It's Not Who You Know, It's How You Know Them: Who Exchanges What With Whom?[1]

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Does the Golden Rule, Rule?

What goes around comes around, we learned as children on the streets of Berlin, New York and Saskatoon.

Do unto others as you would have them do unto you, we learned from the Bible.

Where were you when I needed you? We thought this when others did not repay the help we had given to them.

Reciprocity – doing for others if they have done for you – is a key way people mobilize resources to deal with daily life and seize opportunities. In principle, reciprocity (the Golden Rule) is a universal norm. In practice, it is variable. People exchange emotional aid, material aid, information and companionship. Although these forms of interpersonal support sometimes flow only in one direction, exchanges can reciprocate between two persons or through larger networks. Such exchanges are a key to obtaining *network capital:* social capital that is embedded in interpersonal relations that can provide custom-tailored helpful resources that are flexible, efficient and effective. Consistent with a network view, we view social capital as a resource embedded in a person's social network and accessed through network ties (Lin 2001; 2005).

The loosely coupled networked nature of contemporary society means that network capital does not come reliably from one single solidary group. Because personal networks rarely operate as solidarities, people cannot count on all the members of their networks to provide help all the time. Rather, network capital comes uncertainly from a variety of ties in networks. People navigate nimbly through partial involvements in multiple networks, giving and getting network capital (Wellman and Leighton 1979; Wellman 1999, 2001; Kadushin 2004). They exchange many types of network capital through their relationships. For example, close friends and family supply most emotional support(Wellman 1992) while acquaintances and business contacts supply many job leads (Granovetter 1974, 1995; Moerbeek, Flap and Ultee 1995).

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Reciprocity provides multiple benefits. First, it is a flexible, efficient, and often effective and low-cost source of social capital. Second, the very act of reciprocity increases the social capital of both parties, and often that of others in their networks as chains of resource exchange proliferate. Third, reciprocity often creates a sense of morality through helping. Fourth, it often binds people together in mutual dependence. Sixth, beyond the very act of reciprocity, the network of mutual relationships increases societal cohesion as the network of reciprocity propagates through society (Mauss 1923-1924, Narotzky and Moreno 2002).

The information researchers have amassed about exchanges of network capital has largely been about tone-way flows of resources (often called "social support") or about laboratory studies of exchange. We do not know in any systematic way about the relational nature of reciprocity. For example, are people who receive emotional support more likely to give back emotional support in return or are they likely to provide a minor service instead?

This chapter uses survey research from Toronto to understand the variable and contingent nature of reciprocity. We investigate the extent to which interpersonal ties, network characteristics, and people's social characteristics (e.g., gender) affect the nature of reciprocal relationships.

- From whom do people obtain reciprocal support?
- What kinds of supportive resources do they get?
- To what extent is the supportiveness of others associated with our own supportiveness – in specific exchanges of the same kind of resource or in the exchange of other kinds of resources?

Despite the importance and contingency of reciprocity, these questions have not been addressed in multivariate analyses that tease out which characteristics of people and their relationships are associated with reciprocity. We start the process, using evidence from a Toronto study of social networks and social support to identify what kinds of reciprocal support are available from whom in which kinds of relationships.

Precepts of the Sages

The consequences of reciprocity go beyond the specific resources exchanged. With reciprocity, social capital multiplies in positive feedback cycles. What goes around comes around - helpfulness stimulates further helpfulness and social bonds are stimulated. They are activated more frequently and convey more resources and perhaps even a wider variety of resources. If reciprocal support operates within groups, social cohesion increases. The very act of reciprocity sustains social bonds. If it crosses group boundaries, social inclusion expands in scope and societal integration increases. In this way, reciprocity provides two functions in society; a stabilizing function as well as a starting function (Gouldner 1960). Reciprocity can help to initiate and maintain interactions between people (*starting*) as well as provide a mechanism to ensure that the exchanges remain balanced and even (*stabilizing*).

Sages worldwide have prescribed reciprocity as a guide to moral and ethical behavior. A few millennia after Cain's immortal question, Jesus taught the essence of reciprocity, known as The Golden Rule:

Do unto others as you would have them do unto you. [Matthew 7:12]

Similar sayings predate Jesus, such as Aristotle's (385 BCE):

We should conduct ourselves towards others as we would have them act toward us,

And Ecclesiastes (11:1) in about 250 BCE:

Cast they bread upon the waters: for thou shalt find it after many days.

Nor are such norms limited to Judeo-Christian traditions, although the thought is expressed negatively in harm reduction rather than in positive do-gooding. For example, the Hindu epic, the *Mahabharata,* written in about 1000 BCE says:

This is the sum of duty: Do naught unto others that would cause you pain done to you.

Five hundred years later, Confucius wrote:

Do unto another what you would have him do unto you, and do not do unto another what you would not have him do unto you. Thou needest this law alone. It is the foundation of all the rest.

