DOCUMENT RESUME

ED 361 399 TM 020 501

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TITLE Lee's Typology of Love Styles: A Confirmatory Factor Analysis of the Hendrick-Hendrick Measure with Implications for Counseling.
PUB DATE Apr 93
NOTE 35p.; Paper presented at the Annual Meeting of the American Educational Research Association (Atlanta, GA, April 12-16, 1993).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Counseling; Factor Structure; Graduate Students; Higher Education; *Love; Matrices; Maximum Likelihood Statistics; *Measures (Individuals); Models; *Test Validity; Undergraduate Students
IDENTIFIERS Confirmatory Factor Analysis; LISREL Computer Program; *Typology of Love Styles (Lee)

ABSTRACT

Love is among the most fundamental aspects of the experience of being human, but measures of perceptions of the experience of love have only recently been explored. One of the most popular measures was developed by C. Hendrick and S. Hendrick. Most previous studies of the measure have used exploratory factor analysis and orthogonal factor rotation. In the present study, confirmatory factor analytic methods were conducted using the LISREL program. Results with 185 undergraduate and graduate students (69.2 percent female, and 83.2 percent non-minority) support a view that a more appropriate model might be a "G," or General factor theory, and a model in which love styles are correlated. Two tables present tests of model fit and items sorted by factor loading. Appendixes contain the variance-covariance matrix, LISREL maximum likelihood estimates and matrices, and modification indices for the factor matrix. (Contains 33 references.) (SLD)

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LEE'S TYPOLOGY OF LOVE STYLES:

A CONFIRMATORY FACTOR ANALYSIS OF THE HENDRICK-HENDRICK MEASURE

WITH IMPLICATIONS FOR COUNSELING

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Paper presented at the annual meeting (session #32.49) of the American Educational Research Association, Atlanta, GA, April 14, 1993.

ABSTRACT

Love is among the most fundamental aspects of the experience of being human, but measures of perceptions of the experience of love have only recently been explored. One of the most popular measures was developed by Hendrick and Hendrick. However, most previous studies of the measure have employed exploratory factor analysis and orthogonal factor rotation. In the present study, confirmatory factor analytic methods were conducted using LISREL. Our results support a view that a more appropriate model might be a "G"- or General factor theory, and a model in which love styles are correlated.

Love is among the most fundamental aspects of the experience of being human. Freud (1924) himself argued that, "A strong ego is protection against disease, but in the last resort we must begin to love in order that we may not fall ill, and we must fall ill if, in consequence of frustration, we cannot love" (p. 42). Sternberg and Grajek (1984) noted that

> Love can be among the most intense of human emotions, and is certainly one of the most sought after. People have been known to lie, cheat, steal, and even kill in its name, yet no one knows quite what it is. (p. 320)

And the nature of love certainly remains of interest to persons other than academics ("Finding Out", 1992).

Unfortunately, previous empirical research provides limited understanding of love phenomena, because historically researchers have "believed that love is too mysterious and too intangible for scientific study" (Wrightsman & Deaux, 1981, p. 170). Initial investigations of love phenomena conducted during the 1940s were "followed by nearly a 20-year period in which there is almost no published evidence of efforts to investigate love phenomena using inventories or paper-and-pencil testing" (Elkins & Smith, 1979, p. 10). Love was not mentioned in the 23 volumes of the Annual Review of Psychology that Curtin (1973) surveyed.

However, as C. Hendrick and S. Hendrick (1986, p. 392) noted, "During the past decade, love has become respectable as an area for study by psychologists." Work by Rubin (1984) and by Tennov (1979) illustrates efforts to develop science in this area of inquiry. Two distinct traditions have emerged in contemporary research regarding love phenomena, as summarized by Thompson and Borrello (1992).

One series of studies of love has been primarily *inductive*, i.e., measurement items have been elaborated based on integrating specific insights and then attempting to delineate theory. One substrand of studies in this genre has utilized the Love Relationships Scale (Borrello & Thompson, 1987, 1989a, 1989b; Thompson & Borrello, 1987a, 1987b). Another substrand of studies has employed the Triangular Love Scale (Sternberg, 1988, pp. 99-100).

A second important series of studies has been *deductively* grounded (Borrello & Thompson, 1990a, 1990b; C. Hendrick & S. Hendrick, 1986, 1990; C. Hendrick, S. Hendrick, Foote & Slapion-Foote, 1984; S. Hendrick & C. Hendrick, 1987; Thompson & Borrello, 1990) in Lee's (1973/1976) typology of love, i.e., the Hendrick-Hendrick measure uses specific items derived from a general theory. This particular general theory posits three primary love styles: (a) **eros**, which is romantic or passionate love, (b) **ludus**, which is game playing love, and (c) **storge**, which is friendship love. Lee suggested that three secondary styles are formed as compounds of the primary styles, but still have their own unique properties and characters: (d) **mania**, which is a compound of ludus and eros, (e) **pragma**, which is a compound of storge and ludus, and (f) **agape**, which is a compound of eros and storge.

The Hendrick-Hendrick measure has become increasingly popular. However, it is not entirely clear that the measure operationalizes a definition of love that social scientists should unequivocably accept.

There is some empirical evidence that a model positing a dominant General or "G"-factor and a few additional nuance factors may be more appropriate. For example, Sternberg and Grajek (1984) report results suggesting that love is a "G"-factor or "Thomsonian" phenomenon (e.g., Sternberg & Grajek, 1984) in which one dimension (apparently involving obsessive thought) dominates meaning. Similar findings have emerged in our previous work (cf. Thompson & Borrello, 1987b) using a measure grounded on Tennov's (1979) work. And findings in some studies (e.g., Thompson, Davenport & Wilkinson, 1992) using multiple measures of love phenomena also suggest the influence of "G"-factor dynamics.

Though there are exceptions (e.g., Borrello & Thompson, 1990a; Thompson & Borrello, 1990), most of the studies involving the Hendrick-Hendrick measure have employed exploratory common factor analysis with rotation to the varimax criterion. In the present study, confirmatory factor analytic strategies (Jöreskog & Sörbom, 1989) were employed to test the fit of models to data from the Hendrick-Hendrick measure. Confirmatory methods are useful in directly evaluating fits of theoretical models to data.

Three *a priori* models were evaluated in the present study. Model 1 posited the six uncorrelated factors (7 items/factor) reported by the Hendricks in their previous work. Model 2 posited the six factors (7 items/factor) reported by the Hendricks, but allowed the factors to be correlated. Model 3 posited five factors that were allowed to be correlated, with Mania and Agape (7 + 7 = 14 items) defining a single "G"-factor. This model was derived based on previous work (e.g., Thompson & Borrello, 1990) suggesting that the Mania and Agape factors are highly correlated and may constitute basically a single dimension that dominates the factor space.

