

Commitment and Satisfaction in Romantic Associations: A Test of the Investment Model

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Two experiments were designed to test the adequacy of the investment model of developing relationships in predicting satisfaction with and commitment to ongoing associations. According to the investment model, attraction to and satisfaction with a relationship is a function of a comparison of the relationship outcome value (both rewards and costs) to the individual's expectations, or comparison level. Commitment to a relationship is said to be a function not only of the relationship outcome value, but also the quality of the best available alternative and the magnitude of the individual's investment in the relationship. The intrinsic or extrinsic investment of resources serves to increase commitment by increasing the costs of leaving the relationship. Thus, increases in investment size, decreases in alternative value, and increases in relationship value should increase commitment to an ongoing relationship. In Experiment 1, a role-playing study, commitment to relationships increased with intrinsic and extrinsic investment size and decreased with the value of alternatives, but was not appreciably affected by relationship costs. Satisfaction/attraction significantly increased as relationship costs decreased. In Experiment 2, a survey of ongoing romantic associations, satisfaction/attraction was predicted by relationship reward value and relationship cost value. Commitment to relationships increased as relationship reward value and investment size increased and as alternative value and relationship cost value decreased, although the effects of cost value were weak.

Psychologists concerned with interpersonal relationships have typically concentrated on the study of attraction and its antecedents (Aronson & Linder, 1965; Byrne & Nelson, 1965; Gerard & Mathewson, 1966; Insko & Wilson, 1977). Variations in factors such as attitudinal similarity (Byrne

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& Nelson, 1965), physical attributes of the target person (Walster, Aronson, Abrahams, & Rottman, 1966), positivity of target evaluation of the subject (Aronson & Linder, 1965), and social interaction (Insko & Wilson, 1977) have been shown to affect initial liking for another. Reinforcement-affect theory (Clore & Byrne, 1974) and consistency theories (Festinger, 1957; Heider, 1958; Newcomb, 1968) are thus helpful in understanding initial attraction toward strangers. However, they do not adequately account for temporal changes in relationships, nor do they deal with the development or deterioration of commitment to ongoing associations.

Several psychologists have recently proposed models of interpersonal attraction in ongoing associations (Altman & Taylor, 1973; Levinger & Snoek, 1972). Each theory attempts to identify variables that account for the growth and deterioration of attraction, and to describe the course of development and dissolution of associations. The model to be described in this paper is in this general tradition. The primary goal of the investment model is to predict degree of commitment to and satisfaction with a variety of forms of ongoing association (e.g., romantic, friendship, business) with wide ranges of duration and involvement.

The investment model is based on several principles of interdependence theory (Kelley & Thibaut, 1978), and assumes that individuals are in general motivated to maximize rewards while minimizing costs. As interdependence theory states, satisfaction with and attraction to an association is a function of the discrepancy between the outcome value of the relationship and the individual's expectations concerning the quality of relationships in general, or his comparison level (CL) (Thibaut & Kelley, 1959). The outcome value of a relationship (O_X) is defined as:

$$O_X = \sum w_i a_i \quad [1]$$

where a_i represents the individual's subjective estimate of the value of attribute i available in relationship X , and w_i represents its subjective importance. Attribute values may be positive or negative (i.e., rewards or costs), material or psychological, and may either exist objectively or merely in the subjective perception of the individual. Some examples of potentially important attributes are intelligence, physical appearance, complementary needs, sense of humor, sexual satisfaction, and attitudinal similarity.

The individual's comparison level is the standard against which the attractiveness of a relationship is evaluated. It represents the average relationship outcome value that the individual has come to expect, and is determined by the quality of past experiences with relationships and comparison to associations of similar others. Individuals evaluate their present relationships in relation to their comparison levels in order to assess degree of satisfaction and with attraction to the association. Satisfaction with relationship X (SAT_X) is represented as:

$$SAT_X = O_X - CL \quad [2]$$

The individual should be more satisfied with and attracted to a relationship as the rewards associated with the relationship increase, costs decrease, and expectations become lower.

