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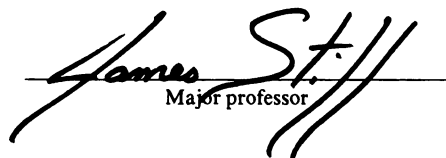
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SOCIAL NETWORKS AND DEVELOPMENT OF CLOSE RELATIONSHIPS:
TEST OF AN INTERDEPENDENCY MODEL

By

Hyun Joo Kim

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ABSTRACT

SOCIAL NETWORKS AND DEVELOPMENT OF CLOSE RELATIONSHIPS:

TEST OF AN INTERDEPENDENCY MODEL

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This study conceptualizes relational development as increase in interdependency between relational partners. The central proposition of this study states that the increase in interdependency at the level of relational dyad will be associated with an increase in interdependency at the level of the dyad's social network of close friends and family members. Theoretical and methodological limitations of previous studies of social networks are discussed. A study free of these limitations was conducted to test the interdependency model of relational development. Generally, data were consistent with the proposed model. The degree of relational development was positively correlated with indicators of involvement in partner's network and overlap between the individual networks of relational partners. In addition, the degree of network overlap was predictive of the convergence among network members regarding their perception of the focal relationship. Findings are reviewed in the light of the interdependency model. Limitations of the current study are discussed and suggestions for future research are made.

This dissertation is dedicated to my late father, Doo Sik Kim, who had courageously let his son leave home and long prayed for his son's accomplishment.

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CHAPTER 1

THEORETICAL RATIONALE

Generally, development of close relationships has been understood as a movement from nonpersonal interaction to interpersonal attraction (Berscheid & Walster, 1978; Rubin, 1973); enhanced predictability about partners (Berger & Calabrese, 1975; Miller & Steinberg, 1975); and growing commitment (Huston & Levinger, 1978; Kelley, 1983; Rusbult, 1980). Though there has been much consensus about how to conceptualize and describe development of close relationships, conditions that promote or deter relational development have not been thoroughly investigated.

Most studies on relational development adopt a rather restricted focus for investigating such a complex phenomenon. They interpret behaviors of relational partners as resulting from their common attributes and norms rather than their involvement in structured social relationships (Wellman, 1983). Because partners' social networks witness the evolution of the focal relationship, social networks must be considered a crucial environmental determinant of close relationships.

Network Perspective for Studying Close Relationships

Huston and Levinger (1978) reviewed studies on close relationships and found that more than two-thirds of them

dealt with impressions and encounters, usually removed from the relationships' social contexts. The remaining studies considered the relationships themselves, excluding other relationships in the social environment. La Gaipa (1981) comments on this tendency of relying heavily on individual or dyadic variables for studying close relationships.

Too often have studies of personal relationships focused on single dyadic relationships and the behaviors that occur in them while disregarding the nexus of other relationships to which individuals are exposed. (p. 67)

The need to investigate the embeddedness of dyadic relationships in social contexts has been widely acknowledged (Duck & Gilmour, 1981; Huston & Levinger, 1978; La Gaipa, 1981; Parks & Adelman, 1983). Researchers of close relationships (Huston & Levinger, 1978; Kelley, Berscheid, Christensen, Harvey, Huston, Levinger, McClintock, Peplau, & Peterson, 1983) have agreed that a relationship's causal context is formed by the dispositions of each relational partner, by factors emerging from the interaction between the partners, and by features of social environment in which the relationship is embedded.

Repeated attempts to account for relational development on the basis of a combination of personal characteristics of partners have proved unsuccessful (cf. Huston & Levinger, 1978). Examination of dynamic interplay of a close relationship with various elements in the partners' social

network will remedy this failure. For instance, Parks and Adelman (1983) found that when network factors were combined with basic dyadic variables, it was possible to predict which relationships would deteriorate over time with nearly 90% accuracy. Thus, a network perspective is one promising avenue of future research on close relationships.

A network approach to relational development starts by treating relational partners as social actors who are interpreting and constructing reality relative to others. People may be influenced by the relationships they have with other individuals (Hinde, 1981). According to atomistic perspectives, individual actors are depicted as making choices and acting without regard to the behavior of other actors. By contrast, network analysis incorporates a significant assumption about social behavior: That actors participate in a social system involving many other actors who are significant reference points for one's behaviors. The nature of relationships a relational partner has with other system members may affect and be affected by the partner's perceptions, beliefs, and actions (Knoke & Kuklinski, 1982).

In fact, the idea that individuals do not conduct their social behaviors totally on their own volition has been echoed by several earlier social theorists (Blau, 1964; Levi-Strauss, 1969; Mead, 1934). Blau (1964), for example, emphasizes the importance of including a network perspective for studying human relationships.

The pattern of association between two individuals is strongly influenced by the social context in which it occurs. Even the analysis of social interaction in dyads, therefore, must not treat these pairs as if they exist in isolation from other social relations..... It is essential, to conceptualize processes of social association between individuals realistically as finding expression in networks of social relations in groups and not to abstract as isolated pairs from this group context. (pp. 31-32)

As such, this study considers the role of a social structural phenomenon, i.e., a communication network, in developing close relationships. This study explores the association between the dynamics of relational development and properties of social networks. First, major findings of previous studies will be subjected to a more vigorous theoretical and methodological review. Then, relational development and social network properties will be conceptualized in such a way that they not only synthesize the various perspectives of looking at close relationships but also permit investigation of the interplay between relational development and social networks. Hypotheses that specify the relationship between network properties and relational development will be advanced. These hypotheses will be subjected to empirical tests that overcome limitations of previous studies.

Review and Critique of Social Network Research

Summary of previous studies.

Two groups of studies from the areas of social psychology and communication have investigated relational development from a network perspective. First group of studies was concerned with the partner's global perception of network support or interference (Eggert & Parks, 1987; Johnson & Milardo, 1984; Leslie, 1982; Lewis, 1973; Parks & Adelman, 1983; Parks, Stan, & Eggert, 1983). These studies found that perception of support from partner's social network, perceptions of similarity and attraction to partner's network were all correlated with dimensions of relational development (Eggert & Parks, 1987; Lewis, 1973; Parks & Adelman, 1983; Parks et al., 1983); and perception of network interference had a negative effect on relational development (Johnson & Milardo, 1982).

A second group of studies centered on testing network overlap and shrinkage as related with development of close relationships (Johnson & Leslie, 1982; Krain, 1977; Milardo, 1982; Milardo, Johnson, & Huston, 1983). General findings of these studies indicate that as relationships advance, there is an increase in the size of the overlapping network mutually shared by both partners (Milardo, 1982); while the size of separate networks of each partner decreases (Johnson & Leslie, 1982; Krain, 1977; Milardo et al., 1983). For example, Milardo (1982) found that the percentage of network members common to both partners in a dating relationship

increased substantially from 30% at casual dating, to 58% at exclusive dating, to 77% for engaged couples. Research designs and findings of major network studies on relational development are summarized in Table 1.

Table 1 about here

Though these studies added to our understanding of close relationships, their contribution to knowledge about the interplay between relational development and social network has been limited. These studies investigated certain aspects of social networks while overlooking others. One advantage of applying a more complete network approach to the study of close relationships is the opportunity to identify the organization of social relations and detect emergent social phenomena that do not exist at the level of individual partners (Knoke & Kuklinski, 1982).

Contrary to the motives of researchers who study the social networks of close relationships, most of these network studies have failed to identify any of the structural properties of social networks and apply theoretical implications of network analysis to their investigation. Several methodological flaws also make it difficult to draw substantive conclusions from previous findings. Among them, failure to secure data from actual network members and errors in eliciting social network members seem to be the most crucial. In the following

sections, previous studies of social networks are subjected to a more extensive conceptual and methodological review.

Conceptual weaknesses.

Researchers of social networks have not investigated how particular properties of networks interact with features of relationships at different stages of development. As such, we do not know the extent to which structural properties influence and are influenced by the developmental process of close relationships. Most network studies of close relationships describe the social network from the perspective of focal relational partners. Such variables as perceptions of attraction and similarity to network members and amount of communication with network members were valid indices of relational development (Eggert & Parks, 1987; Parks and Adelman, 1983; Parks et al., 1983).

However, these studies did not describe the overall network, including ties existing among network members and the nature of such ties. A few studies that attempted to map the properties of social networks only described association between macro properties of network overlap (Milardo, 1982) or shrinkage of separate networks (Johnson & Leslie, 1982; Milardo et al., 1983). For example, Milardo (1982) argues that studies of close relationships have yet to establish how structural or interactional characteristics of networks are associated with the development of a pair relationship.

One major strength of network analysis is that it

surpasses individual-based approaches (Knoke & Kuklinski, 1982). To do this, network analysis identifies larger social structures based on sociometric data from individuals (Tichy, 1981). Network analysis purports to explain, at least in part, the behavior of network elements and of the system as a whole by appealing to specific features of the connections among the elements (Laumann, 1979). While social psychologists explore the ways in which feelings for one another pull partners together, network analysts should explore the ways in which these feelings are transpired through networks and manifested as various forms of network influence (McCall, 1982). Employing network approach requires researchers to identify structural patterns that can facilitate or prohibit this process.

On the contrary, network studies of close relationships often remain at the level of focal relational partners without reference to the nature of other links in the network or how they fit together. That is, while communication links from the focal partners to their network members have been widely surveyed, links reciprocated from the network members to the partners or links among network members have not been investigated. As a result, prior studies identified only a small portion of the entire process by which dyadic relationships and their social network interact.

In addition to the size of the overlapping network (Milardo, 1982; Milardo et al., 1983), it may be necessary

to consider features of social networks that play critical roles in network-dyad relations. For example, the characteristics of ties among network members can be important. Association between range and strength of ties and effect of communication flow in the network have long been documented (Festinger, Schachter, & Back, 1950).

Cobb and Jones (1984) argue that network support can be measured by looking at three elements: the supportive behavior that people actually provide, the properties of the network, and the way a person feels about it. Albrecht and Adelman agree when they contend that "measurement of support communication should include the nature of supportive messages exchanged between interactants and the type of relationship that exists between them, and the characteristics of the network structure embedding the interaction" (1987, p. 71). Thus, when conceptualizing social networks, including specific parameters of network structures enhances the theoretical relevance of network research and may improve understanding of the phenomenon.

Methodological weaknesses.

No data from actual network members. Previous network studies on close relationships failed to obtain data from other network members than focal relational partners. This failure did not allow the researchers to delineate a complete map of interaction patterns among network members. Few studies have assessed both the perceptions of relational partners and those of other network members. It is



generally understood that respondents cannot accurately estimate the frequency of social contacts with network constituents over time (Bernard & Killworth, 1977). This makes it difficult to sort out how much of the linkage between relational development and network properties is due merely to the dyadic partners' potential response biases (Parks et al., 1983). In this regard, findings drawn from the previous studies may be limited because of the bias inherent in the procedures used to elicit network data.

Some researchers, however, collected data using an interactive approach. Instead of asking the relational partners about their network, Milardo and his colleagues (Milardo, 1982; Milardo et al., 1983) required participants to record their daily communication activities immediately after each interaction occurred. One improvement of their method from the standard method was that the time interval was shorter between the occurrence of each social act and the record of it, which may have produced a more accurate assessment of each communication act. However, when we consider that the method employed by these researchers consists of asking the relational partners to provide network data, their data are also subject to the same reporting biases and are inadequate for developing a map of the complete network.