Method

Participants in the study were 185 students enrolled in various undergraduate and graduate classes at a large land-grant university. The mean age was 22.46 (SD=7.39). There were more females (69.2%) than males in the study. Most of the participants were nonminority students (83.2%), though 10 participants were African-American (5.4%), 15 were Hispanic (8.1%), and 6 were members of other minority groups (3.2%). Scores on the 42 C. Hendrick and S. Hendrick (1990) items were collected using a Likert-scale response format.

Results

A host of fit statistics can be consulted to help us evaluate the fit of our definitions to data. These statistics include the LISREL goodness-of-fit index (GFI), the parsimonious GFI (PGFI), the Bentler (1990) comparative fit index (CFI), and the parsimonious CFI (PCFI), among others.

With respect to the relative utility of GFI versus CFI indices, though they are grounded in different theory, they often yield comparable results (Mulaik, James, Van Alstine, Bennett, Lind & Stilwell, 1989). But GFI evaluates fit to both the variances and the covariances of the observed variables, while CFI evaluates fit to only the covariances among the observed variables. As researchers employ more observed variables, the ratio of the $\underline{v}$ diagonal entries in the covariance matrix to the ($\underline{v}$ * ($\underline{v}$ - 1) / 2) off-diagonal matrix entries decreases rapidly, so to some extent the two indices may tend to be more similar in these circumstances.

With respect to the indices ignoring model parsimony as against those considering it (Mulaik et al., 1989), it seems reasonable to place more emphasis on indices that consider the parsimony of the models that we are testing. When we "free" a parameter in a confirmatory analysis, we get an exact fit to the data for this estimate. Fit, then, is partially a function of how many parameters we free. Our most realistic estimates of fit arise when we try to fit the parameters we want to emphasize from one study to the data from another study, so that fit is less artifactual. Indices that consider model parsimony give credit for evaluating the invariance across studies of the parameter estimates we wish to interpret, by favoring models with more degrees of freedom.

In the present study models were tested using the variance-covariance matrix (Cudeck, 1989). Table 1 presents the fit statistics associated with the three *a priori* models. Of these three models, Model 2 had the best fit with the data (χ^2 = 1560.10; df = 804; noncentrality parameter = 1560.10 - 804 = 756.10;

756.10/804 = 0.94). The LISREL goodness-of-fit index (GFI) was .70. The parsimony ratio (Mulaik et al., 1989) associated with the GFI was .89; the parsimonious GFI (i.e., the PGFI = GFI times the parsimony ratio) was .62. The Bentler (1990) comparative fit index (CFI) was .70 (((3390.60 - 861) - (1560.10 - 804)) / (3390.60 - 861)). The parsimony ratio associated with the CFI was .93; the parsimonious CFI (PCFI) was .66.

INSERT TABLE 1 ABOUT HERE.

These results would not make one sanguine about the fit of any of the three models to our data. Indeed, the model recommended in much of the previous research with the Hendrick-Hendrick measure is Model 1, and it is a candidate for worst fitting model. For example, Model 1 had the largest noncentrality-to-degrees-of-freedom ratio and the worst comparative fit index.

At this juncture we began to explore the fit of variations in Model 2 to our data. We did this in two stages. First, we freed all parameters in the factor matrix that had modification indices greater than 20. We also freed factor matrix parameters with modification indices greater than 10 when parameters involving highly correlated factors were involved. We judged these pairs of factors to be Eros and Agape ($\underline{r}$ = +.678), Agape and Mania ($\underline{r}$ = +.557), and Eros and Ludus ($\underline{r}$ = -.499). For example, we freed the loading of an Agape item, number 36, with the Eros factor, because the modification index for this loading was 16.138. In this new analysis 58 (42 + 16) factor matrix parameters were freed.

Second, we once again repeated the analysis, but we then fixed 5 of the 15 previously freed factor matrix parameters, because the parameters were small in relation to their standard errors. This resulted in a final model with 53 parameters free in the factor matrix. Table 1 also reports the fit indices for this model. Table 2 presents the factor matrix and the items associated with this analysis, and Table 3 presents maximum-likelihood estimates of the factor correlation matrix.

INSERT TABLES 2 AND 3 ABOUT HERE.

Discussion

Love is fundamental to the experience of being human. Sisca, Walsh and Walsh (1985) even note that, "love deprivation has frequently been linked epidemiologically [by researchers] to a variety of psychological syndromes" (p. 63), including psychopathology, neuroses and hysteria. Our current state of understanding is very limited, partly because it has not traditionally been considered scientifically respectable to conduct inquiry in this area.

We do not even have widely acceptable definitions of relevant constructs. As Elkins and Smith (1979, p. 10) have observed, "It is apparent that the ambiguity, abstractness, and disagreement that surround love phenomena have inhibited a generalizable understanding of love among behavioral scientists."

Confirmatory methods were employed in the present study.

Exploratory factor analysis yields indeterminate common factors, so even if methods could somehow create meaning or define constructs, certainly exploratory common factor analysis can not do so. As Mulaik (1987, p. 301) notes, "It is we who create meanings for things in deciding how they are to be used. Thus we should see the folly of supposing that exploratory factor analysis will teach us what intelligence is, or what personality is." Confirmatory analysis forces us to do the best job we can of creating the meaning of our constructs, presumably using available theory and previous empirical research. The latent variables we define then represent a more objective conception of our constructs.

Our reading of the present results is that they are consistent with some of our previous results with this measure, with our results with other measures, and with some of the findings in research by others (cf. Sternberg & Grajek, 1984). As the Table 2 results indicate, Ludus, Storge, Pragma, Mania and Agape emerged relatively as expected as Factors II through VI, respectively.

Factor I, however, is defined as a broader, more general, construct with elements of destiny (item 19), sexuality (items 10, 13 and 37), understanding (item 31), friendship (item 15), commitment (items 6 and 36), depth of feeling (item 22), and immediacy of connection (items 1, 27 and 25). This *is* the Eros conceptualized by the Hendricks in operationalizing Lee's Eros love style, but this is *more* than just Eros. This is focus, and perhaps the obsession we have seen in our previous work. Unfortunately, absent items that directly measure components of obsessive thought, we cannot here invoke this concept as part of our definition of this more general factor.

The correlation matrix reported in Table 3 also suggests important linkages between these constructs. Our "G"-factor is highly correlated with Agape ($\underline{r}$ = +.597) and with Ludus ($\underline{r}$ = −.416), and Agape and Mania are highly correlated ($\underline{r}$ = +.551). It does not seem appropriate to use a model positing that the six dimensions are uncorrelated.

