

Construct validation of a triangular love scale

ROBERT J. STERNBERG

Department of Psychology, Yale University, U.S.A.

Abstract

This article presents a construct validation of a love scale based upon a triangular theory of love. The article opens with a review of some of the major theories of love, and with a discussion of some of the major issues in love research. Next it briefly reviews selected elements of the triangular theory of love, according to which love can be understood as comprising three components—intimacy, passion, and decision/commitment. Then the article presents two studies constituting the construct validation of the love scale. The construct validation comprises aspects of internal validation—determination of whether the internal structure of the data is consistent with the theory—and external validation—determination of whether the scale based on the theory shows sensible patterns of correlations with external measures. The data are generally, but not completely supportive of the utility of the triangular love scale.

INTRODUCTION

Lovers can often be elusive, but in being so, they mirror the phenomenon of love itself. Few psychological constructs are more elusive than the construct of love (see Berscheid, 1988). But the elusiveness of love, like that of lovers, has not discouraged people altogether: several psychologists have proposed to capture the essence of love through a diverse range of theories of the phenomenon.

One of the earliest psychological theories was that of Freud (1922), which explicated love in terms of striving for an ego ideal. A later, related view was that of Reik (1944), which explained love in terms of a search for salvation. Maslow (1962) suggested that Deficiency love (D-love) might have the properties that Freud and Reik talked about, but that a higher form of love, Being love (B-love), was possible

Addressee for correspondence: Robert J. Sternberg, Department of Psychology, Yale University, P. O. Box 208205, New Haven, CT 06520-8205, USA.

I am grateful to Sandra Wright for assistance in testing participants, and to Michael Barnes and Elizabeth Neuse for assistance in data analysis. More detailed analyses are available from the author.

for people who were self-actualized and could love others for themselves rather than to remedy their own deficiencies.

Whereas these earlier theories were in the province of clinical psychology, some more recent theories of love have derived more from the province of social/personality psychology. One of the more well-known social/personality theories is that of Lee (1977), who has proposed that love is not a single thing at all, but rather, an entity needing to be understood in terms of people's individual 'styles' of loving. According to Lee, there are six such styles: (a) *eros*, the love style characterized by the search for a beloved whose physical presentation of self embodies an image already held in the mind of the lover; (b) *ludus*, which is Ovid's term for playful or gamelike love; (c) *storge*, a style based on slowly developing affection and companionship; (d) *mania*, a love style characterized by obsession, jealousy, and great emotional intensity; (e) *agape*, which is altruistic love in which the lover views it as his or her duty to love without expectation of reciprocation; and (f) *pragma*, a practical style involving conscious consideration of the demographic characteristics of the loved one. Tests of this theory have suggested that it accounts well for a variety of data (Hendrick & Hendrick, 1986, 1990, 1995). Shaver, Hazan and Bradshaw (1988) (see also Hazan & Shaver, 1990, 1994; Shaver & Hazan, 1988, 1993) suggest a stylistic type of theory, with the lover's style of loving depending in part upon the attachment style he or she established *vis-à-vis* his or her mother in infancy. Such attachments, which may be either secure, anxious-ambivalent, or avoidant, are reflected, to some extent, in ways of loving as an adult. Not all social psychological theories, of course, take a stylistic point of view. Hatfield (1984, 1988) has distinguished between passionate and companionate love. Davis (1985) has also suggested three components: physical attraction, caring, and liking. Three-component theories seem to be popular these days, as the theory to serve as the basis for the present article, like Shaver's and Davis's theories, involves three components. This 'triangular' theory will be described in more detail than the others, as the goal of the article is to construct-validate a scale based on the theory.

ELEMENTS OF A TRIANGULAR THEORY OF LOVE

The triangular theory of love (Sternberg, 1986, 1988) holds that love can be understood in terms of three components that together can be viewed as forming the vertices of a triangle. The triangle is used as a metaphor, rather than as a strict geometric model. These three components are intimacy (top vertex of the triangle), passion (left-hand vertex of the triangle), and decision/commitment (right-hand vertex of the triangle). (The assignment of components to vertices is arbitrary). These three components have appeared in various other theories of love, and moreover, appear to correspond rather well to people's implicit theories of love (Aron & Westby, 1996). Each of these three terms can be used in many different ways, so it is important to clarify their meanings in the context of the present theory.

Three Components of Love

The three components of love in the triangular theory are intimacy, passion, and decision/commitment. Each component manifests a different aspect of love.

Intimacy

Intimacy refers to feelings of closeness, connectedness, and bondedness in loving relationships. It thus includes within its purview those feelings that give rise, essentially, to the experience of warmth in a loving relationship. Sternberg and Grajek (1984) cluster-analysed data from the loving and liking scales of Rubin (1970) and a close-relationships scale of Levinger, Rands and Talaber (1977), as a result of which they identified 10 clusters in intimacy: (a) desire to promote the welfare of the loved one; (b) experienced happiness with the loved one; (c) high regard for the loved one; (d) being able to count on the loved one in times of need; (e) mutual understanding with the loved one; (f) sharing of one's self and one's possessions with the loved one; (g) receipt of emotional support from the loved one; (h) giving of emotional support to the loved one; (i) intimate communication with the loved one; and (j) valuing of the loved one in one's life.

Passion

Passion refers to the drives that lead to romance, physical attraction, sexual consummation, and related phenomena in loving relationships. The passion component includes within its purview those sources of motivational and other forms of arousal that lead to the experience of passion in a loving relationship. It includes what Hatfield and Walster (1981) refer to as 'a state of intense longing *for union* with the other' (p.9). In a loving relationship, sexual needs may well predominate in this experience. However, other needs, such as those for self-esteem, succorance, nurturance, affiliation, dominance, submission, and self-actualization, may also contribute to the experiencing of passion.

Decision/Commitment

Decision/commitment refers, in the short-term, to the decision that one loves a certain other, and in the long-term, to one's commitment to maintain that love. These two aspects of the decision/commitment component do not necessarily go together, in that one can decide to love someone without being committed to the love in the long-term, or one can be committed to a relationship without acknowledging that one loves the other person in the relationship.

The three components of love interact with each other: for example, greater intimacy may lead to greater passion or commitment, just as greater commitment may lead to greater intimacy, or with lesser likelihood, greater passion. In general, then, the components are separable, but interactive with each other. Although all three components are important parts of loving relationships, their importance may

differ from one relationship to another, or over time within a given relationship. Indeed, different kinds of love can be generated by limiting cases of different combinations of the components.

Kinds of Love

The three components of love generate eight possible limiting cases when considered in combination. Each of these cases gives rise to a different kind of love (described in Sternberg, 1988). It is important to realize that these kinds of love are, in fact, limiting cases: no relationship is likely to be a pure case of any of them. Non-love refers simply to the absence of all three components of love. Liking results when one experiences only the intimacy component of love in the absence of the passion and decision/commitment components. Infatuated love results from the experiencing of the passion component in the absence of the other components of love. Empty love emanates from the decision that one loves another and is committed to that love in the absence of both the intimacy and passion components of love. Romantic love derives from a combination of the intimacy and passion components. Companionate love derives from a combination of the intimacy and decision/commitment components of love. Fatuous love results from the combination of the passion and decision/commitment components in the absence of the intimacy component. Consummate, or complete love, results from the full combination of all three components.