While gathering data from the networks of each relational partner may be costly and time-consuming, it may be essential for answering crucial questions about the role



of social networks in the development of close relationships. Research designs that include assessments of both integration and quality of ties from relational partners as well as their network members provide opportunities for exploring areas perceptual convergence and divergence. For example, Eggert and Parks (1987) contend that they cannot know whether feelings of attraction and support were reciprocated and transpired throughout the network, because they only collected data from relational partners. A broader range of social network indices should be incorporated in future research designs to permit cross-level analyses in addition to the traditional analysis of individual-level perceptions of the social network.

Errors in eliciting social network. Unlike organizational network which has a corporate identity in real life (Aldrich & Whetten, 1981), social networks of close relationships neither have clearly identifiable boundaries nor distinct defining characteristics that are relatively stable over time. Correctly identifying the social network becomes important because an error in the specification of the boundary can result in fundamental misrepresentation of the structure (Laumann, Marsden, & Prensky, 1983).

Previous studies revealed weaknesses in defining the boundaries of social networks. Most network studies relied on 'significant others' approach for eliciting relational partners' social network members (Eggert & Parks, 1987;

Johnson & Leslie, 1982; Johnson & Milardo, 1982; Krain, 1977; Lewis, 1973; Parks & Adelman, 1983; Parks et al., 1983). The significant others approach conceptualizes relational partners' network members as close associates whose opinions are important to the partners. This approach, while being most preferable because of its efficiency and practicality, may need some elaboration given following considerations.

First, social networks of people vary in size and composition (cf. Huston, Surra, Fitzgerald, & Cate, 1981; Wheeler & Nezlek, 1977). While some people may have small but strongly integrated networks, others may have larger networks with weaker integration. That is, there is always a possibility that the presence of a social network is more salient to some people than to others. For example, men tend to emphasize sharing activities and interests with friends more than women whose friendships tend to be characterized by emotional sharing. Also women tend to interact with network members more often and for longer period of time than men (Brehm, 1985; Weiss & Lowenthal, 1975). Thus, considering only the number of people met or known in a partner's network by itself would not be a valid measure of network involvement (Eggert & Parks, 1987; Parks et al., 1983).

Therefore, when constructing a network of significant others, the size factor should be controlled for and an index of network importance should be created. This can be

done by assessing the strength and frequency of ties (Granovetter, 1973) and integration among network members and relational partners. By doing so, it becomes possible to document how central and important each network is to the focal relationship.

Second, error is likely to result from respondents' exaggeration when they lengthen list of associates to avoid appearing unpopular. This may have been critical for the studies where the respondents were required to list a specified number of people as their network members (Parks & Eggert, 1987; Parks & Adelman, 1983; Parks et al., 1983). These studies required respondents to list 4 family and kin and 8 non-kin of their own network and their dating partner's network to whom they felt the closest. Asking respondents to list a certain number of people in their partner's network may have caused respondents who have little contact with partner's network overreport the actual number of network links. There is also the possibility that respondents might include people in their partner's network who their partner would not consider important members of their social network. If this occurs, the assessments of network overlap would underrepresent the actual degree of overlap in the two partners' primary networks.

Another problem with this technique is that there is no justification for researchers to set the size of social network. Individuals seem to vary in the number of people they consider close. For instance, whereas Johnson and



Milardo (1984) found that respondents on average listed 5.8 people as their significant network members, Fischer's (1982) finding suggests that people identify about 13 members of the core network. Another study (Milardo et al., 1983) required respondents to record their daily social interactions and reported that number of best friends averaged from 4.4 to 9.0, depending upon the degree of relational development.

Though speculation by Parks and his colleagues about network size is consistent with general findings, imposing a finite limit on the number of network members respondents should list creates a demand characteristic that ensures the respondents will identify some close friends and list enough others to satisfy the needs of a professional social scientist (Milardo, 1983). Because there seems to be a practical limit to the amount and intensity of ties an individual can maintain (Wellman, 1983), it is likely that respondents will not list more network members than what a researcher can handle. Therefore, it may be more effective to instruct respondents to list as many or as few network members as they wish, rather than requiring them to complete a list of a certain length.

New Approach to Relational Development

Defining relational development.

Many network studies have not adequately conceptualized relational development. They merely categorized relationships using crude courtship labels, such as 'casual

dating,' 'regularly dating,' or 'engaged' (Johnson & Leslie, 1982; Johnson & Milardo, 1984; Milardo, 1982; Milardo, Johnson, & Huston, 1983). In addition, such measures ask respondents to categorize their relationship using a single-item measure which is never amenable to the assessment of reliability. Milardo (1983) argued that "theoretical advances will result when nominally defined boundary conditions, such as dating partners, spouses, and close friendships are rephrased in the light of conceptually defined dimensions common to the development of a variety of close relationships" (p. 14). Thus, the current study adopts a more sensitive definition of relational development by including several factors.

The notion of interdependency. Though most conceptualizations of relational development do not include the factors beyond dyadic level, closer scrutiny of them makes it possible to apply them in the context of social networks. This study views a focal dyadic relationship as situated in the web of other relations in the social environment. As such, it becomes necessary to conceptualize relational development accordingly. Social exchange theory (Blau, 1964; Burgess & Huston, 1979; Homans, 1961; Kelley, 1979; Kelley et al., 1983) explains relational development in terms of interdependency among actors. Whitten and Wolfe (1973) argue that without exchange theory the notion of network would be quite abstract, divorced from the realities of human life in specific social settings.

Because social exchanges may transpire indirectly through complex chains of many interdependent actors rather than directly between just two actors (Olsen, 1978), the concept of interdependency becomes a useful tool in explaining the linkage between close relationships and their social network. It suggests people seek the company of others because they can obtain greater rewards and satisfaction by cooperating with others. Humans are assumed to be inexorably dependent upon others and hence collectively interdependent for the satisfaction of a wide variety of needs. Close relationships are considered, therefore, as reflections of interdependency, where the well-being of one person is at least partially contingent upon the actions of his or her relational partner.

Conceptualizing relational development. Drawing upon the above discussion, this study adopts the social exchange notion of interdependency to conceptualize relational development. Defining features of close relationship include strength, frequency, diversity, and duration of interdependency (Kelley et al., 1983). These properties seem to be congruent with other widely accepted definitions of close relationships. Among these, attraction (Burgess & Huston, 1979) is an index of strength of interdependency; amount of communication is indicative of frequency of interdependency; behavioral multiplexity (Hinde, 1979) and predictability (Berger & Calabrese, 1975; Miller & Steinberg, 1975) resulting from recurrent interactions



become indices of diversity of interdependency; and commitment (Kelley et al., 1983; La Gaipa, 1981, Rusbult, 1980) indicates the expected duration of interdependency.

Accordingly, relational development will be understood as an increase in combination of these indicators that are representative dimensions of interdependency between partners. Positive associations among these properties are expected for close relational partners because these dimensions have been conceived as underlying relational development (Kelley et al., 1983; La Gaipa, 1981).

Defining social network properties.

The social network of close relational partners is one shared world two people create (Brehm, 1985). This suggests that study of social networks should examine each partner's own network as well as a global network which encompasses the networks of both partners. Because interdependency is an indicator of relational development, we expect this interdependency to occur not only between relational partners but also between their networks to create a social environment common to both partners. Relational partners, by becoming interdependent with each other, become interdependent in their social lives as well. This idea is represented in Figure 1.

Figure 1 about here

Several network properties of close relationships

manifest themselves in communicative behaviors and are defined below. The degree of interdependency between a partner (A or B) and members of his or her relational partner's (B's or A's) network is defined as the involvement in the partner's network. The degree of interdependency among members of the global network is defined as the overlap between A's and B's networks. Agreement among network members regarding their perceptions about the focal relationship is defined as the meta-relational perception convergence and is indicative of the social context of close relationships (Huston & Levinger, 1978; Milardo, 1983). These factors were chosen in accordance with the predictions current theories make about the relationship between the social network and the interdependency of the focal relational partners.

Predictions Regarding Social Network Properties

This study views network of relational partners as a communication system and assumes that the properties of the social network influence communication between relational partners and members of their networks and vice versa. Social networks provide support for the relationship and shape 'surrounding culture' that gives relational partners clues about the ways to conduct the relationship (Duck, 1986). As relationships develop, they begin to have meaning for other people and become a social entity over and above the feelings that the partners have for one another.

To explain the linkages between social networks and

relational development, researchers have applied various theories of social psychology and communication. These include uncertainty reduction theory (Berger & Calabrese, 1975) employed mainly by researchers interested in partners' perceptions of network involvement and influence (e.g., Eggert & Parks, 1987; Parks & Adelman, 1983; Parks et al., 1983), social regression theory (Slater, 1963) employed by researchers looking at network overlap and shrinkage (Johnson & Leslie, 1982; Johnson & Milardo, 1984), and social reaction theory (Waller & Hill, 1951) employed to identify network support and interference (Lewis, 1973).

Though each theoretical position is sufficient to justify research questions and hypotheses suggested in prior studies, there have been few attempts to find a single set of encompassing conceptual propositions that function to integrate these theories into a single approach to studying social networks. The notion of transitivity (Aronson & Cope, 1968; Davis & Leinhardt, 1970; Granovetter, 1973; Holland & Leinhardt, 1972) offers an answer to the question of how the dynamics of a particular personal relationship become associated with the dynamics of other relationships within the focal partners' network. The transitivity principle posits that if person A likes person B and person B likes person C, the A-C relationship is partly a product of A-B relationship as well as other multiple relationships A or C has with his or her other friends. The idea of transitivity becomes especially important when we consider

social networks of relational partners in terms of interdependency.

Transitivity of choice relations is a central factor in friendship formation theories. Each tie gives participants potential indirect access to all those with whom dyad members are connected. These related chains transmit and allocate scarce resources, fitting members into larger social systems. Transitivity is expected from strong ties but not from weak ones (Granovetter, 1973), as it is reasonable not to be interdependent with one's weak associates (Aronson & Cope, 1968). Thus, increases in the structural interdependency of partners' social environments is characterized by increases in the overlap and density of their communication networks (Milardo, 1986). Though several theories may partially explain why the transitivity occurs, the exact nature of this process of transitivity has not been explored.

In the following sections, linkages between each of the aforementioned properties of social network and the elements of relational development are discussed. Propositions and their theoretical rationale are provided as an effort to comprehensively explain how transitivity occurs in social networks of close relational partners.

Involvement in partner's network.

Involvement in partner's network is conceptualized as the amount and range of communication as well as the strength of tie one (A or B) has with members of his or her

partner's (B's or A's) network. As relational partners experience increasing interdependency, they will become more interdependent with the members of their partner's social network. In a developing relationship, relational partners are motivated to promote this interdependency for two reasons. First, at the egoistic level, one's need to maintain cognitively balanced affective state regarding his or her relational conduct dictates that people be similarly attracted to network members of a relational partner. Second, at the dyadic level, people should reciprocate feelings of attraction and intimacy to one's relational partner by demonstrating attraction toward members of the partner's network. Thus, attraction toward a partner will be expressed in the form of interdependency with his or her network.

Relational development contains both depth and breadth dimensions (Altman & Taylor, 1973). While development at the depth dimension implies the strengthened bond between two people, development at the breadth dimension suggests increase in activities these relational partners jointly participate. Hays (1984) found that partners in developed relationships tend to engage in more behaviors and in more categories of interaction. Therefore, it is expected that the broadened interdependency between relational partners should expand to include other members of partners' networks. Granovetter (1973) argues that partners' network members may provide entry to an attractive new social circle

with potential rewards. Thus, awareness of increased availability of rewarding resources provided by members of a partner's social network increases as partners develop stronger feelings of attraction toward one another.

