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Perceived empathy, accurate empathy and relationship satisfaction in heterosexual couples

Duncan Cramer & Sophia Jowett

Loughborough University, UK

ABSTRACT

One aim of this study was to test a model derived from Cutrona that conflict and depression partially mediate the relation between perceived and accurate empathy and relationship satisfaction. This was investigated in 149 heterosexual couples using dyadic analysis. As accurate empathy was not significantly related to relationship satisfaction when actual and assumed similarities were controlled, this model was only examined with perceived empathy. Apart from conflict in men, the actor effects of the model were supported. Perceived empathy was positively associated with relationship satisfaction and negatively associated with depression and conflict. Depression and conflict were negatively associated with relationship satisfaction. There were two partner effects. Conflict in women was significantly associated with depression and relationship dissatisfaction in men.

KEY WORDS: accurate empathy • conflict • depression • dyadic analysis • heterosexual couples • perceived empathy • relationship satisfaction • similarity

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Knowledge of factors affecting how satisfied people are with their romantic or marital-type heterosexual relationships may help increase satisfaction with those relationships. One of the strongest correlates of such satisfaction has been emotional support (e.g. Cramer, 2006; Cutrona, 1996). A potential key characteristic of emotional support is perceived empathy or the feeling of being understood by someone (e.g., Cramer, 1986; Rogers, 1959). Client- or person-centred theory (Meador & Rogers, 1979; Rogers, 1959) proposes that the perception of feeling understood or being shown empathy is one of three interrelated characteristics leading to greater psychological well being and more fulfilling relationships. According to this theory, having someone understand our feelings helps us to become more aware of those feelings thereby enabling us to become more fully who we really are and so lead more satisfying lives. Furthermore, as a characteristic of social support, being understood has been rated as the fifth and sixth most helpful of 32 socially supportive behaviours when discussing personal problems and psychological distress, respectively (Cramer, 1986). Feeling understood by one's partner has been found in young adults to be related to self-esteem (Cramer, 1990) and to feeling satisfied with one's romantic relationship independently of feeling accepted (Cramer, 2003), implying that being understood may be socially supportive. Consequently, there is both theoretical and empirical evidence suggesting that being understood may be one of the major aspects of emotional support.

Perceived empathy

Rogers (1975) stated that an early, highly rigorous definition of his of empathy was that it "is to perceive the internal frame of reference of another with accuracy and with the emotional meanings which pertain thereto as if one were the person, but without ever losing the 'as if' condition" (1959, p. 210). A later, longer definition of his included viewing empathy as "entering the private perceptual world of the other", "being sensitive, moment to moment, to the changing felt meanings which flow in this other person" and "communicating your sensings of his/her world" (Rogers, 1975, p. 4). Rogers (1975) acknowledged that the empathic understanding subscale of the Barrett-Lennard (1962) Relationship Inventory provided an operational definition of empathy. He thought that Barrett-Lennard's (1962) definition of empathy overlapped with his own, but that it also differed, although he did not comment on what differences there were. A shortened version of Barrett-Lennard's (1964) revised empathic understanding subscale has been found to be related to both self-esteem (Cramer, 1990) and relationship satisfaction (Cramer, 2003), suggesting that this subscale may be a measure of this construct. In this paper this concept is called perceived empathy, as it is an index of the extent to which a person perceives they are understood by another.

Accurate empathy

Perceived empathy or feeling understood may be distinguished from how accurately someone seems to know or understand us. While this latter concept has also been referred to as empathy or understanding (e.g., Dymond,

1954), it may be less confusing to call it accurate empathy, although this term has also been used to refer to the rating of empathy in therapy (e.g., Truax et al., 1966) as well as to a questionnaire subscale for measuring this quality (Truax & Carkhuff, 1967). One way accurate empathy has been measured is as the absolute difference between a person's view of some aspect of their lives and someone else's perception of how they think that person sees that aspect (e.g., Acitelli, Douvan, & Veroff, 1993; Dymond, 1954). For example, a husband may view himself as moody and his wife may think that he sees himself as moody, in which case she may be assumed to show accurate empathy. This measure of accurate empathy has also been found to be related to relationship satisfaction in married couples.

However, because higher accurate empathy on this measure will occur when both people assume that the other person is more like them and when both people have more similar views (e.g., Cronbach, 1955), it is important to control for the actual similarity of the two people when measuring accurate empathy. When some attempt to do this has been done, accurate empathy has still been generally found to be related to relationship satisfaction. For example, Acitelli et al. (1993) reported that wives', but not husbands', marital well being was positively related to both wives' and husbands' accurate empathy of destructive conflict behaviours. Sillars, Weisberg, Burggraf, and Zietlow (1990) noted that only wives' marital satisfaction was significantly related to husbands' accurate empathy of instrumental aspects of the relationship, such as money and leisure. The idea that accurate empathy is important for effective relationship functioning has been proposed in other theoretical perspectives, such as role theory (e.g., Luckey, 1960) and symbolic interactionism (e.g., Taylor, 1967).

Empathic accuracy

More recently, accurate empathy has been measured by video recording an interaction between two people, and asking them separately to select points at which they recalled experiencing a thought or feeling and to describe what these were (e.g., Ickes, Stinson, Bissonnette, & Garcia, 1990). These thoughts or feelings may be specified as those that they did not explicitly express (e.g., Kilpatrick, Bissonnette, & Rusbult, 2002). This procedure may better assess what person-centred theorists view as a deeper level of empathy. The video is then shown to the other person and they are asked what they thought the other person was thinking or feeling at those points. The reports of the two people are rated by judges for their similarity. This index may then be adjusted with a measure of chance agreement (Ickes et al., 1990). This "on-line" or interaction-derived measure of accurate empathy will be called empathic accuracy in this paper to distinguish it from the non-interaction based measure. Empathic accuracy has been found to be related to relationship satisfaction for dating women (Thomas & Fletcher, 2003) and on some occasions for married couples (Kilpatrick et al., 2002).