Of course, our sample size in the present study was somewhat small (Bentler, in press). And, in any case, no one single study means very much. It is from the cumulation of evidence across (a) samples, (b) measures, (c) occasions and (d) methodologies that science progresses. As Neale and Liebert (1986) observe:

> No one study, however shrewdly designed and carefully executed, can provide convincing support for a causal hypothesis or theoretical statement... Too many possible (if not plausible) confounds, limitations on generality, and alternative interpretations can be offered for any one observation. Moreover, each of the basic methods of research (experimental, correlational, and case study) and techniques of comparison (within- or between-subjects) has intrinsic limitations. How, then, does social science theory advance through research? The answer is, by collecting a diverse body of evidence about any major theoretical

proposition. (p. 290)

This model comes reasonably close to a "G"-factor or "Thomsonian" construction of love that we believe is a more appropriate view, and one that is suggested by the corpus of our work and the literature. What is needed at this juncture are replications in which the parameters like those reported in Table 2 are fit to data in new samples. Replications in which more model parameters are fixed have more degrees of freedom, meaning there are more ways in which the models are potentially falsifiable, and so represent more rigorous tests of our conceptions of latent constructs (Mulaik, 1987, 1988). Nevertheless, we appear to be making progress in delineating a construct that so deeply affects so many lives, through its presence, its absence, and through its loss.

References

Bentler, P.M. (1990). Comparative fit indices in structural models. Psychological Bulletin, 107, 238-246.

Bentler, P.M. (in press). On the quality of test statistics in covariance structure analysis: Caveat emptor. In C.R. Reynolds (Ed.), Advances in cognitive assessment: An interdisciplinary perspective. New York: Plenum.

Borrello, G.M., & Thompson, B. (1987, November). Construct validity of a measure of love relationships perceptions. Paper presented at the annual meeting of the Mid-South Educational Research Association, Mobile, AL.

Borrello, G., & Thompson, B. (1989a). A replication "bootstrap" analysis of the structure underlying perceptions of stereotypic love. Journal of General Psychology, 116, 317-327.

Borrello, G., & Thompson, B. (1989b, November). Second-order factor analysis as a validity assessment tool: A case study example involving perceptions of stereotypic love. Paper presented at the annual meeting of the Mid-South Educational Research Association, Little Rock, AR. (ERIC Document Reproduction Service No. ED 312 299)

Borrello, G.M., & Thompson, B. (1990a). An hierarchical analysis of the Hendrick-Hendrick measure of Lee's typology of love. Journal of Social Behavior and Personality, 3, 327-342.

Borrello, G.M., & Thompson, B. (1990b). A note regarding the validity of Lee's typology of love. Journal of Psychology, 124(6), 639-644.

Cudeck, R. (1989). The analysis of correlation matrices using covariance structure models. _Psychological Bulletin_, _105_, 317-327.

Curtin, M. E. (1973). _Symposium on love_. New York: Behavioral Publications.

Elkins, G. R., & Smith, D. (1979). Meaning and measurement of love: A review of humanistic and behavioral approaches. _The Humanist Educator_, _18_(1), 7-14.

Finding out the meaning of true love. (1992, December 22). _USA Today_, Section D, p. 1.

Freud, S. (1924). On narcissism. In J. Rivier & J. Strachy (Eds.), _Collected papers of Sigmund Freud_. New York: International Psychoanalytic Press.

Hendrick, C., & Hendrick, 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, C., Hendrick, S., Foote, F. H., & Slapion-Foote, M. J. (1984). Do men and women love differently? _Journal of Social and Personal Relationships_, _1_, 177-195.

Hendrick, S.S., & Hendrick, C. (1987). Love and sex attitudes: A close relationship. In W.H. Jones & D. Perlman (Eds.), _Advances in personal relationships_ (Vol. 1, pp. 141-169). Greenwich, CT: JAI Press.

Jöreskog, K.G., & Sörbom, D./SPSS. (1989). _LISREL 7: A guide to the program and applications_ (2nd ed.). Chicago: SPSS.

Lee, J. A. (1973). _The colors of love: An exploration of the ways_ of loving. Don Mills, Ontario: New Press. (Popular Edition, 1976)

Mulaik, S.A. (1987). A brief history of the philosophical foundations of exploratory factor analysis. Multivariate Behavioral Research, 22, 267-305.

Mulaik, S.A. (1988). Confirmatory factor analysis. In R.B. Cattell & J.R. Nesselroade (Eds.), Handbook of multivariate experimental psychology. New York: Plenum.

Mulaik, S.A., James, L.R., van Alstine, J., Bennett, N., Lind, S., & Stilwell, C.D. (1989). Evaluation of goodness-of-fit indices for structural equation models. Psychological Bulletin, 105, 430-445.

Neale, J.M., & Liebert, R.M. (1986). Science and behavior: An introduction to methods of research (3rd ed.). Englewood Cliffs, NJ: Prentice-Hall.

Rubin, Z. (1984). Toward a science of relationships. Contemporary Psychology, 29, 856-858.

Sisca, S.S., Walsh, A., & Walsh, P.A. (1985). Love deprivation and blood pressure levels among a college population: A preliminary investigation. Psychology: A Quarterly Journal of Human Behavior, 22, 63-70.

Sternberg, R.J. (1988). The triangle of love. New York: Basic Books.

Sternberg, R. J., & Grajek, S. (1984). The nature of love. Journal of Personality and Social Psychology, 47, 312-329.

Tennov, D. (1979). Love and limerance: The experience of being in love. New York: Stein and Day.

Thompson, B., & Borrello, G. M. (1987a, January). Comparisons of factors extracted from the correlation matrix versus the covariance matrix: An example using the Love Relationships Scale. Paper presented at the annual meeting of the Southwest Educational Research Association, Dallas. (ERIC Document Reproduction Service No. ED 280 862)

Thompson, B., & Borrello, G. (1987b). Concurrent validity of a love relationships scale. Educational and Psychological Measurement, 47, 985-995.

Thompson, B., & Borrello, G.M. (1990, November). Measuring second-order factors using confirmatory methods: A case study example with the Hendrick-Hendrick love instrument. Paper presented at the annual meeting of the Mid-South Educational Research Association, New Orleans. (ERIC Document Reproduction Service No. ED 325 527)

Thompson, B., & Borrello, G. (1992). Different views of love: Deductive and inductive lines of inquiry. Current Directions in Psychological Science, 1(5), 154-156.

Thompson, B., Davenport, D., & Wilkinson, R. (1992, March). Romantic love: Theories, findings, and various measurement strategies. Paper presented at the annual meeting of the American Association for Counseling and Development, Baltimore.

Wrightsman, L. S., & Deaux, K. (1981). Social psychology in the 80s. Monterey, CA: Brooks/Cole.