In sum, the possible subsets of the three components of love generate as limiting cases different kinds of love. Most loves are 'impure' examples of these various kinds: they partake of all three vertices of the triangle, but in different amounts.

Geometry of the Love Triangle

The geometry of the 'love triangle' depends upon two factors: amount of love and balance of love. Differences in amounts of love are represented by differing areas of the love triangle: the greater the amount of love, the greater the area of the triangle. Differences in balances of the three kinds of love are represented by differing shapes of triangles. For example, balanced love (roughly equal amounts of each component) is represented by an equilateral triangle.

Multiple Triangles of Love

Love does not involve only a single triangle. Rather, it involves a great number of triangles, only some of which are of major theoretical and practical interest. For example, it is possible to contrast real versus ideal triangles. One has not only a triangle representing his or her love for the other, but also a triangle representing an ideal other for that relationship (see Sternberg & Barnes, 1985). The ideal may be based in part on experience in previous relationships of the same kind, which form what Thibaut and Kelley (1959) refer to as a 'comparison level', and in part on expectations of what the close relationship can be. It is also possible to distinguish

between self-and other-perceived triangles. In other words, one's feelings of love in a relationship may or may not correspond to how the significant other perceives one to feel. Finally, it is important to distinguish between triangles of feelings and triangles of action.

It is one thing to feel a certain way about a significant other, and another thing to act in a way consistent with these feelings. Each of the three components of love has a set of actions associated with it. For example, intimacy might be manifested in action through sharing one's possessions and time, expressing empathy for another, communicating honestly with another, and so on. Passion might be manifested through gazing, touching, making love, and so on. Commitment might be manifested through sexual fidelity, engagement, marriage, and so on. Of course, the actions that express a particular component of love can differ somewhat from one person to another, from one relationship to another, or from one situation to another. Nevertheless, it is important to consider the triangle of love as it is expressed through action, because action has so many effects on a relationship.

The present article describes two studies representing an attempt to construct-validate a scale based on some of the aspects of the triangular theory of love in order to determine how well the scale applies to loving relationships of different kinds with different people. If the theory is correct, one would expect that (a) the three components of the theory could be measured; (b) they would exhibit some degree of correlation, because most love relationships will involve more than a single component of love, but they will not be perfectly correlated, as not all loves will be 'consummate'; (c) the components will thus emerge as separate but correlated factors in a factor analysis; and (d) the components will predict satisfaction in love relationships.

Indeed, there is already some evidence that those components should relate to satisfaction (Murray, Holmes, & Griffin, 1996). There is also evidence that correlations among components as well as with external measures may be somewhat inflated because of people's tendencies to idealize their own relationships (Murray & Holmes, 1993; Van Lange & Rusbult, 1995).

STUDY 1

Study 1 represents a first construct validation of the Triangular Love Scale.

Method

Research Participants

Participants were 84 New Haven area adults, equally divided among men and women, who answered an advertisement in a local newspaper. To be eligible for participation, the participants were required to be over 18, primarily heterosexual, and either married or currently involved in a close relationship with someone. The range in age of participants was from 19 to 62, with a mean age of 28 and a standard deviation of 8 years. Lengths of close relationships ranged from 0.10 to 22.00 years

with a mean of 4.54 years and a standard deviation of 4.60 years. Participants were paid \$10 for approximately 2 hours of testing.

Materials

Data collection proceeded through the use of questionnaires. The main questionnaires were a first version of the Sternberg Triangular Love Scale, the Rubin Love Scale, and the Rubin Liking Scale (Rubin, 1970). The feeling portion of the Sternberg scale is shown as Table 1 of this article.

Table 1. Items of Sternberg Triangular Love Scale

Component	
Intimacy	
02	I have a warm and comfortable relationship with _____
03	I experience intimate communication with _____
04	I strongly desire to promote the well-being of _____
17	I have a relationship of mutual understanding with _____
18	I received considerable emotional support from _____
22	I am able to count on _____ in times of need
30	_____ is able to count on me in times of need
45	I value _____ greatly in my life
59	I am willing to share myself and my possessions with _____
60	I experience great happiness with _____
63	I feel emotionally close to _____
64	I give considerable emotional support to _____
Passion	
05	I cannot imagine another person making me as happy as _____ does
08	There is nothing more important to me than my relationship with _____
11	My relationship with _____ is very romantic
19	I cannot imagine life without _____
21	I adore _____
32	I find myself thinking about _____ frequently during the day
35	Just seeing _____ is exciting for me
42	I find _____ very attractive physically
46	I idealize _____
55	There is something almost 'magical' about my relationship with _____
65	My relationship with _____ is very 'alive'
66	I especially like giving presents to _____
Commitment	
07	I will always feel a strong responsibility for _____
23	I expect my love for _____ to last for the rest of my life
24	I can't imagine ending my relationship with _____
27	I view my relationship with _____ as permanent
29	I would stay with _____ through the most difficult times
39	I view my commitment to _____ as a matter of principle
47	I am certain of my love for _____
51	I have decided that I love _____
52	I am committed to maintaining my relationship with _____
56	I view my relationship with _____ as, in part, a thought-out decision
57	I could not let anything get in the way of my commitment to _____
58	I have confidence in the stability of my relationship with _____

The first two pages of the test booklet contained demographic types of questions, such as age, gender, length of relationship, marital status, educational level, and status of parents' marriage. The third page comprised a relationship satisfaction questionnaire, which asked nine questions (how satisfied, happy, close, rewarding, important, good, intimate, passionate, and committed) that the participants evaluated on a 1 (*not at all*) to 9 (*extremely*) scale in regard to the relationship in which they were currently involved.

The next several pages contained the Sternberg Triangular Love Scale. Participants were required to rate on a 1 (*not at all*) to 9 (*extremely*) scale their responses to 72 statements. Intermediate scale points were labelled with the words *somewhat* (3), *moderately* (5), and *quite* (7). Thirty-six of the statements involved feelings, and 36 involved actions. The action questions were the same as the feelings questions except that they were preceded by the phrase 'My actions reflect. . .'. Twelve of the feelings questions were written to measure intimacy, 12 to measure passion, and 12 to measure decision/commitment. The different kinds of statements were intermixed in the questionnaire, so that participants could not really perceive which statements measured what. Of course, participants were not informed in advance of the nature of the triangular or any other theory. The Rubin scales came last.

Half of the participants (males and females in equal numbers) were instructed to rate all of the statements for six different love relationships (mother, father, sibling closest in age, lover/spouse, best friend of the same sex, and ideal lover/spouse) in terms of how *important* each statement was, in the participants' minds, to each of the six relationships. The other half of the participants (again, males and females in equal numbers) were instructed to rate the statements on how *characteristic* each was in their own lives for each of the six relationships. Importance is a value judgment, characteristicness a judgment of the actual state of an existing relationship.