Perceived empathy and accurate empathy

Perceived empathy or feeling understood may also be measured as the absolute difference between a person's view of some aspect of their lives

and how they think someone else perceives their view of that aspect (Laing, Phillipson, & Lee, 1966). For example, a husband may think he is moody and he may think his wife thinks he is moody, in which case it may be presumed he feels understood, although he may not be aware of the congruence in these views. There only seems to have been one published study using this measure of perceived empathy and this study found married couples seeking marital help felt less understood than couples assumed to be happily married (Laing et al., 1966). The difference between these two groups in feeling understood appears to be slightly smaller than that for accurate empathy, implying that accurate empathy may be slightly more strongly related to marital satisfaction than feeling understood. The relation between accurate empathy and feeling understood was not reported. As the size of the association with relationship satisfaction has been found to be greater for feeling understood, as measured by a shortened version of the Barrett-Lennard empathy subscale (Cramer, 2003), than for a difference measure of accurate empathy (e.g., Acitelli et al., 1993; Sillars et al., 1990), the use of this subscale is likely to be a stronger correlate of relationship satisfaction than accurate empathy. The association between feeling understood and accurate empathy does not appear to have been studied. However, being accurately understood would be expected to be a condition for feeling understood. Therefore, one aim of this study was to determine whether accurate empathy would be related to perceived empathy as well as to relationship satisfaction.

Dyadic analysis

The link between relationship satisfaction and perceived empathy (Cramer, 2003) or a questionnaire-derived difference measure of accurate empathy (e.g., Acitelli et al., 1993; Sillars et al., 1990) has previously only been examined in women and men separately and not together as a couple using dyadic analysis (e.g., Kenny, 1996; Kenny, Kashy, & Cook, 2006). The dyadic analysis of couple data is important for determining whether the behaviour of one person is related to the behaviour of the other person and the extent to which this interdependence occurs (e.g., Kelley & Thibaut, 1978). The actor-partner interdependence model (e.g., Kashy & Kenny, 2000) assesses the extent to which one person's score on an independent variable may affect not only that person's score on a dependent variable (an actor effect), but also someone else's score on that dependent variable (a partner effect). For example, does a husband's empathy affect his own marital satisfaction (an actor effect) as well as his wife's marital satisfaction (a partner effect)? Using this model, Kilpatrick et al. (2002) found no significant partner effects for relationship satisfaction and an interaction-derived measure of empathic accuracy in married couples at three yearly intervals within the first four years of marriage. Consequently, the second aim of this study was to check whether it was necessary to consider partner effects when examining the relation between relationship satisfaction and perceived or accurate empathy.

Cutrona's model

Cutrona (1996), who referred to empathy as being an important component of social support, proposed four ways in which perceived partner social support may enhance relationship satisfaction. If empathy is seen as an essential aspect of social support, for which there is some evidence (Cramer, 1986, 1990, 2003), then these four processes may also apply to empathy. Firstly, during-stress support may reduce emotional withdrawal and isolation within the relationship. Secondly, support may discourage depression and its adverse effects on the relationship. Thirdly, support may prevent conflict escalating within the relationship. Fourthly, support may increase emotional intimacy by providing positive experiences. This last mechanism may be difficult to test, as intimacy has been defined and measured in a similar way to emotional support (e.g., Sternberg, 1997). Moreover, Cutrona (1996) herself has stated that support as reflected in understanding is "an integral part of intimate exchanges" (p. 179). However, this fourth process is consistent with support being directly associated with relationship satisfaction. As well as conflict mediating the link between partner support and relationship satisfaction, it has also been suggested that support may moderate the relation between conflict and relationship satisfaction (e.g., Pasch & Bradbury, 1998). Low support, together with conflict, may exacerbate relationship dissatisfaction while high support may reduce it. Smith, Vivian, and O'Leary (1990) found evidence for such a moderating effect 30 months after being married, but not six weeks prior to it or six or 18 months after it. As which variable is designated the moderating variable is arbitrary, conflict rather than social support may be viewed as moderating the relation with relationship satisfaction. It was thought that conflict could both mediate and moderate the association between relationship satisfaction and social support conceived of as perceived or accurate empathy.

In a series of three studies on the romantic relationships of young adults, Cramer (2004a, 2004b, 2006) tested for the moderating effect of support on the relation between conflict and relationship satisfaction, as well as three of the ways Cutrona (1996) suggested support may increase relationship satisfaction. None of these studies found a moderating effect for support. While these studies provide no evidence that empathy may play such a role, the third aim was to check whether this was the case. All three studies found support to be directly linked to relationship satisfaction. However, a mediating effect was only shown for conflict in one study (Cramer, 2006) and for depression in another one (Cramer, 2004a). These mediating effects may be less apparent in the shorter term relationships examined in these studies. While relationship satisfaction was found to be related to both conflict and depression in all three of these studies, information from partners was not collected so partner effects could not be examined. Thus, the fourth aim of this study was to determine whether the relation between relationship satisfaction and either accurate or perceived empathy was partly mediated by both conflict and depression, as suggested by Cutrona's model and to check for partner effects.

Partner effects

There appear to be only a few published studies that have tested for partner effects for some of these variables. Campbell, Simpson, Boldry, and Kashy (2005) did not note any partner effects for diary reports of conflict and support on relationship satisfaction in dating couples. However, Beach, Katz, Kim, and Brody (2003) found partner effects between wives' and husbands' own marital satisfaction and their partner's depressive symptoms about one year later, although the coefficients were very weak. Saffrey, Bartholomew, Scharfe, Henderson, and Koopman (2003) found partner effects for women's perception of their partner's interpersonal problems on men's relationship satisfaction and for both women's and men's perception of their partner's problems on the relationship quality of young childless heterosexual couples. Relationship satisfaction was measured in terms of the person's own self-report, whereas relationship quality was assessed by two judges based on an interview with that person.