Table 1
Tests of Model Fits

Statistic	Model[a] 1	2	3	4	5
Null chi^2	3390.60	3390.60	3390.60	3390.60	3390.60
Null df	861	861	861	861	861
Noncentrality	2529.60	2529.60	2529.60	2529.60	2529.60
Model chi^2	1770.63	1560.10	1713.42	1287.34	1292.26
Model df	819	804	809	788	793
Noncentrality	951.63	756.10	904.42	499.34	499.26
NC / df	1.16	0.94	1.12	0.63	0.63
GFI	0.659	0.702	0.656	0.755	0.754
Pars Ratio	0.907	0.890	0.896	0.873	0.878
GFI*Pars	0.598	0.625	0.588	0.659	0.662
CFI	0.624	0.701	0.642	0.803	0.803
Pars Ratio	0.951	0.934	0.940	0.915	0.921
CFI*Pars	0.593	0.655	0.604	0.735	0.739

[a]Model 1 posited the six uncorrelated factors (7 items/factor) reported by the Hendricks in their previous work. Model 2 posited the six factors (7 items/factor) reported by the Hendricks, but allowed the factors to be correlated. Model 3 posited five factors that were allowed to be correlated, with the Mania and Agape (7 + 7 = 14 items) defining a single "G"-factor. Model 4 was the same as Model 2, except that 16 additional factor loadings (42 + 16 = 58) were freed. Model 5 was the same as Model 4, except that 5 previously freed parameter estimates were again fixed to be zeroes (58 - 5 = 53).

Table 2
Items Sorted by Factor and by Their |Loadings| for Model 5

Loading	Item/ (Item Classification)
+3.135	19. I feel that my lover and I were meant for each other. *(Eros)*
+2.535	10. My lover and I have the right physical "chemistry" between us. *(Eros)*
+2.307	13. Our lovemaking is very intense and satisfying. *(Eros)*
+2.181	31. My lover and I really understand each other. *(Eros)*
+1.979	15. I expect to always be friends with my lover. *(Storge)*
+1.761	37. My lover fits my ideal standards of physical beauty/ handsomeness. *(Eros)*
-1.468	22. I could get over my love affair with my lover pretty easily and quickly. *(Ludus)*
-1.335	27. Our friendship merged gradually into love over time. *(Storge)*
+1.183	25. My lover and I became emotionally involved rather quickly. *(Eros)*
+1.056	36. When my lover gets angry with me, I still love him/her fully and unconditionally. *(Agape)*
+0.978	1. My lover and I were attracted to each other immediately after we first met. *(Eros)*
+0.961	6. I try to always help my lover through difficult times. *(Agape)*
+2.971	2. I try to keep my lover a little uncertain about my commitment to him/her. *(Ludus)*
+2.647	14. I have sometimes had to keep my lover from finding out about other lovers. *(Ludus)*
+2.619	7. I believe that what my lover doesn't know about me won't hurt him/her. *(Ludus)*
+2.385	26. My lover would get upset if he/she knew of some of the things I've done with other people. *(Ludus)*
+1.927	38. I enjoy playing the "game of love" with my lover and a number of other partners. *(Ludus)*
-1.747	5. When things aren't right with my lover and me, my stomach gets upset. *(Mania)*
+1.183	24. I am usually willing to sacrifice my own wishes to let my lover achieve his/hers. *(Agape)*
+1.086	34. When my lover gets too dependent on me, I want to back off a little. *(Ludus)*
+1.023	22. I could get over my love affair with my lover pretty easily and quickly. *(Ludus)*
+3.798	27. Our friendship merged gradually into love over time. *(Storge)*
+3.567	20. Our love is the best kind because it grew out of a long friendship. *(Storge)*
+3.473	39. Our love relationship is the most satisfying because it developed from a good friendship. *(Storge)*

+2.024	32.	Our love is really a deep friendship, not a mysterious, mystical emotion. *(Storge)*
+1.618	11.	To be genuine, our love first required caring for awhile. *(Storge)*
+1.193	3.	It is hard for me to say exactly when our friendship turned into love. *(Storge)*
+1.086	31.	My lover and I really understand each other. *(Eros)*
+0.653	15.	I expect to always be friends with my lover. *(Storge)*
+2.769	23.	A main consideration in choosing my lover was how he/she would reflect on my family. *(Pragma)*
+2.524	16.	In choosing my lover, I believed it was best to love someone with a similar background. *(Pragma)*
+2.361	28.	An important factor in choosing my lover was whether or not he/she would be a good parent. *(Pragma)*
+2.351	35.	One consideration in choosing my lover was how he/she would reflect on my career. *(Pragma)*
+2.324	4.	I considered what my lover was going to become in life before I committed myself to him/her. *(Pragma)*
+2.165	40.	Before getting very involved with my lover, I tried to figure out how compatible his/her hereditary background would be with mine in case we ever had children. *(Pragma)*
+1.611	8.	I tried to plan my life carefully before choosing a lover. *(Pragma)*
+3.459	17.	Sometimes I get so excited about being in love with my lover that I can't sleep. *(Mania)*
+3.202	21.	When my lover doesn't pay attention to me, I feel sick all over. *(Mania)*
+2.665	29.	Since I've been in love with my lover, I've had trouble concentrating on anything else. *(Mania)*
+2.601	41.	If my lover ignores me for a while, I sometimes do stupid things to try to get his/her attention back. *(Mania)*
+2.322	5.	When things aren't right with my lover and me, my stomach gets upset. *(Mania)*
+1.979	33.	I cannot relax if I suspect that my lover is with someone else. *(Mania)*
+1.462	18.	I cannot be happy unless I place my lover's happiness before my own. *(Agape)*
+1.433	12.	If my lover and I break up, I would get so depressed that I would even think of suicide. *(Mania)*
-0.824	6.	I try to always help my lover through difficult times. *(Agape)*
-0.767	36.	When my lover gets angry with me, I still love him/her fully and unconditionally. *(Agape)*
+3.555	42.	I would endure all things for the sake of my lover. *(Agape)*
+2.853	9.	I would rather suffer myself than let my lover suffer. *(Agape)*

+2.825 30. Whatever I own is my lover's to use as he/she chooses. *(Agape)*

+2.784 24. I am usually willing to sacrifice my own wishes to let my lover achieve his/hers. *(Agape)*

+1.155 6. I try to always help my lover through difficult times. *(Agape)*

+2.018 18. I cannot be happy unless I place my lover's happiness before my own. *(Agape)*

+2.014 36. When my lover gets angry with me, I still love him/her fully and unconditionally. *(Agape)*

Table 3
LISREL Maximum Likelihood Estimates of the Model 5
Matrix of Factor Relationships

	I	II	III	IV	V	VI
I	1.000					
II	-0.416	1.000				
III	0.291	-0.255	1.000			
IV	-0.064	0.290	0.259	1.000		
V	0.237	0.226	-0.047	0.253	1.000	
VI	0.597	-0.332	0.322	0.062	0.551	1.000