The Prophet Muhammad had similar sentiments in about 600 CE:

No one of you is a believer until he desires for his brother that which he desires for himself. (Hadith recorded by al-Bukhari)

And a New Zealand Maori saying counsels:

Give as much as you take and all will be well. (reported in Mauss 1923-1924 [1968]: 265).

Perhaps the strongest expression of altruistic reciprocity is found in the Talmud whose sages teach that the highest blessing is to help someone without expecting anything in return, even self-satisfied "naches" (feeling good about doing good; Rosten 1999).

The idea has continued. For example, Kant's (1785) categorical imperative encompasses generalized reciprocity:

Act as if the principle on which your action is based were to become by your will a universal law of nature.

And the more anarchistic Bakunin suggested the similar "golden rule of humanity" eighty years later in 1867:

No person can recognize or realize his or her own humanity except by recognizing it in others and so cooperating for its realization by each and all.

Sociologist Alvin Gouldner (1960) summarized this line of thought as "the norm of reciprocity":

People should help those who have helped them and people should not injure those who have helped them.

The sages preach normatively-driven reciprocity: providing support without expectation of immediate reward. If all so acted, support would be in the air, and reciprocity would be a given, rather than a variable. Yet it may be that only saints and sages persistently help others without the expectation that someone will help them in turn. Not all reciprocity is driven by altruistic norms. Self-interest is also a factor: helping others on the basis of being helped in return. For example, gift giving can increase social capital and create new ties by allowing people to connect to others through a series of exchanges (Gouldner 1960; Sahlins 1965, 1972). Similarly, by helping others, a person can develop a reputation as a helpful person. When needing help in return, others may be more forthcoming. Reciprocity becomes a practice by which people cooperate to gain advantage in society. High-status people who link groups (sometimes called "power brokers") amass generalized credit that can be called upon for reciprocal exchange in the future in ways that they may not known when they get credit and even from people they do not directly know (Kadushin 1981). As the action philosopher Don Corleone said via the voice of Marlon Brando:

> *Some day, and that day may never come; I'll call upon you to do a service for me. But until that day – accept this justice as a gift on my daughter's wedding day* (Puzo and Coppola 1972).

Varieties of Reciprocity

Most studies of reciprocity look at the conditions that elicit cooperation rather than selfish behavior. These studies find that most people use cooperative strategies when given the option (Ostrom 2003). Often, people reciprocate in kind to what they have been given. The exchange literature refers to this as *restricted (or similar) exchange.* A resource given comes with the understanding that reciprocation will take place within a limited time frame (Ekeh 1974). The resource (goods and services) given is reciprocated with the same resource, which may also create conditions for future reciprocity and cooperation to occur.

If the resource given is beneficial, people may also reciprocate with something else that they deem (and believe the recipients will deem) to be equally beneficial in a *generalized (or mixed) exchange*. Generalized exchange has fewer restrictions than restricted exchange, and is an indicator of interpersonal trust (Gouldner 1960). In such situations, people do not depend on the immediate reciprocation of resources and will exchange one type of resource for a different type.

Another distinction exists - exchange between two persons and exchange within a network. If there is even greater trust within social networks, a third person may reciprocate the support (Ekeh 1974; Kadushin 1981). As Yamagishi and Yamagishi (1994) note, this implies a belief in the reciprocating nature of the network, or if the Golden Rule is accepted, in humanity as a whole (see also Cook 2004).

We use these variably defined terms as a starting point for a typology. That combines resources exchanged with types of exchange partners. We distinguish (in Table 1) between two forms of exchange partners (*one-to-one, network)* and two types of exchangeable resources (*restricted, mixed)*. One-to-one restricted (or *similar*) exchange occurs when two persons exchange the same type of resource within an agreed time frame. Network restricted exchanges work on the same principle, but occur within a network of individuals. A third (or fourth) party instead of the person who received the resource reciprocates the resource given. Malinowski's (1922) classic study of the "Kula ring" worked on this principle, with people passing ornamental armbands and necklaces around a chain of Pacific islands.

> Table 1 about here: Network Typology <

One-to-one *generalized* (or *mixed*) exchanges occur between two people, but the terms of reciprocity are not clear or formalized, if they even exist at all. The resource returned to by the original receiver may not be the same as the one that was originally given. He gives her hugs; she gives him a box of chocolates. Network mixed exchanges are series of one-way exchanges that occur within a network or chain of people where the terms of reciprocation are relaxed or non-existent. This can become series of one-way exchanges within a network or exist as reciprocated exchanges that occur fluidly and not within specific time parameters.

While we have discussed network exchanges in order to provide a comprehensive framework, we regret that we do not have the data to analyze such exchanges here. We analyze only one-to-one exchanges, both restricted to one kind of thing (e.g. emotional support) or mixed (as when emotional support is exchanged for minor services). We also note that the typology could be extended further, both in terms of quantity (are few services done in exchange for many services?) and of temporality (how long does someone expect to wait for reciprocity?).

