on them when completing the equity questionnaire. The correlations between attachment anxiety and the four equity components, however, do not differ significantly between the two priming conditions. This surprising result that a

significant anxiety priming effect can only be located at the level of the composite equity ratio might be explained by the weakness of the priming manipulation. Only the mathematical cumulation of the insignificant changes for each of the four equity components in the equity ratio leads to an significant effect.

Against expectation, correlations between the attachment avoidance dimension and equity are not influenced by the avoidance priming and do not differ significantly from zero. They are r = .08 for the avoidance-equity condition and r = -.16 for the equity-avoidance condition respectively. The difference between the two correlations is not significant (z = 1.26). The same is true for the correlational pattern of the four equity components taken separately.

Study 3: Causal Test of Attachment - Equity Interrelationships using a Vignette Technique

Studies 1 and 2 showed highly negative relationships between the anxiety attachment dimension and the equity ratio. Anxiety seems to be one condition which makes subjects feel disadvantaged, with there being a tendency to rate their partner's input at an especially low level. The results obtained for the avoidance attachment dimension were not definitive. Study 1 showed a positive correlation between avoidance and equity ratio, yet Study 2 did not. In Study 2 avoidant participants scored low on all four components of the equity ratio. The prediction that avoidant participants invest the least of all three attachment groups in a relationship was not confirmed. Their input in Study 1 was not significantly lower than the input of anxious subjects. In Study 2 the correlation between avoidance and own input was not more negative than the correlation between anxiety and own input. One reason for this could be that it is socially unacceptable to rate one's own input as being low, so avoidant participants do not want to admit to their own low commitment. Therefore, the vignette technique, which presents subjects with fictitious persons displaying the typical attachment styles, is a suitable method as the effects of social acceptability and impression management should be less influential.

Study 3 is designed to test the causal impact of an attachment style on the perception of equity by asking participants to assess a fictitious person's equity in her/his relationship, with that fictitious person being typical of one of three attachment styles. Again one would expect that a secure fictitious person with higher levels for all four components of the equity equation will be deemed as having an equitable relationship as compared with fictitious persons displaying insecure attachment styles (i.e. anxious and avoidant). A second prediction is that an anxious fictitious person with lower-rating A and B components (compared with the other groups) will be ascribed an underbenefitted position. Thirdly, it is predicted that an avoidant fictitious person with lower-rating C and D components (compared with the other groups) will be ascribed an overbenefitted position.

Method

Participants

One hundred and thirty-three students from various faculties completed a questionnaire which included one of three different vignettes during lectures. Thirty-

eight men and 95 women between 18 and 43 years of age (M = 22, SD = 3) participated in the study. Seventy-six were involved in an intimate relationship at the time. The participants did not receive any payment. Completing the questionnaire took 10 to 15 minutes.

Questionnaire and procedure

Participants were told they would participate in a study analysing impression formation, the aim of which was to find out whether it was possible to form a reliable impression of a person on the basis of only limited information. They were asked to predict how a given person would fill out a given questionnaire on the basis of an interview with that person. They read a description of either a secure (n = 43), anxious (n = 46), or avoidant (n = 44) person of the same sex as themselves (see the vignettes in the appendix).

Subsequently, the participants were asked to complete an equity questionnaire from the point of view of the fictitious person described. They were told that the person had also completed the questionnaire and that their estimate would be compared with the actual judgements. Finally, participants were debriefed. The equity questionnaire is identical with the ones used in Studies 1 and 2 and displays a reliability of alpha = .90. The reliability of the four single components ranged between .88 and .96.

Data were analysed according to a between-subjects design. A multivariate analysis of variance was computed with the three attachment styles of the fictitious persons being the experimental conditions (independent variable) and the equity ratio and single equity components as the dependent variables.

Results and discussion

In terms of the equity ratio, the relationship of the secure fictitious person is assessed as being equitable, the position of the anxious as being underbenefitted and - unexpectedly - the position of the avoidant person as being equitable as well (see Table 4).

Table 4
Study 3: Means and standard deviations of equity ratio and equity components by attachment style of a fictitious person

	secure	(n=43)	anxious	(n=46)	avoidant	(n=44)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*F (2, 130)*
Equity ratio	-.06 a	.22	-2.30 b	.85	.02 a	.48	231.22 ***
A input partner	5.6 a	.71	2.1 b	.61	4.6 c	.83	285.52 ***
B outcome self	6.0 a	.67	2.0 b	.68	3.6 c	.71	383.80 ***
C input self	5.9 a	.72	5.5 b	.77	3.8 c	.88	82.12 ***
D outcome partner	5.8 a	.72	4.4 b	.90	4.0 c	.99	52.89 ***

Note. Different letters indicate significant differences in Student-Neuman-Keuls tests. Theoretical range of equity ratio is -6.86 to +6.86, range of rating scales used to measure A, B, C, D is 1-7.
$mF(10, 250) = 11.10$ ***.
*** $p < .001$.