Design

The main dependent variables were questionnaire ratings. The Rubin scales and the satisfaction questionnaire were used for purposes of external validation of the Sternberg scale. The main independent variables on the Sternberg scales were component of love (intimacy, passion, commitment), manifestation (feelings versus actions), and relationship rated (mother, father, sibling closest in age, lover/spouse, best friend of the same sex, and ideal lover/spouse). All three variables were within-participants. The main between-participants variables were gender of participants (male versus female) and form of questionnaire filled out (importance versus characteristicness rating).

Procedure

Research participants first read and signed an informed-consent form. They then filled out the questionnaire booklet in small groups. Order of scales was randomized across participants. Participants were then debriefed.

Results

Basic Statistics

Table 2 shows means and standard deviations of the characteristicness and importance ratings for ratings of feelings in the Triangular Love Scale, and for satisfaction ratings. Because of the high correlation between ratings of feelings and actions in the Triangular Scale (median $r=0.98$), means of action ratings are not shown separately. Table 3 displays the results of a five-way analysis of variance upon the Sternberg scale means, which had as independent variables types of rating (characteristicness, importance), gender (male, female), relationship (mother, father, sibling, lover, friend, ideal lover), manifestation (feelings, action), and component (intimacy, passion, commitment).

In these analyses, the main effects of the type of rating and gender were not statistically significant, whereas the effects of relationship, manifestation, and component were. With regard to relationship, which, in terms of percentage of variance in total sum of squares accounted for, was the largest effect in the ANOVA, the mean for the ideal lover was highest and the mean for lover second highest in each set of comparisons. The mean for father was lowest in most cases, occasionally alternating with the second lowest overall mean, that for the sibling closest in age.

Table 2. Basic statistics

Triangular Love Scale		Characteristicness		Importance	
		Mean	S.D.	Mean	S.D.
Intimacy	Mother	6.49	1.74	6.82	1.53
	Father	5.17	2.10	5.92	2.04
	Sibling	5.92	1.67	5.89	1.99
	Lover	7.55	1.49	7.84	1.06
	Friend	6.78	1.67	6.48	1.51
	Ideal lover	7.64	1.94	7.97	1.02
Passion	Mother	4.98	1.90	4.64	1.91
	Father	3.99	1.84	3.88	1.72
	Sibling	4.51	1.71	4.02	1.88
	Lover	6.91	1.65	6.76	1.27
	Friend	4.90	1.71	4.32	1.56
	Ideal lover	7.29	1.84	7.06	1.17
Commitment	Mother	6.83	1.57	6.55	1.41
	Father	5.82	2.22	5.67	1.86
	Sibling	6.60	1.67	5.70	1.75
	Lover	7.06	1.49	7.01	1.20
	Friend	6.06	1.63	5.77	1.69
	Ideal lover	7.14	1.93	7.15	1.16
Overall	Mother	6.10	1.61	6.00	1.48
	Father	4.99	1.94	5.16	1.74
	Sibling	5.68	1.55	5.20	1.75
	Lover	7.17	1.47	7.21	1.04
	Friend	5.91	1.58	5.52	1.46
	Ideal lover	7.35	1.84	7.40	0.98

Table 3. Five-way analysis of variance: statistically significant effects

	<i>df</i>	<i>MS</i>	<i>F</i>	% variance (for total subjects)
Relationship	5	413.99	38.10***	17.36
Manifestation	1	36.35	33.72***	0.30
Component	2	456.69	151.32***	7.66
Type x component	2	22.99	7.62***	0.39
Gender x relationship	5	44.99	4.14**	1.89
Gender x component	2	18.18	6.02**	0.30
Relationship x manifestation	5	0.77	4.95***	0.03
Relationship x component	10	27.44	58.25***	2.30
Manifestation x component	2	1.97	3.36*	0.03
Type x relationship x manifestation	5	0.46	2.92*	0.02
Type x relationship x component	10	1.10	2.33*	0.09
Relationship x manifestation x component	10	0.78	4.61***	0.07
Total % variance				31.99

Note. Type—characteristicness, importance; Gender—male, female; Relationship—mother, father, sibling, lover, friend, ideal lover; Manifestation—feelings, actions; Component—intimacy, passion, commitment.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

The two middle means were those for mother and closest friend of the same sex, with the mean for the mother generally higher than that for the friend. The significant effect of manifestation was due to feeling ratings being higher than action ratings: in other words, people’s actions do not fully reflect their feelings, but rather represent some kind of loss of expression in the translation of feelings into actions. The significant effect of component—the second largest in the study in terms of percentage of variance accounted for—is due to passion ratings being substantially lower in magnitude than either of intimacy or commitment ratings, and commitment ratings being somewhat lower than intimacy ratings. Thus, the general rank order of ratings was intimacy, followed by commitment and then passion.

Several interactions were statistically significant, although only two of these interactions were of sufficient statistical strength to account for at least 1 per cent of the variance in the total sum of squares. Newman–Keuls analysis was used to explore these interactions. The first of these more substantial interactions was that between gender and relationship. Women gave higher ratings for their best friend and ideal lover than did men. The second of the more substantial interactions was that between relationship and component. For intimacy ratings, the mean of ideal lover and lover were the highest, the means for mother and best friend were next highest, and the means for father and sibling were lowest. For passion, the means for ideal lover and lover were much higher than all of the other means, which did not differ statistically among themselves. For commitment, the means for ideal lover, lover, and mother were higher than those for friend, sibling, and father. Two other interactions accounted for at least 0.3 per cent of the variance in the data. The first, between type of rating and component, showed importance ratings being higher than characteristicness ratings for intimacy, but characteristicness ratings being higher than importance ratings for passion and commitment. The second interaction,

between gender and component, revealed that women gave higher intimacy ratings, on average, than did men, but did not differ from men in their ratings on the passion and commitment components. The other interactions, all accounting for less than 0.1 per cent of the variance in the data, were not interpreted.

One would expect differing sizes and shapes of triangles for different relationships, given the differences in means, and the differences showed up clearly (see means in Table 2). One would expect highest intimacy characteristicness ratings for best friends and lovers (as well as ideal lovers), and the data are consistent with this expectation. Mean intimacy ratings are over 7.5 for the lover and ideal lover, and close to 7 for the best friend of the same sex, whereas means are under 6 for father and sibling and about 6.5 for mother. One would expect relationships with parents, siblings, and friends to be substantially lower in characteristic passion than relationships with lovers (or hypothetical relationships with ideal lovers), and the data bear out this expectation: passion ratings for the former relationships all average less than 5, whereas they average about 7 for the latter relationships. Finally, one would expect commitment to be lower for a friend than for a lover or one's own family of origin, and, in fact, the mean characteristicness commitment rating for best friend was lower than all other commitment ratings except father, from which it did not differ significantly. Thus, the trends are generally consistent with both the triangular theory and intuitions regarding the natures of different relationships.

Internal Validation

The internal validity of the theory and scale refers to the extent to which the scale adequately reflects the theory, and the theory adequately reflects reality. In construct validation, departures from validity may reflect a failure in the theory to mirror reality, a failure in the scale to operationalize the theory adequately, or both. The internal validation of the theory and scale consisted of three basic parts: internal-consistency analyses, intercorrelational analyses, and factor analyses.

Internal-Consistency Analyses The internal-consistency analyses comprised two parts: item–total correlations for each of the items in each subscale, and internal-consistency reliability analysis.

