Using a Bonding Motivation Model to Predict Relationship Stability

A Working Paper

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Introduction

In this Working Paper, I present a theoretical model of the bonding affects that motivate intimate relationships and then test that model, using data from a longitudinal study of 268 young, heterosexual couples in a committed relationship. The model is described in the theoretical framework section, drawing upon my previous writing. I will not cite references in that discussion, but readers interested in supporting literature will find it in the following two references that are available by clicking on the TFRI Publications button at www.tfri.org.

Miller, W.B. & Rodgers, J.L. (2001). The Ontogeny of Human Bonding Systems: Evolutionary Origins, Neural Bases, and Psychological Manifestations. Boston: Kluwer.

Miller, W.B. (2004). Affiliative and sexual bonding in adult relationships: A biopsychodyadic framework. Downloadable unpublished paper.

In the methodology section I describe data collected for a research project on unwanted pregnancy in low-income couples and then report on data analysis procedures. The data examined for the study reported in this paper constitute a small part of this much larger project, which is described in the following report:

Miller, W.B. (2009). Unintended pregnancy in low-income couples: Report on phases I and II data analyses. Report to the National Campaign to Prevent Teen and Unplanned Pregnancy.

This Working Paper concludes with a presentation of the results of data analysis and a discussion of the implication of these results for the validity of the theoretical model.

Theoretical Framework

I theorize that personal relationships, including especially those that are intimate, romantic, and sexual, are made possible by bonding schemas that are inherited by the individual in a pre-adapted form and then shaped by relationship experiences during childhood development and early adult life into bonding schemas that promote affiliation and mating. Such general purpose schemas interact with any new partner to produce a dynamic set of perceptions, feelings, memories, and evaluations that together constitute a

bonding schema that is specific to the new partner. A similar process occurs in the partner and the two specific schemas then interact in the production of bond-related behaviors that are characteristic of the relationship between these two partners.

The effect of a specific bonding schema on its relevant relationship may be formulated in terms of the TEIB framework as follows: individual bonding traits – i.e., general dispositions that determine how individuals tend to bond within relationships – affect the motivational states that are associated with each specific relationship. These states include the emotions aroused in the individual by that relationship and his or her intentions with respect to the formation, maintenance, and dissolution of that relationship. These states in turn affect bond behaviors, such things as listening empathically to, expressing affection for, and accepting differences with the partner and these behaviors, in turn, affect the strength of the bond between the two partners.

Figure 1 uses the general ideas presented above to represent an individual level model of the affiliative predictors of stability in a loving relationship. Affiliative bonding traits, which include dispositions such as warmth, trait anxiety, agreeableness, and aggression, are shown in the figure as predictors of the intimate state that I call feelings of emotional closeness with the partner. Such feelings, which are produced by relationship reciprocity between the partners, consist of the feelings of affection, connectedness, and closeness that are experienced by two people in a loving relationship. Bonding traits are also shown in the figure as predictors of the antagonistic state that I call experience of conflict with the partner. This experience, which is produced by conflicts of interest between partners, is a second important factor affecting the course of a loving relationship.

The next step in the sequence of states represented in Figure 1 is the emotional state called relationship satisfaction, which refers to the individual's sense of fulfillment in the relationship based on the accumulated net of positive and negative experiences. A number of observers have concluded that there are orthogonal positive and negative dimensions of relationship satisfaction and that each contributes separately to overall satisfaction. The concept of satisfaction also contains an implicit reference to some standard or expectation, either an internal one, such as an ideal level of satisfaction, or an external one, such as what level of satisfaction the individual perceives to be

attainable.   As shown in Figure 1, satisfaction probably serves as a major motivator of commitment along with closeness and conflict, each of which are shown as having both a direct effect on commitment and an indirect effect through satisfaction.

Commitment is another construct widely used in relationship research and has been consistently found to have positive effects on relationship stability, even when a number of other interpersonal variables such as relationship length, intimacy, satisfaction, and the availability of alternative relationships are controlled. Commitment, which has personal, structural, and moral components, reflects the strength of someone's determination, that is to say their intention to continue a relationship. In the model shown in Figure 1, it is a major predictor of relationship stability, along with feelings of closeness and the experience of conflict.