In addition, communication in partner's network with an increasing range of contacts is a potentially rich source of information exchange that helps partners gain more understanding of each other (Berger, 1979; Parks & Adelman, 1983). Considerable information about one's partner is obtained from people other than the relational partner. Hewes and Planalp (1982), for example, reported that 64% of the college students indicated that a third party might have information about the target person which could be obtained only from the third party.

Family and friends should be a particularly useful source of information because they have considerable experience with the partner's out-of-role behavior. By communicating with more members of partner's network, one can come to know more about various aspects of relational partner which otherwise might not be available. In one study, communication with a partner's network was a stronger correlate of uncertainty reduction ($r=.47$) than either perception of network support ($r=.41$) or direct communication with the partner ($r=.35$) (Parks & Adelman, 1983).

Involvement in partner's network becomes especially important at the time of relational crisis. Social



commitment to members of a partner's network and the fear of losing rich sources of rewarding reinforcement may act as a strong barrier force that keeps the relational partners from leaving the relationship (Parks & Adelman, 1983).

Commitment to a relationship stems not only from its attractive features, but also from the constraints imposed on interactions by network members (Levinger, 1979, Milardo, 1986). Parks and Adelman (1983) found that romantic partners were less likely to break up when they communicated more often with their partner's family and friends.

Withdrawal from any sector of the partner's network implies endangered interdependency with other members of the network, potentially resulting in overall reductions in interdependency at the dyadic level. Particularly, weakened interdependency with crucial members of partner's network may substantially affect the relationship between the focal relational partners.

Therefore, following proposition is suggested. Because network involvement is conceptualized in terms of amount and range of communication and tie strength, the proposition is converted into three hypotheses that refer to these specific parameters of partner's network. Given that features of close relationships and social network properties are understood as mutually determinant (Milardo, 1982; Parks et al., 1983), no directionality was assumed in formulating the proposition. The proposition is stated in a correlational terms that implies the reciprocal nature of the interplay



between dyadic relationships and social networks.

Proposition 1: The degree of involvement in partner's network will be positively correlated with the degree of relational development.

Hypothesis 1-1: The amount of one's (A's) communication with partner's (B's) network members will be positively correlated with the degree of relational development.

Hypothesis 1-2: The proportion of one's known members of partner's network will be positively correlated with the degree of relational development.

Hypothesis 1-3: The strength of ties one has with partner's network members will be positively correlated with the degree of relational development.

Network overlap.

Network overlap refers to the degree to which members of a relational partner's (A's) network are linked to members of his or her partner's (B's) network. This variable is conceptualized in terms of amount and range of communication and strength of ties among members in one global network which combines networks of both relational partners. Two people are assumed to have networks that are generally independent of one another during their initial phase of development. As the relationship develops, partners become more interdependent with each other.

Increased interdependency implies increases in partners' joint participation in social activities involving



members of partners' social network. Gaining relational publicity (Levinger, 1980) in such a manner provides opportunities for network members to become better acquainted. Indeed, Huston and Levinger (1978) contend that as a pair becomes further involved with each other, their joint network will increase in size. They suggest that relationships develop from an initial 'awareness of others' stage, to a 'surface contact' stage, and then finally to a 'mutual relationship' stage defined as the two partners' a joint network of the two partners.

As more people who are commonly associated with both relational partners become aware that the resources are offered through the focal relationship, they will also become aware that their access to these resources is dependent upon the focal relationship that is central in the joint network. In the same way, as relational partners become aware that emotional, social, and instrumental needs of network members are dependent upon their relationship, they will find it increasingly harder to break their relationship (Forgas, 1985). In essence, the more friends perceive system constraints, the more they feel emotionally committed to their friendships (Argyle & Henderson, 1984). Joint networks can also act as barriers discouraging the dissolution of a relationship. Joint networks indirectly add to an individual's commitment to the continuation of a relationship, especially to the extent that the network of mutual friends is identified as an irretrievable investment,

too costly a set of relationships to risk losing.

Typically, the size of network overlap has been investigated in terms of the number of people who are commonly identified as network members by both partners (Milardo, 1982; Milardo et al., 1983). However, when considering the global network that encompasses both partners' social environments, an additional index of the size of network overlap seems available. That is, by examining the proportion of ties that connect members of the two separate networks among the potential number of ties, it becomes possible to assess the way these ties interact with the development of focal relationship. Thus, a proposition is advanced. From the proposition, two hypotheses are derived that predict relationships between these indicators of the size of network overlap and the degree of relational development.

Proposition 2: The size of overlap between networks of both partners will be positively correlated with the degree of relational development.

Hypothesis 2-1: The proportion of people in the global network who are commonly identified as significant others by both relational partners will be positively correlated with the degree of relational development.

Hypothesis 2-2: The proportion of ties connecting the two separate networks in the global network will be positively correlated with the degree of relational development.

In addition to these general indices of network overlap, other qualitative features of the global network have not been documented in previous endeavors. If interdependency occurs at the level of the global network, it should be understood not only in terms of its size but also its quality. Amount and range of communication and the strength of ties among members of the joint network are representative of the qualitative aspect of the network overlap.

It is predicted that network members will find increasing opportunities for communication as the relationship between the focal partners develops. Increased communication will eventually bring the network members closer to each other as a set of people surrounding the focal partners. Theoretical linkages between strength of ties and integratedness among members of network and the stability of relationships involved in it has long been acknowledged (Simmel, 1953). Thus, these three properties are added as additional indicators of interdependency among members of partners' global network. Therefore:

Proposition 3: The degree of overlap in the partners' global network members will be positively correlated with the degree of relational development.

Hypothesis 3-1: The amount of communication among members of partners' global network will be positively correlated with the degree of relational development.

Hypothesis 3-2: The proportion of ties among members of partners' global network will be positively correlated with the degree of relational development.

Hypothesis 3-3: The strength of ties among members of partners' global network will be positively correlated with the degree of relational development.

Convergence of meta-relational perception.

Convergence of meta-relational perception refers to the degree to which members of the global network agree on their definition of the focal relationship. As interdependency spreads throughout the network and the amount of communication among network members increases, so will the similarity of perception (cf. Berger & Calabrese, 1975; Rogers & Kincaid, 1981). Interdependency among network members may form a globally balanced system, where all members are ultimately in agreement regarding their perceptions about the focal relationship (Newcomb, 1961). Thus, it may be predicted that members of a global network will demonstrate convergence in their perceptions about the focal relationship due to their abundant and similar experiences and communication with the focal partners.

Awareness of this convergence of perceptions will provide relational partners with positive rewards and indicate that their relationship is valued by their network members (Clore & Byrne, 1974). Such convergence implies continued communication about the focal relationship among these members of the global network. This may be

interpreted by the focal partners as a sign of their healthy concern for the relationship, which will ultimately make the focal partners more satisfied with their relationship. The degree of convergence among network members is also indicative of relational partners' efforts to enhance the relationship. If partners are committed to a relationship, they are more likely to agree with each other on various aspects of their relationship (Kiesler, 1971). When partners communicate with their social network members about the relationship, information they will provide is likely to be consistent over time. Accordingly, this consistency will promote agreement among network members in their perception about the focal relationship. Therefore:

Hypothesis 4: The degree of convergence of meta-relational perceptions among members of global network will be positively correlated with the degree of relational development between focal partners.

Here, stronger agreement is likely when there is higher proportion of ties that connect two separate networks of relational partners. Because such ties are maintained by network members who belong to the two networks simultaneously and who are assumed to know both partners well, these members' opinions about the focal relationship would be influential in shaping other network members' perceptions about the relationship. Members of one relational partner's (A's) network, who are not directly connected to the members of other relational partner's (B's)

network, should rely on these mutual network members as a valid source of information about the focal relationship.

By becoming central in the flow of information regarding the relationship between the focal partners, these members will communicate about the relationship more frequently and actively than other network members. Accordingly, multiple redundant communication paths in a network created by frequent communication opportunities will enhance the accuracy with which the focal relationship is perceived. Festinger, Schachter, and Back (1950) contend that "the more active the process of communication which goes on within the group, the greater will be the effect of the process of communication in producing uniformity of attitudes, opinions, and behavior" (p. 175). Thus:

Hypothesis 5: The degree of convergence of meta-relational perceptions among members of global network will be positively correlated with the proportion of ties connecting two separate networks in the global network.

CHAPTER 2

METHOD

Overview

Data were collected at two different phases. Phase One participants were partners of 95 heterosexual dyads (N=190). Dyadic partners responded to questions about their relationship and then provided a list of network members consisting of close friends and family. Phase Two participants (N=747) were those people who were identified by the focal dyads as members of their social network. They were contacted by the researcher and provided information about their communication contact with the focal partners and other members of the social network.

Participants

One member of each Phase One dyad was solicited from various undergraduate communication classes at a large Midwestern university and given extra course credit for participation. Participants were those (1) who had a close relational partner of the opposite gender residing in the same locality, and (2) who preferred the particular person as a relational partner over others (cf. Milardo, 1982). Students who agreed to participate in the study were asked to bring their partner with them to the research session. Solicited dyads included 10 engaged couples, 33 couples at

the exclusive dating stage, 9 casually dating couples, and 43 friends dyads. Average age of the participants was 20.8 ($SD=2.08$). Among 190 Phase One participants, 17 were freshmen, 39 were sophomore, 73 were junior, and 45 were seniors. Sixteen were non-college participants.¹

Phase Two participants responded to either a telephone interview or mail survey and provided information about their perception about the focal relationship and their communication contact with the focal partners as well as other members of the focal partners' networks.

Procedures

Phase One.

Phase One participants arrived in pairs at a designated time and were greeted by the researcher. Each dyadic partner then individually completed a two-part questionnaire. In Part One of the questionnaire, participants responded to items assessing the quality of the relationship. In Part Two of the questionnaire, participants were instructed to think of other close friends, family members, and relatives they considered important and who are substantially influential in various aspects of their personal life including crucial decisions. Participants were then asked to provide names of these "significant others." They were free to list as many as or as few names as they wished. They were also told to include names of only those they interact with on a regular and frequent basis. The relational partner they brought to the

research session was not included in this list.

After listing network members, participants indicated their relational closeness with each of the network members. Participants were then given names of network members their partner listed and asked to identify those whom they knew. Participants then indicated their relational closeness and amount of communication with each of these members of their partner's network. Following this, the researcher asked for permission to contact the network members listed by each relational partner. If participants agreed, they were asked to provide phone numbers and addresses of the names they had provided. Participants were free to refuse permission, and those who did were deleted from further analysis.

Nine of the 95 dyads indicated that they did not want their network members to be contacted by researcher. There were 12 dyads where one partner provided agreement while the other did not. In terms of the degree of relational development, however, participants who did not provide the agreement (mean=4.82) were not different from those who provided the agreement (mean=5.18) ($t=1.41$, $df=185$, $p>.05$).² Participants who agreed but could not provide phone numbers and addresses at the time they completed the questionnaire were later contacted by the researcher who requested the information. All participants were then debriefed about the nature of the study and were thanked for their participation.



Phase Two.