The hypotheses concerning the contributions of the different components of the equation are confirmed. Contrary to Study 2, the three groups differ from each other concerning their assessment of all four components. Secure targets are assessed as giving and taking significantly more than insecure ones. Their partner's contributions as addressed by components A and B (partner's input and own outcome) are significantly lower in anxious targets compared to the two other groups. One's own contributions (components C and D) are judged lowest for avoidant targets. However, an overbenefitted position is not ascribed to the avoidant person as the own outcome (B) of the avoidant person is also assessed as being relatively low.

General Discussion

We assume that individuals do not perceive themselves in an over- or underbenefitted position, nor in an equitable relationship by chance or by depending on systematic situational circumstances, but that attachment style affects whether a relationship is experienced as equitable or inequitable. We postulated anxiety to be one of the reasons contributing to an underbenefitted position. As anxious persons constantly observe their partner's conduct and focus on it, we hypothesized they would rate their partner's contributions particularly low. We presumed avoidant persons would assess themselves as being in an overbenefitted position as they are aware of their low level of commitment in the partnership.

Study 1 examined the correlational pattern between attachment and equity. As was expected, secure participants enjoy equitable relationships, giving and taking significantly more compared with insecure subjects. Anxious participants see themselves as being in an underbenefitted position. In particular, they rate their partner's input as being significantly lower than secure and avoidant subjects rate their partner's input. On average avoidant participants tend to be in an overbenefitted position, rating their own input at a lower level than their partner's, yet not significantly lower when compared with anxious subjects.

Study 2 employed an experimental design to test the causal relationships for correlations found in the first study. As attachment style cannot be manipulated experimentally, the cognitive accessibility of one of the two attachment dimensions was manipulated by employing a priming technique. The result was when attachment anxiety was primed, the correlation with the equity ratio was significantly more negative than without priming. Thus, anxiety heightens a subject's perception of being underbenefitted. The priming effect is limited to the equity ratio and does not occur if the four equity components are separately taken into account.

As expected, participants with dispositionally high anxiety scores also rated their partner's input as being particularly low (independent of the priming manipulation). Against expectations, avoidance did not correlate with the equity ratio under either experimental condition. Highly avoidant participants were no more overbenefitted than low avoidance ones. As expected, they did rate their own input as low, yet their partner's input was also rated as low. Thus, it can be claimed that there is a relationship between avoidance and the exchange of rewards. However, this does not result in an overbenefitted position, but in a low level of exchange. One has to keep in mind that only subjective impressions have been recorded in this study and that objectively,

avoidant participants can still be in an overbenefitted position, if the effect of avoidance is more a behavioural phenomenon than a perceptual phenomenon. Further possible explanations for the lack of effect may involve motivational and cognitive factors; avoidant participants might have overrated their own input in order to present themselves positively to avoid feelings of guilt or they may misperceive their partner's input due to their generally disapproving attitude.

It is possible that avoidant participants in Studies 1 and 2 rated their own input at a higher level than is actually the case. To eliminate the influence of social acceptability and impression management, Study 3 employed a vignette technique. When subjects assess unknown persons, the results should not be affected by subjects overrating their own input in an attempt to present themselves positively. In Study 3 secure participants were ascribed an equitable exchange with high component values. Anxious participants were judged to be underbenefitted, with significantly lower rates for their partner's input and their own outcome compared with secure and avoidant participants. As in Study 2, avoidant participants were assessed as being treated relatively equitably. Yet, as expected, their own input (M=3.8) is significantly lower than both the other groups' (M=5.9 or 5.5) and their partner's input (M=4.6); $t(43) = 5.6, p < .001$. According to our hypothesis, anxious people stress their partner's low input and avoidant people emphasise their own low input. Only in Study 3 is their own input of avoidant targets low (3.8 on a 7-point scale), leading to the conclusion that the vignette manipulation technique was successful. Yet, considering the complete equity ratio, the result for avoidant targets does still not constitute an overbenefitted position as their own outcome is rated relatively low as well (M=3.6). Presumably, avoidant persons do not know what to do with their partner's input. Although avoidant persons are aware of their partner's higher input, leading to feelings of guilt (Grau, 1999), their partner's input is insufficient to produce a high outcome. In terms of attachment theory, avoidant persons are unable to make use of their partner's input in order to overcome their mistrust of a functional relationship.