Satisfaction and attraction refer to the degree of positive affect associated with a relationship. The individual's commitment to an association, however, is related to the probability that he/she will leave the relationship, and involves feelings of psychological attachment. Commitment is *in part* a function of the relationship outcome value and the outcome value of the individual's best available alternative (or CL_{alt}). Alternative outcome value (O_Y) represents the quality of the best available alternative to a relationship X , whether solitude or an alternative association. It is mathematically defined in the same manner as is satisfaction with the current relationship:

$$A_Y = O_Y - CL \quad [3]$$

The individual should evaluate alternatives more positively as the rewards associated with the best alternative increase, as its costs decrease, and as comparison level decreases. However, although evaluations of the quality of the current relationship and the alternative both depend on comparison level, comparisons of the relative merits of the two (i.e., $SAT_X - A_Y$) depend solely on the difference between the rewards and costs of one's current association and those of the alternative.

The investment model states that commitment is affected not just by the outcome values of the current relationship and alternative, but also by investment size. Commitment increases with the passage of time in part because the resources "put into" a relationship increase the costs of withdrawing from it. Investments may be of two sorts. *Extrinsic* investments occur when previously extraneous interests are linked to current behavior. For example, an individual's home and his current relationship may not have been initially associated. However, if he believes that dissolution of the relationship with his current partner would cause him to lose his home, commitment should be increased and the individual should be less likely to leave the relationship. The *intrinsic* investment of resources such as time, emotional involvement, self-disclosures, money, and so on, should also increase commitment. Since investments of both types are nonportable and would be lost on dissolution of the relationship, the individual who has made investments should be less likely to leave his ongoing association. Investment size (I_X) is defined as:

$$I_X = \sum w_j r_j \quad [4]$$

where r_j refers to the size of the investment of resource j in relationship X , and w_j refers to the importance of this resource.

Commitment is generally increased over time by the investment of resources in a relationship, but it is also a function of the relationship and alternative outcome values. Commitment to the current association (COM_X) is therefore defined as follows:

$$COM_X = O_X + I_X - O_Y \quad [5]$$

Thus, commitment should increase as the relationship becomes more "valuable" (or rewarding, with fewer costs), as alternatives decrease in quality, and as the magnitude of the individual's investment in the association becomes larger. It should be noted that satisfaction/attraction and commitment are not isomorphically related. High investments and/or poor alternatives may sometimes serve to "trap" the individual in an unhappy, unsatisfying relationship—commitment may be high while satisfaction and attraction are low.

Although the investment model is a new means of formally distinguishing between the concepts of satisfaction/attraction and commitment, similar concepts have been introduced in the past by other social scientists. The reward/cost (outcome value), comparison level, and alternative value parameters are borrowed directly from interdependence theory (Thibaut & Kelley, 1959; Kelley & Thibaut, 1978), although the explication of their effect on commitment is new to the investment model. Becker (1960) discussed a notion similar to the concept of extrinsic investments when he argued that one of the primary aspects of commitment was "prior actions of the person staking some originally extraneous interest on his following a consistent line of activity" (Becker, 1960, p. 36). An identical factor was identified by Schelling (1956), who referred to extrinsic investments as a "side bet." Rubin (Note 1) introduced the notion of "entrapment," which is closely related to the concept of commitment. Entrapment refers to the investment of greater resources (e.g., time, energy, money) than an exchange objectively warrants. The process of entrapment directly parallels that of increasing commitment through intrinsic investments, as discussed in the investment model. Finally, Blau (1967) captured much of the content of the investment model when he argued that:

"... Alternative opportunities foregone strengthen commitments, and together with the investments made sometimes produce firm attachments." (Blau, 1967, p. 160).

Thus, although the investment model is a new approach to the study of interpersonal relationships, its basic concepts are firmly rooted in existing psychological and sociological literature.

An experiment and a cross-sectional survey questionnaire were designed to examine the effects of variations in relationship outcome value, alternative outcome value, and investment size on commitment and satis-

faction in romantic associations.¹ In the first experiment, subjects were asked to place themselves in the position of the major character in a written scenario, and to answer a number of questions concerning their probable behavior, the value of the relationship with their partner, their attraction to and satisfaction with both the current relationship and the alternative, and their commitment to the current relationship. The second experiment was a survey of individuals who were involved in ongoing romantic associations. These subjects answered questions related to a number of parameters of the investment mode. Multiple regression procedures were employed to determine the extent to which the model parameters accurately predicted their degree of commitment to and satisfaction with the relationships in which they were involved. Together, the two experiments provide a good test of the predictive ability of the investment model, since the strengths of one method correspond to the weaknesses of the other. The experiment is highly controlled and clearly demonstrates causal relations, while the survey possesses greater real-world validity.

