

MOTHER'S FAMILY PSYCHOLOGY: A SOCIAL RELATIONS MODEL ANALYSIS OF MATERNAL PERCEPTIONS OF THE FAMILY SYSTEM

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Knowledge about family relationships was once based primarily on reports provided by mothers. Recognition of discrepancies in the reports of different family members motivated attempts at more objective descriptions of the family system, including latent variable models that took advantage of multiple family informants to create consensus-based descriptions of the family. This study takes a new look at the maternal perspectives on the family system, treating them as important in their own right. Two hundred and eight mothers provided ratings on positivity in each of the family relationships in their two-parent two-child families. Analysis of these data using the family version of the social relations model (SRM) offered a unique window into "mother's family psychology." The round-robin SRM family assessment was applied to data provided by two mothers to explore how individual perspectives on the family might inform therapist-client discussions within the context of individual therapy.

Key words: Social relations model; Latent variable modeling; Family assessment; Perceiver bias; Family psychology.

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For many years, data on family relationships came primarily from mothers. This gave rise to the term Wives' Family Sociology (Safilios-Rothschild, 1969) and the complaint that the description of family relationships requires more than one person's perspective. In part the complaint was based on findings that husbands and wives have different perspectives (Thomson & Williams, 1982), with eminent sociologists like Jesse Bernard (1982) calling attention to the differences between "his marriage and her marriage." Subsequent research went in two different directions, with some researchers following the lead of Bengtson and Kuypers (1971) by investigating discrepancies in family members' perspectives (see Shapiro, 2004) and others taking an interest in the extent to which family members have shared perspectives (Thomson & Williams, 1982). The ability to detect shared perspectives was greatly facilitated by the development of confirmatory factor analysis (CFA). In CFA, the extent to which family members share the same perspective can be estimated by the size of factor loadings of each individual's rating (Cook & Goldstein, 1993) on a theoretically specified latent variable. Such latent variables, representing the consensus view of the raters (Cole & Jordan, 1989; Cook & Goldstein, 1993; Jacob & Windle, 1999; Thomson & Williams, 1982), are generally expected to be more valid measures of family variables than can be obtained by any one individual. The present study turns back the clock to investigate individual perspectives on family relationships. The goal is not to argue for the validity of individual perspectives on the family, but rather to use modern modeling methods

to better describe the whole family system as viewed by individuals occupying different family roles (e.g., mothers, fathers, etc.). These presumably *subjective* perspectives reveal the effective family system from the perspective of the occupants of that role, perhaps even the “internalized family.” As such, they can inform us about a person’s sense of place within their family, and how he or she is likely to behave toward other family members. To paraphrase Thomas and Thomas (as cited in Merton, 1995), if a person perceives a situation to be real, it will likely be real in its consequences.

The approach I will take in assessing individual perspectives on the family system involves applying the social relations model (SRM; Kenny & La Voie, 1984) to directed relationships data collected within a round-robin design using only the mother as the informant. Directed relationships data are measurements of the thoughts, feelings, or behavior of an actor toward a partner. For example, if a mother shows positivity toward her husband, she is the actor and her husband is the partner, and the observation is a directed relationship measure. How much positivity he shows toward her is a separate directed relationship measure. Traditionally, when data are collected within a round-robin family design, measures are collected from each family member about their attitude, feelings, or behavior toward each of the other family members, or about the rater’s perceptions of the attitude, feelings, or behavior of the family member toward the rater herself or himself. In a three-person family group, this will produce six directed relationship measures: mother-father, mother-child, father-mother, father-child, child-mother, and child-father. In a four-person family (e.g., two parents and two children), there will be 12 such measures for any one construct. In this study of 208 families, however, all 12 observations were obtained from the mother.

THE SOCIAL RELATIONS MODEL

The SRM was developed as a method to analyze round-robin data (Kenny & La Voie, 1984; Warner, Kenny, & Stoto, 1979) and was first applied to family data by Cook and Dreyer (1984). Within the family context, it is a mathematical model of the variance components of directed relationship measures obtained from family members; for example, mother’s positivity toward father and father’s positivity toward mother. Variance in these observed scores reflects differences between families, which can be important to explanations of why family members have experiences that differ from each other and that differ from people in the same role from other families. The role of the SRM is to describe each observed score in terms of the factors that define it at a more molecular level, like a molecule is defined by the different atoms that compose it. We understand more about the observed scores if we know how much their molecular components contribute to variance in the observed scores. Applied to family groups, the SRM states that the variance in *each* directed relationship measure is a function of five components: a family group effect, an actor effect, a partner effect, a relationship effect, and errors of measurement (see Kenny, Kashy, & Cook, 2006, Chap. 9). How families differ, one from another, is evaluated by the variances of these effects, and these variances are estimated by latent variables (or factors) within a confirmatory factor analysis.

Figure 1 presents the path diagram for the SRM components and the correlations among the components specific to the mother-father dyad. Latent variables (e.g., the family factor) are

represented by circles and the observed variables (e.g., mother-father positivity) are represented by rectangles. The single headed arrows from the latent variables to the observed variables indicate that the latent variable “causes” variability in the observed variable. The term “cause” is used here in the context of a measurement model and represents the view that change in an unobserved factor (often referred to as the “true score”) causes the change in the observed scores that are indicators of the unobserved factor. As seen in Figure 1, between-family differences in mother’s positivity toward father is caused by the family factor, the mother actor factor, the father partner factor, and the mother-father relationship factor, plus errors of measurement. Likewise, between-family differences in father’s positivity toward mother is a function of between-family differences in the family factor, the father actor factor, the mother partner factor, the father-mother relationship factor, and errors of measurement. Each of the other directed relationship measures in the family (e.g., mother-child positivity, child-mother positivity, father-child positivity, etc.) are functions of the corresponding set of SRM components. Only the family factor is common to all the observed scores.