Of the 916 network members identified by Phase One participants, 747 (81.6%) participated in Phase Two data collection. Six hundred and eighty-five of these participants responded to telephone interview and 62 who lived outside the local area code responded to a mail survey (Appendix) which was similar to the interview protocols. One hundred sixty-nine of the 916 network members did not participate in Phase Two. Of these, 152 were inaccessible after repeated phone calls and 17 did not return the mail survey.³

Twelve interviewers were extensively trained by the researcher and were provided with standardized instructions that specified the exact interview protocols. Interviews began with an explanation of Phase One data collection and the context in which the respondents were selected as interviewees. For mail survey respondents, similar messages were included in the cover letter (Appendix). Statements assuring confidentiality of responses were also inserted. This was particularly important because network analysis deals with sociometric questions that are generally perceived as sensitive and somewhat private in nature (Knoke & Wood, 1981; Rogers & Kincaid, 1981).

Each interview was personalized in such a way that each respondent was referred to the names of focal relational partners and the names of network members listed by both partners. This consideration was necessary to increase

respondent involvement and response rate (cf. Erickson, Nosanchuk, & Lee, 1981). After the respondents indicated their willingness to participate in the interview, they were first asked to rate their perception of closeness and communication contact with each of the focal relational partners. They then made similar ratings for other members in the networks of both partners. Finally, they rated the closeness of the focal relationship.

Instrumentation

Measures of relational development.

Consistent with this study's conceptualization of relational development as increasing interdependency, specific indicators were employed to represent strength, frequency, diversity, and duration dimensions of interdependency. These indicators included measures of attraction as representing strength, amount of communication as being frequency, behavioral multiplexity and predictability as representing diversity, and commitment as a proxy of duration of interdependency.

Strength of interdependency was measured with six Likert-type items with seven-point response format. Because the present study deals with heterosexual dating relationships, 'love' portion of Rubin's (1970) love and liking scale was employed. Given that the strength of interdependency refers to the degree to which relational partners are affectively tied to each other (Kelley et al., 1983) or more generally the degree of cohesiveness

(Cartwright & Zander, 1968), the items measuring attraction between romantic partners matched with the conceptualization.

Frequency of interdependency refers to the rate and number of connections between partners over any given time span (Kelley et al., 1983). To tap this dimension of interdependency, amount of communication was measured by asking the relational partners of their approximate hours of interaction during a typical week.

Because the diversity of interdependency is defined in terms of the number of multiple ways in which relational partners interact (Hinde, 1979), a four-item measure of behavioral multiplexity was developed. An eight-item measure of uncertainty reduction developed and validated by Parks (1978) was added to assess the degree of predictability resulting from diverse and recurrent interactions between partners.

Commitment or the extent to which the relationship is expected to continue (Kelley et al., 1983) indicated the duration dimension of interdependency. The measure included the partner's degree of satisfaction from the relationship and the awareness of alternative relationships (Forgas, 1985; Rusbult, 1983). Additionally, the partner's willingness to continue the relationship for the next six months, two years, and six years was asked by three items. Together, 11 Likert-type items with a seven-point response format were used to measure commitment.

Because the above indicators are expected to be positively correlated with each other (Kelley et al., 1983; La Gaipa, 1981), the degree of relational development was operationalized as a composite score of these indicators. Among these, however, the measure of amount of communication was excluded because of the incompatibility of its response format. The measure of amount of communication was examined separately in terms of its correlation with other indicators of relational development and social network properties.

Measures of involvement in partner's network.

The degree of involvement in partner's network corresponds to one's interdependency with members of partner's network. Accordingly, it was operationalized in terms of the amount of communication (frequency), proportion of communication ties (range), and the strength of ties each dyadic partner (A or B) has with members of partner's (B's or A's) network.

Amount of communication was measured by asking each member of partner's (A's or B's) network to estimate the average number of hours spent during a typical week communicating with the other partner (B or A) either face-to-face, by phone, by writing, or in a group setting. Absence of a tie was coded as zero. To obtain the final measure of amount of communication, number of communication hours was first summed across all network members and then divided by the total number of people in the network. This procedure standardized ratings across networks of varying



size.

Proportion of ties was the ratio of people of partner's (A's or B's) network who indicated that they knew the other partner (B or A). Strength of ties was measured by asking each member of partner's (A's or B's) network to rate his or her relationship with the known partner (B or A) on a seven-point closeness scale ranging from 'very distant' to 'very close.' The average response across network members was used as the measure of strength of ties with partner's network members.

Measures of network overlap.

Interdependency between networks of relational partners was examined by considering the degree of overlap between the networks. To obtain the measures of network overlap, one global network combining two separate networks of both partners (A and B) was considered. Besides the traditional measure of the size of overlap, interdependency between the networks was operationalized by the amount of communication (frequency), proportion of communication ties (range), and strength of ties among members of the global network.

Size of network overlap was examined by counting the number of ties that connect members of two separate networks (A's and B's) in the global network. Any ties directed from mutual network members (those who belong to both networks) were regarded as cross-linkages connecting two separate networks. Again, to control for the effect of density of the global network, ratio of this number to the total number

of ties observed in the global network was used as the final indicator of network overlap. This measure was compared with the proportion of people who were listed as mutual network members of both partners (Milardo, 1982).

Amount of communication in the global network was measured by asking each member of the network to estimate the average number of hours spent during a typical week communicating with each of other members in the network, either face-to-face, by phone, by writing, or in a group setting. Absence of a tie was recorded as zero. This measure was first aggregated across all network members and then divided by the total number of people in the network to produce the final measure of amount of communication in the global network.

Proportion of ties (density) was the ratio of the number of actually observed ties among the network members to the number of all possible ties in the global network (cf. Mitchell, 1969; Thurman, 1979). When a member was identified as known to other, a tie was recorded as existing between the two members.

Strength of ties was obtained by asking each member to evaluate the degree of closeness with other global network members with whom he or she has a communication tie. A seven-point scale was used for this measure. Obtained scores were summed across the network members and then divided by the total number of ties existing in the network.

Measure of perception convergence.

Measure of the convergence of meta-relational perception was obtained by examining the discrepancy among members of global network regarding their ratings about the closeness of the focal relationship. The index of perception convergence for each network was the standard deviation of all the closeness ratings provided by the members of the global network during Phase Two data collection.

CHAPTER 3

RESULTS

Confirmatory Factor Analysis

Examination of the structural quality of each measure of relational development preceded tests of the hypotheses. Confirmatory factor analyses (Hunter, Cohen, & Nicol, 1982) were performed to verify unidimensionality of the measures. Following Hunter's (1980) suggestion, three criteria were applied for testing the unidimensionality of the measures. After examining homogeneity of content of the items, tests of internal consistency and parallelism were conducted. Analyses indicated that some revisions of the original scales were necessary to achieve a unidimensional factor structure for each measures of relational development.

One item of the original six items of the measure of strength of interdependency (attraction), four items among the 12 items of the diversity of interdependency measure (behavioral multiplexity and predictability), and three items of the 11-item measure of duration of interdependency (commitment) failed to meet the criteria for internal consistency and parallelism and were deleted from further analyses. In all, five items of strength ($\alpha=.84$), eight items of diversity ($\alpha=.91$), and eight items of duration of interdependency ($\alpha=.94$) were retained for further analyses.

Though each of the measures fit a unique factor structure, high intercorrelations among these factors indicated the existence of one global underlying factor (cf. Kelley et al, 1983; La Gaipa, 1981). When all 21 items from the three measures were combined to make a global factor, none of the items deviated from the criteria for unidimensionality. This result is consistent with the current study's conceptualization of relational development as encompassing dimensions of strength, diversity, and duration of interdependency. Thus, a global indicator of the degree of relational development was formed from a composite score of these measures ($\alpha=.95$). Means and standard deviations of the final 21 items and their factor loadings are presented in Table 2.

 Table 2 about here

Descriptive Statistics

Measures of relational development.

The average rating of relational development was 5.13 ($SD=1.32$) on a seven-point scale. Ratings of the primary factors of relational development were all similar to the global rating of relational development. Average ratings were 5.00 ($SD=1.40$) for strength, 5.15 for diversity ($SD=1.29$), and 5.21 ($SD=1.52$) for duration of interdependency. Ratings of relational development by both partners were highly correlated ($r=.84$, $p<.001$). Also, male



partners' rating of relationship (mean=5.15, SD=1.34) was not different from female partners' rating (mean=5.12, SD=1.31) (t=.40, df=91, p>.05), suggesting a considerable agreement by both partners about the definition of their relationship.

The average amount of communication between relational partners during a typical week was 27.58 hours (SD=32.05). The average length of their relationship was 2 years and 4 months (SD=6 years and 5 months). However, correlations of these two measures with the global measure of relational development were weaker than those of the above three primary factors of relational development. The correlations were r=.56 (p<.001) for the amount of communication and r=.21 (p<.01) for the length of relationship.

To further explore the possibility of different measurement models of relational development for romantic relationships and friendships (Eggert & Parks, 1987), association among indicators of relational development were compared between the two types of relationships. Romantic relationships included engaged, exclusive dating, and casual dating partners. Romantic relationships and friendships produced similar patterns of correlations among indicators of relational development. Table 3 shows correlations among indicators of relational development for the two relationship types jointly as well as separately.

 Table 3 about here

Significant differences in the degree of relational development were observed across four relational categories ($F=59.74$, $df=3,180$, $\eta^2=.50$, $p<.001$). Comparisons of the ratings of relational development between adjacent relational categories also revealed significant differences. The partners of engaged dyads reported higher rating of relational development ($\text{mean}=6.42$, $SD=.30$) than those at the exclusive dating ($\text{mean}=5.94$, $SD=.68$) ($t=3.06$, $df=84$, $p<.01$), followed by the partners at the casual dating ($\text{mean}=4.98$, $SD=.97$) ($t=4.78$, $df=82$, $p<.001$). Rating of relational development made by the casually dating partners was significantly higher than the rating made by the partners at friendship stage ($\text{mean}=4.10$, $SD=1.20$) ($t=2.91$, $df=95$, $p<.01$).

Amount of communication also decreased considerably from engaged partners to partners at friendship stage ($F=64.37$, $df=3,180$, $\eta^2=.52$, $p<.001$). The engaged partners spent significantly more time communicating with each other ($\text{mean}=75.95$, $SD=42.27$) than the partners at the exclusive dating ($\text{mean}=40.92$, $SD=27.52$) ($t=4.30$, $df=83$, $p<.001$) who were followed by the partners at the casual dating ($\text{mean}=13.59$, $SD=10.24$) ($t=4.01$, $df=81$, $p<.001$). The partners at friendship stage spent less time communicating with each other ($\text{mean}=7.11$, $SD=7.37$) than those at the

casual dating ($t=3.07$, $df=97$, $p<.01$).

Taken together, these findings suggest the validity of the current study's global measure of relational development across relational categories. Considering that the majority of social network studies used nominal level measure of relational development (Johnson & Leslie, 1982; Johnson & Milardo, 1984; Milardo, 1982; Milardo et al., 1983), the above findings justify attempts to compare this study's results with those of previous studies.

The length of relationship, however, was not significantly different across the four relational categories ($F=.65$, $df=3,180$, $\eta^2=.01$, $p>.05$). While engaged partners had been in their relationship for 2 years and 6 months on average ($SD=2$ years and 1 month), partners at friendship stage had maintained their relationship for a similar length of time ($mean=2$ years and 10 months, $SD=8$ years and 6 months) ($t=-1.02$, $df=87$, $p>.05$). This suggests that partners can remain in a relationship over an extended period of time without further developing it. This finding, combined with the relatively weak correlation between the length of relationship and the degree of relational development ($r=.21$), may negate the usefulness of the measure of length of relationship as an indicator of relational development.

Network analysis.

Reciprocation. Because people interact on an equal basis in nonwork related social networks, communication ties

were considered symmetrical, which requires the ties to be reciprocal (Tichy, Tushman, & Fombrun, 1979).