Appendix A
Variance-Covariance Matrix

	E0101	L0802	S1503	P2204	M2905	A3606	L0907	P2308	A3709	E0210
E0101	20.383									
L0802	3.030	20.951								
S1503	0.238	4.696	22.928							
P2204	2.529	-0.885	-0.649	21.340						
M2905	4.871	-4.211	-2.251	2.092	21.788					
A3606	0.657	-2.440	0.797	-0.955	2.825	5.948				
L0907	-0.631	7.152	1.726	1.776	-3.536	-2.176	23.528			
P2308	-0.464	3.291	3.225	5.573	1.105	0.048	0.000	18.689		
A3709	1.421	-1.409	1.656	-0.255	4.361	4.310	-3.856	0.051	15.618	
E0210	3.345	-3.405	0.888	-0.619	4.684	3.604	-2.505	0.478	4.109	11.107
S1611	-1.820	-3.112	2.245	2.544	1.653	3.214	-2.118	1.587	3.278	4.037
M3012	-0.132	-1.181	0.800	0.706	3.896	-0.631	-2.266	-0.397	2.723	1.423
E0313	5.010	-1.653	-0.975	0.753	3.503	2.866	-0.389	0.735	3.402	6.993
L1014	0.725	6.992	0.244	2.657	-1.858	-2.569	7.499	0.988	-2.433	-3.338
S1715	-0.005	-3.474	-0.101	-1.908	2.579	4.143	-2.940	0.502	3.445	5.153
P2416	2.417	-0.598	-0.221	5.138	-0.294	0.039	0.597	1.993	-0.007	0.946
M3117	6.100	3.053	-0.024	2.267	8.364	1.735	0.386	0.993	5.357	2.807
A3818	0.835	-1.459	1.723	1.216	6.839	2.203	-0.584	-0.262	9.226	2.571
E0419	2.857	-3.949	-0.567	-1.554	6.398	4.179	-3.253	0.391	5.609	7.983
S1820	-5.235	-4.060	5.928	0.758	-1.048	1.045	-2.956	3.765	0.351	0.065
M3221	2.626	2.442	-0.554	2.718	7.772	0.167	-0.128	2.661	4.342	2.971
L1122	-0.941	5.231	0.967	-0.340	-2.392	-3.306	3.932	0.231	-3.495	-4.772
P2523	-0.156	2.151	-0.978	4.191	-4.685	-0.789	2.400	3.944	-1.964	-2.329
A3924	2.001	1.758	1.895	-0.541	3.685	2.229	0.044	1.392	6.952	2.883
E0525	5.102	0.992	0.212	-0.944	2.469	0.889	-0.886	-0.420	2.724	3.180
L1226	-0.744	5.098	1.500	2.085	-3.220	-1.345	9.509	-0.040	-2.008	-1.061
S1927	-4.474	-2.955	6.412	3.330	-0.530	1.596	-0.709	5.111	1.410	-0.444
P2628	0.471	-2.779	-0.334	7.561	1.938	1.201	-3.404	5.336	3.121	1.586
M3329	1.503	3.338	1.717	1.271	3.866	-0.941	-0.141	1.763	2.343	1.075
A4030	1.932	-5.478	-0.554	1.643	5.540	3.787	-2.959	0.524	7.886	5.573
E0631	-0.395	-5.064	-0.090	-0.789	3.288	4.329	-2.428	1.314	4.404	6.120
S2032	-2.420	-3.729	0.979	-0.987	-0.070	4.592	-2.803	0.422	3.243	3.806
M3433	4.377	1.530	0.543	2.303	2.388	0.649	2.116	0.848	1.281	1.850
L1334	-2.126	2.906	2.829	0.894	-4.108	-0.558	2.579	0.503	0.322	-1.389
P2735	1.885	3.795	0.854	7.815	-0.967	-0.629	3.272	3.751	-1.639	-1.540
A4136	1.564	-4.328	-0.653	-0.607	3.486	4.647	-3.101	1.159	6.225	4.407
E0737	4.687	-1.492	0.656	-1.519	4.970	2.926	-1.247	0.432	3.181	4.816
L1438	-0.595	6.183	3.104	0.275	-1.898	-3.017	5.199	0.876	-2.048	-2.841
S2139	-3.110	-4.561	3.612	1.342	0.335	2.761	-2.184	2.679	2.718	2.508
P2840	-0.822	3.409	0.953	3.544	0.069	-0.925	2.195	1.861	-0.673	-1.439
M3541	1.696	6.067	-0.068	2.746	1.735	0.166	2.331	0.963	3.193	0.312
A4242	1.129	-3.210	-0.706	-0.248	6.298	3.578	-3.802	-0.656	10.035	4.576

	S1611	M3012	E0313	L1014	S1715	P2416	M3117	A3818	E0419	S1820
S1611	10.933									
M3012	0.413	13.365								
E0313	1.928	1.105	16.216							
L1014	-2.082	1.690	-0.068	19.943						
S1715	3.324	0.512	5.513	-3.583	12.322					
P2416	1.606	-0.062	2.267	2.340	1.398	21.697				
M3117	1.057	5.420	4.166	0.669	-0.509	2.732	24.629			
A3818	1.474	5.000	2.922	0.842	1.121	1.609	10.360	19.356		
E0419	3.544	2.211	6.888	-2.647	6.684	2.284	5.345	4.956	15.328	
S1820	2.804	1.196	-0.790	0.320	2.260	3.357	-2.562	-0.379	1.673	23.715
M3221	1.830	4.095	0.953	2.422	-0.754	3.452	10.627	6.727	2.448	-3.451
L1122	-1.906	-1.853	-4.911	3.455	-4.424	0.096	-2.236	-3.151	-5.599	-0.257
P2523	0.779	-3.086	-1.177	3.160	-0.715	8.725	-1.626	-1.452	-1.956	1.864
A3924	2.065	2.290	1.985	0.258	2.595	1.871	6.194	7.601	3.530	0.301
E0525	0.760	1.669	4.365	-1.625	2.030	-2.439	2.896	4.321	2.172	-6.821
L1226	-0.088	0.060	1.034	11.627	-1.761	3.009	-1.915	0.852	-2.384	-1.879
S1927	5.434	0.031	-0.539	-0.707	0.885	3.918	-1.664	-0.468	-0.002	14.301
P2628	1.725	1.620	1.863	-0.783	1.267	5.429	0.497	2.889	1.957	1.706
M3329	1.378	4.279	1.323	3.127	-0.975	3.283	9.771	7.191	1.251	-0.454
A4030	4.249	3.738	5.078	-1.861	4.854	3.215	4.324	8.022	5.725	3.133
E0631	4.516	2.304	4.453	-2.674	6.941	0.967	1.847	2.713	7.995	4.459
S2032	5.052	0.104	2.520	-1.690	6.262	0.188	-0.311	0.854	4.264	6.369
M3433	1.292	0.164	3.728	4.258	-1.842	3.058	6.371	3.559	1.009	-3.740
L1334	0.914	-1.712	-3.179	2.124	-0.708	2.686	-4.716	-4.235	-3.086	1.013
P2735	1.109	-1.795	0.415	2.159	-2.060	5.784	3.405	-0.266	-1.104	-0.939
A4136	2.768	1.481	4.226	-2.184	4.277	1.332	2.368	4.944	7.363	2.071
E0737	2.930	0.200	3.573	-2.190	2.187	1.110	5.534	3.403	6.822	0.136
L1438	-2.239	0.568	-1.565	4.661	-2.880	0.421	0.309	-0.427	-2.397	-0.357
S2139	5.431	0.735	2.267	-0.590	4.154	4.828	0.079	0.504	3.859	13.033
P2840	-0.637	0.699	0.606	1.646	-0.589	5.253	1.816	2.155	-1.164	1.510
M3541	1.068	2.860	1.928	3.338	-1.853	3.908	8.839	5.087	0.084	-1.156
A4242	3.565	4.340	4.575	-2.984	4.213	2.087	7.864	10.108	8.496	1.771