Aims

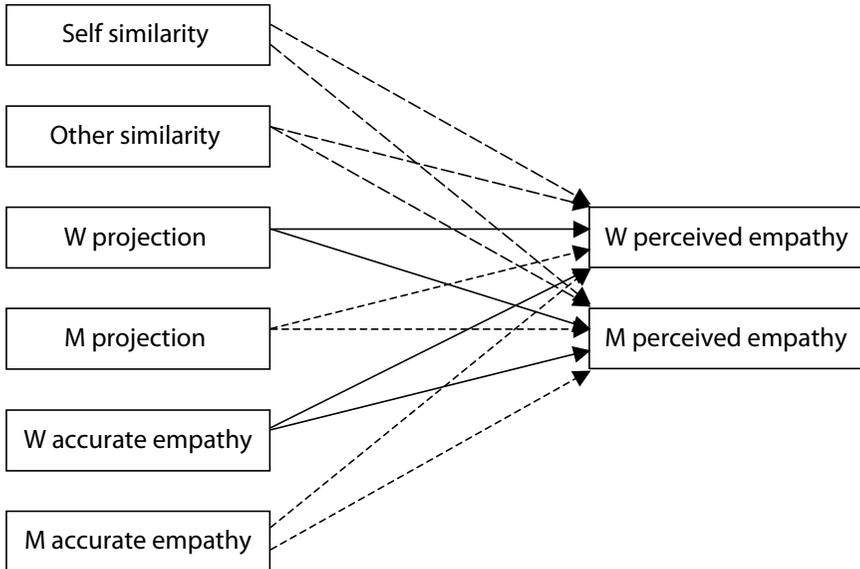
The present paper has four main aims. One aim is to determine to what extent a person's perception of being understood by their romantic partner is related to how accurately their partner perceives them. As accurate empathy may be confounded by the similarity of the views of those two individuals and the extent to which they assume the other person to be like them, actual and assumed similarity will be controlled. Figure 1 shows how these variables are modelled. The second aim is to see to what extent couples' satisfaction with the relationship is related not only to their own feelings of being understood, but also to their partner's feeling of being understood and to the other indices of similarity. Figure 2 presents the model for these variables. The third aim is to ascertain whether perceived and accurate empathy moderate the relation between conflict and relationship satisfaction and whether this involves partner as well as actor effects. Figure 3 portrays this model. The fourth aim is to see whether conflict and depression mediate the effect of perceived empathy and accurate empathy on relationship satisfaction and to what extent partner effects may be present. Figure 4 depicts this model.

Method

Participants

The participants were a convenience sample of 149 heterosexual couples where one of the partners was a professional athlete. There were 84 male and 65 female athletes. The mean age for women was 27.17 (ranging from 16 to 53) and for men was 27.32 (ranging from 16 to 56). Of the couples, about 49% were dating, 21% were married, 20% were co-habiting and 10% were engaged. The mean duration of the relationship was 2.31 years ($SD = 4.14$). Thirteen per cent of the couples had children. The mean duration of the career of the athlete was 11.59 years ($SD = 6.17$). About 44% of them

FIGURE 1
Perceived empathy as a function of accurate empathy, projection, self similarity and other similarity



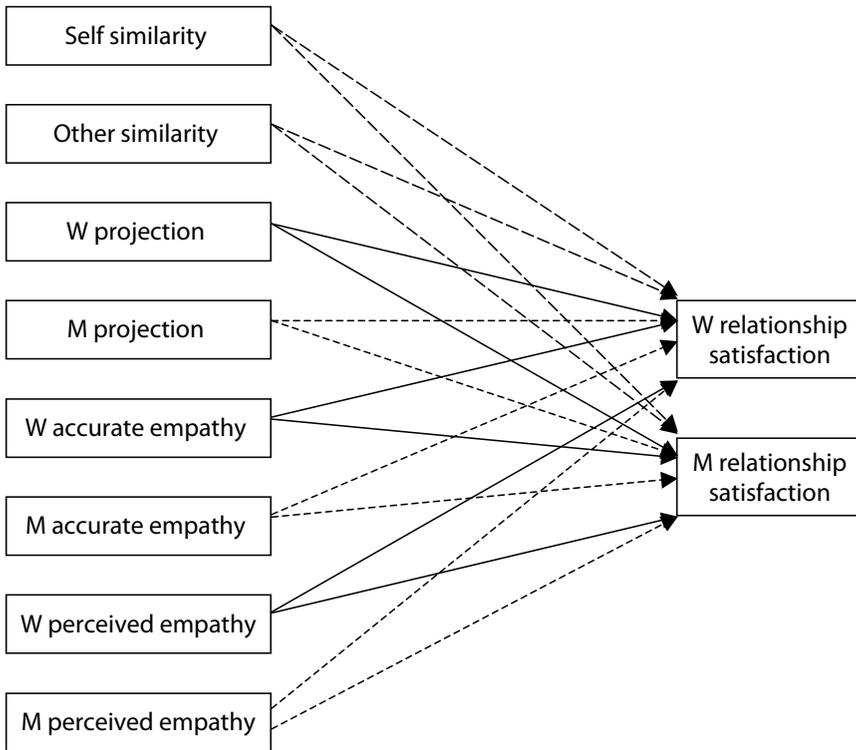
Note. W denotes women and M men. Lines are continuous for women, short dashed for men and long dashed for similarity.

competed at an international level, 27% at a national level, 17% at a club level, 10% at a regional level and 2% at a university level. About 56% engaged in individual sports. The main sport athletes took part in varied widely.

The means and standard deviations of relationship satisfaction and depression in this study were not significantly different from those for these same two measures in an older sample of 61 couples who had lived together for at least two years (Cramer, 2008).

Athletes were approached to participate via their clubs, coaches or national governing bodies and at their sport meetings. About 2000 packs were distributed to potential participants during 2006–2007. Each pack included two envelopes, one addressed to the athlete and the other to their partner. Each envelope contained an invitation letter for participation highlighting the aims of the study, its potential practical implications and contact details of the researchers, as well as instructions for completing the questionnaires. Freemail envelopes were supplied for returning complete questionnaires. The recruitment process lasted over eight months. Completed questionnaires were received from 159 couples, giving a response rate of about 8%. The data from 10 couples was excluded due to some missing data on the variables analysed.