(i) Item–total correlations. There are actually two considerations in determining whether an item well represents a given construct as measured by a particular subscale. The first consideration is the level of the corrected item–total correlation: the higher the correlation, the better the item measures the construct assessed by the scale. The correction of the item–total correlation is for the contribution of the item itself to the total subscale score. In all analyses here, the item being considered has been taken out of the total subscale score. The second consideration is the correlation of the item scores with their own subscales as opposed to other subscales: each item should be more highly correlated with its own subscale than with the others. Such a pattern of correlations would show convergent-discriminant validation for the item.

Consider first the set of item–total correlations for the characteristicness ratings on the intimacy subscale. Of the 12 intimacy items, seven have their highest overall correlation with the intimacy subscale. Of 72 item–total correlations for individual

relationships, 51 show the predicted pattern of higher correlations with the intimacy score than with either of the passion or commitment scores. Chance frequencies for these two analyses would be four overall correlations and 24 correlations for individual relationships. The absolute values of the item–total correlations are quite good: all are over 0.50. Test publishers usually view 0.30 as the minimum value for an acceptable correlation. Of the item–total correlations for individual relationships, all are over 0.30 and most are quite a bit higher. For example, the median item–total correlation for the lover relationship is 0.76. Considering individual items, the one that appears possibly to be misplaced is item 4, ‘I strongly desire to promote the well-being of _____’. This item appears to measure commitment more than intimacy.

Consider next the item–total correlations for the importance rating on the intimacy subscale. All 12 of the overall correlations are higher with the intimacy subscale score than with either of the passion or commitment scores. Of the 72 correlations for individual relationships, 58 are higher with the intimacy scores than with either passion or commitment scores. Again, chance values are 4 and 24. All overall item–total correlations are over 0.50, and the median is 0.74. For individual relationships, all values are over 0.30, and most are substantially higher. The only item that appears to be questionable in its placement on the intimacy scale is once again number 4.

To conclude, the items of the intimacy subscale seem to serve their function quite well, in general, with the exception of a single item dealing with promoting the well-being of the other in the relationship.

Consider now the correlations with the passion score, starting with the characteristicness ratings. Nine of 12 individual items show their highest correlation with passion total score, and 51 and 72 correlations for individual relationships are highest with passion. Both figures are substantially better than the chance values of 4 and 24. All overall correlations are over 0.40, and the median is 0.69. All but one of the 72 item–total correlations for individual relationships are over 0.30 (the exception is 0.29), and most are well above the 0.30 level. For example, the median for the lover relationship is 0.72. Two items seem potentially misplaced. Number 35, ‘Just seeing _____ is exciting me’, seems to be as much a commitment item as a passion item. Number 65, ‘My relationship with _____ is very “alive” ’ may be more an intimacy item than a passion item.

Turning to the importance ratings for passion, the pattern again is quite favourable. Ten of 12 overall correlations are highest with the intended passion subscale, and 61 of 72 correlations for individual relationships are highest with passion. All overall correlations are over 0.40, and the median is 0.62. Individual relationship correlations are all over 0.30, and the median for lover is 0.58. For the importance ratings, the one item that seems probably misplaced is again number 65.

To conclude, the results for the passion scale are quite favourable. One of the 12 items is probably misplaced, that pertaining to the aliveness of the relationship.

Consider finally the commitment subscale, starting with the characteristicness ratings. Only half the items (six) have their highest overall correlation with the commitment score. Of the correlations for individual relationships, however, 42 of 72 have their highest correlation with commitment. For commitment, it is clear that one item was dysfunctional: number 56. ‘I view my relationship with _____ as, in part, a thought-out decision’, had trivial item–total correlations for all but two relationships (lover and ideal lover). Its overall item–total correlation was -0.05 .

Another item, number 39, 'I view my commitment to _____ as a matter of principle', also was not successful. Its overall item-total correlation was 0.28, and two of six individual item-total correlations fell below 0.30. Of the 10 other items in the commitment subscale, all had overall item-total correlations over 0.50. The median for the entire set of 12 was 0.61. For the individual relationships, excluding the two bad items, all item-total correlations were over 0.40. The median for lover on all 12 items was 0.70.

The importance ratings showed a pattern similar to the characteristicness ratings. The same two items—39 and 56—showed overall item-total correlations below 0.30. All other items showed overall item-total correlations of at least 0.50. The median item-total correlation for the overall data was 0.62, including the two bad items. Excluding the two bad items, all but one of the item-total correlations for individual relationships were over 0.30. The median item-total correlation for the lover relationship, including all items, was 0.60.

To conclude, the commitment scale served its purpose reasonably well, except for two items, one dealing with the commitment as a matter of principle and the other dealing with it as a thought-out decision.

(ii) Internal-consistency reliabilities. The results of the item analysis can be summarized simply. I will discuss only feelings ratings, as action ratings showed virtually identical patterns. All 112 reliability coefficients except one are over the customary psychometrically minimally acceptable value of 0.80 (the exception is 0.79). For intimacy, the reliabilities are all at least 0.90. For passion, all are at least 0.80. For commitment, all but one (the exception is 0.79) are over 0.80. As would be expected from the analysis, reliabilities for intimacy and passion run a bit higher than those for commitment. But when one considers that 89 of all 112 reliabilities are at least 0.90 and all but one of the rest are at least 0.80, the internal consistency of the Triangular Theory of Love Scale seems quite good, especially considering that each subscale is only 12 items in length. Overall scale reliabilities are 0.95 or over with one exception, which is 0.93.

Relationships Among the Subscales of Intimacy, Passion, and Commitment We consider next intercorrelations among various aspects of the scale scores. First we consider correlations between characteristicness and importance ratings; next between feeling and action ratings; and finally among intimacy, passion, and commitment ratings.

(i) Correlations of characteristicness and importance ratings. These correlations can be computed only across item types, as different participants provided the characteristicness ratings, on the one hand, and the importance ratings, on the other. For the individual relationships, correlations were quite variable, but they generally covaried with the standard deviations of the item ratings. Such covariation strongly suggests that the magnitudes of the correlations reflected amounts of range in each set of ratings, rather than actual degrees of relationship. Overall, averaging across relationships, the correlations were 0.66 for intimacy, 0.77 for passion, and 0.92 for commitment. The respective levels of these values suggest that the extent to which a given behaviour characterizes a relationship is least reflective of its perceived importance in that relationship for intimacy, and most reflective for commitment.

(ii) Correlations of feeling and action ratings. Correlations were computed between feeling and action ratings computed across the 42 participants supplying each of the two kinds of ratings (characteristicness and importance). The

correlations were generally very high. For characteristicness, they were all at least 0.90. Medians across relationships were 0.96 for intimacy, 0.97 for passion, and 0.92 for commitment. The overall median was 0.98. For importance, they were all at least 0.85 except for one (0.78). Medians across relationships were 0.90 for intimacy, 0.96 for passion, and 0.91 for commitment. The overall median was 0.96. Clearly, ratings for feelings and actions are correlated at roughly the level of the reliabilities of the subscales, suggesting there is no need to consider them separately. Given these higher correlations, the action ratings will generally not be considered further.