Unreciprocated ties were attributed to a measurement error resulting from respondents' recall inaccuracy or missing data (Rice & Richards, 1985). Thus, when person A reported a tie to person B, but person B did not reciprocate the tie or did not participate in Phase Two of data collection, person A's report of tie to person B was assumed reciprocal. To achieve the reciprocity, adding the missing ties was preferred to deleting them. This decision was made because deleting the missing ties will likely increase sampling error by reducing the sample size.

On the average 94.8% of the ties network members reported were reciprocated by the focal partners. A small portion (5.2%) of unreciprocated ties indicated that participants' report of communication contact with their partner's network members was fairly accurate. Average rate of forced reciprocation due to missing data was 15.8%. The overall rate of forced reciprocation was 21%.

Social network properties. On the average 5.8 network members ($SD=2.3$) were listed by each participant. Among them, 4.7 (78%) were friends and 1.2 (22%) were kin.⁴ Relational partners' average rating of closeness to their own network members was 5.89 ($SD=.74$) on a seven-point scale. Of the 5.8 members listed by each participant (A or B), 4.2 (73%) indicated that they knew the participant's relational partner (B or A). The network members' rating of

closeness to the other focal partner averaged 3.85 ($\underline{SD}$ =1.42) on a seven-point scale. Each member of the participant's (A's or B's) network spent 6.28 hours ($\underline{SD}$ =12.43) communicating with the other focal partner (B or A).

When the networks of both partners were combined, 11.5 people ($\underline{SD}$ =8.6) formed the average global network. Approximately one member (11%) of each global network was found to be common to both partners' networks. However, only 40 dyads reported having one or more mutual network members, while 55 dyads reported no mutual network members at all. Number of mutual network members in the global network ranged from 2.8 (31%) for the engaged couples, 1.1 (12%) for the exclusively dating partners, to 0.7 (10%) for partners at friendship stage.⁵ The average proportion of existing ties (density) among members of the global network was .53 ($\underline{SD}$ =.22). Of these, 39% were connecting members of one's (A's or B's) network to members of his or her partner's (B's or A's) network. The average perception of closeness among global network members was 3.96 ($\underline{SD}$ =1.05). Each global network member spent 3.8 hours ($\underline{SD}$ =3.89) on average communicating with each of the other members in the global network.

Finally, the correlation between network members' reports of supportiveness ($\underline{mean}$ =5.69, $\underline{SD}$ =.99) and their rating of closeness of the focal relationships ($\underline{mean}$ =5.63, $\underline{SD}$ =1.03) was strong ($\underline{r}$ =.67, $\underline{P}$ <.001). That is, as network members perceived the focal relationship increasingly close,

they provided stronger support for the relationship, and vice versa. This result is consistent with Parks and his colleagues' findings (Parks & Adelman, 1983; Parks et al., 1983) which confirmed network members' overall concern for the well-being of focal relationships.

Tests of the Hypotheses

Involvement in partner's network.

Positive correlations were predicted between the degree of relational development and indicators of involvement in partner's network. To test the hypotheses drawn from this prediction, correlations were obtained by treating each relational partner as the unit of analysis. Table 4 contains correlations among the degree of relational development, amount of communication with partner, amount of communication with partner's network members, proportion of known members of partner's network, and strength of ties with partner's network members.

Table 4 about here

Hypothesis 1-1 predicted a positive correlation between the degree of relational development and the amount of communication with partner's network members. Data were consistent with the hypothesis. The correlation was moderate but significantly different from zero ($r=.32$, $p<.001$).⁶ This suggests that partners in more developed relationships spent more time communicating with each

other's network members. One noteworthy finding was the correlation between the amount of communication with partner and the amount of communication with partner's network members. The correlation was $r=.55$ ($p<.001$). Thus, it may be that as partners spend more time communicating with each other, they found increasing opportunities for communication with each other's network members also.

A predicted positive correlation between the degree of relational development and the proportion of known members of partner's network was supported by data (Hypothesis 1-2). The correlation was sizeable ($r=.64$, $p<.001$) and significantly stronger ($p<.01$) than any other correlations between the degree of relational development and indicators of involvement in partner's network. Thus, partners of more developed relationships knew more members of each other's social network.

Hypothesis 1-3 that predicted a positive correlation between the degree of relational development and the strength of ties with known members of partner's network was also supported ($r=.26$, $p<.01$). Partners in more developed relationships felt closer to members of each other's network than did partners in less developed relationships. The amount of communication between focal partners was also similarly correlated with the strength of ties with partner's network members ($r=.28$, $p<.001$).

In sum, the indicators of involvement were all positively correlated with the degree of relational

development. Among the indicators of involvement in partner's network, the range of communication, which was operationalized by the proportion of known members of partner's network, was the strongest indicator of relational development. When all three indicators were combined, they explained a substantial portion of the variance of relational development ($R=.58$, $R^2=.34$)

Network overlap.

Indicators of network overlap were expected to be positively correlated with the degree of relational development. Because network overlap occurs at the level of global network of both partners, each relational dyad was treated as the unit of analysis. To test the hypotheses derived from the literature review, the average of both relational partners' ratings of relational development was correlated with each of the indicators of network overlap. This procedure was justified because relational partners demonstrated considerable agreement on the measure of relational development ($r=.84$, $p<.001$).

Table 5 contains correlations among the degree of relational development, amount of communication between relational partners, proportion of mutual network members, proportion of ties connecting two separate networks, amount of communication among global network members, proportion of existing ties in the global network, and the strength of ties among global network members.

Table 5 about here

Hypotheses 2-1 predicted a positive correlation between the degree of relational development and the proportion of mutual network members. Data were consistent with the hypothesis ($\underline{r}=.33$, $\underline{p}<.01$).⁷ Based on this finding, it can be concluded that partners of a more developed relationship shared more people as their mutual network members.⁸ The amount of communication between relational partners was correlated with the proportion of mutual network members in a similar fashion ($\underline{r}=.36$, $\underline{p}<.01$).

Also supported was Hypothesis 2-2 which predicted a positive correlation between the degree of relational development and the proportion of ties connecting two separate networks ($\underline{r}=.34$, $\underline{p}<.01$). That is, the more developed the focal relationship, the more members of one's (A's or B's) network became connected to members of other's (B's or A's) network. Particularly, the strong correlation between the proportion of mutual network members and the proportion of ties connecting two networks ($\underline{r}=.65$, $\underline{p}<.001$) indicates the importance of mutual network members in the merging of the two separate networks into a global network.

Hypothesis 3-1 predicted a positive correlation between the degree of relational development and the amount of communication among global network members. Data, however, were not supportive of the prediction. The correlation was

small and not significantly different from zero ($r=.15$, $p>.05$). A similar result was found for Hypothesis 3-2. The correlation between the degree of relational development and the proportion of existing ties among global network members was not significantly different from zero ($r=.15$, $p>.05$). Neither amount of communication nor the density of ties among members of the global network was associated with the degree of relational development.

On the other hand, as predicted by Hypothesis 3-3, a positive correlation existed between the degree of relational development and the strength of ties among global network members ($r=.36$, $p<.001$). When partialling out the effect of proportion of ties connecting two networks, the correlation remained relatively unchanged (partial $r=.31$, $p<.01$). In other words, increases (or decreases) in the proportion of ties connecting the two networks had little effect on the correlation between relational development and the strength of ties among global network members.

Convergence of meta-relational perception.

The degree of convergence of meta-relational perceptions among global network members was predicted to be positively correlated with relational development and the amount of network overlap. Because the degree of meta-relational perception convergence was indicated by the standard deviation of closeness ratings made by global network members, smaller deviations indicated greater perception convergence. Thus, negative correlations

indicate a positive relationship and vice versa.

The data were somewhat inconsistent with Hypothesis 4 which predicted a positive relationship between the relational development and the meta-relational perception convergence. The correlation between the standard deviation of closeness ratings made by the global network members and relational development was not significantly different from zero ($\underline{r} = -.16$, $p > .05$). However, a stronger relationship was found between the amount of communication between focal partners and meta-relational perception convergence ($\underline{r} = -.30$, $p < .01$). Thus, though the data were not conclusive, it may be that communication between focal partners, and not relational development per se, is responsible for perception convergence.

Consistent with Hypothesis 5, the correlation between the standard deviation of closeness ratings and the proportion of ties connecting two separate networks was negative and significantly different from zero ($\underline{r} = -.24$, $p < .05$). In other words, members of global networks which have many connecting ties that link the two separate networks are more likely to show agreement in their perceptions about the focal relationships. The other indicator of network overlap, i.e., the proportion of mutual network members, was also negatively correlated with the standard deviation of closeness ratings made by network members ($\underline{r} = -.36$, $p < .001$), highlighting the importance of mutual network members in the development of perceptions

about the focal relationship among members of the global network. The degree of meta-relational perception convergence was not correlated with other indicators of network overlap ($r = -.09$ with the amount of communication among global network members; $r = .10$ with the proportion of existing ties among global network members; $r = .05$ with the strength of ties among global network members).

In sum, it can be concluded that meta-relational perception convergence is more a function of how many members of one's (A's) network are connected to members of other's (B's) network than the degree of relational development between the focal partners or the amount and range of communication among the global network members.

CHAPTER 4

DISCUSSION

Assessment of the Interdependency Model

The proposed interdependency model of relational development states that increases in relational interdependency will coincide with increases in interdependency between social networks of relational partners. The model was tested from two perspectives. First, interdependency with a partner's social network was investigated by measuring involvement in a partner's network. Second, interdependency between the individual networks of relational partners was investigated by examining qualities of a global network, which resulted from the merging of partners' social networks.

General findings verified the usefulness of the interdependency model for explaining the interplay between development of various types of heterosexual relationships and features of their social networks. Particularly, the validation of the measurement model of relational development for both romantic relationships and friendships suggests that the two types of relationships share considerable similarity in their developmental patterns. This finding provides support to La Gaipa's (1981) view which posits that the psychological resources exchanged

between partners would remain relatively stable in primary relationships.

In this section, the major findings of this study are summarized and discussed in reference to the existing body of research on this topic.

Involvement in partner's network.

Relational development was positively correlated with involvement in the other partner's social network in terms of amount and range of communication as well as the strength of ties. That is, partners in a more developed relationship communicate with more members of each other's network with increased frequency and an increased feeling of closeness. Among all the indicators of involvement in a partner's network, range of communication, i.e., proportion of known members of partner's network, was the strongest correlate of relational development.

Additional analyses permit further speculation about the relative importance of range of communication as an indicator of involvement in partner's network. The proportion of known members of partner's network was moderately correlated with both the amount of communication ($r=.30$, $p<.001$) and the strength of ties with partner's network members ($r=.26$, $p<.001$). When the effect of proportion of known members was partialled out, the correlation between the amount of communication with partner's network members and relational development decreased considerably (partial $r=.14$, $p>.05$; zero-order

$r=.32$, $p<.001$). The same was true of the correlation between the strength of ties with partner's network members and relational development. This correlation, after controlling for the effect of the proportion of known members, also became nonsignificant (partial $r=.12$, $p>.05$; zero-order $r=.26$, $p<.01$).

Thus, it is likely that the correlation between relational development and the amount of communication with partner's network members is largely mediated by the proportion of known members of partner's network. Increased strength of ties may also result largely from knowing more members of partner's network. Most likely, becoming acquainted with a partner's network members is a prerequisite for becoming involved in the partner's network. Though the interplay between changes in a focal relationship and changes in its surrounding network has been hypothesized to occur in a reciprocal rather than unidirectional fashion (Milardo, 1982, 1983; Parks et al., 1983), the above interpretation seems a likely alternative to such a scenario.