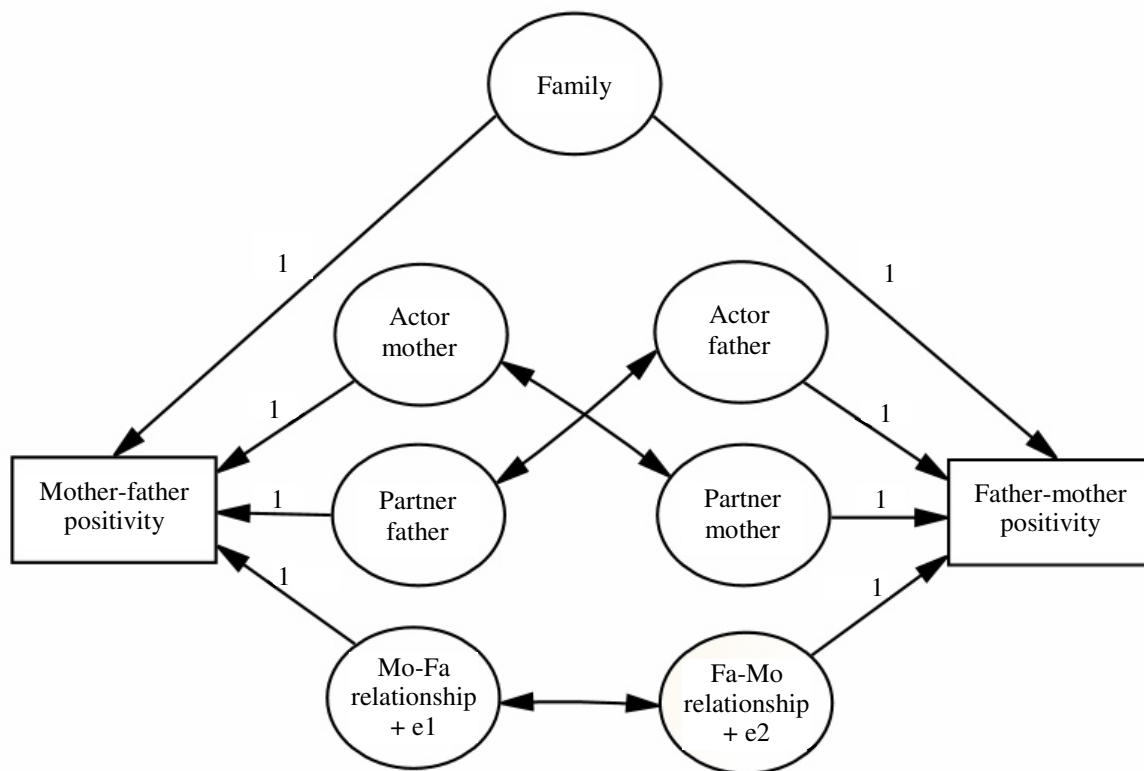


FIGURE 1¹

SRM components for positivity in the mother-father dyad.

SRM factors are represented by circles and observed variables are represented by rectangles.

Single headed arrows indicate causal relationships and double headed arrows indicate correlations.

The “1” on the causal arrows indicates that the loading of the observed variable on the factor is fixed at 1.0.

The mother-father (Mo-Fa) and father-mother (Fa-Mo) relationship factors are part of the residual variance and, therefore, contain errors of measurement (e1 and e2).

Families or groups with at least four people are needed to estimate all the components in the model, but a selected set of SRM effects can be estimated with data from three-person families (see Kenny et al., 2006). There is one family effect for each family in the sample. It is measured by the mean of all the observed directed relationship measures. The latent variable for the family factor measures how much this effect varies across families. If there is not significant variance in the factor, then families do not differ on this component and it cannot explain between-family differences. The mean of the family factor measures the level of positivity in the average family in the sample.

An actor effect is like a personality trait in that it measures consistency in a person's thoughts, feelings, or behavior across multiple relationships, where each relationship is considered a different situation (Malloy & Kenny, 1986). The actor effect for mother's positivity reflects consistency in mother's positivity in her relationships with father, older child, and younger child. Viewed from the perspective of a latent variable model, what these three relationship measures have in common (i.e., the common factor) is mother's positivity toward others. In Figure 1, the causal arrow from the mother actor factor to mother-father positivity indicates that a mother's general tendency to be positive toward other family members is one of the factors explaining her positivity toward father. Likewise, the causal arrow from the father actor factor to father-mother positivity indicates that a father's general tendency to be positive toward others is one of the factors explaining father's positivity toward mother. If an actor factor does not have significant variance, it cannot explain between-family differences in the relationships of that actor. In a sample of two-parent two-child families, separate actor factors are estimated for mother, father, older child, and younger child.

In a round-robin family design, each individual is both an actor in relation to multiple partners and the partner in relation to multiple actors. Like an actor effect, a partner effect measures consistency in behavior; but in this case the consistency is in the way different family members think, feel, or behave toward a particular partner. Father's partner effect reflects consistency in the positivity he receives from mother, older child, and younger child. The common factor in these measures is that they all measure something about father. The causal arrow from the father partner factor to mother-father positivity indicates that a father's general tendency to elicit positivity from others is one of the sources of a mother's positivity toward father. Likewise, the causal arrow from the mother partner factor to father-mother positivity indicates that a mother's general tendency to elicit positivity from others is one of the sources of father-mother positivity. As with actor factors, there is a separate partner factor for mother, father, older child and younger child. The mean of the father partner factor measures the extent to which the average father elicits positivity from other family members. The variance of the father partner factor estimates between-family differences in how much positivity fathers elicit from their family members.