	M3221	L1122	P2523	A3924	E0525	L1226	S1927	P2628	M3329	A4030
M3221	19.607									
L1122	-1.339	10.971								
P2523	-0.540	3.839	21.995							
A3924	6.306	-0.590	0.469	14.279						
E0525	3.664	-1.398	-2.047	4.138	20.261					
L1226	2.912	2.396	3.980	-0.103	1.031	25.744				
S1927	-0.674	-0.050	3.675	-0.320	-5.959	0.290	20.936			
P2628	1.463	-0.862	5.969	2.951	-0.843	-1.255	3.679	21.445		
M3329	8.428	1.097	0.948	4.340	2.538	1.819	1.335	3.320	15.242	
A4030	4.609	-4.353	-1.322	5.712	1.368	-0.024	2.903	4.581	3.716	17.527
E0631	0.723	-5.560	-1.184	2.934	2.280	-2.357	2.435	2.737	0.697	5.638

S2032	-0.495	-2.877	0.914	1.918	-0.341	-1.886	4.217	1.325	-0.700	5.846
M3433	8.168	-0.441	1.636	3.455	2.407	6.836	-0.191	0.739	4.963	2.203
L1334	-0.273	2.229	4.201	0.465	-2.995	3.003	1.936	0.828	-1.121	-3.106
P2735	2.405	1.591	7.016	1.017	0.935	2.324	0.289	3.827	3.306	-1.728
A4136	2.141	-3.913	-0.386	4.344	2.725	-0.925	1.490	2.624	1.018	6.890
E0737	2.252	-2.127	-1.003	2.372	1.975	-0.568	1.082	-1.005	2.316	3.335
L1438	0.219	4.428	2.353	-0.346	-0.035	2.461	-0.921	-0.224	2.483	-2.550
S2139	-0.272	-2.211	2.085	1.205	-2.958	-1.613	11.772	4.048	1.787	5.257
P2840	0.876	1.327	6.939	1.337	-0.294	0.441	2.968	7.016	4.103	1.679
M3541	9.397	0.463	2.821	6.204	1.429	4.814	1.411	1.774	6.524	3.152
A4242	6.913	-4.029	-1.521	9.286	4.126	-1.968	0.532	2.665	4.904	9.766

	E0631	S2032	M3433	L1334	P2735	A4136	E0737	L1438	S2139	P2840
E0631	12.342									
S2032	7.376	14.645								
M3433	-1.994	-2.075	24.022							
L1334	-0.260	0.400	-1.916	17.629						
P2735	-1.721	-1.237	5.001	4.471	19.252					
A4136	6.002	4.607	1.408	-2.167	-0.589	12.184				
E0737	3.321	1.184	3.396	-2.132	0.490	4.364	15.467			
L1438	-2.234	-2.586	0.677	2.309	3.899	-1.899	-1.851	11.590		
S2139	5.818	6.730	-1.462	1.119	0.495	3.810	1.964	-1.676	16.323	
P2840	-0.632	-0.359	1.792	1.506	3.966	-0.441	-1.057	3.871	1.384	18.331
M3541	-1.289	-0.824	6.803	0.699	3.412	1.438	1.903	1.088	0.314	3.843
A4242	4.695	3.063	3.727	-2.963	-0.505	7.837	5.182	-2.688	3.926	0.194

	M3541	A4242
M3541	21.840	
A4242	7.134	19.675

Appendix B.1
LISREL Maximum Likelihood Estimates of the Model 1
Factor Matrix (PHI = an Identity Matrix)

	EROS	LUDUS	STORGE	PRAGMA	MANIA	AGAPE
E0101	1.142	0.0	0.0	0.0	0.0	0.0
L0802	0.0	2.657	0.0	0.0	0.0	0.0
S1503	0.0	0.0	1.302	0.0	0.0	0.0
P2204	0.0	0.0	0.0	2.395	0.0	0.0
M2905	0.0	0.0	0.0	0.0	1.951	0.0
A3606	0.0	0.0	0.0	0.0	0.0	1.256
L0907	0.0	2.804	0.0	0.0	0.0	0.0
P2308	0.0	0.0	0.0	1.545	0.0	0.0
A3709	0.0	0.0	0.0	0.0	0.0	2.965
E0210	2.661	0.0	0.0	0.0	0.0	0.0
S1611	0.0	0.0	1.463	0.0	0.0	0.0
M3012	0.0	0.0	0.0	0.0	1.360	0.0
E0313	2.364	0.0	0.0	0.0	0.0	0.0
L1014	0.0	2.844	0.0	0.0	0.0	0.0
S1715	0.0	0.0	1.002	0.0	0.0	0.0
P2416	0.0	0.0	0.0	2.451	0.0	0.0
M3117	0.0	0.0	0.0	0.0	3.474	0.0
A3818	0.0	0.0	0.0	0.0	0.0	2.821
E0419	3.119	0.0	0.0	0.0	0.0	0.0
S1820	0.0	0.0	3.717	0.0	0.0	0.0
M3221	0.0	0.0	0.0	0.0	3.346	0.0
L1122	0.0	1.567	0.0	0.0	0.0	0.0
P2523	0.0	0.0	0.0	2.768	0.0	0.0
A3924	0.0	0.0	0.0	0.0	0.0	2.354
E0525	1.100	0.0	0.0	0.0	0.0	0.0
L1226	0.0	2.691	0.0	0.0	0.0	0.0
S1927	0.0	0.0	3.426	0.0	0.0	0.0
P2628	0.0	0.0	0.0	2.508	0.0	0.0
M3329	0.0	0.0	0.0	0.0	2.598	0.0
A4030	0.0	0.0	0.0	0.0	0.0	2.777
E0631	2.273	0.0	0.0	0.0	0.0	0.0
S2032	0.0	0.0	1.837	0.0	0.0	0.0
M3433	0.0	0.0	0.0	0.0	2.044	0.0
L1334	0.0	1.037	0.0	0.0	0.0	0.0
P2735	0.0	0.0	0.0	2.331	0.0	0.0
A4136	0.0	0.0	0.0	0.0	0.0	2.230
E0737	1.893	0.0	0.0	0.0	0.0	0.0
L1438	0.0	1.866	0.0	0.0	0.0	0.0
S2139	0.0	0.0	3.508	0.0	0.0	0.0
P2840	0.0	0.0	0.0	2.103	0.0	0.0
M3541	0.0	0.0	0.0	0.0	2.563	0.0
A4242	0.0	0.0	0.0	0.0	0.0	3.495