Based on Figure 1, and taking into consideration the data available for the current study, I have constructed a hypothesized model, which is shown in Figure 2. Because of limitations in the data, only the emotional and intentional states of the theoretical model are included, predicting the outcome variable of relationship stability. Separate measures of positive and negative relationship satisfaction are available in the data and these are included in the hypothesized model, connected by a correlation. For the sake of simplicity, I will not attempt to model the relationship between emotional closeness and experience of conflict. As a result, these two are shown connected by a correlation.

Methodology

Sample

Our sample consisted of 268 low income couples who were recruited from family planning clinics in the area of San Jose, California, where they had gone in search of contraceptive services. Only couples who had been in a committed relationship for at least 6 months and where both members were at least 18 years of age were recruited into the study. Around the time of their clinic attendance, individual males and females were interviewed separately about the nature of their relationship and about various aspects of their family planning and reproductive experiences, motivations, and goals. Each

respondent was then individually re-interviewed six months and again twelve months later about the presence or not of changes in their relationship status and their contraceptive practices.

In Table 1, I show frequency counts of selected demographic characteristics of the sample. Additional characteristics of males and females included the following: mean (standard deviation) age were 26.2 (6.4) and 24.7 (5.6) years; mean (standard deviation) relationship length was 38.0 (28.6) and 37.6 (28.7) months; and, mean (standard deviation) annual employment income was 20.6 (17.1) and 12.27 (9.0) thousand dollars. The couples reported having a mean number of 0.88 children at home. Overall, the sample may be described as youths and young adults in established relationships who were predominantly unmarried and cohabiting, less than college educated, of low income, and of diverse racial and ethnic background.

Measures

All five of the predictor variables used in our model are psychological state variables that reflect selected, theoretically-based affective responses of the individuals in our sample to their current relationship. Five psychological state measures that reflect aspects of the respondents' current intimate relationship were selected on the basis of our hypothesized model for inclusion in the study as predictor variables. Tables 2 and 3 give either response categories and frequency counts or descriptive statistics for these five interview-based variables.

Table 4 gives the response categories for the two principle outcome variables that reflect the stability of the couples' relationship during the one year follow up period. Because 75 of the 268 couples (28%) were lost to follow up for at least one of the two follow up interviews, there is some uncertainty about the relationship status of an appreciable fraction of the initial sample at the end of 12 months. In order to address this problem, I created two follow up variables, Separated1 and Separated2. Both were initially coded into three categories as follows: all couples who had separated by the 6 month follow up were coded as 1, all couples who had separated only by the 12 month follow up were coded as 2, and all remaining couples were coded as 3. This gave two

ordinal variables, with a higher score representing greater couple stability. However, a drawback of this variable design is that all couples lost to follow up are coded as 3. Therefore in the definition of Separated1, I declared all 50 couples for whom there was no information about their relationship status from both of the two follow up interviews as missing. Because this design still allowed the 25 couples who were still together at 6 months but lost to follow up at 12 months to be included and coded as 3, in the definition of Separated2 I declared these 25 couples to be missing as well. The net result of these steps was that Separated1 was less conservative than Separated2 with respect to mistakenly counting couples lost to follow up only at 12 months as having maintained their relationships. On the other hand, Separated1 was more inclusive with repect to sample size.   Both of these outcome variables will be tested in the hypothesized model.

Analysis

I estimated the hypothesized model shown in Figure 2 using the linear structural equation capabilities of LISREL. I analyzed a single covariance matrix, with all six variables located in the beta (endogenous variable) matrix. In addition to estimating the hypothesized predictive relationships shown in the figure, I estimated the correlations between the two relationship satisfaction variables and between the emotional closeness and the experience of conflict variables in the psi matrix. Because of the missing values in the relationship outcome variables, the covariance matrices used in the LISREL analyses were based on the pair-wise missing option.

I analyzed the male and female groups separately, beginning with the null hypothesis of no difference across groups. This meant that I constrained all prediction parameters to be equal across groups unless relaxing one or more constraints improved overall model fit. I used modification indices (M.I.s) as guides to the location of model strain, iteratively relaxing the constraint associated with the largest M.I. one at a time until no further significant improvement could be achieved. I then dropped any non-significant pathways and added any new pathways where M.I.s suggested doing so would improve model fit. The analysis proceeded in this manner until a final best fitting overall model was achieved.

Once a satisfactory model had been constructed using Separated1 as the relationship outcome variable, I replaced it in the obtained model with Separated2 as the outcome variable. I then examined the resulting model's goodness of fit indices and compared them with those f the Separated1 model.