Up to this point the observed measure of mother-father positivity has been specified as an indicator of three different factors: the family factor, the mother actor factor, and the father partner factor. Thus, when specifying the model in a confirmatory factor analysis, mother-father positivity would load on each of these factors. This is another way of saying that we are partitioning the variance in mother-father positivity into these three components, where each component is identified as a latent variable. However, there is one more factor in the SRM that must be specified. It may be that the variance in the observed measure of one family member in relation to another is *not* due to characteristics of the family as a group, or characteristics of the actor, or char-

acteristics of the partner. It may reflect the unique relationship of the actor to the partner, a relationship effect. In the family SRM, there is a relationship effect for each of the 12 observed relationship measures.

Although relationship effects can be measured as latent variables (see Cook, 1994), they are more commonly measured as part of the residual variance of each observed score. The residual variance is the variance in the observed score that has not been accounted for by other factors. It is the unexplained variance. If variance due to the relationship effect is not estimated as a separate factor, then variance due to the relationship effect it will be contained in the residual. This means that the residual will be a composite of random errors of measurement and systematic variance due to the relationship effect. In Figure 1, this is illustrated by the fact that the mother-father and father-mother relationship factors also include errors of measurement, indicated by e_1 and e_2 . Because the variance of the residual is not just due to variance in the relationship effect, a significant residual variance should not be interpreted as indicating between-group differences in the corresponding relationship effect. However, the mean of the residual can be interpreted as the average relationship effect in the sample.

In addition to the variance and the mean of each of the SRM factors, the SRM specifies certain correlations among the factors. As noted earlier, for each person (i.e., role) in the family, there is an actor effect and a partner effect. The actor effect generally measures what the person “gives” to others, and the partner effect generally measures what the person “gets” from others. Within a sample of families, correlations can be tested between actor effects and partner effects for a given role. In this way the SRM can answer questions about whether people generally get what they generally give, or in other words, whether there is generalized reciprocity. Generalized reciprocity correlations are illustrated in Figure 1 by the double-headed arrows connecting the mother actor factor to the mother partner factor and the father actor factor to the father partner factor. In a sample of four-person families, there will be four generalized reciprocity correlations, one each for the mother role, the father role, the older child role, and the younger child role.

Reciprocity can also be measured in specific relationships. The correlation of relationship effects within dyads measures dyadic reciprocity. There are six dyads in two-parent two-child families (mother-father, mother-older child, mother-younger child, father-older child, father-younger child, and older child-younger child), so six dyadic reciprocity correlations can be estimated. When relationship effects are measured as part of the residual variance, dyadic reciprocity is measured by the correlation of the corresponding residual variances. For example, in Figure 1 the mother-father relationship factor is correlated with the father-mother relationship factor. Additional details on model specification can be found elsewhere (Kashy & Kenny, 1990; Tagliabue & Lanz, 2009).

In most research using the SRM, the interest is predominantly on the variances and covariances of the SRM factors and not on the factor means. This is because most research does not involve groups in which members have meaningful roles. For example, if college students are randomly assigned to round-robin groups for the purposes of a study, the group effect is not meaningful. In family research the individuals are not randomly assigned to their family, nor are they randomly assigned to their role. Consequently, there is more interest in the means of the SRM components. Means for the SRM effects provide descriptions of the family system that were not available before the SRM was developed. Consider, for example, the partner effects for positivity. The mean of the younger child partner factor tells us how much, on average, the younger child elicits positiv-

ity from other family members. We get estimates of the average partner effect for the mother, father, and older child too. These estimates can be compared to each other to address the question “Who elicits the most positivity?” Also provided are the means for the family factor (“How positive is the average family member in the average family?”), the four actor factors (“Who gives the most positivity?”), and the 12 relationship factors (“To whom is the average mother especially positive?”). To the degree that the sample is representative of the population, this is normative data on the family system, and the SRM effects for a particular family can be compared to these norms to determine where and how much that family differs from the norm. In other words, it is the basis for an assessment of family functioning (Cook, 2005; Cook & Kenny, 2004; De Mol, Buysse, & Cook, 2010). It is easy to see how this provides much more detailed information about family relationships than is provided by conventional measures of family functioning.

As noted earlier, mother's ratings of the relationships in her family should not be assumed to represent objective data. However, there is a number of interesting questions that can be addressed by these data. First, we can inspect the means for the family, actor, partner, and relationships to determine who mothers think gives the most positivity, who elicits the most positivity, and which relationship is the most positive for each individual, controlling for family, actor, and partner effects. Second, we can compare the mother's perspective to the perspective of another family member. For example, fathers' ratings may produce family, actor, partner, and relationship effects of that differ from mothers, and the profile of these scores may suggest a qualitatively different view of the family. Third, we can correlate other variables with the SRM effects to further explain the mother's perspective. For example, mothers' reports on a measure of social desirability may correlate positively with the family effect for positivity, suggesting that the family factor is a “macro perceiver effect” for mothers. This has been one of the concerns about traditional self-report family assessment procedures that use individual ratings of whole-family functioning (Cook & Kenny, 2006; Manders et al., 2007).

That an individual's perspective on the family may reflect their own subjective states (or traits) is only problematic if one assumes they reflect actual characteristics of the family. On the other hand, if the goal is to assist the person in articulating their view of their family and where they see possible problems, then an SRM analysis could provide a much needed framework for individual-oriented family therapy. In this paper, a second set of analyses extends the SRM family assessment procedure to include data provided by only one person, in this case the mother. Specifically, I use data from a previous study (Cook, 2000) as a standard against which I compare the family relationships of two particular mothers. By comparing the SRM effects for these particular families to those from the average family in the sample, I obtain a unique view of each mother's subjective family. I then consider how this information may inform a therapist and/or the mother herself about her psychology of family relationships.