Appendix B.2
LISREL Maximum Likelihood Estimates of the Model 2
Factor Matrix and the Matrix of Factor Relationships

	EROS	LUDUS	STORGE	PRAGMA	MANIA	AGAPE
E0101	0.978	0.0	0.0	0.0	0.0	0.0
L0802	0.0	2.813	0.0	0.0	0.0	0.0
S1503	0.0	0.0	1.199	0.0	0.0	0.0
P2204	0.0	0.0	0.0	2.331	0.0	0.0
M2905	0.0	0.0	0.0	0.0	1.963	0.0
A3606	0.0	0.0	0.0	0.0	0.0	1.318
L0907	0.0	2.562	0.0	0.0	0.0	0.0
P2308	0.0	0.0	0.0	1.605	0.0	0.0
A3709	0.0	0.0	0.0	0.0	0.0	2.839
E0210	2.566	0.0	0.0	0.0	0.0	0.0
S1611	0.0	0.0	1.542	0.0	0.0	0.0
M3012	0.0	0.0	0.0	0.0	1.345	0.0
E0313	2.246	0.0	0.0	0.0	0.0	0.0
L1014	0.0	2.599	0.0	0.0	0.0	0.0
S1715	0.0	0.0	1.159	0.0	0.0	0.0
P2416	0.0	0.0	0.0	2.529	0.0	0.0
M3117	0.0	0.0	0.0	0.0	3.475	0.0
A3818	0.0	0.0	0.0	0.0	0.0	2.776
E0419	3.206	0.0	0.0	0.0	0.0	0.0
S1820	0.0	0.0	3.594	0.0	0.0	0.0
M3221	0.0	0.0	0.0	0.0	3.287	0.0
L1122	0.0	1.876	0.0	0.0	0.0	0.0
P2523	0.0	0.0	0.0	2.762	0.0	0.0
A3924	0.0	0.0	0.0	0.0	0.0	2.282
E0525	1.061	0.0	0.0	0.0	0.0	0.0
L1226	0.0	2.295	0.0	0.0	0.0	0.0
S1927	0.0	0.0	3.304	0.0	0.0	0.0
P2628	0.0	0.0	0.0	2.351	0.0	0.0
M3329	0.0	0.0	0.0	0.0	2.578	0.0
A4030	0.0	0.0	0.0	0.0	0.0	2.846
E0631	2.390	0.0	0.0	0.0	0.0	0.0
S2032	0.0	0.0	1.934	0.0	0.0	0.0
M3433	0.0	0.0	0.0	0.0	2.088	0.0
L1334	0.0	1.075	0.0	0.0	0.0	0.0
P2735	0.0	0.0	0.0	2.373	0.0	0.0
A4136	0.0	0.0	0.0	0.0	0.0	2.297
E0737	1.912	0.0	0.0	0.0	0.0	0.0
L1438	0.0	1.984	0.0	0.0	0.0	0.0
S2139	0.0	0.0	3.570	0.0	0.0	0.0
P2840	0.0	0.0	0.0	2.151	0.0	0.0
M3541	0.0	0.0	0.0	0.0	2.662	0.0
A4242	0.0	0.0	0.0	0.0	0.0	3.524

PHI

	EROS	LUDUS	STORGE	PRAGMA	MANIA	AGAPE
EROS	1.000					
LUDUS	-0.499	1.000				
STORGE	0.316	-0.246	1.000			
PRAGMA	-0.034	0.279	0.263	1.000		
MANIA	0.305	0.124	-0.013	0.263	1.000	
AGAPE	0.678	-0.392	0.311	0.060	0.557	1.000

Appendix B.3
LISREL Maximum Likelihood Estimates of the Model 3
Factor Matrix and the Matrix of Factor Relationships

	EROS	LUDUS	STORGE	PRAGMA	MANIA/AGAPE
E0101	0.994	0.0	0.0	0.0	0.0
L0802	0.0	2.749	0.0	0.0	0.0
S1503	0.0	0.0	1.193	0.0	0.0
P2204	0.0	0.0	0.0	2.282	0.0
M2905	0.0	0.0	0.0	0.0	2.096
A3606	0.0	0.0	0.0	0.0	1.100
L0907	0.0	2.606	0.0	0.0	0.0
P2308	0.0	0.0	0.0	1.576	0.0
A3709	0.0	0.0	0.0	0.0	2.700
E0210	2.574	0.0	0.0	0.0	0.0
S1611	0.0	0.0	1.539	0.0	0.0
M3012	0.0	0.0	0.0	0.0	1.259
E0313	2.250	0.0	0.0	0.0	0.0
L1014	0.0	2.556	0.0	0.0	0.0
S1715	0.0	0.0	1.129	0.0	0.0
P2416	0.0	0.0	0.0	2.515	0.0
M3117	0.0	0.0	0.0	0.0	2.655
A3818	0.0	0.0	0.0	0.0	3.010
E0419	3.202	0.0	0.0	0.0	0.0
S1820	0.0	0.0	3.585	0.0	0.0
M3221	0.0	0.0	0.0	0.0	2.236
L1122	0.0	1.897	0.0	0.0	0.0
P2523	0.0	0.0	0.0	2.836	0.0
A3924	0.0	0.0	0.0	0.0	2.414
E0525	1.063	0.0	0.0	0.0	0.0
L1226	0.0	2.308	0.0	0.0	0.0
S1927	0.0	0.0	3.316	0.0	0.0
P2628	0.0	0.0	0.0	2.388	0.0
M3329	0.0	0.0	0.0	0.0	1.679
A4030	0.0	0.0	0.0	0.0	2.701
E0631	2.379	0.0	0.0	0.0	0.0
S2032	0.0	0.0	1.903	0.0	0.0
M3433	0.0	0.0	0.0	0.0	1.261
L1334	0.0	1.146	0.0	0.0	0.0
P2735	0.0	0.0	0.0	2.325	0.0
A4136	0.0	0.0	0.0	0.0	2.043
E0737	1.920	0.0	0.0	0.0	0.0
L1438	0.0	1.986	0.0	0.0	0.0
S2139	0.0	0.0	3.588	0.0	0.0
P2840	0.0	0.0	0.0	2.164	0.0
M3541	0.0	0.0	0.0	0.0	1.816
A4242	0.0	0.0	0.0	0.0	3.490