Laboratory and Ethnographic Studies of Exchange and Reciprocity

Animal studies have shown reciprocal support among kin (Ridley 1997; Fehr and Rockenbach 2004). Where the possibility of future gain is greatest, cooperative strategies are most frequently used (Sanabria, Baker and Rachlin 2003; Wilkinson 1986). For example, blue jays cooperate to obtain food. Working together enables two jays to obtain a larger, but delayed, reward despite temptations to cheat and get a smaller, immediate reward. By contrast, animals use selfish strategies where environmental conditions are such that trust is low as is the possibility of future exchanges (Stephens, McLinn and Stevens, 2002; Hall 2003; Stevens and Hauser 2004; Stevens and Stephens 2004; Wilkinson 1984). As with humans, the jays vary in their likelihood of reciprocal cooperation, with the characteristics of their partners substantially affecting the tendency to reciprocate (Noë 2001; Mesterton-Gibbons and Adams 2002).

Not only birds do it. Reciprocity appears to provide humans with neurological and physiological benefits. Brain scan research suggests that people are neurologically set up to help each other. For example, one study found that thinking about others' problems activates the same parts of the brain as when people think about their own. Other studies have shown that compassion registers in the brain's pleasure zones, and that good deeds reduce physiological stress levels. For example, especially helpful female neighbors have higher levels of oxytocin – a hormone linked to feelings of well being, and viewing a videotape of saintly Mother Teresa has led to temporary spikes in immunity-boosting chemicals; (Anderssen 2005).

Social psychology has a long tradition of analyzing exchange and reciprocity, especially in experimental laboratory situations. Game simulations, such as the "Prisoners' Dilemma" suggest that cooperative behavior is more likely to be used when: (a) sufficient repetitions of successful exchanges have occurred, and (b) adequate time has passed to formulate an opinion about the trustworthiness of the exchange partner.[3]

[3] Axelrod (1984); Baker and Rachlin (2001); Bienenstock and Bonacich (1997); Buchan, Cross and Dawes (2002); Conlon (2003); Flynn and Brockner (2003); Komter (1996); Komter and Volleberg (1997); Molm, Quist and Wiseley (1993); Stephens, McLinn and Stevens (2002); Takahashi (2000).

Such studies suggest that people asked to contribute money to other players do so to the extent that they believe others will reciprocate. . Network reciprocity appears to have the best payoff: players who give away half their money (showing unselfish exchange behavior and trust) usually receive returns in excess of what they gave away.[4] Where trust is high and participants have a relaxed accounting system based on trust, network reciprocity strategies are more rewarding than strategies using one-to-one exchanges or selfish strategies that do not involve any exchanges (Kollock 1993, 1994).

In these laboratory games, familiarity with exchange partners is important because the behavior of one person affects the probability of reciprocation by another. As levels of trust decline after each round of play in an experiment, levels of cooperation also decline. In situations where participants trust each other, they reciprocate more when the level of mutual support remains steady throughout a number of rounds. Thus, people in labs behave somewhat like blue jays in labs.

Laboratory experiments focus on salient variables by abstracting them out of real-life situations. Yet experiments can only handle a few variables at a time, isolating the actual processes of exchange from the context of social relationships and structures. In contrast to lab experiments, ethnographers have immersed themselves in the daily lives of communities. At the risk of statistical precision, they have been able to provide a sense of how sets of people reciprocate.

For decades, ethnographic fieldwork has documented reciprocity in villages and urban neighborhoods. In rural areas, one English study showed how exchange of resources combines with paid labor to provide different types of reciprocal help (Pahl 1982), and a Chinese study showed the interdependence of villagers during Maoist upheavals in China (Chan, Madsen and Unger 1992). Most urban studies have focused on the heavy use that poor people make of reciprocal relationships to supply social capital, both in the third world (e.g., Lewis 1961; Peattie 1968; Roberts1978) and in the developed world (e.g., Young and Willmott 1957; Gans 1962; Liebow 1967; Stack 1974). Other studies have shown how networks provide bypasses around rigid bureaucracies and relative certainty of supply in anarchic societies (see Sik and Wellman's (1999) account of communist and post-communist Hungary; Gold, Guthrie and Wank's (2003) account of *guanxi* in contemporary China). "Old boy" networks of the connected allow elites to organize and share resources informally and quickly (Unger 2004).

Social Support as Social Capital[5]

When we began this research, we were surprised that we were only able to discover a small number of survey-based studies of exchange and reciprocity. Moreover, those we did find focused on elderly populations or on effects of social support on health.[6] Yet, survey research

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[4] Hoffman, et al. (1998); Kurzban, et al. (2001); Parks and Rumble (2001); Yamagishi and Cook (1993).

[5] Scholarship about "social support" and "social capital" are so substantively similar that it is less important to worry about the distinctions between them than to realize that they come out of the different rhetoric of two distinct research traditions. Social psychology, social work and medical sociology for social support, and political science, political sociology, and social network analysis for social capital.