(iii) Intercorrelations of intimacy, passion and commitment. Intercorrelations were computed between all possible pairs of ratings of intimacy, passion, and commitment. The correlations are generally high, although somewhat variable as a function of relationship. For characteristicness overall, passion correlates 0.71 with intimacy and 0.68 with commitment. Intimacy correlates 0.81 with commitment. For lovers, all correlations are in the 0.80s, and for ideal lover, they are generally at the 0.90 level, but for siblings they are in the 0.75–0.80 range. Correlations for the importance ratings are somewhat lower. The overall correlations are 0.61 for passion and intimacy, 0.72 for passion and commitment, and 0.73 for intimacy and commitment. Here, correlations for the lover and ideal lover are only in the 0.60s. Thus, there seems to be greater commonality among the three components in the way people feel with regard to them than in the importance they assign to each of the components across relationships.

Factor Analyses Two factor analyses were conducted, one for characteristicness ratings and one for importance ratings, both averaged over relationships. One-through six-factor solutions were studied. Final solutions were chosen primarily on the basis of interpretability of axes, with the constraint that eigenvalues of all factors in the chosen solution be greater than 1. Scree tests revealed relatively smooth curves of increase in percentages of variance in the data accounted for as a function of number of factors, and hence were not useful in choosing solutions. Ratings were factor analysed using principal-component analyses with varimax rotation. The unrotated solution, of course, yielded a general factor, as unrotated solutions maximize the variance placed in the first factor. Varimax is an orthogonal rotation, yielding factors that are uncorrelated. Promax rotations, which yield oblique factors, were also carried out with two different levels of correlation of factors ($k=3$ and $k=6$). However, the oblique axes generally yielded the same patterns as the orthogonal ones, except less clearly. Hence, the promax results are not further reported.

(i) Factor analysis of characteristicness ratings. A three-factor solution was chosen for the characteristicness ratings. The three factors account for 60 per cent of the variance in the data. The first factor accounts for 26 per cent, the second for 19 per cent, and the third for 15 per cent. The three factors are fairly straightforwardly interpretable as commitment, intimacy, and passion, although items expected to load on a particular factor did not always show their highest loading on that factor.

The items showing the highest loadings on the commitment factor are 'I am committed to maintaining my relationship with _____' (0.89), 'I expect my love for _____ to last for the rest of my life' (0.86), 'I have confidence in the stability of my relationship with _____' (0.78), and 'I cannot imagine ending my relationship with _____' (0.77). The items showing highest loadings on the intimacy factor are 'I especially like giving presents to _____' (which was supposed to be a passion

item) (0.84), 'There is nothing more important to me than my relationship with _____' (also supposed to measure passion) (0.76), 'I have a relationship of mutual understanding with _____' (0.72), and 'I feel emotionally close to _____' (0.68). The items showing very high loadings on the passion factors are 'My relationship with _____ is very romantic' (0.76), 'I find myself thinking about _____ frequently during the day' (0.72), and 'There is something almost "magical" about my relationship with _____' (0.69).

(ii) Factor analysis of importance ratings. A factor analysis of the importance ratings was also done. Four factors emerged in the data, which were labelled intimacy, commitment, passion, and decision. Note that in this factor analysis, unlike in the factor analysis of the characteristicness ratings, the two aspects of the decision/commitment component have split off from each other. Again, not all items loaded most highly on the predicted factor. The four factors account for 63 per cent of the variance in the data. The respective percentages of variance accounted for by each of the four factors are 21 per cent, 15 per cent, 14 per cent and 13 per cent.

The items with the highest loadings on the intimacy factor are 'I give considerable emotional support to _____' (0.81), 'I have a relationship of mutual understanding with _____' (0.79), 'I have a warm and comfortable relationship with _____' (0.79), and 'I experience great happiness with _____' (0.73). The items with the highest loadings on the commitment factor are 'I expect my love for _____ to last the rest of my life' (0.86), 'I cannot imagine ending my relationship with _____' (0.85), and 'I view my relationship with _____ as permanent' (0.85). The items with the highest loadings on the passion factor are 'I idealize _____' (0.80), 'I find _____ very attractive physically' (0.71), 'I view my relationship with _____ as, in part, a thought-out decision' (which was supposed to measure commitment) (0.68), and 'My relationship with _____ is very romantic' (0.63). Examples of items with very high loadings on the decision factor are 'I am willing to share myself and my possessions with _____' (which was supposed to be an intimacy item) (0.81), 'I am committed to maintaining my relationship with _____' (0.78), 'I have decided that I love _____' (0.77), and 'I have confidence in the stability of my relationship with _____' (0.74).

External Validation

The external validation consisted of two parts: intercorrelations of the Sternberg Triangular Love Scale with the Rubin Liking and Loving scales, and correlations of each of these scales with overall satisfaction in the participants' romantic relationships.

Correlations Between Sternberg and Rubin Scales Correlations were computed for each of the scores from the Sternberg subscales and overall scale with the Rubin Liking and Loving scores. The Sternberg and Rubin scales were fairly highly correlated. For characteristicness ratings, median correlations across relationships were, for liking and loving respectively, 0.68 and 0.74 for intimacy, 0.66 and 0.79 for passion, 0.61 and 0.65 for commitment. Similar but somewhat lower values were found for importance ratings. For the combined relationships (overall ratings), the median correlation for the characteristicness ratings was 0.69 for liking and 0.80 for loving; for the importance ratings, the corresponding

median correlations were 0.65 and 0.66. But there was no clear convergent-discriminant pattern. In other words, none of the Sternberg subscales was more clearly related to liking as opposed to loving, or vice versa. Nor did the magnitudes of the correlations vary much as a function of component. There does seem to have been some variation as a function of relationship, however. For the characteristicness ratings, correlations appear to have been relatively higher for father and ideal lover, and relatively lower for sibling. The correlations for the importance ratings were generally lower than for the characteristicness ratings. They seem to have been relatively higher for father, and relatively lower for lover. To conclude, the Sternberg and Rubin scales are clearly related, but do not show straightforward convergent-discriminant relations as a function of components of each of the scales.

Correlations of the Sternberg and Rubin Scales with Satisfaction How do the two scales fare when correlated with an external criterion—namely, overall satisfaction with one's romantic relationship? This satisfaction score, it will be recalled, is a composite of nine questions related to satisfaction with the romantic relationship, which was the only relationship assessed for satisfaction. The results are clearcut: all three subscales of the Sternberg Triangular Love Scale show higher correlations with satisfaction than do either of the two Rubin scales for all items individually and for overall score. The differences in correlation are fairly substantial, ranging from about 0.40 to 0.50 in a comparison of the Sternberg subscales to the Rubin Liking Scale and from about 0.15 to 0.25 in a comparison of the Sternberg subscales to the Rubin Loving Scale. Overall, the correlations with the satisfaction scale (all statistically significant) were 0.59 for the Rubin Love Scale, 0.36 for the Rubin Liking Scale, and 0.86, 0.77, and 0.75 respectively for the Sternberg Intimacy, Passion, and Commitment Scales. To conclude, the Sternberg scale seems to measure constructs more predictive of relationship satisfaction than do the Rubin scales. Of course, satisfaction is only one possible external correlate, and it can be measured in a variety of ways. It is quite possible that the Rubin scales would show higher correlations with other external measures, or with satisfaction measured in other ways.