METHOD

Participants

The sample consisted of the mothers from 208 two-parent two-child families residing in the United States. Data on 25 additional families was partially missing and excluded from these

analyses. The characteristics of the families with missing data have been reported previously (Cook, 2000). In general, they functioned at a lower level than the families with complete data. The gender distribution in this sample was 60.6% female ($n = 127$) for the older child and 48.6% female ($n = 101$) for the younger child. The mothers in this sample had an average age of 45.95 years ($SD = 4.425$). The average ages of the fathers, older children, and younger children were 48.17 ($SD = 5.437$), 19.65 ($SD = 2.188$), and 16.038 ($SD = 2.158$), respectively. If there were other children in the family, they did not participate in the study. The majority of families were Caucasian (90%) and the average family income was between \$82,000 and \$97,000 inflation adjusted U.S. dollars.

Procedures and Measures

Recruitment focused on intact families with a college student who had a younger sibling. Initial recruitment involved calls to randomly selected numbers from the student phonebook at a large Southwestern university. This method was ineffective, so subsequent recruitment relied on flyers posted on college campuses, newspaper advertisements, and word of mouth. This resulted in the participation of a number of families in which the older child was not a college student. The two children in the family were offered \$15 if all four family members participated. The study was approved by the Institutional Review Board (IRB). Each family member signed an informed consent (or assent) form, and the parents also signed consent forms for minor children. Questionnaires were sent to the families via the U.S. Mail. The packets included postage — paid return — addressed envelopes for each family member to return the completed questionnaires. The response rate was approximately 40%.

In accordance with a round-robin family design (Cook & Kenny, 2004), most of the questionnaires required the respondent to rate his or her relationship with each of the other three family members on a variety of constructs. However, for a few constructs each family member rated all 12 of the relationships in the family. For example, the current study uses mothers' ratings of positivity directed from each family member, herself included, to each of the other family members. Thus the round-robin family data were entirely based on the mother's perspective. The positivity measure consisted of the average of four items scaled on a 7-point Likert format anchored by 1 = *It never happens*, 3 = *It sometimes happens*, 5 = *It often happens*, and 7 = *It always happens*. The items were adapted from a list of "pleasing behaviours" developed for the study of marital satisfaction (Wills, Weiss, & Patterson, 1974). To facilitate the use of the scale with different types of partners (e.g., older sibling with younger sibling), each item included a blank line for identifying the target of the rating. The instructions informed the rater to mentally insert the target's name in the blank; for example "_____ shows approval or compliments me." When rating the relationship between two other people, the content of the items was the same, but there were short blanks for identifying both the actor and the partner. The instructions said, "Now, think about things _____ (the actor) says or does when together with _____ (the partner)." For example, "_____ (the actor) shows approval or compliments _____ (the partner)." Coefficient alpha reliabilities for the 12 measures of positivity had a mean of .78 and a range from .72 to .83.

Analysis

This study involved two different but related analyses. The first analysis used CFA to estimate the components of the SRM based on all the complete data from mothers' ratings of interpersonal positivity in their families. The specifications for this CFA have been presented elsewhere, most notably in Dyadic Data Analysis (Kenny et al., 2006). This implementation of the family SRM analysis focuses on the means, variances, and covariances of the latent variables measuring family, actor, partner, and relationship effects. The analysis was conducted using fSRM (Stas, Schönbrodt, & Loeys, 2014), an R-package developed specifically for the family version of the SRM.

The second analysis involves the use of formulas for estimating the SRM effects (family, actor, partner, and relationship effects) from the raw data (i.e., the 12 observed scores from each family). These formulas were originally presented in the first paper on the SRM (Warner et al., 1979). The SRM formulas were later applied to family data, where role-related behaviors are important and family level factors are expected (Cook & Dreyer, 1984). Cook and Kenny (2004) subsequently demonstrated how the formulas could be used for the assessment of family functioning in individual families. The procedure involves computing the family, actor, partner, and relationship effects for each family in a sample using the formulas and obtaining the mean and standard deviation for each effect. The same SRM effects from an individual family can then be compared to the sample means for these effects to get Z scores. An effect from an individual family that differs substantially from the sample mean (e.g., $Z > 1.50$) for that effect merits further attention clinically. A number of articles have elaborated on this method and its clinical utility (Cook, 2005; Cook & Kenny, 2004; De Mol et al., 2010).

RESULTS

The SRM of Maternal Perceptions

In the standard family SRM analysis, family members report on their own relationships and not on the relationships between other family members. In that context, the family effect measures something about the family as a group, the actor effects measure characteristics of family members as raters or perceivers, the partner factors measure the extent to which a partner elicits the same response from different raters, and relationship effects measure the unique adjustment that an actor makes to a particular partner, independent of actor, partner, and family effects. In the present study a single family member, the mother, provided reports on all the relationships in the family, not just her own. Consequently, the results do not reflect characteristics or experiences of the individuals in the family, but only the experience the mother has of those relationships. To facilitate discourse on the topic of mother's perceptions of their family relationships, I will use the term MSR, an abbreviation of "mother's subjectively rated," as a preface when I refer to these families.

Model fit. Beginning with the confirmatory factor analysis that tests the SRM based on the reports of 208 mothers, the chi-square for goodness of fit was statistically significant, indicating that the fit of the model could be improved, $\chi^2(df = 47, N = 208) = 107.30, p < .001$. However, the comparative fit index (.97), the Tucker-Lewis index (.96) and the root mean square error

of approximation (.08) were all in the acceptable range. As with data from standard family SRM analyses, the model does a remarkable job of accounting for a complex pattern of data. The estimates of the SRM factors are presented in Table 1.