Results

The structural equation model obtained with the Separated1 variable is shown in Table 5. Included are the unstandardized and the standardized parameter estimates, together with their associated t values, for all prediction pathways. Also included are the R^2s for all the outcome variables in the model. The standardized estimates (t values) of the correlations between the two relationship satisfaction variables and between the emotional closeness and the experience of conflict variables were -.23(-7.28) and -.30(-6.59), respectively. The goodness of fit for the model was good. With 19 degrees of freedom, the Chi-square was 20.39 with a p value of 0.37 and the root mean square error of approximation was 0.011 with a p value of 0.95. The fit statistics for the model using Separated2 as the relationship outcome variable were comparable. With 19 degrees of freedom, the Chi-square was 21.69 with a p value of 0.30 and the root mean square error of approximation was 0.019 with a p value of 0.94.

For purposes of comparison of the Separated1 model with the hypothesized model, these results are also sown in a visual form in Figure 3. This presentation facilitates identifying which hypothesized prediction pathways were confirmed in the model, which ones were not confirmed, and what new pathways were identified. The model obtained with Separated2 as the relationship outcome variable contained only trivial differences in the S.P.E.s compared with the model shown in Figure 3.

Discussion

There are a number of noteworthy conclusions that may be drawn from the modeling results. First, the great majority of the pathways that were hypothesized to lead from relationship motivations to relationship stability were confirmed. This result

supports the validity of the motivational model and its components. Second, the direct path from emotional closeness to separation was not observed, perhaps because of the unanticipated pathway from closeness to commitment. In fact, all the effects of emotional closeness on relationship stability act indirectly through positive satisfaction and relationship commitment. Third, the direct pathways from negative satisfaction to commitment and to separation also were not observed. It may be that negative relationship satisfaction simply does not have the power to affect relationship stability, or it may be that the measure of negative relationship satisfaction used in this study was not a good one for predicting a stability outcome. Fourth, given the strong direct effect that experience of conflict has on separation and considering the theme of separation in the experience of conflict measure (see Table 4), it seems quite possible that this direct effect indicates that previous conflict to the point of separation forecasts later separation. Fifth, given the indirect effect that experience of conflict has on separation through positive satisfaction and considering the relative importance in the model of positive satisfaction relative to negative satisfaction, it seems that the positive aspects of relationships may have greater weight in determining relationship stability. Sixth and finally, there are no gender differences in either the prediction pathways or the size of pathway parameter estimates. This suggests that the relationship motivations captured in the model and the processes that are hypothesized to result in separation are closely similar for males and females, at least for the modest amount of relationship stability variance accounted for in the current study.

Conclusion

The results of this small study suggest that the model of relationship motivations used to predict relationship stability is a valid one. It may, therefore, be capable of providing interesting insights into a variety of health-related couple behaviors, including behaviors related to family planning and the transmission of sexually transmitted infections. Future work in these two areas should be undertaken to confirm this conjecture. It will also be of interest to see if greater predictive strength can be gained with the inclusion of bonding traits as predictors in the model.

Table 1. Frequency Counts of Selected Categorical Demographic Variables, Separately by Gender

Variable	Males (N = 268)		Females (N = 268)	
Category	Frequency	Column %	Frequency	Column %
Marital Status				
1 Never Married	176	65.67	176	65.67
2 Currently Married	66	24.63	66	24.63
3 Common Law	1	0.37	0	0.00
4 Separated	8	2.99	7	2.61
5 Divorced	17	6.34	18	6.72
6 Widowed	0	0.00	1	0.37
Cohabitation				
1 No	69	25.75	70	26.12
2 Sometimes	13	4.85	12	4.48
3 Yes	186	69.40	186	69.40
Education				
1 <12 Years	42	15.67	31	11.57
2 12 Years	90	33.58	88	32.84
3 13-15 Years	86	32.09	102	38.06
4 16 Years	50	18.66	47	17.54
Employment Status				
1 Not in the Labor Force	13	4.85	37	13.81
2 Unemployed	48	17.91	71	26.49
3 Employed	202	75.37	160	59.70
Religion				
1 Protestant	48	17.91	64	23.88
2 Roman Catholic	79	29.48	84	31.34
3 Other	39	14.55	39	14.55
4 None	102	38.06	91	33.96
Race/Ethnicity				
1 African American	56	20.90	52	19.40
2 Hispanic American	87	32.46	93	34.70
3 European American	103	38.43	93	34.70
4 Other	22	8.21	30	11.19