EXPERIMENT 1

Experiment 1 examined the effects of relationship outcome value, intrinsic and extrinsic investment size, and alternative outcome value on satisfaction/attraction and commitment in romantic associations. Since it is both unethical and nearly impossible to manipulate these factors systematically in real, developing relationships, these variables were manipulated in a role-playing paradigm. The use of role-playing as an experimental method is not completely satisfactory (Cooper, 1976; Darroch & Steiner, 1970; Freedman, 1972), but is generally seen as enlightening when used in combination with other forms of experimentation (Freedman, 1972) or when appropriate as a complement to standard experimental methods (Cooper, 1976).

Each participant read a role-playing essay that described the major character's dilemma—should he/she remain in the current romantic association or begin to date an alternative person? It was predicted that decreases in the costs associated with the current relationship, increases in intrinsic and extrinsic investment size, and decreases in the quality of the alternative would lead to decreases in the probability that the participant would choose to date the alternative and increases in reported commitment to the current relationship (see Eq. [5]). Satisfaction with and attraction to the current relationship were expected to be significantly

¹ No attempt was made to measure *CL* in these experiments because of the intimate connection of respondents' reports of reward and cost values with their general expectations (most people cannot separate what exists objectively from what they expect in general). However, when *CL* is experimentally varied, it does significantly affect satisfaction with outcomes.

affected by variations in the outcome value of the current association, but not by investment size or alternative outcome value (Eq. [2]).

Method

Participants. Eighty-two males and 89 females participated in the experiment in partial fulfillment of the requirements for an introductory psychology course at the University of North Carolina at Chapel Hill. Fourteen to twenty-two participants were present in each experimental session, and the ratio of males to females was approximately equal across experimental conditions.

Procedure. Upon arrival at the experimental session, participants were seated at tables and were given essay booklets and questionnaire materials. The experimenter administered verbal instructions outlining the experimental task. Each participant was asked to place him/herself in the position of the major character of the four-page essay (Robert for male participants, Sarah for females), imagining that person's feelings, attitudes, beliefs, and behavior. Participants were to try to imagine they were experiencing the situations the fictional character experienced and behaving as the essay character behaved, forgetting their own attitudes and characteristics manners of behaving.

Each essay began with a brief description of the character to be role-played by the participant. Male and female essays were identical except for changes in the sex of the major character, current partner, and alternative person. In females' essays, the protagonist (Sarah) was described as a typical 21-year-old junior at the University of North Carolina. Sarah had met Robert, her current romantic partner, at work through her employer (Robert's father), and had dated him for a specified period of time. Robert had recently moved some distance away from Sarah for academic reasons, and the two were now able to see one another less often than they had previously. John, an alternative who was interested in dating Sarah, then entered the scene. Sarah had to decide whether to remain in the current relationship or begin dating the alternative.

The experiment effected four independent variable manipulations: relationship cost (high or low), alternative outcome value (high or low), investment size (high, medium, or low), and sex of participant. *Relationship cost* was manipulated through changes in the difficulty of maintaining the relationship. In the high cost condition, Robert had moved 1000 miles away and he and Sarah were able to see one another only once a month, and in the low cost condition, he had moved 60 miles away, enabling one or two visits per week. *Alternative outcome value* was manipulated through variations in John's intelligence, personality, physical attributes, and wit, producing a moderately attractive or a moderately unattractive alternative. The third independent variable manipulation effected variations in both intrinsic and extrinsic investment size, and therefore had three levels. In the small investment condition, Sarah had dated Robert for 1 month prior to his move, and in the medium investment condition they had been dating one another for 1 year. A comparison of these two conditions, therefore, tests the effects of the intrinsic investment in the relationship of time. The large investment condition was similar to the medium in that the two had dated for 1 year, but an extrinsic investment was added—if Sarah were to begin dating the alternative, her employer, Robert's father, would know and she would feel compelled to quit her job. A comparison of the medium and large investment conditions, therefore, tests the effects of the extrinsic investment in the current association of the essay character's job.