[6] For studies of reciprocity with respect to caregiving to the elderly, see, for example. Krause and Shaw 2000; Liang, Krause and Bennett, 2001; Morgan, Schuster and Butler 1991; Hamilton and Sandelowski 2003. For studies of the effects of social support on health, see for example Uehara, 1990; Turner and Marino 1994; see also the review in Uchino, Cacioppo and Kiecolt-Glaser 1996).

brings useful strengths to the study of exchange and support. Both experimental and ethnographic studies work with closed populations, approaches more appropriate to traditional group-based communities (villages, neighborhoods) than to the far-flung, sparsely-knit social networks which comprise the personal communities of most residents of developed countries (Wellman 2001; Wellman and Hogan 2004). But, as Karen Cook (2004: 190) argues:

> A major difference between life in small isolated communities and that in large complex societies is the declining significance of groups into which one is born and the growing significance of reciprocated choices between erstwhile strangers for human relations, as noted by Peter Blau (2002) in one of the last pieces he wrote before his death. This move from communal norms to networks of association is central to the emergence of modern complex society, and it changes the very nature of the problem of social order.

This shift from groups to networks has major implications for the mobilization of social capital. The title of this book, *Social Capital on the Ground,* implies the traditional notion of social networks and social capital in traditional proximate settings – villages and neighborhoods. People observe and support each other by walking door-to-door – or at most traveling short distances. But what if the ground is shifting under people's feet so that most of their ties are no longer in their vicinity? That was already the situation in the 1960s and 1970s when modern social network research began in North America, and it is even more the situation in the twenty-first century with the internet maintaining many friendship and kinship ties over long distances (Wellman 2001). It is not that neighborhood ties have died; it is just that they no longer dominate most personal networks.

As the neighborhood and village have become only one of several foci of interaction, reciprocity has become less rooted in the social control and rewards of the group and more a product of trust within ties? Tie attributes such as proximity, frequency of contact between exchange partners, role relationship, and tie strength can mediate the reciprocal provision of social support. So can the social characteristics of individuals - the resources available to them – and of the networks in which these ties are embedded. These factors play a significant role in how reciprocity occurs and help to foster trust among network members before the exchanges take place.

The shift from groups to networks may also entail more differentiated ties. Even villages have differentiation, but the more complex and sparsely knit networks of modern urbanites probably have a greater variety of role relationships. Research has shown that not all ties are supportive and not all supportive ties provide the same kinds of resources (Pahl 1982; Wellman and Wortley 1989, 1990; Wellman 1992). Survey research lends itself to inquiring about the kinds of resources exchanged between people.

The shift from groups to networks evokes the question of how people obtain resources through interpersonal relationships. If group-based community is declining, do networked-based relationships take their place (Wellman 1979; Wellman and Leighton 1979)? To address this question, survey-based studies of social support – interpersonal help – became popular in the 1980s, especially among social psychologists, social workers and community and medical sociologists. They typically interviewed respondents about the help available from their socially-close ties outside of their households: good friends, immediate kin, active neighbors, etc. At first, studies just asked about help in general (e.g., Wellman 1979), but with experience, researchers began investigating the extent to which different types of relationships (parents, etc.) gave

various kinds of support (e.g., Wellman and Wortley 1990; see also the review in Wellman 1992).

Seven Big Questions about Reciprocity

Our review of research and wisdom suggests several big questions about reciprocity:

1. Is there a difference between the ways in which ties and networks foster support or reciprocity? Perhaps what appears to be reciprocity is simply that supportive resources often flow in two directions, to and from Person A and Person B. In that case, individual social, tie and network characteristics – such as gender, the strength of a relationship and network size – that predict to the one-way provision of support would similarly predict to reciprocal exchanges. But different dynamics may be at play with reciprocity, so that some characteristics predict only to one-way support or to reciprocity, but not to both. In that case, understanding reciprocity would require new analytic models.

2. Does restricted (similar) reciprocity – tit-for-tit – function differently than generalized (mixed) reciprocity – tit for tat? What are the circumstances under which people exchange similar or different things?

3. Are different dynamics associated with the reciprocal exchange of different kinds of resources, for example, emotional support or services?

4. Is reciprocity principally through one-to-one exchanges or more complex flows through networks? The shift from groups to networks suggests that one-to-one exchanges, more directly enforceable, may well predominate.

5. Where does reciprocity come from: within the person (both psychological traits and social characteristics), from the nature of the tie or from the networks in which the tie is embedded?

6. Is reciprocity driven more by norms – do the right thing - or by self-interest – do the thing that will help me the most in the long run?

7. What are the implications of extensive reciprocity for the mobilization of social capital and for the proliferation of social cohesion?

Studying Supportive Relationships in East York

Ties, Networks and Social Characteristics

We wish that we could address all seven questions, but our data limit our analysis to the first three. We analyze the difference between support and reciprocity, restricted versus mixed reciprocity, and compare the exchange of three types of resources.

Survey research has different strengths than focused, decontextualized lab studies of a small set of subjects and sensitizing ethnographic studies of small groups. Survey research lends itself to multivariate statistical analysis that allows researchers to tease out the relative effects of variables. It can provide information about how a substantial number of real-world phenomena relate to reciprocal exchanges:

1. *Characteristics of ties* – such as their strength, role relationship, frequency of contact, or similarity in ego-alter personal characteristics. For example, do kin reciprocate more than friends?