In summary, the current study verified the association between relational development and involvement in partner's network. The findings were consistent with those of Parks and his colleagues (Eggert & Parks, 1987; Parks & Adelman, 1983; Parks et al., 1983). Though the current study is partially a replication of their work, it provides more specificity in describing the ways in which partners become

involved in each other's social network. An interesting finding was that network involvement was indicated more by behaviorally based variables, i.e., range and amount of communication, than an emotionally based variable, i.e., strength of ties.

By obtaining information about network involvement from both relational partners and their network members, this study's findings were not dependent upon the respondents' perceptions about the influence of their partners' network. It has been speculated that people's perception of network involvement is compounded by their wishful thinking (Parks et al., 1983) or that they cannot accurately estimate the frequency of communication contacts with their network members (Bernard & Killworth, 1977). However, the small portion of unreciprocated ties in the present study (5.2%) negates this possibility. At least for the current study, which sampled relatively small and densely knit social networks, respondents' report of communication contacts with partner's network was a reliable source of information.

Network overlap.

The test of overlap between networks of relational partners produced mixed results. Among several indicators of network overlap, only the size of overlap and strength of ties among global network members were correlated with relational development. The amount and range of communication among network members were not indicative of relational development, though the directions of the

correlations were consistent with the prediction. Thus, a conservative interpretation would be that in a more developed relationship, members of one partner's (A's) network know more members of the other partner's (B's) network (network overlap) and the feeling of closeness among global network members (strength of ties) increases.

A couple of explanations can be offered for the nonsignificant correlations between relational development and both the amount and range of communication among global network members. The first possibility centers on the nature of the interdependency in the global network. Unlike partners' involvement in each other's network, interdependency among the global network members may take more affective than behavioral form. Relational development may be more predictive of the perception of closeness among global network members than the amount and range of communication among them. That is, unrelated to the actual amount or range of communication, members of one partner's (A's) network could feel close to members of other partner's (B's) network as they would to the focal partners.

A second possibility is a measurement issue. In examining the amount and range of communication at the level of the global network, it was difficult to distinguish between a network in which members are densely connected within the two separate networks but not so across the networks and a network in which members are densely connected across the two separate networks but not within

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each network (cf. Bott, 1971; Mitchell, 1974). The overall density in the global network could be similar between two qualitatively different networks. Thus, it is possible that the amount and range of communication among the global network members might not be a good reflection relational development, unless the amount and range of communication within each of the two separate networks are controlled for.

One additional finding was a confirmation of the shrinkage hypothesis which has not been fully supported by previous endeavors (Johnson & Leslie, 1982; Krain, 1977; Milardo et al., 1983). Because network shrinkage is conceptually a necessary end result of network overlap, the shrinkage hypothesis could be examined by considering the proportion of people in the global network who remained within each relational partner's separate network. The correlation between the proportion of separate network members and relational development was $-.35$ ($p < .01$), while the correlation between the proportion of mutual network members and relational development was $.33$ ($p < .01$). That is, as relationships develop more, the number of partners' mutual network members increased and at the same time the number of their separate network members decreased (Slater, 1963).

Given the nonsignificant correlation between the degree of relational development and the number of partner's network members ($r = .04$, $p > .05$), it is unlikely that the network size increases or decreases as focal relationship

becomes developed. Because the current study sampled only intimate sectors of partner's network, the portion of one's peripheral network members who dropped out of the network as it merged with partner's network could not be answered (Milardo et al., 1983). However, it is reasonable to conclude that the network overlap and shrinkage that occur as relationships develop do not seem to come at the expense of existing relationships with close friends and family (cf. Johnson and Leslie, 1982).

In summary, the current findings not only replicated results of previous studies on network overlap (Milardo, 1982; Milardo et al., 1983), but also confirmed the validity of a more elaborated measure of network overlap, i.e., the proportion of ties connecting two separate networks of partners. Additionally, the current study documented specific features of emerging social environments by considering a global network of both partners. In this regard, support for the multi-person transitivity principle (Aronson & Cope, 1968; Davis & Leinhardt, 1970; Granovetter, 1973) provided the conceptual coherence to explain interdependency through a system in which multiple actors are involved. Particularly, mutual network members were found to be primary agents of transitivity across networks of partners.

Convergence of meta-relational perception.

As an effort to explore the nature of social environment of close relationships, the current study

examined the perceptual convergence among members of partner's networks. Though not fully consistent with the predictions, findings regarding meta-relational perception convergence were notable.

Rather than the degree of relational development, the size of network overlap was more indicative of the degree of meta-relational perception convergence. Both the proportion of ties across two networks and the proportion of mutual network members contributed to explaining the extent to which global network members agree in their perceptions about the focal relationship. Because meta-relational perception convergence implies frequent communication about the focal relationship among members of the global network, other network indicators might not be as informative as the proportion of ties connecting two separate networks.

Thus, characteristics of the global network and not the focal relationship itself are primarily responsible for influencing network perceptions about the focal relationship. What seems to matter is the amount and range of communication across networks and the structural position of network members who are providing meta-relational messages (Kapferer, 1973). Given that mutual network members are those who maintain strong ties with both relational partners, the amount and range of communication with the strongly tied mutual network members could be influential for the meta-relational perception convergence. This is somewhat inconsistent with the 'strength of ties'

hypothesis (Granovetter, 1973) which suggests that the amount of communication is not as important as the uniqueness of communication.

Additionally, network members' meta-relational perception was found to be similar to that of the focal partners. Given that relational partners reveal positive information about their relationship while withholding negative information (Goldsmith, 1988), this finding is not surprising. Network members' meta-relational communication, a primary source of information about the focal relationship, may be framed in such a way that it did not deviate much from the original version revealed by the focal partners.

Though communication about the focal relationship could be only one of the several functions partners' social network performs, examination of the meta-relational perception convergence highlighted the importance of the mutual network members and the network members who maintain communication ties across individual networks of both relational partners. These members of the partners' social network could be analogous to the Likert's (1961) notion of 'linking pins,' who are generally identified as overlapping different organizational systems and a primary source of information (Farace, Monge, & Russel, 1977).

Study Limitations and Suggestions for Future Research

Findings of the current study made a significant contribution to the existing body of knowledge about social

networks and development of close relationships. However, scrutiny of the findings reveals a few crucial issues that were not fully addressed by the current study. In this section, these limitations are discussed and suggestions for future research are offered.

The first limitation stems from the current study's emphasis on the pattern rather than the content of communication occurring in the social network. The necessity for securing information from as many network members as possible restricted the practical length of the questionnaire used in Phase Two. Hence, the content of communication linkages was not assessed.

Among such information, the nature of meta-relational messages exchanged between the focal partners and their network members would have provided some interesting insights. Though the previous studies suggested a supportive nature of communication between focal partners and their network members (Johnson & Milardo, 1984; Lewis, 1973; Parks & Adelman, 1983; Parks et al., 1983), the exact content and amount of the supportive messages could not be investigated in the current study (cf. Cobb & Jones, 1984; Gottlieb, 1985). Also missing was information about the nature of communication among the global network members. Information about the proportion of communication among global network members that is meta-relational would be informative in explaining overall network influence on the development of close relationships.

Additionally, future research should examine the different supportive functions provided by various sectors of partner's network. Because most of the partner's network members sampled in the current study were friends (78%), family members' opinions were underrepresented. Because several researchers failed to support the widely held belief that peer support groups influence youth much more than do family (cf. Bates, 1942; Milardo & Lewis, 1985; Parks et al., 1983; Ryder et al., 1971), the issue of relative importance of family versus friends needs to be examined.

Second, the difference between the current study and previous studies in eliciting social network members warrants consideration. The network of significant friends and family may not be as informative as other possible forms of networks for explaining the interdependency between the relational partners and their social environment. There is a possibility that the network members who are generally considered influential for the relational partners' daily life may not be influential for guiding their personal relationships. For example, the fear of relational publicity and interference by the members of potentially dense social networks may lead relational partners to communicate about their relationship with a separate group of people that one cannot identify as network of close friends and family (cf. Brehm, 1985). This could be particularly true for relational partners who have multiple close relationships besides the one under investigation of

this study and these relationships are scattered around various sectors of their personal life space. Though the majority of network members were aware of the focal relationships, a special concern may be given to those who had not been informed of the relationship by focal partners.

Also, by asking the respondents to list their network members who were salient to them both in affective (e.g., significant others) and behavioral dimensions (e.g., frequent interactions), the current study might have underestimated the overall network size. In fact, the average network in the present study was somewhat smaller in size than those in previous studies (cf. Eggert & Parks, 1987; Fischer, 1982; Milardo et al., 1983). An uncontrolled bias might have been introduced by choosing this network elicitation method over others. The current study could not document partners' interaction with affectively salient networks without involving frequent interactions and those with less affective but relatively frequent interactions. Thus, this study could not answer a question as to how affection-based social relations become transitive in the web of multiple actors surrounding the focal partners.

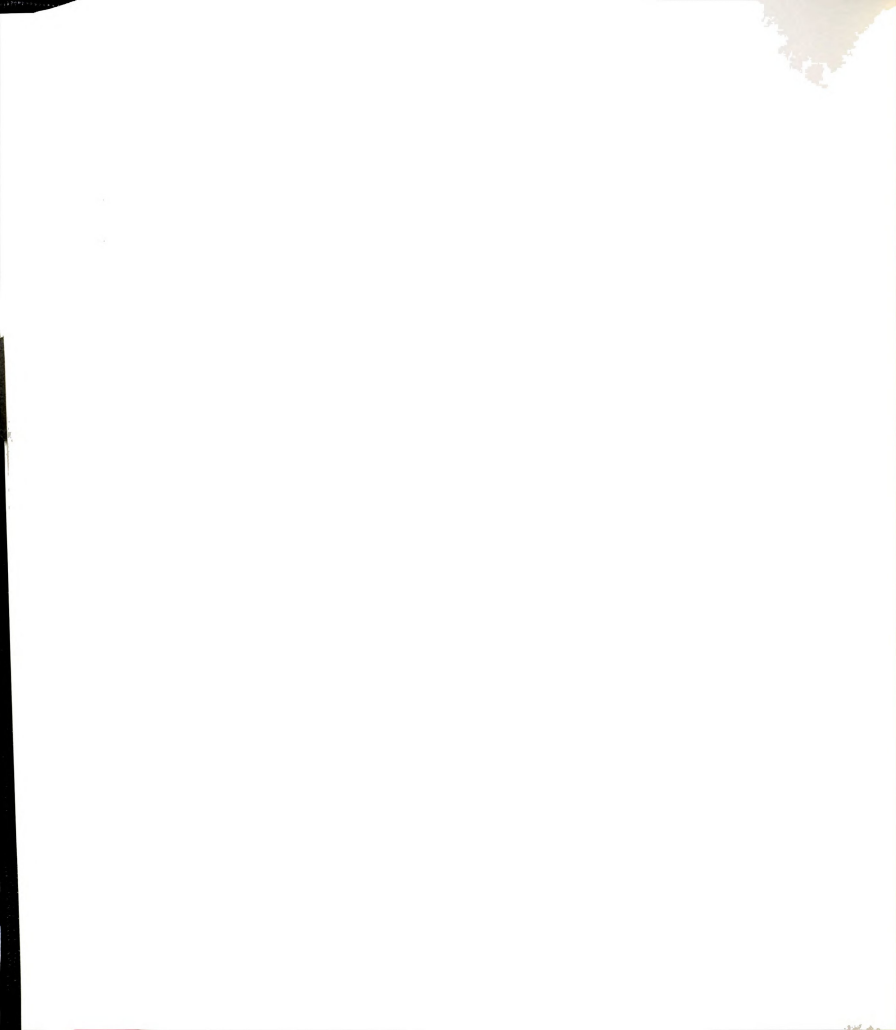
Finally, typical of studies of close relationships, the current study failed to obtain considerable variance in the measure of relational development. Relatively high average rating of closeness (5.13) and smaller standard deviation (1.32) are indicative of this possibility. Given that respondents of this study were partners in heterosexual

relationships, social desirability bias might have affected their reports on perceptions of relationships (cf. Edmonds, 1967). Because most of the question items measuring relational development are vulnerable to this bias, future endeavors should employ a priori assessment of the social desirability for individual items of a measure of relational development (Edwards, 1957).