TABLE 1
Social relations analysis of family positivity as perceived by mothers ($N = 208$)

Social relations model components	Effect mean	Variance [†]
Family	4.64*	.23
Actor		
Mother	0.60*	.20
Father	-0.02	.45
Older child	-0.22*	.42
Younger child	-0.36*	.37
Partner		
Mother	0.43*	.10
Father	-0.19*	.26
Older child	-0.09*	.15
Younger child	-0.15*	.01
Relationship		
Mother-Father	-0.12*	.62
Mother-Older child	0.07*	.11
Mother-Younger child	0.05*	.14
Father-Mother	-0.08*	.87
Father-Older child	0.02	.11
Father-Younger child	0.06*	.26
Older child-Mother	0.08*	.35
Older child-Father	0.03	.19
Older child-Younger child	-0.11*	.51
Younger child-Mother	0.01	.42
Younger child-Father	0.08*	.27
Younger child-Older child	-0.09*	.39

Note. Latent variable means are presented in the Effect column and the variance of these effects are presented in the Variance column.

* $p < .05$, two-tailed. †All variances were statistically significant, $p < .05$, one-tailed.

The MSR family effect. The mean family effect was 4.64 on the 7-point positivity scale. That means that in the average MSR family, the average family member experienced positivity from the others at a rate slightly more than “sometimes” and slightly less than “often.” The statistical test of the mean family effect tests whether the mean differs from zero. Given that the positivity scale does not include zero, the family effect is necessarily statistically significant. The variance of the family effect (.23) measures whether there is systematic variance in positivity at the family level (a group effect), indicating that some MSR families are more positive than others. The family factor is an indicator of how mothers perceive their family as a group. It is important to recall, however, that mother’s perception of the family as a group has not been measured and that the group effect is based on the aggregation of ratings of specific relationships. The SRM has done the work of integrating the 12 relationship-specific measures into a group level

factor. Because the ratings of each relationship are based on mother's perspective, this group effect may reflect a bias, thus measuring something about the mother and not about the family.

MSR actor effects. In contrast to the family effect, the other effects in the model can be either positive or negative, so their size and statistical significance are important. There are constraints on the actor effects such that their sum equals zero. This is the same as the constraints on main effects in the ANOVA model (Cook & Kenny, 2004; Warner et al., 1979). A person's actor effect reflects how much that person differs from the family mean (i.e., the average member of the family). As can be seen in Table 1, the actor effect for mothers is 0.60, so in MSR families the mothers are on average .6 scale points more positive than the average family member. There is also significant variance in this effect, so one of the ways that MSR families differ is in the mother's level of positivity. The actor effect for MSR fathers (−0.02) is not significantly different from zero, so the average father is neither more nor less positive than the average family member. There is significant variance in the actor effect for fathers (.45), so MSR families differ in the father's level of positivity. The actor effects for the older and younger child in these families are significant and negative. In the average MSR family, the children are less positive than the average family member, and the significance of the variance in these effects indicates that MSR families differ in the level of positivity of the older and younger child. That mothers rate their own relationships more positively than they do other MSR family relationships may reflect a social desirability response set or bias.

MSR partner effects. The partner effects indicate how much mothers, fathers, older children, and younger children elicit the positivity they receive from other family members. Like the actor effects, the partner effects are constrained so that the sum of the effects equals zero. A positive partner effect means that the person elicits more positivity, and a negative partner effect means that the person elicits less positivity, compared to the family mean. The partner effect for MSR mothers (0.43) is positive and statistically significant, indicating that they elicit more positivity than the average member of their family. The partner effects for the other MSR family members are all negative and significant, indicating that they all elicit less positivity than the average member of their family. The variance in all the partner effects is significant, so MSR families differ in how much positivity family members elicit from each other. That MSR mothers rate themselves as the recipient of more positivity than other family members could also reflect a social desirability bias.

MSR relationship effects. Relationship effects are most easily interpreted as indicating how much a person's specific relationships differ from their actor effect, which represents their average family relationship.² For instance, the mother-father relationship effect is negative and statistically significant (−0.12). This means that the average mother is .12 scale points lower in her positivity toward father than her actor effect (0.60) would lead one to expect. The mother-older child relationship effect (0.07) and the mother-younger child relationship effect (0.05) are both positive and significant, indicating that the average mother is more positive toward both of the children than her actor effect indicates. The three relationship effects for a given actor are constrained to sum to zero (e.g., $-0.12 + 0.07 + 0.05 = 0$).

The relationship effects for MSR fathers qualify conclusions that would be drawn on how positive fathers are toward other family members in general, based on the father actor effect. MSR fathers are less positive toward their wives than they are in general (−0.08) and more positive toward the younger child than they are in general (0.06). The relationship effect for the aver-

age father's positivity toward his older child (0.02) does not differ significantly from zero. Taken together, the relationship effects indicate that MSR mothers and fathers are less positive with each other than with their children.

The relationship effects for MSR children partially mirror the relationship effects for the parents. Specifically, the MSR siblings are less positive toward each other than they are in general. However, the older sibling is relatively more positive with mother (0.08) than father (0.03) and the younger sibling is relatively more positive with father (0.08) than mother (0.01). This raises the question of whether the older sibling's unique relationship is significantly more positive with mother than with father, and whether the younger sibling's unique relationship is significantly more positive with father than with mother. These questions can be addressed by setting the relevant relationship effects to be equal and testing whether this changes the fit of the model. The fit of the SRM was not significantly changed by setting the older child-mother relationship effect to equal the older child-father relationship effect, but there was a marginally significant difference between the younger sibling's unique relationships with father and mother. The results favored a more positive relationship with father, $\chi^2_{\text{diff}}(df = 1, N = 208) = 3.54, p < .06$.