FIGURE 2
Relationship satisfaction as a function of perceived empathy, accurate empathy, projection, self similarity and other similarity



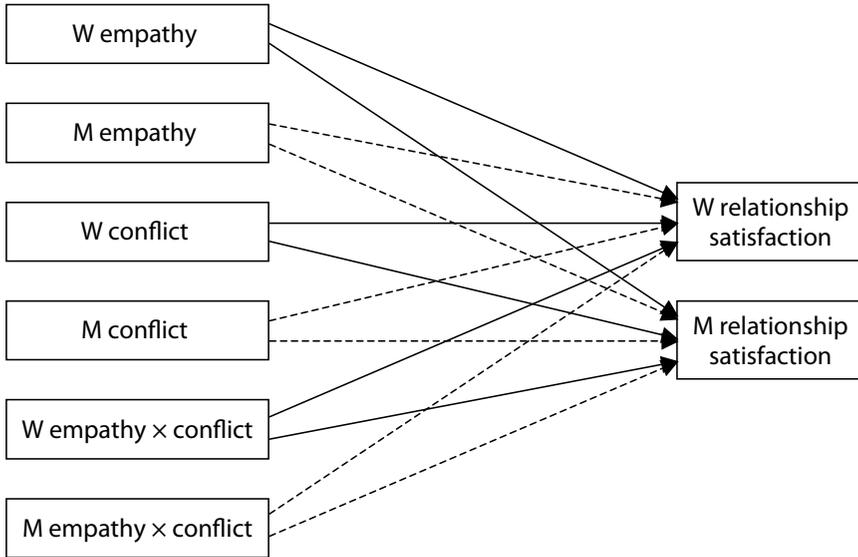
Note. W denotes women and M men. Lines are continuous for women, short dashed for men and long dashed for similarity.

Measures

Perceived empathy. Perceived empathy was assessed by the eight positively worded items from the empathy scale (e.g. “My partner nearly always knows exactly what I mean”) of the revised Relationship Inventory (Barrett-Lennard, 1964). Items were answered on a 7-point Likert scale, ranging from “Strongly disagree” (coded 1) to “Strongly agree” (coded 7). Higher scores denote greater empathy. A six-item scale has been found to have an alpha reliability of .84 and to be related positively to satisfaction and negatively to conflict in the romantic relationships of young adults (Cramer, 2003).

Empathic accuracy. Empathic accuracy was measured as the mean absolute difference between one partner’s own view on six items and their partner’s view on how their partner views those items, taking each item separately.

FIGURE 3
Relationship satisfaction as a function of empathy, conflict and empathy-conflict interaction



Note. W denotes women and M men. Lines are continuous for women and dashed for men.

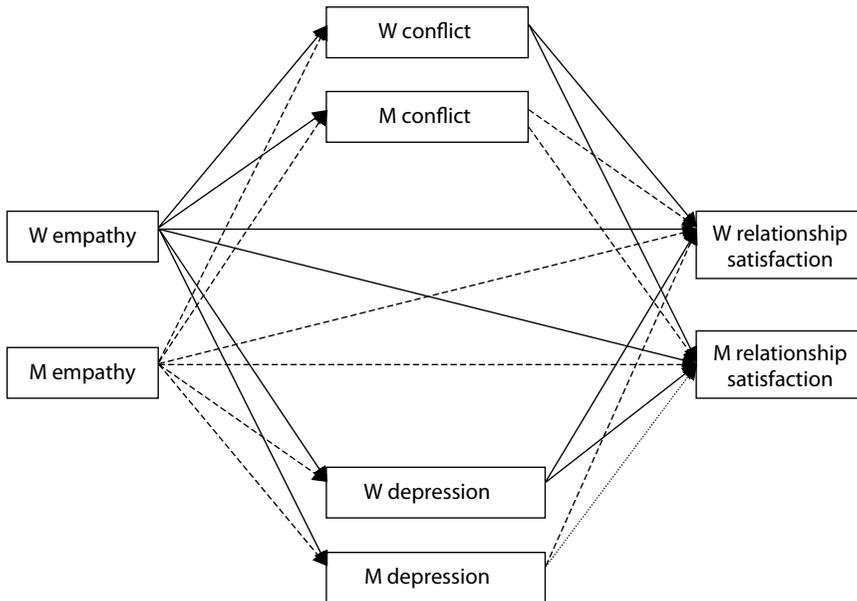
The items were those used by Kenny and Acitelli (2001). Although the item on equity was asked, it was not included in the measure as it employed a 3-point Likert scale, rather than the 4-point Likert scale used for the other items. The six items concerned job satisfaction, closeness to partner, closeness to own and partner's family, caring for partner and sexual satisfaction. Verbal labels for the points varied according to the items. For example, for the three closeness items, the labels ranged from "Not at all close" (1) to "Very close" (4). A higher score signifies less accurate empathy.

Actual similarity of self. Actual similarity of self was assessed as the mean absolute difference between one partner's view of themselves and their partner's view of themselves, taking each item separately.

Actual similarity of other. Actual similarity of other was assessed as the mean absolute difference between one partner's view of their partner and their partner's view of their partner, taking each item separately. Higher scores reflect less actual similarity.

Assumed similarity. Assumed similarity or projection (Dymond, 1954) was measured as the mean absolute difference between a partner's own views and their perception of their partner's views on those items, taking each item separately. Higher scores represent less assumed similarity.

FIGURE 4
Relationship satisfaction as a function of empathy, conflict and depression.



Note. W denotes women and M men. Lines are continuous for women and broken for men.

Relationship satisfaction. Relationship satisfaction was measured with the Hendrick (1988) Relationship Assessment Scale, which has been found to have an alpha reliability of .86 (Hendrick, 1988) and a seven-week test-retest reliability of .85 (Hendrick, Dicke, & Hendrick, 1998). This scale has been shown to correlate .80 with the more widely used 32-item Spanier (1976) Dyadic Adjustment Scale (Hendrick, 1988). It consists of seven items (e.g., “In general, how satisfied are you with your relationship?”) answered on a 5-point Likert scale with different verbal labels for each item. For example, the labels were “poorly” (1), “average” (3) and “very well” (5) for the first item and “unsatisfied” (1), “average” (3) and “very satisfied” (5) for the second item. Higher scores indicate greater relationship satisfaction.