Discussion

If the triangular theory and measure are viable, then there ought to be a significant interaction between relationship and component: in other words, different relationships ought to show different blends of the three components of the theory. Such a significant interaction was obtained, and in fact, had the highest *F* value (58.25) and accounted for the most variance (0.023) of any of the two-, three-, or four-way interactions in the study.

The actual means made sense in terms of the theory. For example, one would expect the mean characteristicness rating for passion to be especially high in the lover relationship relative to other relationships, whereas high levels of intimacy and commitment might be more characteristic of multiple relationships. For lover, the mean passion rating is 6.91. The next highest rating is for mother at 4.98, a difference of 1.93. In contrast, the mean for lover on intimacy is 7.55, and the next highest mean, for friend is 6.78, a difference of only 0.77. Similarly, for commitment, the

difference between lover and the next highest mean, mother, is only 1.07. The importance ratings show the same pattern, only more strongly.

The internal-consistency analysis revealed that all but four of the 36 test items served their appropriate functions in the triangular test. Moreover, the subscale reliabilities, which were in the 0.80s and 0.90s, and the overall scale reliabilities, in the high 0.90s, were quite favourable.

Intercorrelational analysis revealed that although action means were lower than feeling means, the two kinds of ratings were very highly correlated (generally in the 0.90s), and so action ratings were disregarded in subsequent analyses. The intercorrelational analyses also revealed that, for characteristicness ratings overall, intimacy and commitment were more highly correlated than either intimacy and passion or passion and commitment. For importance ratings, the correlation of intimacy with passion was lower than the correlation of intimacy with commitment or of passion with commitment.

Factor analyses revealed three factors for the characteristicness ratings, corresponding to the three components of the triangular theory, and four factors for the importance ratings, with decision/commitment splitting off into decision and commitment as separate factors. In general, then, the factor-analytic results were supportive of the theory.

Finally, the external validation revealed moderate to high correlations with Rubin scale scores, although there was no clear convergent-discriminant pattern with respect to liking and loving. The three subscales of the Sternberg Triangular Love Scale correlated more highly with satisfaction ratings than did either of the Rubin Liking or Loving Scales.

Although the data are generally supportive of the triangular theory of love, the limitations of the study ought to be recognized. First, the study makes use exclusively of questionnaire data, and ultimately, the construct validation of the theory of love ought to be supplemented by behavioural data. Such data would be important, because questionnaire responses do not always well reflect how people actually behave in everyday life. Second, the questionnaire was designed with the triangular theory of love in mind: it was not constructed in a theory-free fashion. Hence, to the extent that the factor-analytic and other data were consistent with the triangular theory, this consistency may reflect in part the construction of the questionnaire. Questionnaires constructed to support other theories might equally well support those theories (e.g. Hendrick & Hendrick, 1986). Third, the sample tested was relatively small, comprising only 84 participants. Fourth, the data were not always fully supportive of the theory. For example, although component scores were expected to be correlated, the correlations were somewhat higher than expected. Moreover, some of the items on the scale did not measure what they were supposed to measure.

It seemed desirable to conduct a second study in order to remediate some of the limitations of the first study. The new study would provide an opportunity to put the triangular theory to a stronger test.

STUDY 2

The second study was generally like the first, with several important exceptions. First, the study involved 101 participants drawn from the same population as in

Study 1, thereby more than doubling the size of the sample from which conclusions could be drawn. Second, to increase efficiency of testing, ratings were collected only for relationship with one's lover, which was the relationship of greatest interest. Third, action ratings were not collected, as they had been shown in Study 1 to correlate at the 0.9+ level with feelings ratings. Finally, and most importantly, bad items from the first version of the scale were replaced and new items added.

Method

Research Participants

Participants were 101 New Haven area adults, including 50 men and 51 women who answered an advertisement in a local newspaper. Eligibility requirements were the same as in Study 1. Participants ranged in age from 18 to 71, with a mean of 31 years and a standard deviation of 11 years. Lengths of close relationships ranged from 1 to 42 years with a mean of 6.3 years and a standard deviation of 8.6 years. Participants were paid \$10.00 for approximately 1½ hours of testing

Materials

Participants received a revised version of the Sternberg Triangular Love Scale, as well as the Rubin Liking and Loving Scales and a demographic questionnaire.

The following items were deleted from the revised version of the Sternberg Triangular Love Scale. For intimacy: I have a warm and comfortable relationship with _____, I experience intimate communication with _____, I strongly desire to promote the well-being of _____, I have a relationship of mutual understanding with _____; for passion: I find _____ very attractive physically, My relationship with _____ is very 'alive', I especially like giving presents to _____; for commitment: I view my relationship with _____ as, in part, a thought-out decision, I have decided that I love _____, I view my commitment to _____ as a matter of principle, I would stay with _____ through the most difficult times.

The following are the new items on the scale. For intimacy: I have a comfortable relationship with _____, I have a warm relationship with _____, I communicate well with _____, I share deeply personal information about myself with _____, I feel that I really understand _____, I feel that _____ really understands me, I feel that I really can trust _____; for passion: I find _____ to be very personally attractive, I would rather be with _____ than with anyone else, I fantasize about _____, When I see romantic movies or read romantic books I think of _____, I especially like physical contact with _____, My relationship with _____ is passionate; for commitment: I view my relationship with _____ as a good decision, I know that I care about _____, I feel a sense of responsibility toward _____, Because of my commitment to _____, I would not let other people come between us, Even when _____ is hard to deal with, I remain committed to our relationship, I view my commitment to _____ as a solid one, I plan to continue in my relationship with _____.

Note that each subscale was increased from 12 to 15 items in length in order to increase internal-consistency reliability and, it was hoped, validity of each subscale.

Design

The main dependent variables were questionnaire ratings. The main independent variables were the component of love (intimacy, passion, commitment), gender of participant (male, female), and type of rating (characteristicness, importance).

Procedure

Participants first read and signed an informed-consent form, next filled out the questionnaire booklet in small groups, and then were debriefed. The order of statements on the triangular scale was randomized across participants.

Results

Basic Statistics

Table 4 shows the basic statistics for the main ratings collected in the study. A three-way analysis of variance on scores from the revised Sternberg Triangular Love Scale, with ratings as the dependent variable and type of rating, gender, and component as independent variables, revealed three statistically significant effects. Type of rating and component were within participants, gender, between-participants. The significant effects were type of rating, $F(1,99)=21.77$, $p<0.001$, $MS=37.67$, accounting for 11 per cent of the variance; and type x component, $F(2,98)=11.86$, $p<0.001$, $MS=3.66$, accounting for 6 per cent of the variance.

The significance of the effect of type of rating was due to the fact that importance ratings were higher than characteristicness ratings, an effect not obtained in Study 1. The significance of component was due to intimacy ratings being higher than commitment ratings, which were in turn higher than passion ratings. This same pattern was obtained in Study 1.