Reciprocity of positivity in MSR families. The variances of the actor effects, the partner effects, and the relationship effects were all statistically significant. Consequently, all the generalized and dyadic reciprocity correlations can be estimated. These results are presented in Table 2. The generalized reciprocity correlations are remarkably large, all above $r = .85$ and all are statistically significant. When mothers rate positivity in family relationships, the positivity that individuals receive is closely tied to the positivity they give.

TABLE 2
Generalized and dyadic reciprocity correlations
for mothers' perceptions of positivity in family relationships

Reciprocity	r	Z
Generalized		
Mother	.88	4.12*
Father	.86	6.50*
Older child	.90	6.20*
Younger child	.86	4.95*
Dyadic		
Mother-Father	.79	7.19*
Mother-Older child	.28	1.71 ⁺
Mother-Younger child	.45	3.16*
Father-Older child	.05	0.23
Father-Younger child	.45	3.13*
Older child-Younger child	.73	5.60*

Note. The Z statistic tests whether the covariance on which the correlation is based is significantly different from zero.

⁺ $p < .10$, two-tailed. * $p < .05$, two-tailed.

The dyadic reciprocity correlations were smaller, and not all of them were statistically significant. The smaller size of the correlations is expected because they are attenuated by errors of measurement. Nonetheless, four of them were statistically significant; mother-father ($r = .79$),

mother-older child ($r = .28$), father-younger child ($r = .45$), and older child-younger child ($r = .73$). The correlations were positive, meaning that the more one member of the dyad was uniquely positive to the other, the more the other reciprocated by being uniquely positive in return. Thus, when mothers rate positivity in their family relationships, reciprocity of positivity is common at both the individual and the dyadic levels of analysis. Nonetheless, there is more dyadic reciprocity between members of the same generation (e.g., mother-father dyads) than between members of different generations.

The SRM Assessment of Individual MSR Families

Having established that the SRM provides an acceptable description of maternal perceptions of positivity in the family system, we turn our attention to the assessment of individual families using observations provided by the mother only. Two MSR families were selected for analysis based on the mother's rating of father's positivity toward the younger of the two children, typically an adolescent. These were the families where the level of positivity was the lowest in the sample of 208. Although similar with regard to the level of father-child positivity, different processes may account for the low scores. Father's positivity toward the child can be affected by the father's characteristics as an actor, the child's characteristics as a partner, the unique relationship of the father to the child, and the family-group effect, and each of these could reflect a bias in the perspective of the informant (i.e., mother). However, if we take the view that each of the components reflect the mother's experience of her family (and not objective reality), then we obtain a wealth of information that can be useful in understanding mother's behavior toward other family members. Following the method described by Cook and Kenny (2004), each of the SRM effects for the two individual families will be compared to the mean SRM effects from the sample as a whole. Since we are not interested in making inferences, the Z scores will be used only for descriptive purposes. In this regard, Z scores greater than or less than 1.5 standard deviations from the sample average are considered important.

MSR Family 1

The younger child in this family was a 16 year old female, and her older sibling was a 19 year old female. Mother's rating of father's positivity toward the younger daughter was 1.80 on a 7-point scale (higher scores mean more positivity). This is almost three standard deviations below the average score for MSR father-daughter positivity ($Z = -2.71$). Three other observed scores were substantially lower than the sample average; mother's positivity toward the younger child ($Z = -2.36$), the younger child's positivity toward mother ($Z = -1.91$), and the younger child's positivity toward father ($Z = -2.84$). SRM analysis revealed that the family as a group (family mean = 3.47) was low in positivity ($Z = -1.63$). Consequently, the low observed score for the father's positivity toward his younger daughter was in part due to characteristics of the family as a group. However, the actor effects, partner effects, and relationship effects are independent of the family effect. Compared to the family mean, the older child was substantially higher in positivity (actor effect = 1.25, $Z = 2.31$) and elicited more positivity (partner effect = 0.75, $Z = 1.90$). Thus,

in this MSR family the older child is a relatively positive factor. The younger child, however, was lower in positivity (actor effect = -1.72 , $Z = -2.26$) and elicited less positivity (partner effect = -1.18 , $Z = -2.32$) than the average family member. Consequently, the MSR father's low level of positivity toward the younger daughter was in part due to characteristics of the younger daughter as a partner. Given the opposite signs of their actor and partner effects, the two daughters show polarized behavior within the family.

According to the SRM, this MSR father's low level of positivity toward the younger daughter could be due to characteristics of the family, the father as an actor, the younger daughter as a partner, and or the father-daughter relationship. But of these components, only the family effect and the daughter's partner effect were significantly lower than the sample means for these effects. Thus, the father's low level of positivity toward his younger daughter does not reflect characteristics of the father or his unique relationship with this daughter. That the younger daughter's actor and partner effect were both substantially lower than the sample averages, coupled with a large ($r = .84$) generalized reciprocity correlation for MSR younger siblings, suggests that this daughter's low level of positivity was reciprocated by other family members. A therapist working individually with the mother might investigate the extent to which she endorses the family assessment findings and, if so, (1) why she thinks her family is low in positivity, (2) how her two daughters came to be so different in their expressions of positivity, and (3) how these factors affect her emotionally and affect her behavior toward other family members. One might anticipate that she would blame the younger daughter for creating a "low-positivity family environment." A behavioral therapist might encourage the mother to reinforce expressions of positivity from this daughter, perhaps recruiting father and older sister into the intervention. A therapist might also suggest that the rule of reciprocity (i.e., being positive toward the younger daughter only when younger daughter is positive) is problematic in this family and that finding reasons to unilaterally praise the younger daughter could disrupt this pattern. These positive interventions would have benign effects regardless of the objective dynamics of the family.