Conflict. Conflict was assessed with three items (on likes and dislikes, finances and financial problems and feelings about the relationship) taken from the 12 items of the Marital Communication Inventory (Noller & Feeney, 1998). The items were answered on a 4-point Likert scale ranging from “rarely” (1) to “most of the time” (4). The conflict scale was reported as being negatively related to relationship satisfaction in couples within the first two years of marriage. Noller and Feeney (1998) did not report the alpha reliability for the full scale they used. The fact that the correlation between the full scale and relationship satisfaction for both wives and husbands on

the first occasion of testing in their study was lower than that found in this study provides some support for the validity of this three-item scale for both women and men, as these two variables have been found to be relatively strongly correlated (e.g. Cramer, 2003; Kurdek, 1994). The correlation between men and women partners was significantly positive in this study, as has been generally reported for other conflict measures (e.g. Kurdek, 1995; Storaasli & Markman, 1990). Higher scores represent greater conflict.

Depression. Depression was measured with the widely used Depression Subscale of the revised Symptom Checklist (SCL-90-R: Derogatis, 1983), which is the same subscale as that for the original checklist (Derogatis, 1977). Respondents were asked to rate on a 5-point scale, ranging from “Not at all” (1) to “Extremely” (5), how much discomfort from 13 symptoms (e.g., “Crying easily”) they experienced in the past seven days. Derogatis (1983) reported an internal reliability of .90 and a one-week test–retest reliability of .82 for this scale. The scale has been found to correlate .89 with the Beck Depression Inventory II in psychiatric outpatients (Steer, Ball, Ranieri, & Beck, 1997). Higher scores denote greater depression.

The mean of the summated score for each of these variables was used.

Results

Table 1 shows the alpha reliabilities, means, standard deviations and correlations for the main measures. Although the cut off for what is considered an adequately reliable measure may vary, Nunnally (1978) has suggested a minimum level of .70. According to this criterion, all the measures based on a single scale had adequate reliability, apart from the conflict scale in men.

The means show that both women and men were generally satisfied with their relationship, had little conflict, were not depressed and felt understood. Accurate empathy, assumed similarity and actual similarity of both self and other tended to be high.

A repeated measures multivariate analysis of variance (MANOVA) was carried out on the first six measures in which the within-subject variable was gender and the between-subject variables were relationship status and whether the participant was an athlete. A significant between-subject effect (Pillai's Trace $F_{18,408} = 2.02, p < .01$) was found. The only significant univariate effect was for assumed similarity ($F_{3,139} = 8.51, p < .001$). Scheffé tests showed that assumed similarity was significantly higher in dating couples than in the other couples.

Women's and men's scores were significantly positively correlated for all measures, ranging from relationship satisfaction (.54) to depression (.32). Relationship duration was only significantly correlated with men's relationship satisfaction, conflict and perceived empathy. Longer relationships were associated with men's greater relationship satisfaction, less conflict and greater perceived empathy. The relationship between other variables is described below in terms of the models used to test the four main aims of

TABLE 1
Means, Standard Deviations and Correlations for the Main Variables

| Variables | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|----------------------|------|------|---------|---------|---------|---------|---------|---------|---------|---------|--------|--------|--------|-------|--------|-----|----|
| 1. W Satisfaction | 4.44 | 0.54 | | | | | | | | | | | | | | | |
| 2. M Satisfaction | 4.40 | 0.59 | .54*** | | | | | | | | | | | | | | |
| 3. W Conflict | 1.73 | 0.71 | -.47*** | -.40*** | | | | | | | | | | | | | |
| 4. M Conflict | 1.64 | 0.59 | -.25** | -.34*** | .41*** | | | | | | | | | | | | |
| 5. W Depression | 1.92 | 0.73 | -.37*** | -.24** | .29*** | .22** | | | | | | | | | | | |
| 6. M Depression | 1.74 | 0.54 | -.21** | -.41*** | .31*** | .05 | .32*** | | | | | | | | | | |
| 7. W Empathy | 5.29 | 0.88 | .48*** | .37*** | -.29*** | -.18* | -.32*** | -.12 | | | | | | | | | |
| 8. M Empathy | 5.40 | 0.99 | .36*** | .69*** | -.23** | -.28*** | -.23** | -.28*** | .49*** | | | | | | | | |
| 9. W Accuracy | 0.62 | 0.37 | -.34*** | -.32*** | .20* | .07 | .20* | .29*** | -.27*** | -.37*** | | | | | | | |
| 10. M Accuracy | 0.66 | 0.36 | -.37*** | -.26** | .19* | .04 | .22** | .21** | -.27*** | -.29*** | .52*** | | | | | | |
| 11. W Projection | 0.49 | 0.35 | -.32*** | -.04 | .15 | .11 | .37*** | .02 | -.29*** | -.19* | .43*** | .53*** | | | | | |
| 12. M Projection | 0.44 | 0.31 | -.28*** | -.30*** | .16* | .01 | .25** | .28*** | -.26*** | -.36*** | .51*** | .41*** | .47*** | | | | |
| 13. Self-Similarity | 0.53 | 0.31 | -.25** | -.19* | .11 | -.14 | .04 | .22** | -.17* | -.13 | .52*** | .57*** | .17* | .13 | | | |
| 14. Other Similarity | 0.57 | 0.32 | -.26*** | -.30*** | .10 | .04 | .14 | .32*** | -.22** | -.27*** | .59*** | .59*** | .23** | .26** | .66*** | | |
| 15. Duration | 2.31 | 4.14 | .06 | .20* | -.20* | -.16 | -.10 | -.14 | .07 | .19* | .02 | -.10 | -.10 | -.06 | .11 | .01 | |

Note. Accuracy = Accurate Empathy; Empathy = Perceived Empathy; W = Women, M = Men.
*p < .05; **p < .01; ***p < .001 (two-tailed).

the study. Owing to the large variation in the participant's age, correlations were run with age partialled out. The partial correlations were little different from the zero-order correlations.