After reading the essay as many times as was necessary to achieve complete familiarity (this required approximately 15 min), participants placed their essays face down and proceeded to complete their experimental questionnaires. Nineteen nine-point semantic-differential items were designed to measure participants' judged satisfaction with and commitment to the current association, and to assess the effectiveness of the experimental manipulations. Manipulation checks and dependent variables were assessed in a single random order that was constant over questionnaires. Two items served as checks on the

intrinsic investment size manipulation (current relationship is very long/short in duration, time investment is very small/large), three served as checks on the extrinsic investment size manipulation (job is extremely/not at all important and connected to current relationship, investment of job in relationship is very small/large), four items assessed the effects of the partner costs manipulation (partner's move is extremely/not at all distant, frequency of visits is likely to be very large/small, current association is extremely/not at all difficult and costly), and five items were designed to evaluate the success of the manipulation of alternative outcome value (the alternative is extremely/not at all intelligent, witty, and physically attractive, his/her personality is extremely/not at all pleasant, dating him/her would be extremely/not at all pleasant). Participants also answered two questions concerning satisfaction with the current association (I am not at all/extremely satisfied, attracted to relationship), and three related to commitment (it is extremely/not at all likely that I will begin dating the alternative, I am not at all/extremely attached and committed to the current relationship). After completing the questionnaire, participants were thoroughly debriefed, thanked, and excused.

Results

Manipulation checks. The set of manipulation checks associated with each independent variable was subjected to a three-factor nonorthogonal multivariate analysis of variance involving relationship costs, alternative value, and investment size (Appelbaum & Cramer, 1974). Compared to participants in the low cost condition, participants in the high cost condition reported that the relationship was more "costly," that the partner had moved a greater distance, that they could see one another less frequently, and that the relationship had become more difficult (Mult. $F(4, 156) = 745.23, p < .001$). Participants in the high alternative value condition judged their alternative to be more intelligent, physically attractive, and funny, to have a more pleasant personality, and guessed that dating him/her would be more enjoyable, than did participants in the low alternative outcome value condition (Mult. $F(5, 155) = 76.43, p < .001$). Two contrasts assessed the effectiveness of the investment size manipulations. A contrast of the low and medium investment conditions tested the effectiveness of the intrinsic investment manipulation on measures of subjective duration and size of time investment in the relationship. The two conditions differed as expected (Mult. $F(2, 158) = 173.91, p < .001$). The contrast of the medium and high investment conditions on measures of the importance and connectedness of the job to the current partner and the investment of the job in the current relationship also revealed a significant effect (Mult. $F(3, 157) = 82.33, p < .001$). Sex of essay character/participant did not significantly affect any set of manipulation checks. Thus, the experimental manipulations appear to have been successful.

Commitment. Three questionnaire items served as measures of commitment: how likely is it that you will begin to date John/Lisa, how attached are you to your relationship with Robert/Sarah, and how committed are you to your current relationship? These data, for the three

TABLE 1
MEAN COMMITMENT FOR EACH EXPERIMENTAL CONDITION

	High cost		Low cost	
	Poor alternative	Good alternative	Poor alternative	Good alternative
Low investment size	17.13	15.14	18.29	15.87
Medium investment size	18.15	16.36	19.69	15.79
Large investment size	18.93	17.43	19.80	18.15

Note: Values shown are the sum of the means of the individual dependent measures. Higher numbers indicate less likelihood of leaving the relationship, greater commitment, and greater attachment.

measures combined, are summarized in Table 1. A three-factor multivariate analysis of variance was performed on the commitment dependent variables. It was expected that variations in costs, alternative value, and intrinsic and extrinsic investments would significantly affect commitment (see Eq. [5]). Participants in the low cost condition reported that they were less likely to date the alternative and were more attached and committed to their relationships than were those in the high cost condition, but this effect was not significant (Mult. $F(3, 154) = 1.96, p < .12$). Low alternative outcome value led to greater reported attachment and commitment and less probability of dating the alternative than did high alternative outcome value (Mult. $F(3, 154) = 13.74, p < .001$). The main effect of investment size on the commitment measures was significant (Mult. $F(6, 308) = 2.79, p < .01$), so specific contrasts were performed in order to explore the independent effects of intrinsic and extrinsic investments. The contrast of the low and medium investment size conditions revealed that larger intrinsic investments produced greater commitment and attachment and less likelihood of dating the alternative (Mult. $F(3, 154) = 3.50, p < .02$). A similar effect was obtained for extrinsic investments, tested by the contrast of the medium and large investment conditions (Mult. $F(3, 154) = 4.51, p < .005$). Sex of participant had no significant effect on the commitment measures, and there were no significant interactions. These multivariate analyses indicate that both alternative value and investment size significantly affect commitment. The three measures of commitment were similarly affected by the independent variable manipulations, greater commitment resulting from poorer alternatives, larger intrinsic investments, and larger extrinsic investments. Increases in costs resulted in decreased commitment, but this effect was not statistically significant.