2. *Characteristics of the networks* in which these ties are embedded – the composition, size and structure of these networks. For example, do densely-knit (heavily interconnected) networks

reciprocate more because of more communication about needs, more normative social control, and better coordination of the delivery of goods and services? Is each tie in a small network more likely to be reciprocally supportive, with quality compensating for quantity?

3. *Social characteristics of the persons* doing the exchanging – such as gender, socioeconomic status, or marital situations? For example, are women more likely to reciprocate emotional support? Are poor people more likely to reciprocate with rich interpersonal support compensating for poor finances? Are people with similar social characteristics more likely to be supportive? For example, two women (or two men) may be more apt to understand and help each other. People with similar socioeconomic status may be more ready to help each other out on the understanding that the other can return the favor later.[7]

Interviewing East Yorkers

The material used in this chapter come from interviews conducted in 1978 in the East York section of Toronto. Although the data are not new, they have the benefit of being well-studied and validated by research elsewhere (Wellman 1985, 1999; Wellman, Carrington and Hall 1988; Wellman and Wortley 1989, 1990; Wellman and Wellman 1992). They also provide a good baseline for our new *Connected Lives* study of how the internet is affecting social capital and reciprocity. Each interview took between 10 and 15 hours, conducted over several days. The interviews were coded for quantitative analysis and transcribed for qualitative analysis.

Twenty-nine people were interviewed, with a combined total of 3,335 active ties in their personal networks. The interview participants are a subset of the random sample of adults surveyed in 1968 for the first East York study (Wellman 1979). Although almost everybody has hundreds of people in their social networks, constraints on interviewing time meant that we were only able to ask in detail about *active* network members, comprising *strong* network members (socially-close, intimate ties extending beyond the household), and *significant* network members who are active network members but not as socially-close. The median active network has four strong ties and seven significant ties. The 335 active members are the units of our analysis.

At the time of the interviews, East York was predominantly family-oriented, English-Canadian in ethnicity (especially from the Midlands and Yorkshire), and working and middle-class. Densely-settled East York, with a population of 100,000 is a largely-residential, integral part of metropolitan Toronto, with a population of about four million. It is on a main subway line, and it takes about 30 minutes to travel downtown, either by public transit or driving. At the time of our data collection, most East Yorkers lived in small homes, with neat lawns.

The interview participants ranged in age from 29 to 66 years old. Most (71 percent) were married. Ninety percent of the men held a full-or part-time job. The men we interviewed held jobs such as electrician, technician, truck driver and supervisor. Somewhat fewer women, 66 percent, were employed, 8 percent were not in the labor force and 26% were homemakers. They held jobs such as secretary, insurance claims examiner, teacher, and waitress.

Like the interview participants, the majority of the network members were married (67 percent), employed (75 percent), and had attended at least trade school or some college (90 percent). They ranged between 18 and 90 years in age.

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[7] We ignore here *personal characteristics,* such as intelligence, health, and altruism.

The Resources That East Yorkers Exchange

We asked East Yorkers about which of twelve different kinds of resources they received from – or gave to – each active network member. For example, both cluster analysis and factor analysis show that while the same network members tend to give different kinds of emotional aid, they often are not the same people who give other forms of social support. Our previous NetLab research has found that the great majority of ties between East Yorkers and network members provide some kind of support. We identified four broad kinds of social support in East York – *emotional aid, minor services, major services*, and *financial aid* – and also discovered which types of ties were apt to send different kinds of support (see Wellman and Wortley 1989, 1990 for details).

Emotional Support is provided in one direction or another in 61 percent of the ties: 41 percent of the network members provide the East Yorkers with emotional support while 38 percent of the East Yorkers' ties with network members are emotionally supportive. That 61 percent – and not 79 percent – of the ties are emotionally supportive is because some ties are reciprocally supportive: see Table 2 for details. In our study, emotional support includes support during minor upsets (provided by 47 percent of the network members), giving advice about family problems (39 percent), and support during major or long-lasting emotional crises (33 percent). The widely-given emotional aid is intangible, with little financial cost, and can be given to some extent over the telephone as well as face-to-face.

> Table 2 about here: Number and Percent Providing One-Way and Reciprocal Support <

For example, one secretary has frequently called on her adult daughter for advice:

Well, it's more of a general thing. I will discuss things with Linda, and she is a very common sense person. I like talking something out with her even though I might have a fair idea on it. Her feeling on it is quite important to me. It really is. I like her thinking.

When men do not have parents or sisters to call on for emotional support, some find a female friend for emotional support. A young man found a surrogate mother in an elderly friend:

Especially when my mom died, I felt that I could to her about things that I would discuss with my mom. She's a very good listener, that's what I found. I have told her things sometimes I haven't even told my wife. Because of the environment and I know she has an open ear, I can spill the beans. I feel that she protects.