The four main aims were looked at using dyadic analysis with structural equation modelling (e.g., Kenny et al., 2006) with linear structural relations (LISREL 8.72; Jöreskog & Sörbom, 2005). For the fourth model an attempt was made to correct for measurement error using the alpha reliability of the variables (James, Mulaik, & Brett, 1982). The path linking each construct (the latent variable) to its indicator (the measured variable) was set equal to the square root of the indicator's alpha coefficient, whereas the random error variance for each indicator was set equal to the quantity one minus the reliability. However, when error was controlled in this way, some of the matrices were not positive definite and the model solutions were non-admissible. Consequently, all models used manifest variables. Predictor variables were free to covary as were criterion variables. These analyses are analogous to standard multiple regression with multiple, rather than one, outcome variable. Standardised path coefficients are presented that are similar to standardised regression coefficients. Because of the large number of coefficients for each model, for the sake of clarity the coefficients have been tabulated rather than presented in a path diagram. To be able to easily compare these coefficients with the original correlations, the correlations have also been included in the tables. The first three models are saturated to determine which path coefficients were statistically significant. Consequently, these models provided a perfect fit to the data. All of the pathways in the fourth model have not been identified and so the statistical fit of this model had to be taken into account. The coefficients for the four aims are displayed in Tables 2–5, respectively.

Perceived empathy and accurate empathy

The first model examined perceived empathy in women and men as a function of accurate empathy and projection (assumed similarity) in women and

TABLE 2
Path (γ) and correlation (r) coefficients for the dyadic analysis of perceived empathy and accurate empathy

| | W empathy | | M empathy | |
|------------------|-----------|---------|-----------|---------|
| | γ | r | γ | r |
| W accuracy | -.07 | -.27*** | -.25* | -.37*** |
| M accuracy | -.05 | -.27*** | -.15 | -.29*** |
| W projection | -.16 | -.29*** | .10 | -.19* |
| M projection | -.11 | -.26*** | -.21* | -.36*** |
| Self-similarity | -.02 | -.17* | .17 | -.13 |
| Other similarity | -.08 | -.22** | -.11 | -.27*** |

Note. Accuracy = Accurate empathy; Empathy = Perceived empathy; W = Women, M = Men. * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed).

TABLE 3
Path (γ) and correlation (r) coefficients for the dyadic analysis of perceived empathy, accurate empathy and relationship satisfaction

| | W satisfaction | | M satisfaction | |
|------------------|----------------|---------|----------------|---------|
| | Γ | r | γ | r |
| W empathy | .34*** | .48*** | .07 | .37*** |
| M empathy | .10 | .36*** | .61*** | .69*** |
| W accuracy | -.08 | -.34*** | -.03 | -.32*** |
| M accuracy | -.14 | -.37*** | -.06 | -.26** |
| W projection | -.08 | -.32*** | .21** | -.04 |
| M projection | -.02 | -.28*** | -.09 | -.30*** |
| Self-similarity | -.07 | -.25** | -.01 | -.19* |
| Other similarity | .05 | -.26*** | -.09 | -.30*** |

Note. Accuracy = Accurate empathy; Empathy = Perceived empathy; W = Women, M = Men. * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed).

men, together with the actual similarity of self and of the other (partner). This model controls for any effect of actual similarity and projection on the relation between perceived empathy and accurate empathy. The coefficients for this model are presented in Table 2. Perceived empathy in men was significantly related to women’s greater accurate empathy and men’s greater projection.

Perceived empathy, accurate empathy and relationship satisfaction

The second model analysed relationship satisfaction in women and men as a function of perceived empathy, accurate empathy and projection in women and men, together with the actual similarity of self and of the other. The coefficients for this model are displayed in Table 3. Women’s perceived empathy was significantly related to women’s relationship satisfaction.

TABLE 4
Path (γ) and correlation (r) coefficients for the dyadic analysis of perceived empathy as moderating the relation between conflict and relationship satisfaction

| | W satisfaction | | | M satisfaction | | |
|---------------|----------------|----------|---------|----------------|----------|---------|
| | γ | γ | r | γ | γ | r |
| W conflict | -.54 | -.34*** | -.47*** | .16 | -.23*** | -.40*** |
| M conflict | -.32 | -.02 | -.25** | -.16 | -.07 | -.34*** |
| W empathy | .23 | .32*** | .48*** | .16 | -.01 | .37*** |
| M empathy | -.06 | .12 | .36*** | .56** | .62*** | .69*** |
| W interaction | .19 | | -.27*** | -.39 | | -.27*** |
| M interaction | .32 | | -.01 | .09 | | .08 |

Note. Empathy = Perceived empathy; W = Women, M = Men. ** $p < .01$; *** $p < .001$ (two-tailed).

Men's perceived empathy was significantly related to men's relationship satisfaction and lower projection in women. When perceived empathy was removed from the model, the path coefficients for accurate empathy remained non-significant. Men's relationship satisfaction was significantly related to lower projection in women, $\gamma = .26$, $p < .01$, and greater projection in men, $\gamma = -.23$, $p < .05$.

Perceived empathy as moderating the relation between conflict and relationship satisfaction

As the path coefficients between accurate empathy and relationship satisfaction were not significant, the third and fourth aims were only examined in terms of perceived empathy and not accurate empathy. The third model ascertained whether relationship satisfaction in women and men was also related to conflict and the interaction between conflict and perceived empathy in women and men. The coefficients for this model are shown in Table 4 with and without the interaction. As the path coefficients for the interaction between conflict and perceived empathy were not significant, perceived empathy did not moderate the association between conflict and relationship satisfaction. Excluding the interactions, women's relationship satisfaction was significantly related to greater perceived empathy and less conflict in women. Men's relationship satisfaction was significantly related to greater perceived empathy in men and less conflict in women.