In addition, by focusing only on heterosexual relationships, the generalizability of this study's findings may be limited. Though the current study applied coherent conceptual and operational tools to explain the association between relational development and features of partners' social networks across various types of heterosexual relationships, it is possible that the current findings may not hold for other types of relationships.

For example, Leik and Leik's (1977) suggest that partners' exposure to new social environment of each other's network may create a challenge to their current relationship by bringing alternative relationships to their attention. Given this, it is arguable that same-sex friendships may reveal less constrained pattern of interdependency, because the concern for being challenged by newly acquainted social circles is less likely in this type of relationship. Thus, documentation of the potential differences in quality and quantity of interdependency across types of relationships is another direction for future research.

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APPENDIX

APPENDIX

Mail survey cover letter

Dear Mr. (Ms). (Addressee):

This survey is a portion of a study looking at the influence of people's social contacts on their personal relationships. The survey is conducted as a part of my doctoral dissertation project which is closely supervised by the Department of Communication at Michigan State University. Once completed, the project will provide a significant contribution to our understanding of close relationships.

(Person A) and (Person B) have recently participated in research conducted by the Department of Communication. In the research, they provided opinions about their own relationship, and also provided us with the names of the people who are important to them. You have been listed among these "significant others." Person A (Person B) has provided us with your mailing address and permission to send this survey to you.

Enclosed is a copy of the survey concerning your personal contacts with (Person A) and/or (Person B); and with their other friends. This survey would require less than 10 minutes of your time. Your participation in the survey is completely voluntary. However, your cooperation will help me complete my degree work and make this project a success.

When you have completed the survey, please seal it in the enclosed return-addressed stamped envelope and mail to us at your earliest convenience. Should you have any questions about the survey, please feel free to call me at (telephone number) any time. When the whole research project has been completed, the results will be promptly available upon your request. Thank you very much for taking your valuable time and helping me in this survey.

Sincerely,

(Signature)

Hyun J. Kim, Doctoral Candidate
Department of Communication
Michigan State University

Mail survey questionnaire

SURVEY OF COMMUNICATION CONTACTS

Department of Communication
Michigan State University
1989

On the following pages are questions concerning your contact with (Person A) and/or (Person B) and your opinions about their relationship. Also included are names of several of their other friends and family members which they provided in previous research. If you know of any of these persons, please provide information about your contact with them.

There are no right or wrong answers. We are only interested in your opinion. Because the information you provide will be merged into a group data, confidentiality is fully guaranteed. Of course, you are free to withhold any information you do not want to reveal. Please take your time and answer each question carefully. We would greatly appreciate your cooperation in taking time to complete this survey.

The survey consists of two parts. In Part One of the survey, we would like you to provide information about your communication contact with (Person A) and/or (Person B) and your perception about the relationship between them. In Part Two, we would like you to provide information about your communication contact with each of the persons whom (Person A) and/or (Person B) have listed as their other close friends and family members.

Please go on to the next page.

PART ONE

I. PLEASE THINK ABOUT (PERSON A).

Q1. Do you know (Person A)?

☐ Yes ☐ No

*IF YES, please answer the following questions (Q1-1 & Q1-2).

*IF NO, please go to Q2 about the middle of this page.

Q1-1. How would you rate your relationship with (Person A)?
Please respond on a scale of 1 to 7 below, 1 being
very distant and 7 being very close. Circle a number.
Very distant 1 2 3 4 5 6 7 Very close

Q1-2. How often do you communicate with (Person A) during A
TYPICAL WEEK, be it face-to-face, by phone, by
writing, or in a group?
 Hour(s) per week

II. PLEASE THINK ABOUT (PERSON B).

Q2. Do you know (Person B)?

☐ Yes ☐ No

*IF YES, please answer the following questions (Q2-1 & Q2-2).

*IF NO, please go to Q3 on next page.

Q2-1. How would you rate your relationship with (Person B)?
Please respond on a scale of 1 to 7 below, 1 being
very distant and 7 being very close. Circle a number.
Very distant 1 2 3 4 5 6 7 Very close

Q2-2. How often do you communicate with (Person B) during A
TYPICAL WEEK, be it face-to-face, by phone, by
writing, or in a group?
 Hour(s) per week

Please go on to the next page.

III. PLEASE NOW THINK ABOUT THE RELATIONSHIP BETWEEN
(PERSON A) AND (PERSON B).

Q3. Do you know the relationship between (Person A) and
(Person B)?

____ Yes ____ No

*IF YES, please answer the following questions (Q3-1 &
Q3-2).

*IF NO, please go to PART II of the survey about the
middle of this page.

Q3-1. How would you rate their relationship?

Please respond on a scale of 1 to 7 below, 1 being
very distant and 7 being very close. Circle a number.
Very distant 1 2 3 4 5 6 7 Very close

Q3-2. How unsupportive/supportive are you for their
relationship?

Please respond on a scale of 1 to 7 below, 1 being
very unsupportive and 7 being very supportive. Circle
a number.

Very unsupportive 1 2 3 4 5 6 7 Very supportive

PART TWO

Next page you will find the names of people whom (Person A)
and/or (Person B) have listed as "significant others." We
would like you to first go through the name list and
INDICATE WHETHER YOU KNOW EACH PERSON IN THE LIST.

NEXT, FOR EACH OF THE PEOPLE THUS INDICATED AS KNOWN TO YOU,
please provide the following information: (1) closeness of
your relationship with the person, and (2) amount of
communication with the person during A TYPICAL WEEK, be it
face-to-face, by phone, by writing, or in a group.

When rating closeness, circle a number that most nearly
represents your opinion on a scale of 1 to 7, 1 being very
distant and 7 being very close. Please refer to the
following scale for more specific rating of closeness.

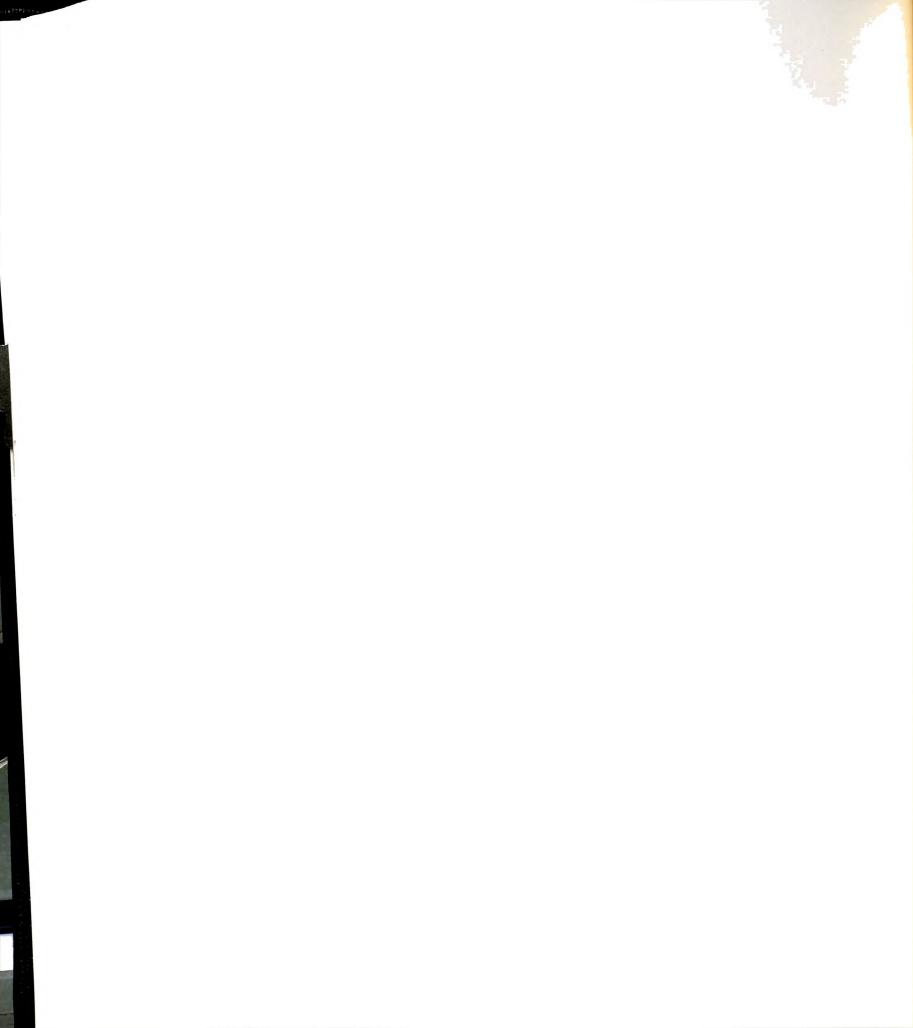
- 1 = Very distant
- 2 = Distant
- 3 = Somewhat distant
- 4 = Neither distant nor close
- 5 = Somewhat close
- 6 = Close
- 7 = Very close

Please go on to the next page.

NAME	Do you know this person?	How would you rate your relationship with this person?	How often do you communicate with this person in A TYPICAL WEEK?
	Circle YES or NO	Circle a number 1=Very distant through 7=Very close	Indicate number of hours in the blank
(Person 01)	YES NO	1 2 3 4 5 6 7	() hour(s)
(Person 02)	YES NO	1 2 3 4 5 6 7	() hour(s)
(Person 03)	YES NO	1 2 3 4 5 6 7	() hour(s)
(Person 04)	YES NO	1 2 3 4 5 6 7	() hour(s)
(Person 05)	YES NO	1 2 3 4 5 6 7	() hour(s)
(Person 06)	YES NO	1 2 3 4 5 6 7	() hour(s)
(Person 07)	YES NO	1 2 3 4 5 6 7	() hour(s)
(Person 08)	YES NO	1 2 3 4 5 6 7	() hour(s)
(Person 09)	YES NO	1 2 3 4 5 6 7	() hour(s)
(Person 10)	YES NO	1 2 3 4 5 6 7	() hour(s)
(and so on)	YES NO	1 2 3 4 5 6 7	() hour(s)

Thank you very much for taking your time and providing valuable information. Your cooperation in this survey is greatly appreciated.

NOTES



NOTES

¹ Year in college, however, had no influence on a number of network measures: number of own network members ($F=.44$, $df=3,170$, $\eta^2=.001$, $p>.05$), proportion of family members among own network members ($F=1.10$, $df=3,170$, $\eta^2=.02$, $p>.05$), and proportion of friends among own network members ($F=1.10$, $df=3,170$, $\eta^2=.02$, $p>.05$). This result indicates that length of time spent in college, i.e., away from pre-college home network, did not alter the size and composition of the participant's network (cf. Shaver, Furman, & Buhrmester, 1985).