MSR Family 2

The younger child in this family was a female, aged 19, who had an older brother aged 22. The mother's rating of father's positivity toward their daughter was the second lowest father-child score in the sample of MSR families, 2.40 on the 7-point scale, $Z = -2.11$. Five other observed scores were at least 1.5 standard deviations from the corresponding sample means; mother-younger child ($Z = 1.55$), father-mother ($Z = -1.81$), father-older child ($Z = -2.16$), older child-father ($Z = -2.35$), and younger child-father ($Z = -2.13$). Surprisingly, the family mean was not substantially different from the sample average (family mean = 3.93, $Z = -0.98$). However, this MSR father generally provided low levels of positivity (actor effect = -2.15 , $Z = -3.44$) and elicited low levels of positivity (partner effect = -2.25 , $Z = -4.235$) from other family members. In contrast to the father, this MSR mother was relatively high in positivity (actor effect = 1.82, $Z = 2.30$) and the younger daughter was relatively high in eliciting positivity (partner effect = .625, $Z = 1.77$). So in contrast to MSR Family 1, low positivity from father to younger daughter was due to characteristics of the father and not to characteristics of the daughter or the family-group. Given that the father's actor and partner effect were both substantially lower than the sample av-

erages, coupled with a large ($r = .86$) actor-partner reciprocity correlation for MSR fathers, this MSR father's low level of positivity appears to be reciprocated by other family members. A therapist working with this mother might inquire whether other family members would describe the family in the same way as she has done, whether the mother's relatively high level of positivity was in compensation for the father's relatively low level of positivity, and how her perception of the father affects the marriage. Whether the father's low level of positivity is maintained by the low level of positivity he receives from others and whether he has (from her perspective) always been this way would also be important areas of inquiry.

In summary, low levels of father-younger child positivity are explained by different SRM components in the two MSR families. In Family 1 the family as a group and the younger child as a partner were important. Family members were generally low in positivity and, in addition to this, the younger child elicited low levels of positivity. In Family 2 the father was important, receiving low levels of positivity as a partner commensurate with the low levels of positivity he gave as an actor. Family 2 was also unique because the younger child elicited relatively high levels of positivity, despite the low amount received from the father. Reciprocity of positivity was probably an important dynamic in both MSR families.

DISCUSSION

The family SRM is usually applied to family data where each participant has reported only on his or her own relationships with other family members. The rater may report on target-to-rater behavior (e.g., mother rates father's positivity toward herself) or on rater-to-target behavior (e.g., mother rates her positivity toward father). In either case, the results of SRM analysis can be informative regarding the sources of variance in such measures and patterns of family relationships. It is not assumed that other family members would be in agreement with all the ratings, but only that the analysis informs our understanding of the psychological experience family members have of each other. But family members do not just experience their own relationships, they also experience the relationships between other family members. For example, the quality of the relationship between parents affects the well-being and development of the children (Davies & Cummings, 1994; Grych & Fincham, 1990). Fortunately, family members can provide data on these relationships as well. For example, the mother can rate her behavior toward other family members, the behavior of other family members toward her, and both sides of each of the dyads in which she is not a member (e.g., her child's behavior toward the father and the father's behavior toward the child). When other family members rate all these relationships, and all are included in the SRM analysis, it is called a "triadic SRM analysis" (Bartle-Haring, Kenny, & Gavazzi, 1999; Bond, Horn, & Kenny, 1997).

The present study used data originally intended for a triadic SRM analysis. Four family members from 208 families each rated positivity in all 12 relationships in their two-parent two-child families. The goal of the triadic SRM analysis is to obtain estimates of the SRM components using the consensus of family member's perspectives and controlling for individual response tendencies or rater effects. However, an interest in the use of the SRM for the clinical assessment of families suggests that the ratings of these 12 relationships — provided by a given individual — may provide insight into that person's experience of their family system that could be informative about that person's behavior. The goal of this study was not to describe the "true"

family system, but rather to understand the mother's subjective experience of her family system, her family psychology.

What have we learned about mother's family psychology? First, as with conventional family round-robin data, we found that mother's round-robin family data are quite amenable to SRM analysis. The SRM does an excellent job of accounting for the complex patterns of covariance in the observed scores of positivity, as indicated by the model "fit" indexes. We also learned how the "average" mother views the relationships in her family. Although she may exist only statistically, the average mother is important because she provides a standard against which the families of real mothers may be compared and real differences can be identified. Highlights of the specific SRM findings in the family of this mythical average mother follow.

We learned that there is a significant family factor. This means that there is an element of within-family similarity in MSR family members' level of positivity, and that the level of the family group effect differs from family to family. In the average mother's family, this level (the mean of the family-group effect) was above the midpoint on a 7-point positivity scale. We learned that of the four actor effects, the actor effect for MSR mothers was positive and larger than any other actor effect. This indicates that mothers rate themselves as higher in positivity than they rate most other family members. This may reflect a general bias in how mothers perceive their family relationships. However, there was also significant variance in the mother actor effects, so not all mothers are the same. In contrast to mothers, the average actor effects of both the MSR children were significant and negative. In the family of the average mother, the MSR children are relatively low in positivity. MSR fathers are not significantly different than the family mean, but their actor effects do have significant variance. Not all MSR fathers have the same level of positivity.