Conflict and depression as mediating the relation between perceived empathy and relationship satisfaction

The fourth model determined whether conflict and depression mediated the association between perceived empathy and relationship satisfaction in women and men. As this model did not provide a perfect fit, various indices were employed to assess the model fit, including the Normal Theory Weighted Least Squares Chi-Square (χ^2), the Comparative Fit Index (CFI), the Non-normed Fit Index (NNFI) and the Root Mean Square Error of

TABLE 5
Path (γ and β) and correlation (r) coefficients for the dyadic analysis of conflict and depression as mediating the relation between perceived empathy and relationship satisfaction

| | W empathy | | M empathy | | W satisfaction | | M satisfaction | |
|----------------|-----------|---------|-----------|---------|----------------|---------|----------------|---------|
| | γ | r | Γ | r | β | r | β | r |
| W conflict | -.24** | -.29*** | -.04 | -.23** | -.31*** | -.47*** | -.18** | -.40*** |
| M conflict | -.06 | -.18* | -.25** | -.28*** | .00 | -.25** | -.10 | -.34*** |
| W depression | -.27** | -.32*** | -.10 | -.23** | -.16* | -.37*** | .03 | -.24** |
| M depression | .03 | -.12 | -.30** | -.28*** | .00 | -.21* | -.20*** | -.41*** |
| W satisfaction | .28*** | .48*** | .11 | .36*** | | | | |
| M satisfaction | .02 | .37*** | .56*** | .69*** | | | | |

Note. Empathy = Perceived empathy; W = Women, M = Men.
 * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed).

Approximation (RMSEA). The Normal Theory Weighted Least Squares Chi-Square may be thought of as comparing the correlation matrix of the original data with that for the model. As it does not take account of sample size, it is likely to be significant with samples larger than 200. The three other measures of fit take account of sample size in various ways. The RMSEA considers sample size by dividing chi-square by the degrees of freedom and tests this in what may be viewed as assuming the null hypothesis is false rather than true. The NNFI compares the model with a null or independence model in which the variables are assumed to be unrelated. The CFI also compares the model with a null model and assumes the null hypothesis is false rather than true. A good model fit is reached when the CFI and the NNFI are close to .95, the RMSEA is close to .06 and chi-square is non-significant (Hu & Bentler, 1999). This model did not provide a satisfactory fit to the data on all of these measures, $\chi^2(4) = 19.12$, $p = .001$, RMSEA = .16, NNFI = .77, apart from one, CFI = .97. To provide a more satisfactory fit to the data, a path coefficient between women's conflict and men's depression had to be created. This model provided a satisfactory fit to the data, $\chi^2(3) = 5.83$, $p = .12$, RMSEA = .08, NNFI = 0.94, CFI = 0.99.

Table 5 depicts the coefficients for this model, except that for women's conflict and men's depression, $\beta = .28$, $p < .001$. Greater conflict in women was associated with greater depression in men. Depression was a significant mediator between perceived empathy and relationship satisfaction for both women and men. Greater perceived empathy was associated with lower depression, which was associated with greater relationship satisfaction. There was also a significant direct path between perceived empathy and relationship satisfaction for both women and men. Greater perceived empathy was associated with greater relationship satisfaction. Women's conflict was a significant mediator of the relation between perceived empathy and relationship satisfaction in both women and men. Greater perceived empathy was associated with less conflict, which was associated with greater relationship satisfaction. While men's perceived empathy was significantly related to men's conflict, men's conflict was not significantly related to men's relationship satisfaction.

Discussion

Accurate empathy and perceived empathy

The first aim of this study was to determine whether perceived empathy was related to accurate empathy when assumed and actual similarity was controlled. This relation was found for men but not women. Men who felt more understood had partners who were more accurate in what the men thought on various issues. As there were no significant differences between women and men in the means and variances of these variables, this difference was not due to the scores being more extreme or restricted for women than men. Correlations are likely to be smaller and so less significant with more restricted scores and scores are more likely to be restricted if they are

more extreme. Although men were as accurate as women in their perception of their partner's views, men may not have communicated as well as women their perception of their partner's views, resulting in men's accurate empathy not being significantly related to women's feeling of being understood. Future research on this issue should include a measure of the extent to which partners communicate their views on the topics used to assess their accurate empathy in order to determine whether communication of accurate empathy mediates the relation between one partner's accurate empathy and the other partner's perceived empathy. Perceived empathy in men was also independently related to greater projection in men, even when actual similarity was controlled so men who thought their partner was similar to them felt better understood.

Accurate empathy and relationship satisfaction

Accurate empathy was not significantly associated with relationship satisfaction in either women or men when assumed and actual similarities were controlled. One of the few studies that controlled assumed and actual similarities in a similar way to that in this study was that by Acitelli et al. (1993). They found that wives', but not husbands', marital well being was significantly related to their partners' accurate empathy of destructive, but not constructive, conflict behaviour. More satisfied wives had partners who were more accurate in their perception of their wives' destructive conflict behaviour. This finding may have been due to the greater variance of this study's accurate empathy measure and/or the relatively strong correlation between conflict and relationship satisfaction that has been typically found (e.g., Bradbury et al., 2000). Being accurately empathic about conflict may be more important in determining relationship satisfaction than being accurately empathic about the kind of topics that were used in this study and that were taken from a subsequent study by Kenny and Acitelli (2001). In their paper Kenny and Acitelli (2001) did not report the relation between accurate empathy on these topics and relationship satisfaction, so it is not known whether these two variables were significantly related. However, the face content of these items suggested that they were relevant and this was supported by finding in the present study that an aggregate measure of the items was positively moderately strongly related to perceived empathy and relationship satisfaction. Nonetheless, future research needs to determine the topics on which it is important to have accurate empathy for bringing about relationship satisfaction. For women, the relation between men's accurate empathy and women's relationship satisfaction may be mediated by women's perceived empathy. In this study, men's accurate empathy was not significantly related to perceived empathy in women possibly because, as mentioned previously, men may not have communicated their accurate empathy to their partner.