Table 2. Frequency Counts of two Psychological State Variables Related to Current Relationship, Separately by Gender

Variable	Males (N = 268)		Females (N = 268)	
Category	Frequency	Column %	Frequency	Column %
Feelings of Emotional Closeness				
1 = None	1	0.37	0	0.00
2	0	0.00	0	0.00
3	1	0.37	3	1.12
4	0	0.00	1	0.37
5	5	1 87	4	1.49
6	9	3.36	5	1.87
7	27	10.07	29	10.82
8	53	19.78	51	19.03
9	52	19.40	67	25.00
10 = Maximum Closeness	120	44.78	188	40.30
Feelings of Commitment				
1 = None	0	0.00	0	0.00
2	1	0.37	0	0.00
3	0	0.00	1	0.37
4	2	0.75	1	0.37
5	0	0.00	1	0.37
6	3	1.12	3	1.12
7	10	3.73	16	5.97
8	44	16.42	23	8.58
9	49	18.28	44	16.42
10 = Maximum Closeness	159	59.33	179	66.79

Table 3. Descriptive Statistics for Psychological State Variables Related to Current Relationship, Separately by Gender

Variable Category

Specific Variable	Males (N = 268)				Females (N = 268)			
	Mean	S.D.	Range	N	Mean	S.D.	Range	N[1]
Current Relationship								
Experience of Conflict[2]	-0.03	0.97	-.8 – 2.9	268	0.03	1.03	-.8 – 2.9	268
Positive Satisfaction[3]	10.07	1.94	0 – 12	268	10.08	1.94	0 – 12	268
Negative Satisfaction[3]	5.43	3.08	0 – 12	268	5.43	3.30	0 – 12	267

[1] A discrepancy between the gender-specific N of an individual trait variable and the overall gender-specific N indicates the number of missing values for that specific variable.

[2] This variable was a principle component of three interview questions asked of respondents: During the past 6 months, have you had any serious conflicts with your partner? During the past 6 months, have you ever given consideration to separation from your partner? During the past 6 months, have you ever actually separated from your partner? Each question had a three point response scale.

[3] These variables were each calculated as the mean score on two questions, each with a seven point response scale. For positive satisfaction the questions were: How enjoyable has your experience with your partner been during the past 6 months? How fulfilling has your experience with your partner been during the past 6 months? For negative satisfaction the questions were: How difficult has your experience with your partner been during the past 6 months? How stressful has your experience with your partner been during the past 6 months?

Table 4. Frequency Counts for Relationship Outcome, Separately by Two Separated at Follow Up Variables

Variable	Separated1 (N = 268)[1]		Separated2 (N = 268)[2]	
Category	Frequency	Column %	Frequency	Column %
Relationship Outcome				
1 = Separated at 6 months	30	13.8	30	15.5
2 = Separated at 12 Months	21	9.6	21	10.9
3 = Not Separated	167	76.6	142	73.6

[1]Of these cases, 50 were lost to follow up at both 6 months and at 12 months.
[2]Of these cases, 50 were lost to follow up at both 6 months and at 12 months and an additional 25 cases were lost to follow up at only 12 months.

Table 5. Structural Equation Model, Showing Unstandardized Parameter Estimates (U.P.E.), Standardized Parameter Estimates (S.P.E.), and T-Values for Prediction Pathways and R^2 for Outcome Variables. N = 536

Outcome Variable

Predictor Variables	U.P.E.	S.P.E.	T-Value	Male/Female R^2
Separated at Follow Up				0.11/0.12
Feelings of Commitment	0.08	0.13	3.00**	
Positive Relationship Satisfaction	0.06	0.15	3.29**	
Experience of Conflict	-0.13	-0.18	-4.14***	
Feelings of Commitment				0.21/0.20
Positive Relationship Satisfaction	0.12	0.21	5.03***	
Feelings of Emotional Closeness	0.27	0.33	7.73***	
Positive Relationship Satisfaction				0.23/0.25
Feelings of Emotional Closeness	0.46	0.33	8.47***	
Experience of Conflict	-0.53	-0.27	-6.95***	
Negative Relationship Satisfaction				0.38/0.41
Feelings of Emotional Closeness	-0.49	-0.21	-6.00***	
Experience of Conflict	-1.69	-0.53	-14.97***	

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