Further analyses were performed in order to determine why the manipulation of relationship cost failed to affect commitment significantly.

Composite values for relationship cost value, alternative value, investment size, and commitment were formed by summing reported values on the individual measures of each concept. The multiple regression of relationship cost, alternative value, and investment size onto commitment was significant ($R = .52, p < .001$), and reduced models (eliminating one or more predictor variables) were less powerful. The cost variable, however, was only weakly related to commitment. The fact that the regression of cost value onto commitment revealed a significant relationship while the analysis of variance reported above did not suggest that the manipulation of costs was either weak or produced inconsistent effects across participants. However, even in the regression analyses, relationship cost was at best only weakly related to commitment. Thus, except for the weak effects of cost on commitment, these data are in agreement with the hypotheses.

Satisfaction. The investment model predicts that increases in the costs of a relationship should result in decreased attraction to and satisfaction with that relationship (refer to Eq. [2]). A three-factor nonorthogonal analysis of variance performed on the measures of satisfaction with and attraction to the current relationship revealed a significant main effect of relationship cost (Mult. $F(2, 158) = 3.82, p < .02$). Participants in the low cost condition were more satisfied with their relationships than were those in the high cost condition (the means were 4.44 and 3.99, $F(1, 157) = 4.25, p < .04$), and were more attracted to their current associations (the means were 4.58 and 4.30, $F(1, 157) = 7.04, p < .009$). As expected, the correlation between satisfaction/attraction and commitment was weak ($R = .24, p < .001$). The sex of participant, investment size, and alternative outcome value variables did not significantly affect satisfaction and attraction. These results provide good support for the prediction concerning the determinants of satisfaction (see Eq. [2]).

EXPERIMENT 2

The second experiment explored the ability of several parameters of the investment model to predict commitment and satisfaction in real, ongoing associations. Values of each parameter of the investment model were measured in a survey questionnaire. The reward and cost components of relationship outcome value were measured separately in this experiment because of the weak effects of the cost manipulation in Experiment 1. In light of that problem it seemed useful to obtain measures of both components in this experiment. The adequacy of the investment model in predicting commitment to and satisfaction with current relationships was examined through the use of multiple regression procedures. The best predictions of satisfaction/attraction and commitment should follow the equations presented in the introduction of the paper (Eq. [2] for satisfaction and Eq. [5] for commitment).

Method

Respondents. Fifty-eight male and 53 female students from the University of North Carolina at Chapel Hill participated in the study in partial fulfillment of the requirements for an introductory psychology course. The participant recruitment sheet provided a brief explanation of the study and a description of the type of relationship to be explored (of any duration and degree of "seriousness," ongoing or past) in order to make certain that all respondents would be capable of completing the questionnaire. Approximately 12 participants attended each session.

Procedure. Upon arrival at the session, respondents received verbal instructions outlining the purpose and nature of the questionnaire and were assured that their responses would be completely anonymous. The experimenter stated that she was interested in examining the course of development of romantic relationships, and announced that respondents would be asked to answer a number of questions concerning a romantic association in which they had at some time been involved. She asked that respondents describing past relationships discuss one in which the dissolution of the relationship occurred as a result of their own actions or was agreeable to them. Respondents describing ongoing relationships were asked to respond with respect to how they felt at present about their relationships, while those describing past relationships were to respond with respect to how they felt about their relationships at the time they ended. The partner was to be referred to as "X," and respondents were asked to make an active effort to be honest in completing the questionnaire items. Materials were then distributed and respondents proceeded to complete the experimental questionnaires. The questionnaire required approximately 30 min to complete.

Questionnaire. The questionnaire contained items designed to measure relationship outcome value (both rewards and costs), alternative outcome value, investment size, satisfaction, and commitment. Since it was anticipated that respondents would not easily be able to answer questions such as "what is the outcome value of your best available alternative," the parameters of the investment model were "translated" into the language of everyday relationships, specifically, (1) each parameter was briefly defined, (2) a series of questions representing concrete operationalizations of each parameter were answered, and (3) several estimates of each model parameter were then obtained. Values of the single estimates for each predictor variable and criterion measure were summed to form a single index of each investment model parameter. Unless otherwise indicated, questionnaire items were nine-point semantic differentials, and end anchors were "extremely/not at all," "none/many," or "very small/large."