Perceived empathy and relationship satisfaction

As found previously, perceived empathy was relatively strongly positively related to relationship satisfaction in both women and men (Cramer, 2003),

suggesting that being understood may be an important determinant of relationship satisfaction. Furthermore, the perceived empathy of partners (like relationship satisfaction and accurate empathy) was relatively strongly positively correlated, indicating that the more that one partner felt understood the more the other partner felt understood. The fact that these variables are related in couples means that it is important to control for this interdependence by taking account of it in a dyadic analysis. Perceived empathy may enhance relationship satisfaction by making individuals more aware of their thoughts and feelings, thereby enabling them to act in ways that are congruent with those thoughts and feelings, as suggested by Rogers (1959). Being able to do this may make partners feel more satisfied with the relationship in which perceived empathy is shown. The findings for men that women's accurate empathy of them was positively related to men's perceived empathy and that men's perceived empathy was positively related to their relationship satisfaction suggests that the relation between women's accurate empathy and men's relationship satisfaction may be mediated by men's perceived empathy. Women's accurate empathy of their partner may lead their partner to feel better understood, which in turn makes men feel more satisfied with their relationship.

Perceived empathy and conflict

As shown in a previous study (Cramer, 2001), perceived empathy was also found to be associated with relationship satisfaction independently of how conflict is handled, implying that these two behaviours may need to be targeted separately when trying to maintain or enhance relationship satisfaction. The suggestion that perceived empathy and conflict may both need to be targeted is further supported by the finding that how conflict is managed does not appear to moderate the relation between perceived empathy and relationship satisfaction. In other words, perceived empathy does not seem to reduce the dissatisfaction with the relationship that is experienced when there is greater conflict. The lack of a moderating effect of conflict on relationship satisfaction has also been found for emotional support (e.g., Cramer, 2004a, 2004b, 2006).

Cutrona's model

If social support in Cutrona's (1996) model is viewed as perceived empathy, then her model suggests that perceived empathy should be directly related to relationship satisfaction, as well as indirectly through conflict and depression. This model implies that enhancing perceived empathy may also indirectly affect relationship satisfaction by reducing conflict and depression. The results of this study were generally consistent with Cutrona's (1996) model, with the exception that for men conflict did not appear to mediate the relation between perceived empathy and relationship satisfaction. Previous studies that have attempted to examine Cutrona's (1996) model in terms of emotional support, rather than perceived empathy, have found inconsistent results. One study found depression, but not conflict, mediated the relation between support and relationship satisfaction (Cramer, 2004a).

Another found conflict, but not depression, mediated the relation between available care or received support and relationship satisfaction (Cramer, 2006), while a third found no mediating effect (Cramer, 2004b). Future research should ascertain whether this model only holds for longer rather than shorter term relationships and/or for perceived empathy rather than social support.

Partner effects

Unlike previous studies that have investigated Cutrona's (1996) model, the present study also looked for partner effects. Two such effects were found. One partner effect was that women's perceived conflict was negatively related to men's relationship satisfaction and not just their own relationship satisfaction. In this study it would seem that the way women view conflict in the relationship may be more important in determining relationship satisfaction than the way men view conflict. Gender differences in the size of the association between conflict and relationship satisfaction have not generally been noted in previous studies (e.g., Cramer, 2003; Kurdek, 1994). The other partner effect was that women's perceived conflict was positively related to men's depression. As this was a cross-sectional study, the causal direction of this association cannot be determined. Conceivably, conflict may lead to depression and/or result from depression. In addition, there was one other partner effect, which was that men's relationship satisfaction was related to less projection in women. This association does not appear to be mediated by women's accurate empathy, in that women who project less perceive their partner more accurately. Although women who saw their partner as being less similar to them perceived their partner more accurately, women's accurate empathy was not significantly related to men's relationship satisfaction. The association between men's relationship satisfaction and women's projection also does not seem to be mediated by men's perceived empathy, insofar that women who project less are seen as more understanding by men. Women's projection was not significantly related to men's perceived empathy when men's projection, accurate empathy and actual similarity were controlled. Furthermore, this association does not appear to be due to women's lesser projection leading to less conflict as women's projection was not significantly related to conflict in women or men. A possible explanation for the association is that women who project less may make a greater effort to please and may be more successful in pleasing their partner, thus leading to men's greater relationship satisfaction.

Limitations and implications

There are various limitations to this study that should be addressed in further research. The measure of conflict was only based on three items, which limited its content validity and most probably contributed to its relatively low reliability in men. Increasing the range of topics on which couples may disagree would have enhanced the comprehensiveness of this measure and is likely to have improved its alpha reliability. The relevance to

perceived empathy and relationship satisfaction of the items for assessing accurate empathy should be more fully explored. The items chosen for this study may have resulted in insufficient variance in accurate empathy for it to be related to relationship satisfaction. The causal direction of associations could not be established due to the cross-sectional nature of the design. The most appropriate way of determining causality is through true or randomised experiments. However, it may be difficult realistically and ethically to manipulate variables, such as perceived empathy, in couples who know each other well. Reciprocal, as well as unilateral, causation needs to be examined as the relation between variables may be directional. For example, depression may be a cause of relationship dissatisfaction as well as a consequence. Panel non-experimental designs do not provide a ready solution to these difficulties, as they do not rule out the problem of confounding variables. Furthermore, the appropriate duration of the interval between assessments needs to be known and cross-lagged pathways may be small, because most of the variance in a variable is likely to be accounted for by that same variable measured earlier.

A more appropriate design may be one in which people seeking professional help are invited to take part in interventions in which the critical variables of interest are manipulated and measured and where participants are randomly assigned to different conditions. For example, one of the components of various relationship enhancement programs and counselling is teaching or encouraging people to check their understanding of the other person. The effect of this kind of intervention in comparison to a suitable control condition may be tested on variables such as accurate empathy, perceived empathy, conflict and relationship satisfaction, and with people who are depressed. This component of encouraging understanding appears to be most central to Guernsey's (1977) relationship enhancement approach. Meta-analytic reviews of studies assessing the effectiveness of this approach have found it to have had the greatest effect size on relationship satisfaction of the relationship approaches compared (Giblin, Sprenkle, & Sheehan, 1985; Hahlweg & Markman, 1988), suggesting that increasing understanding may be a strong candidate for enhancing relationship satisfaction. However, these evaluation studies have typically not isolated a particular component of the approach, such as empathy training, from other aspects, such as encouraging people to be unconditionally accepting. Consequently, these evaluation studies do not enable the effectiveness of this approach to be attributed just to empathy. The present study suggests that such interventions would be worthwhile undertaking.

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