Table 4. Basic statistics

	Characteristicness Mean	S.D.	Importance Mean	S.D.
Intimacy	7.39	1.19	8.18	0.80
Passion	6.51	1.65	6.75	1.30
Commitment	7.20	1.49	7.64	1.12
Overall	7.03	1.50	7.53	1.24
Overall Satisfaction			7.02	1.41

The significant interaction was due to the relatively larger difference between characteristicness and importance ratings for intimacy than for passion and commitment. In other words, people experienced a greater discrepancy between the way things are and the way they would like them to be for intimacy than for passion or commitment. This same interaction was obtained in Study 1.

Internal Validation

Internal-Consistency Analysis The internal-consistency analysis comprised two parts: item–total correlations for each of the items in each subscale, and internal-consistency reliability analysis.

(i) Item–total correlations. Correlations were computed for each item in the revised Sternberg Triangular Love Scale, with its subscale score (intimacy, passion, decision/commitment), and the subscale with which the item had the highest correlation.

There are several ways in which one can evaluate these data. Of 45 items, only three (7 per cent) had characteristicness ratings correlating more highly with another scale than with their own, and only two (4 per cent) had importance ratings correlating more highly with a scale other than their own. Comparable percentages in Study 1 were 42 per cent for characteristicness ratings and 22 per cent for importance ratings (for ratings of lover only, the ratings comparable to those in the present study). For individual items we find that 41 of 45 characteristicness and 40 of 45 importance ratings had corrected item–total correlations over 0.50, and 44 of 45 characteristicness and 44 of 45 importance ratings had corrected item–total correlations over 0.30, the usual psychometric standard for inclusion of an item on a test. In Study 1, the comparable figures for the lover were 31 of 36 characteristicness correlations over 0.50 and 35 of 36 over 0.30 and 29 of 36 importance correlations over 0.50 and 35 of 36 over 0.30. Altogether, then, the convergent correlations of items with their respective subscales were better in the second study than in the first, and the discriminant correlations of items with other subscales were much better in this study than in the previous one.

(ii) Internal-consistency reliabilities. All coefficient alpha reliabilities were over 0.90. For characteristicness ratings, they were 0.91 for intimacy, 0.94 for passion, 0.94 for commitment, and 0.97 overall. For importance ratings, they were 0.90 for intimacy, 0.91 for passion, 0.91 for commitment, and 0.95 overall.

Intercorrelational Analyses Intercorrelations between each pair of subscales for both the characteristicness and the importance ratings and correlations of subscales were lower in the second study than in the first one. Whereas in Study 1 the characteristicness correlations for lover were in the mid-0.80s, in Study 2 they were 0.71 for passion with intimacy, 0.73 for passion with commitment, and 0.73 for intimacy with commitment. Importance correlations were more variable in this study than in the first one, averaging slightly lower than they were previously (0.62 for Study 2 versus 0.67 for Study 1). They were 0.46 for passion with intimacy, 0.68 for passion with commitment, and 0.73 for intimacy with commitment. Correlations between characteristicness and importance ratings ranged from 0.36–0.60 with a median of 0.45.

Factor Analyses Factor analyses were conducted of the ratings of lovers of the revised scales for characteristicness and importance. In this study, both factor analyses were best fit by three-factor rotated solutions. The three characteristicness factors accounted for 57 per cent of the variance in the data, with respective percentages of variance of 21 per cent, 21 per cent, and 15 per cent for the three successive factors. Comparable figures for the importance factors were 51 per cent overall, and 22 per cent, 15 per cent, and 14 per cent for the three respective factors. Most, although not all items, showed their highest loadings on the factors for which the triangular theory predicted salient loadings. Although not every item showed the predicted pattern, the three factors in each analysis were clearly those predicted by the theory, and the results were generally cleaner than in Study 1.

External Validation

The external validation again consisted of two parts. First, the Sternberg Triangular Love Scale was correlated with the Rubin Liking and Loving Scales, and then each of these scales was correlated with ratings from the satisfaction measure.

Correlations Between Sternberg and Rubin Scales Correlations between the Sternberg and Rubin scales were comparable to those in Study 1. Characteristicness ratings were generally more highly correlated than importance ratings. Sternberg scale scores were more highly correlated with Rubin Love than with Rubin Liking scores. The highest correlation was between the Passion subscale of the Triangular Scale and Rubin Love Scale, a result which makes sense in terms of the triangular theory. For characteristicness ratings, respective correlations with the liking and loving scales were 0.61 and 0.70 for intimacy, 0.59 and 0.82 for passion, and 0.56 and 0.71 for commitment. For importance ratings, respective correlations with the liking and loving scales were 0.28 and 0.57 for intimacy, 0.57 and 0.71 for passion, and 0.57 and 0.68 for commitment.

Correlations of the Sternberg and Rubin Scales with Satisfaction Correlations were computed of Rubin and Sternberg scale scores with satisfaction, both for individual items and for total scores. As in Study 1, all three components of the Sternberg scale show higher correlations with overall satisfaction than do either of the Rubin scale scores. Correlations with overall satisfaction were 0.59 and 0.56 for the Rubin Love and Liking Scales respectively, and 0.76, 0.76, and 0.67 for the Sternberg Intimacy, Passion, and Commitment Scales respectively.

Discussion

Study 2 was done in order to remedy some of the problems that arose in Study 1. Most importantly, the study involved a replication sample somewhat larger in size than in Study 1 and the Sternberg Triangular Love Scale was revised to help remediate some of the deficiencies in the scale that were observed in Study 1. The main deficiencies in that study were that an excessive number of items showed their highest corrected correlation with a subscale other than the one in which they appeared, and that the correlations among the three subscales seemed excessively high. In the present study, the cross-correlations of items to scales other than their

own were substantially reduced, and correlations among subscales were also reduced, especially for characteristicness ratings. With respect to internal validation, both characteristicness and importance ratings revealed a three-factor structure corresponding to the components of the triangular theory. With respect to external validation, correlations with overall satisfaction were again very high (median = 0.76 for the three subscales), and higher than those for the Rubin scales.

This conceptual replication thus largely accomplished what it was supposed to accomplish. Although the results are by no means perfect, they do provide further construct validation for the triangular scale.

GENERAL DISCUSSION

Within the limitations of questionnaire studies, the present pair of studies provides empirical data directly testing a scale based on the triangular theory of love. The package of results, taken as a whole, is at least encouraging with respect to the triangular theory's internal and external validity.

At one time, the study of love was seen as fundamentally inconsistent with the notion of quantification (Sternberg, 1988): early clinically based theories were wholly nonquantitative, and in general, many people have felt that love and measurement are inconsistent. The seminal work of Rubin (1970) changed things, and the present work is in the tradition started by Rubin. It differs from this tradition, however, in starting off with a prior theory, and hence, the work constitutes a construct validation of a theory-based measure.