PHI

	EROS	LUDUS	STORGE	PRAGMA	MANIA/AGAPE
EROS	1.000				
LUDUS	-0.501	1.000			
STORGE	0.313	-0.243	1.000		
PRAGMA	-0.035	0.280	0.265	1.000	
MANIA/AG	0.625	-0.273	0.226	0.120	1.000

Appendix B.4
LISREL Maximum Likelihood Estimates of the Model 4
Factor Matrix and the Matrix of Factor Relationships

	EROS	LUDUS	STORGE	PRAGMA	MANIA	AGAPE
E0101	0.987	0.0	0.0	0.0	0.0	0.0
L0802	0.0	2.928	0.0	0.0	0.0	0.0
S1503	0.0	0.0	1.199	0.0	0.0	0.0
P2204	0.0	0.0	0.0	2.328	0.0	0.0
M2905	0.0	-1.792	0.0	0.0	2.391	-0.073
A3606	0.934	-0.144	0.0	0.0	-0.736	1.062
L0907	0.0	2.621	0.0	0.0	0.0	0.0
P2308	0.0	0.0	0.0	1.611	0.0	0.0
A3709	0.0	0.0	0.0	0.0	0.0	2.858
E0210	2.527	0.0	0.0	0.0	0.0	0.0
S1611	0.0	0.0	1.619	0.0	0.0	0.0
M3012	0.0	0.0	0.0	0.0	1.428	0.0
E0313	2.315	0.0	0.0	0.0	0.0	0.0
L1014	0.0	2.675	0.0	0.0	0.0	0.0
S1715	2.052	-0.459	0.653	0.0	0.0	-0.410
P2416	0.0	0.0	0.0	2.523	0.0	0.0
M3117	0.0	0.0	0.0	0.0	3.467	0.0
A3818	0.0	0.0	0.0	0.0	1.470	2.015
E0419	3.138	0.0	0.0	0.0	0.0	0.0
S1820	0.0	0.0	3.565	0.0	0.0	0.0
M3221	0.0	0.0	0.0	0.0	3.205	0.0
L1122	-1.453	1.051	0.0	0.0	0.0	0.0
P2523	0.0	0.0	0.0	2.767	0.0	0.0
A3924	0.0	0.990	0.0	0.0	0.252	2.551
E0525	1.201	0.0	0.0	0.0	0.0	0.0
L1226	0.0	2.397	0.0	0.0	0.0	0.0
S1927	-1.336	0.0	3.798	0.0	0.0	0.0
P2628	0.0	0.0	0.0	2.362	0.0	0.0
M3329	0.0	0.0	0.0	0.0	2.658	0.0
A4030	0.0	0.0	0.0	0.0	0.0	2.828
E0631	2.175	0.0	1.088	0.0	0.0	0.0
S2032	0.0	0.0	2.023	0.0	0.0	0.0
M3433	0.0	0.0	0.0	0.0	1.985	0.0
L1334	0.0	1.061	0.0	0.0	0.0	0.0
P2735	0.0	0.0	0.0	2.352	0.0	0.0
A4136	1.057	0.0	0.0	0.0	-0.783	2.023
E0737	1.763	0.0	0.0	0.0	0.0	0.0
L1438	0.0	1.944	0.0	0.0	0.0	0.0
S2139	0.0	0.0	3.474	0.0	0.0	0.0
P2840	0.0	0.0	0.0	2.162	0.0	0.0
M3541	0.0	0.0	0.0	0.0	2.603	0.0
A4242	0.0	0.0	0.0	0.0	0.0	3.554

PHI

	EROS	LUDUS	STORGE	PRAGMA	MANIA	AGAPE
EROS	1.000					
LUDUS	-0.396	1.000				
STORGE	0.290	-0.248	1.000			
PRAGMA	-0.056	0.291	0.261	1.000		
MANIA	0.251	0.229	-0.043	0.252	1.000	
AGAPE	0.607	-0.326	0.328	0.064	0.550	1.000

Appendix C
Modification Indices for the Factor Matrix
for Model 2

	EROS	LUDUS	STORGE	PRAGMA	MANIA	AGAPE
E0101	0.0	4.387	17.231	0.708	5.817	0.231
L0802	0.412	0.0	5.024	1.193	3.382	0.546
S1503	1.528	9.110	0.0	0.021	0.052	0.589
P2204	0.477	0.473	0.549	0.0	0.082	0.187
M2905	18.074	21.053	0.140	5.565	0.0	10.513
A3606	22.388	20.992	8.850	2.561	21.446	0.0
L0907	1.574	0.0	0.012	0.631	0.697	0.0
P2308	0.701	0.048	2.849	0.0	0.046	0.044
A3709	2.256	0.009	0.627	2.134	2.036	0.0
E0210	0.0	0.418	1.454	1.118	0.115	3.196
S1611	16.464	5.324	0.0	0.065	5.839	12.417
M3012	1.331	2.801	0.644	3.673	0.0	2.232
E0313	0.0	2.670	0.911	1.693	0.279	0.420
L1014	3.004	0.0	2.278	0.285	2.726	2.689
S1715	51.151	27.436	0.0	5.398	0.015	20.259
P2416	5.364	1.997	3.451	0.0	1.390	2.887
M3117	3.533	3.785	0.258	2.106	0.0	0.921
A3818	9.463	9.752	10.129	0.665	20.504	0.0
E0419	0.0	0.068	0.072	0.001	0.002	0.885
S1820	12.465	2.349	0.0	0.993	7.783	10.172
M3221	0.730	0.0	0.966	0.395	0.0	0.673
L1122	30.613	0.0	0.307	0.443	9.239	13.087
P2523	5.645	3.905	0.257	0.0	10.022	6.525
A3924	7.220	20.789	3.240	3.284	11.849	0.0
E0525	0.0	1.043	17.627	1.254	4.666	2.072
L1226	4.586	0.0	0.377	0.124	1.197	3.190
S1927	21.503	7.779	0.0	4.735	0.120	9.356
P2628	7.999	18.343	2.352	0.0	0.096	10.286
M3329	2.690	5.737	2.667	5.296	0.0	2.329
A4030	0.533	1.557	6.877	1.617	0.735	0.0
E0631	0.0	4.906	26.076	0.262	5.989	0.387
S2032	15.714	9.930	0.0	4.780	0.054	9.502
M3433	0.428	2.239	1.532	1.233	0.0	1.270
L1334	0.935	0.0	4.531	4.238	4.630	1.111
P2735	1.747	6.759	6.325	0.0	0.892	2.177
A4136	16.138	6.315	3.237	0.067	12.652	0.0
E0737	0.0	0.776	0.219	0.019	3.285	0.602
L1438	0.369	0.0	0.036	0.783	0.017	0.024
S2139	1.148	0.012	0.0	0.463	2.325	0.759
P2840	1.026	2.362	0.499	0.0	0.515	0.024
M3541	6.004	7.677	0.045	4.009	0.0	0.390
A4242	1.127	0.030	0.961	0.166	2.953	0.0