Minor Services are also provided in one direction or another in by network members (45 percent) and by interview participants in 40 percent of their ties. The minor services include giving or lending household items (38 percent), helping with small household jobs (35 percent), providing other minor services (40 percent), and help in dealing with organizations (10 percent). Thus tangible aid – goods and services – is widely given, although not as pervasively as less tangible emotional support. Yet while low in time and monetary cost, giving minor services often requires physical presence.

For example, one adult son does many household chores:

He does any repairs like curtain rungs that fall down, doors that need fixing. He does some repairs on the car, and that sort of thing. The things you need a man for.

Support often comes with expectations for reciprocity and expectations for even more support. As a newly-married young man says about his parents:

The more you do for them, the more you have to thank them for it. They have a tendency to say, "After all that we have done for you!"

Major Services are provided in one direction or another in a far lower percentage of ties: 29 percent. They are provided by 16 percent of the network members and by interview participants in 17 percent of their ties. Major services include help with big household chores (such as repairs, regular help with housework; 16 percent) and other large services (such as day care for children or long-term health care; 7 percent). Providing such major services usually requires a major commitment of time, effort, and sometimes skill. For example, one secretary's brother-in-law has provided much help since her husband died:

> There's hardly a week that goes by that he doesn't pop in here at some time, and he phones three or four times a week to see if everything is okay. If I need anything, I always know he is at the end of the phone. After their Dad died, he took the boys places, to football games. And if they had a Scout Night or something, he would go with them.

Another woman has also received much help from her two sisters, For example:

> When I had my third one, my youngest sister came over and stayed at my house and looked after my children when I went out. We've shared the care of our mother. My oldest sister always whips up dresses for us. She made my wedding gown, bridesmaids; and attendants' gowns.

Financial Aid provided by 16 percent: giving or lending small or large amounts of money. As small-scale financial aid is indiscriminately reciprocated and large-scale financial aid (usually for home-buying) is not reciprocated – it generally passes from parents to adult children – we do not include it in our analyses.

East Yorkers also provide *companionship,* enjoying each other's company, but we did not ask about this in a way that could be used to study reciprocity. And, to our regret, we never asked about exchanging *information*, other than the family advice that is part of emotional aid.

Operationalizing the Resource Exchange Variables: The dependent variables measure the extent to which each of emotional support, minor services and major services are exchanged in ties. They are coded:

1 = No exchange
2 = One-way exchange, from network member to participant
3 = Reciprocal exchange of that resource (emotional support, etc.) between network member and participant.

The Extent to which East Yorkers Reciprocate

We also use one-way exchange as an independent explanatory variable, but in the opposite direction: from participant to network member. This allows us to examine the extent to which the participants' provision of each type of resource is associated with reciprocal exchange.

Previous research has shown how the East Yorkers' different kinds of relationships, networks and personal characteristics provide different types of resources (Wellman 1985; Wellman, Carrington and Hall 1988; Wellman and Wortley 1990; Wellman and Gulia 1999; Wellman and Potter 1999; Wellman and Frank 2001). While East Yorkers usually get all the dimensions of resources from somewhere in their networks, they usually get different types of resources from different network members. Not only different relationships, but different types of relationships, often provide emotional aid, minor services, major services and financial aid.

Although the diverse networks provide a variety of supportive resources, the networks' spatial dispersion, segmentation into different clusters, and low internal connectivity all hinder the widespread communication of needs and the mobilization of activity. These are more duets of resource exchange than integrated orchestras.

The evidence shows that East Yorkers are supportive in many ways, and that they exchange substantial reciprocal support. Their support is expressed most fully in providing emotional support or minor services. The last row in Table 2 shows the extent to which network members giving one kind of resource reciprocally get back the same kind of resource: for example, when a network member and an East Yorker give each other emotional support.

Even for the abundantly present emotional support and minor services, it is clear that only about one-fifth of the ties reciprocate. However, reciprocity is contingent on one-way exchange, and the data show that when emotional support or minor services are given, it is reciprocated in a substantial minority of the ties. Thirty percent of all emotional aid is reciprocally exchanged as are 38 percent of minor services.[8]

The situation is quite different for major services. Giving such services entails a greater commitment of time and effort. By contrast to the widespread provision of minor services and emotional support, only a minority of East Yorkers, 29 percent, either give or get major services. Most major services are not reciprocated: only 4 percent of all ties have relationships in which major services are reciprocated. Even in those ties when major services are given, only 14 percent (4/29) of the giving relationships are reciprocated. Although the small number of reciprocating ties limits our analysis, the data suggest that either the need for major services has not been present or the receiver does not have the ability to reciprocate by providing major services in return. The provision of such help may well be normative – driven by a felt need to help – rather than self-interested – driven by the belief that similar help will be provided in the near or medium term. For example, one-way provision of major services may occur when parents help adult children in times of childbirth, or adult children help aging parents during illness.

Where Does Reciprocity Come From?