The sceptic might be concerned that the study of love might go the way of the study of other constructs, such as intelligence, where theorists pushing their own particular theories all collect data that support their preferred theories but that do not refute the theories of others (see Sternberg (1977) for a discussion of these issues as they relate to theorizing about intelligence). For example, Davis (1985) presents evidence in favour of his theory; Hendrick and Hendrick (1986) present data in support of Lee's theory; and Shaver *et al.* (1988) present data in support of their theory. At the present time, I suggest that this course of theory development and testing is a favourable one. First, empirically validated theories (indeed, testable theories) are a relatively new development in the study of love, and hence, the proposal of some alternative theories and tests of them is the kind of development the field now needs. Second, the theories are sometimes theories of somewhat different aspects of love, and hence do not all lend themselves to comparative tests. Lee's theory is one of styles of love, Shaver and Hazan's theory is one of the development of attachment patterns in love, and my own theory is one of components of love (and hence is probably most similar to Davis' in this regard). At present, we need to propose theories of love in different aspects. Ultimately, I believe the triangular theory will need to be combined with others, especially the attachment theory of Shaver *et al.* (1988), in order fully to account for the complexity of love. The attachment construct is an especially attractive and important one in love that is not fully accounted for in the triangular theory.

When the triangular theory of love was first presented (Sternberg, 1986), illustrative data were offered in support of the theory, but the aspects of the

theory were not assessed or tested via a measuring instrument. The data presented in this article constitute a test of a measure based on the theory, and seem to be quite (although not totally) supportive of it. Moreover, data collected by Aron and Westby (1996) provide further the support for the theory in terms of people's implicit theories of love, although the role of commitment in these implicit theories of love is less clear than the roles of intimacy and passion (Fehr, 1988, 1993; Fehr & Russell, 1991; Rusbult, Onizuka & Lipkus, 1993). Since Rubin's (1970) seminal work on the theory and measurement of love, a number of theories of love have been presented (see Sternberg & Barnes, 1985). Several have directly supporting data. What seem to be needed now are direct comparative tests between theories, conducted impartially and in a way that might ultimately allow future theories to draw upon the best features of the existing ones. The study of love is on its way toward becoming an empirical but theoretically-based discipline, and I hope this article makes some contribution toward the attainment of that discipline.

REFERENCES

- Aron, A., & Westbay, L. (1996). Dimensions of the prototype of love. *Journal of Personality and Social Psychology*, **70**(3), 535–551.
- Berscheid, E. (1988). Some comments on love's anatomy: Or, whatever happened to old-fashioned lust? In R. J. Sternberg, & M. L. Barnes (Eds), *The psychology of love* (pp. 359–374). New Haven, CT: Yale University Press.
- Davis, K. E. (1985). Near and dear: Friendship and love compared. *Psychology Today*, *19* (Feb), 22–30.
- Fehr, B. (1988). Prototype analysis of the concepts of love and commitment. *Journal of Personality and Social Psychology*, **55**, 557–579.
- Fehr, B. (1993). How do I love thee? Let me consult my prototype. In S. Duck (Ed.), *Individuals in relationships* (Vol. 1, pp. 87–120). Newbury Park, CA: Sage.
- Fehr, B., & Russell, J. A. (1991). Concept of love viewed from a prototype perspective. *Journal of Personality and Social Psychology*, **60**, 425–438.
- Freud, S. (1922). Certain neurotic mechanisms in jealousy, paranoia, and homosexuality. In *Collected Papers* (Vol. 2, pp. 235–240, 323). London: Hogarth.
- Hatfield, E. (1984). The dangers of intimacy. In V. Derlaga (Ed.), *Communication, intimacy, and close relationships* (pp. 207–220). New York: Academic Press.
- Hatfield, E. (1988). Passionate and companionate love. In R. J. Sternberg & M. L. Barnes (Eds), *The psychology of love* (pp. 191–217). New Haven, CT: Yale University Press.
- Hatfield, E., & Walster, G. W. (1981). *A new look at love*. Reading, MA: Addison-Wesley.
- Hazan, C., & Shaver, P. R. (1990). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, **59**, 270–280.
- Hazan, C., & Shaver, P. R. (1994). Attachment as an organizational framework for research on close relationships. *Psychological Inquiry*, **5**, 1–22.
- Hendrick, C., & Hendrick, S. S. (1986). A theory and method of love. *Journal of Personality and Social Psychology*, **50**, 392–402.
- Hendrick, C., & Hendrick, S. S. (1990). A relationship-specific version of the Love Attitudes Scale. *Journal of Social Behavior and Personality*, **5**, 239–254.
- Hendrick, S. S., & Hendrick, C. (1995). Gender differences and similarities in sex and love. *Personal Relationships*, **2**, 55–65.
- Lee, J. A. (1977). A topology of styles of loving. *Personality and Social Psychology Bulletin*, **3**, 173–182.
- Levinger, G., Rands, M., & Talaber, R. (1977). *The assessment of involvement and rewardingness in close and casual pair relationships* (National Science Foundation Report DK). Amherst: University of Massachusetts.

- Maslow, A. H. (1962). *Toward a psychology of being*. Princeton, NJ: Van Nostrand.
- Murray, S. L., & Holmes, J. G. (1993). Seeing virtues in faults: Negativity and the transformation of interpersonal narratives in close relationships. *Journal of Personality and Social Psychology*, **65**, 707–722.
- Murray, S. L., Holmes, J. G., & Griffin, D. W. (1996). The benefits of positive illusions: Idealization and the construction of satisfaction in close relationships. *Journal of Personality and Social Psychology*, **70**, 79–88.
- Reik, T. (1944). *A psychologist looks at love*. New York: Farrar & Rinehart.
- Rubin, Z. (1970). Measurement of romantic love. *Journal of Personality and Social Psychology*, **16**, 265–273.
- Rusbult, C. E., Onizuka, R. K., & Lipkus, I. (1993). What do we really want?: Mental models of ideal romantic involvement explored through multidimensional scaling. *Journal of Experimental Psychology*, **29**, 493–527.
- Shaver, P. R., & Hazan, C. (1988). A biased view of the study of love. *Journal of Social and Personal Relationships*, **5**, 473–501.
- Shaver, P. R., & Hazan, C. (1993). Adult romantic attachment: Theory and evidence. In D. Perlman, & W. H. Jones (Eds), *Advances in personal relationships* (Vol 4, pp.29–70). London: Kingsley.
- Shaver, P. R., Hazan, C., & Bradshaw, E. (1988). Love as an attachment process. In R. J. Sternberg, & M. L. Barnes (Eds), *The psychology of love* (pp.68–99). New Haven, CT: Yale University Press.
- Sternberg, R. J. (1977). *Intelligence, information processing, and analogical reasoning: The componential analysis of human abilities*. Hillsdale, NJ: Erlbaum.
- Sternberg, R. J. (1986). A triangular theory of love. *Psychological Review*, **93**, 119–135.
- Sternberg, R. J. (1988). Triangulating love. In R. J. Sternberg, & M. L. Barnes (Eds), *The psychology of love* (pp.119–138). New Haven, CT: Yale University Press.
- Sternberg, R. J., & Barnes, M. L. (1985). Real and ideal others in romantic relationships: Is four a crowd? *Journal of Personality and Social Psychology*, **49**, 1586–1608.
- Sternberg, R. J., & Grajek, S. (1984). The nature of love. *Journal of Personality and Social Psychology*, **55**, 345–356.
- Thibaut, J. W., & Kelley, H. H. (1959). *The social psychology of groups*. New York: Wiley.
- Van Lange, P. A. M., & Rusbult, C. E. (1995). My relationship is better than—and not as bad as—yours is: The perception of superiority in close relationships. *Personality and Social Psychology Bulletin*, **21**, 32–44.