The partner effects (i.e., the means of the latent variables for partners) indicate how much positivity each family member elicited from other family members. In the average MSR family, the partner effect for mother was large and positive. The mother elicited the most positivity from others. The partner effects of the father, the older child, and the younger child were all negative, and the younger child's was the most negative. It is common in family SRM studies to find that the younger child, often an adolescent, is perceived in the least favorable light (e.g., Eichelsheim et al., 2011). However, all four partner effects had significant variance, so the mean partner effects told only part of the story. MSR families differed in how much positivity the mother elicits, the father elicits, and the children elicit. Additionally, the actor-partner reciprocity correlations indicate that MSR family members tend to elicit positivity in proportion to how much they give it.

In four-person families, each family member participates in three relationships. The actor effect can be interpreted as the way the person behaves toward other family members in general, based on a weighted average of these three relationships. Relationship effects, on the other hand, measure how much the actor makes a unique adjustment to each partner. A large relationship effect means the actor effect does not accurately reflect relationship-specific behavior. For example, in the average MSR family, the mother-father relationship effect was negative. This means she showed less positivity toward father than she does in general. The father-mother relationship effect was also negative, indicating that the father is less positive toward mother than he is in general. We also saw that the older child was more positive toward mother than in general, and that the younger child was more positive toward father than in general. Whether this would replicate, and if so, whether it is due to birth-order effects or some other variable is an interesting question for future study. This is also true for the finding that in older child-younger child dyad,

each child had a negative relationship effect with the other. Higher levels of dyadic reciprocity between members of the same generation has been reported in other SRM based family studies (Eichelsheim, Dekovic, Buist, & Cook, 2009).

The use of the SRM as part of a family assessment procedure involves the comparison of a particular family to a standard, such that sufficiently large differences from this standard reveal family patterns that merit further evaluation. When it was first developed, the SRM was estimated by means of formulas for the group mean, the actor, partner, and relationship effects (Warner et al., 1979) and these formulas were soon modified for use with family groups (Cook & Dreyer, 1984). Sample norms for the family SRM effects can be generated just as they are for psychological tests. The SRM effects for a particular family can be compared to these norms to produce *Z* scores indicating how much the family differs from the sample. The family effect identifies differences from the norm at the family level of analysis, the actor and partner effects identify differences at the individual level of analysis, and the relationship effects identify differences at the dyadic level of analysis. In this study I modified the procedure by comparing the SRM effects for two different MSR families to the SRM effects from the average MSR family. The families had one thing in common. They were each over two standard deviations below the mean for the level of father-younger child positivity. The father-younger child relationship was chosen, in part, because the mother was neither the actor nor the partner in the relationship. It underscores the point that a person's family psychology is not limited to their own relationships.

We cannot really say whether the mother in these families was aware of a deficit of positivity in the father's relationship to the younger child. We have not asked for judgments of this kind. Neither can we say whether the mother would confirm the SRM effects that account for her ratings. However, a clinician should find the SRM family assessment useful for generating questions for the mother about her perceptions of her family. In MSR Family 1, the father-younger child relationship was partially due to low positivity at the family level, so the SRM assessment should trigger a question about whether the mother sees her family as generally low in negativity. The younger child partner effect was also identified by the SRM as a source of low positivity. Would the mother confirm that the child elicits less positivity than other family members? In this family the younger child actor effect was significantly lower than the sample average actor effect. Does the mother see the child as generally low in positivity toward other family members? And given that both the actor and partner effects for the younger child are significantly negative, does the mother think the child's behavior is being reciprocated? If the child were more positive, would he or she get more positivity from others? If the child received more positivity from others, would the child become more positive?

In MSR Family 2, the SRM assessment suggests that father's low level of positivity toward the younger child was due to the father's generally low level of giving positivity (his actor effect). It suggests that he receives low levels of positivity too (his partner effect). When queried by a clinician, would the mother confirm these findings, or would this be new information for her? Would she reject the findings and present an alternative model of her family? Would the findings lead her to revise her ratings of some or all of her family relationships? For any significant SRM finding confirmed by the mother, follow up questions about why she thinks the effect occurs and how she feels about it could provide insights into mother's view of her family. For any SRM finding rejected by the mother, a significant piece of her family psychology might be revealed by the reasons for her disagreement.

CONCLUSION

When a family member rates their relationship with another family member, the score may be above or below the sample average for that measure. But understanding a relationship involves more than knowing whether the observed score is above or below average. For directed relationship data, each observed score can be split into its separate components, just like molecules can be split into their atomic components. The components of family relationships are family effects, actor effects, partner effects, and relationship effects. This is the first study to perform SRM analysis on round-robin family data that has been obtained from only one family member, the mother. We learn from this how the family system looks when the average mother rates the specific relationships in the family. We learn that when the average mother rates positivity in the family, the family turns out to be somewhat positive, the mother turns out to be the family member who is most positive, the mother turns out to be the family member who elicits the most positivity from others, and reciprocity of positivity tends to be high. It is important to remember, however, that these complex findings are not the result of judgments made by the mothers. The findings come from applying the SRM to relatively simple ratings of the level of positivity in specific directed relationships. This is a strength of the SRM and the round-robin design. Less inference is involved when people rate the behavior of one family member toward another, compared to ratings of the system as a whole. Future research that involves other variables, such as perceived control, will shed additional light on the average mother's family psychology. But an equally interesting line of research will investigate how individual mothers respond to the SRM assessment of their own MSR families, and whether the SRM results play a leading or following role in the evolution of their perspectives. Although a convenience sample is all that is available at present, it is hoped that a representative sample will eventually be obtained for future family assessment work.

NOTES

1. Adapted from Cook (1994).
2. In some cases it makes more sense to compare relationship effects to the appropriate partner effect. For example, the mother-father relationship effect may be significant and positive, indicating that the MSR father elicits more positivity from the mother than he elicits more generally (i.e., compared to the father's partner effect).

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