The *reward value* of the relationship (reward component of O_X) was defined for respondents as the extent to which they believed their relationships possessed good attributes and their partners had positive qualities and traits. Eight concrete measures were designed to assess physical attractiveness, complementary needs, similarity of attitudes and background, personality pleasantness, intelligence, sense of humor, ability to coordinate activities, and sexual satisfaction. In addition, two parameter estimates concerned the extent to which their relationships were rewarding and compared favorably to their ideal relationships.

The *cost value* of the relationship (cost component of O_X) was defined as the extent to which respondents believed their relationships had bad attributes and their partners had negative qualities and traits. Nine concrete measures assessed giving up enjoyable activities, monetary costs, time constraints, embarrassing behaviors, unattractive and persistent personal qualities, unattractive and persistent attitudes, failure to live up to agreements, conflict, and lack of faithfulness. Two parameter estimates evaluated the extent to which it was costly to maintain a relationship with X and compared the costs of that relationship to those they felt were normally associated with relationships.

Alternative outcome value (A_Y) was defined as the quality of the best available alternative to the current relationship—beginning a relationship with another person, dating several

other people, or spending time alone. Five concrete measures assessed the attractiveness of alternative persons, difficulty of replacing X , how appealing dating many persons would be, importance of any sort of exclusive romantic involvement, and their happiness when not involved in a romantic association. The parameter estimates concerned degree of expected satisfaction of the alternative, a comparison of the alternative to the respondent's ideal, and a comparison of the alternative to the current relationship. Respondents made these parameter estimates in an abstract sense, without being required to state whether their best alternative was solitude or an alternative association.

Investment size (I_X) was defined for respondents as the extent to which: (1) they had "put things into" their relationships; and (2) there were objects/events/persons/activities uniquely associated with their relationships. Three fill-in concrete items concerned the duration of the relationship, the number of hours per week on the average spent with the partner, and the number of children born of the relationship. Eight concrete measures concerned degree of exclusiveness of the relationship, mutual friends, shared memories, monetary investments, shared material possessions, activities uniquely associated with X , emotional investments, and self-disclosures. Three parameter estimates assessed the extent to which there were important objects/persons/events/activities connected to the relationship, measured the size of the respondent's investment in the relationship, and evaluated the importance of the relationship with X , considering investment size.

Only parameter estimates of the criterion variables of *satisfaction* (SAT_X) and *commitment* (COM_X) were obtained. Four satisfaction measures were designed to assess respondents' attraction to their relationships, positivity of feelings for their partners, satisfaction with their relationships, and closeness of their relationships to their ideals. Six commitment criterion measures assessed the likelihood that respondents would end their relationships in the near future, probable duration of their relationships (very long/short), desired duration of their relationships (very long/short), commitment to their relationships, required attractiveness of alternatives before they would leave their relationships, and degree of attachment to their relationships.

Results

Parameter estimate reliability. In order to obtain estimates of the reliability of the parameter estimates, the set of concrete measures associated with each parameter was regressed onto the parameter estimate. These multiple regressions were significant for reward value ($R = .70, p < .001$), cost value ($R = .42, p < .001$), alternative value ($R = .61, p < .001$), and investment size ($R = .56, p < .001$), so the parameter estimates were judged to be reliable. It should be noted, however, that the multiple correlation onto relationship cost value was low (.42). The estimate of cost value may, therefore, have been somewhat unreliable.

Satisfaction. The model testing methods employed to assess the predictive ability of the investment model follow the step-down regression procedures outlined by Cramer (1972). Recall that according to Eq. [2], satisfaction with a relationship should be best predicted by relationship outcome value, a combination of rewards and costs, and that alternative value and investment size should not contribute to this prediction significantly. Judged satisfaction with relationships was significantly correlated with both relationship reward value ($R = .66, p < .001$) and cost value ($R = .17, p < .001$). Multiple regression analyses indicated that both

of these factors contributed significantly to the prediction of satisfaction ($R = .68, p < .001$). The deletion of either variable from the regression formula resulted in a significant reduction in predictive ability, and the addition of other variables (alternative outcome value or investment size) did not significantly improve its prediction.