The Golden Rule

While our earlier resource has told us about the *one-way* supply of resources between network members, until we did the present research we had not learned anything about who reciprocates with whom for what. That is what we focus on in the remainder of this chapter. Using our knowledge of East Yorkers and their relationships, we investigate the extent to which reciprocity takes place in these networks. Or in more formal language, we identify possible independent variables.

We turn first to the Golden Rule: *Do unto others as you would have them do unto you.* Defined most strictly, this would mean that if I give you X, you would give me X back, either because of normative pressure or out of self-interest. In our case, X could be emotional aid, minor services, or major services. Stated more formally, this is:

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[8] We calculated the reciprocal exchange of emotional support in the following manner: First, as Table 2 shows, 61 percent of the ties have an emotional support component (100-39=61). Dividing the percentage of reciprocating ties (18 percent) by this number – 18/61 – shows that 30 percent of all ties that contain emotional support reciprocate it.

Hypothesis 1: People are likely to exchange the same type of resource.

Yet the literature and our earlier analyses are filled with accounts of people giving some other kind of resource in return for help given. Someone may have lent a supportive ear for years about family problems but gets in return caregiving for illness.

Hypothesis 2: Giving one type of resource is associated with getting other types of resources in exchange.

Note that Hypotheses 1 and 2 are not mutually exclusive. It is quite possible that reciprocity will entail both exchanges of specific resources (tit-for-tit) and exchanges of different resources (tit-for-tat).

Previous research, summarized above, has shown that relational, network and personal characteristics are related to the *one-way* provision of supportive resources that, in turn, can affect reciprocity. Hence, it is reasonable to expect that the characteristics associated with one-way provision of resources are also associated with the *reciprocal* provision of resources.

Tie Strength

Do other aspects of a tie, in addition to the Golden Rule, plays a role in fostering reciprocity. Tie strength is a good possibility, as a number of relational phenomena are associated with "strong ties": a sense of the relationship being intimate and special; a voluntary investment in the tie; a desire for as much companionship as possible and in multiple social contexts; and mutual awareness and supportiveness (reviewed in Wellman 1992).

Do such strong ties provide more support? This question became prominent with George Homans' (1961) assertion that sentiments of social closeness are associated with supportive interactions. They became even more pertinent when our East York as well as other studies (reviewed in Cheal 1988, Wellman 1999) showed that not only is a strong tie more likely to be supportive, the relatively small number of strong ties provide much of an East Yorker's supportive resources.

However, most survey studies of social support have looked only at smaller sets of ties: people's half-dozen or so socially closest ties. The first East York study (Wellman 1979), a northern California study (Fischer 1982b) and a national U.S. study (Marsden 1987) showed that very close ties provided more support than somewhat less close ties. The stronger the tie, the more likely a network member is to provide support, both on an everyday basis and in emergencies (see also Hirsch 1980). The reverse is also true: supportive ties are apt to become stronger over time (Wellman, et al. 1997).

The second East York study found that most strong ties provide small services, emotional support or both. Socially close friends – but not socially close kin – were the most important sources of sociable companionship (Leighton 1986; Wellman and Wortley 1990; Wellman and Frank 2001; see also Uehara 1990, 1994, 1995).

Despite the relationship between the strength of ties and social support, tie strength is not synonymous with the one-way provision of support – much less reciprocity. The regression coefficients between tie strength and support are not so large as to suggest an underlying identity. The differentiated nature of support means that some strong relationships provide one kind of resource but not others. Indeed, some people fear that if the other person feels overburdened, the request will be rejected and the tie disrupted. This may especially be a difficult problem for poor people who cannot use cash to substitute for interpersonal aid (Liebow 1967; Espinoza 1999).

Although all of the 11 or so ties in the typical East Yorker network are relatively strong (by comparison to the other 200+ ties in a network), some are stronger than others. For this analysis, we have set up a dichotomous 0/1 differentiation between Strong ties (1) and somewhat less strong but still Significant ties (0). It is based on the interview participants' belief that the relationships is especially socially close); the participants' report that they interact with a network member voluntarily; and the participants report multiplex interactions with a network member in more than one social context. As these three variables have approximately equal factor loadings (Wellman and Wortley 1989), we combine them into a single tie strength measure. We define a strong tie as one that has at least two of the attributes of social closeness, voluntariness, and multiplexity. Given the high performance of tie strength in one-way provision of resources, we expect it to be significantly associated with reciprocal, two-way, resource exchange.

Hypothesis 3: Strong ties will be more reciprocal than less strong ("significant") ties.

Kinship and Friendship

Kinship: There are cultural, structural and perhaps biological reasons for kin to be supportive and reciprocating suppliers of social capital. The norm that "blood is thicker than water" idealizes the promotion of family welfare, encourages kin to share resources, urges them to give other kin privileged access to these resources, and celebrates long-term reciprocity (Schneider 1984). Kin are also the most likely network members to be densely interconnected, foster communication about needs and norms of providing help. Thus, most North Americans distinguish between kin and friends in their expectations for supplying social capital, and they also distinguish among types of kin, expecting more from immediate kin (Allan 1979; Farber 1966, 1981; Argyle and Henderson 1985). Our East York research has found three distinct types of kinship roles: *parent-adult child, sibling, extended kin* as well as roles of *friendship, neighbor and workmate*. Affines (in-laws) behave like consanguines - because much support effectively goes to the household rather than to the person, kin often feel they are supporting their own blood relatives (Goetting 1990).