Overall, the three studies lead to quite consistent results. Secure persons experience equitable relationships with a high level of exchange, avoidant persons - contrary to predictions - also perceive themselves as being treated equitably, but with a lower level of exchange, while anxious persons feel underbenefitted. In particular, anxious persons perceive their partner's input as low, resulting in them being in an underbenefitted position. The results support a causal interpretation of the impact of attachment style on the perception of equity. The two experimental techniques employed complement each other. The priming technique increases the accessibility of a concept and has the advantage that persons assess themselves instead of fictitious persons. It has the disadvantage that self presentational strategies might influence results. The vignette technique diminishes the influence of self-representation, but has the disadvantage that fictitious persons are being judged. The applicability of results found using the vignette technique to the subjects themselves can only be assumed.

Finally, we want to mention some methodological limitations. Firstly, the participants do not constitute a representative sample and the results cannot be generalised to older adults, for whom other types of resources such as social and practical support may be more important than warmth and friendliness (for a discussion of equity in older samples see Reynolds et al., 1995). Secondly, confirmation of the causal effect of attachment style on equity does not imply that a reverse pattern is

impossible. Even though attachment style is more stable over a person's lifetime than equity, actual changes in interaction can also influence attachment style (Davila, Karney & Bradbury, 1999). A longitudinal study could give more information about the causal direction of the two constructs. Thirdly, the present research examined subjective perceptions of equity. Objective imbalances in exchange patterns and the partners' subjective perceptions can differ markedly (Holmes & Levinger, 1994). Nothing can be said about whether attachment styles influence the actual treatment of partners regarding equity. If the exchange of resources can be assessed in a more objective way, it is possible that avoidant persons are in fact in an overbenefitted position. Further research should address actual behaviour additionally to cognitive representations, as it was done by Simpson, Rholes and Nelligan (1992) regarding helping behaviour. Finally, the assessment of equity was limited to aspects in which the contribution of one partner is the benefit of the other. Personal characteristics such as attractiveness, intelligence, and income which are mainly a "benefit" for the attractive, intelligent or rich partner herself/himself were excluded. Further research is needed concerning the relationship between attachment and other types of resources, i.e. household work, sociability, attractiveness, etc. (for a discussion of different types of contributions see Kollock et al., 1994). Overall, it was shown that attachment style is one important determinant of equity perception. From a methodological view, it seems to be fruitful to study the four components of equity ratio separately in addition to the equity ratio.

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Appendix

Vignette for the secure attachment style (female version)

Mrs. S. states in the interview that she is sure her partner loves her and will not leave her. Both are very important to each other and they feel close. She is sure of her feelings toward him and does not doubt her love for him. Togetherness, tenderness and closeness are important for her and these needs are satisfied in her partnership. She says: "I tell him everything that happens every day. I can tell him anything, we just trust each other. He can do the same and it is never too much for me. I have never had the feeling he wants to engulf me." Disputes and problems occur once in a while, but they do not endanger the basis of the relationship. When Mrs. S. is troubled or ill, it is important for her to be with her partner. "If I don't feel good, he is a great help. I don't want him to solve my problems, just listening is enough. This is really revitalising for me and I can handle everything easier afterwards."

Vignette for the anxious attachment style (female version)

Mrs. S. states in the interview that she worries her partner might not love her enough. She thinks he is more important for her than she is for him. She seeks a lot of closeness and attention, but these needs are not met by her partner. Mrs. S. says: "He doesn't ask how I feel. He doesn't care to provide me with little pleasures. He doesn't have enough time for me. I'm disappointed that he doesn't provide me with the love I need." She frequently tries to get him to care more for her and to spend more time with her. This often leads to disputes. Mrs. S. is afraid her partner might break up the relationship. "I am often afraid he will leave me. For example, when he is friendly with another woman, I feel the fear coming up, he might leave me for another woman. Then I'm totally jealous and desperate."

Vignette for the avoidant attachment style (female version)

Mrs. S. states in the interview that it is not uncommon for her to feel confined in intimate relationships. She often has the feeling her partner wants to engulf her. She says: "He wants to know everything about me. But my most intimate feelings are not for him. I don't tell him everything. If he comes too close, I withdraw from him. There is a limit he is not supposed to cross. If he tries, I defend myself." - Mrs. S. does not want to be too deeply attached to her partner. The thought of a very close relationship causes her great discomfort. She loves being alone and when she is troubled or ill, she'd rather not see her partner. "It's nice when we meet, but it's also okay when we don't meet. I don't have to do everything with him. When we're not together, I don't sit around missing him. I can best solve my problems on my own; he can't help me with that."

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