Commitment. According to Eq. [5], commitment to relationships ought to be best predicted by a combination of relationship outcome value, alternative value, and investment size. This experiment provides direct measures of alternative value and investment size, and relationship outcome value is best approximated by either the satisfaction measure or the relationship reward and cost measures. Regression of satisfaction/attraction to current relationships, alternative value, and investment size onto the commitment measure yielded a significant multiple correlation ($R = .78, p < .001$). Deletion of any variable (or pair) from the full investment model produced a significant reduction in predictive power. Predictions of commitment from satisfaction/attraction alone were significantly less accurate ($R = .65$) than were predictions based on the full model described by Eq. [5] ($F(2, 107) = 24.52, p < .01$).

The contributions of relationship reward and cost values to the prediction of commitment were also explored. Commitment was significantly predicted by the four parameter model consisting of relationship reward and cost values, alternative outcome value, and investment size ($R = .61, p < .001$). Comparisons of this full model to reduced models resulted in significant reductions in predictive power, although the reduction resulting from elimination of the cost variable was minimal (.03 of the variance). Thus, the simplest and most parsimonious prediction of commitment follows from the full investment model—relationship value (rewards and costs), alternative value, and investment size, with the qualification that the contributions of relationship cost, although statistically significant, were weak.

DISCUSSION

The primary goal of the present experiments was to assess the adequacy of the investment model in predicting commitment and satisfaction/attraction in ongoing associations. In Experiment 1, decreases in relationship cost value increased perceived satisfaction with an ongoing association, and in Experiment 2, relationship reward value and relationship cost value were both related to satisfaction. These findings are consistent with the investment model. With respect to the prediction of commitment, Experiment 1 demonstrated that an attractive alternative decreased perceived commitment, and increases in both intrinsic and extrinsic investments increased perceived commitment. However, decreases in relationship costs had at best a weak effect on commitment. A similar pattern of results was observed in Experiment 2, where commit-

ment was best predicted by a model including relationship reward and cost values, alternative outcome value, and investment size, but where cost contributed only weakly to these predictions.

The results of the two experiments are thus consistent. Moreover, except for the weak effect of relationship cost on commitment, the results are in complete agreement with the proposed investment model. The romantic ideal that one accepts a mate "for better or worse" may prevent individuals from admitting that they become less committed to another as the costs of doing so increase. However, in recent research (Rusbult, Note 2; Farrell & Rusbult, Note 3) it was found that relationship cost value (along with the other investment model parameters) *did* predict commitment in friendships and business associations, where the romantic ideal does not apply. Although this line of reasoning provides a reasonable *post hoc* explanation for these findings, it may alternatively be that the weak effect of costs is accounted for by poor measurement in Experiment 2, a weak manipulation in Experiment 1, or more general problems with the investment model. These issues must be resolved in future research.

These experiments provide relatively strong support for the investment model. Satisfaction with and attraction to a relationship is a simple function of the rewards and costs (or outcome value) associated with the relationship. An individual's commitment to another, however, cannot be viewed as a simple function of degree of satisfaction with the relationship, nor does it result from a straightforward evaluation of the relative merits of partner and alternative. The magnitude of an individual's investment in a relationship, along with relationship outcome value and alternative outcome value, is a powerful determinant of the stability of that relationship.

The present experiments have demonstrated the utility of the investment model in predicting commitment and satisfaction/attraction in ongoing associations. The model extends our knowledge of interpersonal relationships by focusing on the determinants of both satisfaction and commitment in relationships that are of a greater duration and degree of involvement than are those explored in most interpersonal attraction research. It goes beyond traditional theories of attraction (Clore & Byrne, 1974; Newcomb, 1968) by exploring the determinants of commitment, an aspect of relationship stability, along with the more traditional issue of positivity of affect (satisfaction/attraction). Whereas Altman and Taylor's (1973) social penetration theory focuses largely on self-disclosures (with some reference to anticipated rewards and costs) as the cause of increasing intimacy, this model deals with a broad range of specific variables that may be subsumed under the more general investment model parameters. While the Levinger and Snoek (1972) model of relationship growth is mainly descriptive, the investment model is highly formalized and predictive in nature. In addition, the investment model extends and formalizes some basic variables of interdependence theory,

one of the few general theories of social behavior, and adds to that theory the concepts of investments and commitment. The model is logically consistent, agrees with existing data, is simple, and has a broad range of applicability (it has also been shown to predict satisfaction, commitment, and "turnover" in business associations and in friendships) (Rusbult, Note 2; Farrell & Rusbult, Note 3). There exists a clear potential for applying the model to other issues in the study of interpersonal relationships.

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