² This finding suggests that the relational closeness was not a good indicator of participants' willingness to publicize the relationship. An interesting finding was that male participants were significantly less likely to provide permission to the researcher than females. While 20 male participants did not provide permission, 9 female participants did not ($\chi^2=4.17$, $df=1$, $p<.05$). Given that providing agreement could be interpreted as helping out the researcher in his Phase Two data collection, females as better empathizers than males (Hoffman, 1977) might have shown more concern for the researcher's success in the project.

3 Sixty-two of the 79 mail surveys were returned. There are a couple of possible explanations for the high mail survey response rate (78.5%). First, by asking questions about the focal partners who were either close friends or family members of them, the survey may have been highly involving for respondents. Second, by inserting a statement in the cover letter that they have been listed by Phase One participants as a 'significant other,' the survey may have been enjoyable for respondents.

4 This finding coincides with Johnson and Milardo's (1984) finding. However, it deviates substantively from what Parks and his colleagues (Eggert & Parks, 1987; Parks & Adelman, 1983; Parks et al., 1983) have assumed, who told respondents to list 8 friends and 4 family members as their network members. Their research procedure, combined with the current study's findings regarding network size, indicates that the significance of the networks sampled in previous studies might have been exaggerated.

5 Though Milardo (1983) pointed out the importance of making a choice between proportion and absolute number of mutual network members as an index of network overlap, the two were highly correlated in the current study ($r=.78$, $p<.001$) and both seemed to be good indicators of size of network overlap.

6 Rather than the average amount of communication which considers the size of the partner's network, simple sum of amount of communication across all members of partner's

network was correlated with the degree of relational development. The correlation ($\underline{r}=.25$, $p<.001$) was not significantly different ($p>.05$) from the correlation between the average amount of communication with partner's network and relational development ($\underline{r}=.32$).

7 Because length of the focal relationship might increase the possibility that the members of partners' networks become overlapping, the effect of length of relationship was controlled for. Length of relationship, however, did not bring any significant change in the correlation between relational development and the proportion of mutual network members (partial $r=.32$, $p<.01$; zero-order $r=.33$, $p<.01$).

8 The finding was also supportive of the shrinkage hypothesis (Johnson & Leslie, 1982; Krain, 1977; Milardo et al., 1983). The correlation between proportion of people who remained within the two separate networks and relational development was $\underline{r}=-.35$ ($p<.01$). That is, as more people were identified as mutual network members, a smaller proportion of people remained in each relational partner's separate network.

TABLES AND FIGURE

Table 1. Summary of major studies on social network and relational development.

Study	Sample	Research Design	Major Findings
Eggert Parks (1987)	friendship and romantic partners	cross-sectional; significant others approach	attraction to, similarity to, and involvement in partner's network were indicators of relational development
Johnson & Leslie (1982)	romantic partners	cross-sectional; significant others approach	limited support for shrinkage hypothesis (withdrawal from only nonintimate network members)
Johnson & Milardo (1984)	romantic partners	cross-sectional; significant others approach; mail survey	perception of network interference was a precursor to termination of relationships
Krain (1977)	romantic and engaged couples	cross-sectional; significant others approach	support for shrinkage hypothesis; no support for network overlap
Lewis (1973)	romantic partners	longitudinal; 10-week interval; significant others approach	positive association between perception of network support and pair commitment
Milardo (1982)	romantic partners	longitudinal; 3-month interval; interactive approach	support for network overlap
Milardo et al. (1983)	romantic partners	longitudinal; 3-month interval; interactive approach	limited support for network shrinkage (in terms of frequency and duration; but not network size)

(continued)

Table 1 Continued.

Study	Sample	Research Design	Major Findings
Parks & Adelman (1983)	romantic partners	longitudinal; significant others approach	communication with and perceived support from partner's network were indicators of uncertainty reduction
Parks et al. (1983)	romantic partners	cross-sectional; significant others approach	involvement in and perceived support from partner's network were indicators of relational development

Table 2. Means, standard deviations, and factor loadings of the items of the three primary factors of relational development.

Item and factor	Mean	SD	<u>Factor loadings</u>	
			Primary factor	Global factor
<u>Strength (Attraction)</u>				
1. I would feel depressed if I could not be with my partner.	4.94	1.87	.79	.75
2. There is almost nothing that I wouldn't do for my partner.	5.43	1.68	.80	.82
3. I feel I can tell my partner about everything that happens to me.	5.48	1.82	.77	.81
4. I feel possessive toward my partner.	4.09	2.04	.63	.59
5. If my partner feels unhappy, it would be me to cheer him/her up.	5.09	1.54	.59	.53
<u>Diversity (Behavioral Multiplexity and Predictability)</u>				
1. We depend on each other for many important aspects of our life.	4.88	1.88	.87	.88
2. We participate in various activities together.	5.38	1.71	.76	.78
3. We help each other in getting the things done.	5.05	1.57	.64	.66
4. I do not know my partner very well. (R)	5.32	2.04	.76	.77
5. I have a very good idea of why my partner does certain things.	5.03	1.54	.67	.62
6. I can accurately predict what my partner's attitudes are.	5.34	1.33	.80	.75
7. I can usually tell what my partner is feeling.	4.85	1.67	.83	.78
8. I can predict how my partner will respond to me in most situations.	5.38	1.31	.68	.61

(continued)

Table 2 Continued.

Item and factor	Mean	SD	<u>Factor loadings</u>	
			Primary factor	Global factor
<u>Duration (Commitment)</u>				
1. It is hard to imagine separating from my partner.	5.10	1.91	.87	.92
2. I believe we are happier than other couples in the world.	5.07	1.69	.81	.81
3. I imagine that it would be better with someone else as my partner. (R)	5.12	1.68	.65	.61
4. I am committed to our relationship.	5.32	1.86	.88	.88
5. I would go to almost any length to see that our relationship continues.	5.48	1.69	.79	.78
6. Likely to continue for the next six months	5.88	1.59	.76	.68
7. Likely to continue for the next two years	5.07	2.02	.84	.75
8. Likely to continue for the next six years	4.51	2.13	.84	.76

Note: Items followed by (R) have been reflected.

Table 3. Correlations among the global measure of relational development, its primary factors, amount of communication, and length of relationship.

Variable	1	2	3	4	5	6
1. Relational development (global measure)	--					
2. Strength of interdependency (attraction)	.94*** .89*** .91***	--				
3. Diversity of interdependency (multiplexity and predictability)	.94*** .85*** .93***	.85** .69** .80**	--			
4. Duration of interdependency (commitment)	.94*** .90*** .91***	.81** .66** .71**	.82** .63** .77**	--		
5. Frequency of interdependency (amount of communication)	.56*** .45*** .35***	.52** .35** .34**	.52** .40** .37**	.54** .43** .27**	--	
6. Length of relationship	.21*** .27*** .28***	.01 .13 .02	.02 .19 .06	.21** .30** .24*	-.07 -.07 -.01	--

* $p < .05$

** $p < .01$

Note 1: a indicates a part-whole correlation between an indicator of relational development and the global measure of relational development.

Note 2: Upper row correlation of each entry was obtained from all respondents (N=190) representing both romantic relationships and friendships; Middle row correlation was obtained from romantic partners (N=104); Lower row correlation was obtained from partners at friendship stage (N=86).



Table 4. Correlations among relational development, amount of communication with partner, amount of communication with partner's network members, proportion of known members of partner's network, and strength of ties with partner's network members.

Variable	1	2	3	4	5
1. Degree of relational development	--				
2. Amount of communication with partner	.56**	--			
3. Amount of communication with partner's network	.32**	.55**	--		
4. Proportion of known member of partner's network	.64**	.46**	.30**	--	
5. Strength of ties with partner's network members	.26**	.28**	.41**	.26**	--

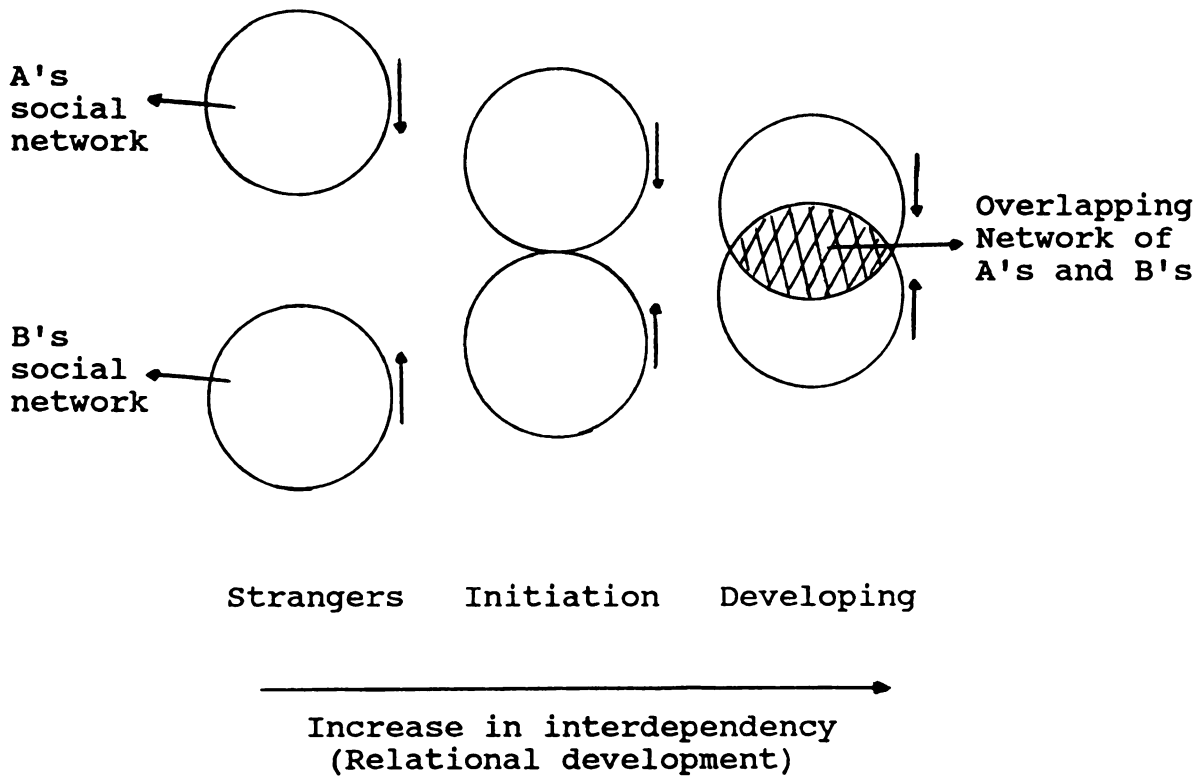
** $p < .01$

Table 5. Correlations among relational development, amount of communication between focal partners, proportion of mutual network members, proportion of ties across networks, amount of communication among global network members, proportion of existing ties in the global network, and strength of ties among global network members.

Variable	1	2	3	4	5	6	7
1. Degree of relational development	--						
2. Amount of communication between partners	.58**	--					
3. Proportion of mutual network members	.33**	.36**	--				
4. Proportion of ties across networks	.34**	.43**	.65**	--			
5. Amount of communication among global network members	.15	.18	.21*	.42**	--		
6. Proportion of existing ties in the global network	.15	.22*	.44**	.68**	.59**	--	
7. Strength of among global network members	.36**	.09	.24*	.22*	.43**	.22*	--

* $p < .05$
** $p < .01$

Figure 1. Diagrammatic representation of the interdependency model of relational development.





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