Although most members of a person's overall network are friends and acquaintances, kin are usually a higher percentage of strong ties. In general, about half of all socially close ties are kin. *Immediate kin* – parents, adult children, siblings, including in-laws – are more apt to be supportive network members, than are *extended kin* - aunts, uncles, cousins, grandparents.

In previous work on these same East York data, hierarchical cluster analysis found that kin differ from friends (and neighbors) in the patterns of support (Wellman and Wortley 1989). It showed that *parent-adult children* ties are the most supportive of all intimate and active ties, providing high levels of major services, financial aid and emotional support (Adams 1968; Fischer 1982a, 1982b). Yet some of this support is almost inherently one-way. Large transfers of money tend to go only in one direction, with parents helping adult children to buy homes but rarely vice-versa. *Siblings* **-** brothers and sisters – give each other much support, although not as much as parents and adult children. By contrast, few *extended kin* who are actively involved in personal networks, and those who are involved rarely provide support.

Friendship: Friends and neighbors make up nearly half of most active personal networks and they usually comprise about half of the ties providing each kind of support (Wellman 1979; Wellman and Frank 2001; Fischer 1982b, 1982c; Willmott 1987). Friendship ties are much less densely knit and normatively bound than are kinship ties. For better or worse, getting social capital from friends is more problematic than getting it from kin. Whereas people are born into –

or marry into – kinship, friendship is more voluntary and often functions as discrete ties outside of committed groups. The voluntary, one-to-one nature of friendship means that people must maintain it more actively and that need be more concerned about reciprocating a friend's help (Wellman and Wortley 1990; Crohan and Antonucci 1989; Allan 1989; Adams 1990; Adams and Torr 1998; Blieszner 1988).

The East York data shows that while friends provide less variety and quantity of support than parents and children, they are as likely as siblings and much more likely than extended kin to be supportive (Wellman, Carrington and Hall 1988; Wellman and Wortley 1989, 1990). Because friends tend to be most similar in personal characteristics, experiences and values, they also tend to be most effective in handling non-technical tasks that benefit from similar norms and roles. Moreover, they are the preeminent sources of emotional support and information in networks (Miller and Darlington 2002).

Hypothesis 4: Kin will exchange more services than friends, especially major services, with the parent-adult child tie being the most supportively reciprocal.

We use dichotomous variables (0,1) to assess the explanatory effects of Parent-Adult Child relationships, Siblings and Friends.

Proximity, Contact and Neighboring

Do contact and proximity help explain reciprocity? This is a reasonable expectation because contact and proximity fosters shared values, increases mutual awareness of needs and available resources, reduces feelings of loneliness, facilitates resource delivery, and encourages reciprocal rounds of resource exchange (Homans 1961). This should especially be true when the resources exchanged depend on the delivery of goods and tangible services, where sizeable travel effort might deter providing help. Preliminary analyses have led us to measure proximity as living in the same neighborhood.

Arguments about contact historically have assumed the near-identity of neighborhood and community. Yet even before the advantage of the internet, most active ties were long distance ties, sustained by telephones, cars and planes (Wellman 2001; Hampton and Wellman 2003). At the time of our East York interviews, about three quarters of the ties extended beyond the neighborhood, one-third beyond the Toronto metropolitan area, and one-fifth stretching more than 100 miles (160 km). Northern California shows a similar pattern (Fischer 1982a, 1982b). Even poor Americans, presumably with less access to planes and cars, have many long-distance ties (Oliver 1986). Kinship ties have been especially able to endure over long distances because their densely knit structures and normative obligations encourage contact.[9]

Before the internet, distance clearly reduced contact in 1979 despite the low-cost of long distance phone calls and the availability of cars and good roads. More than half of all face-to-face personal network *contacts* – as contrasted with *ties* – are with neighbors and workmates: people in close, often daily proximity (Wellman 1996). Few network members lived near enough to see each other daily. But quick access by phone and car – even in the pre-internet days when we collected these baseline data – means that it is the metropolitan area, not the neighborhood that is the limit on face-to-face contact and supplying most goods and services. It is not surprising that emotional support and financial aid are less dependent on proximity as these do

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[9] Keller (1968); Litwak and Szelenyi (1969; Verbrugge (1979); Wellman and Leighton (1979); Wellman and Tindall (1993); Dominguez and Watkins (2003); Oh (2003); Hampton and Wellman (2003).

not require physical contact to be effective (Mok, Wellman and Basu 2006; Wellman, Carrington and Hall 1988; Wellman and Wortley 1990).

Hypothesis 5: Physical access – in the form of contact, proximity and neighboring – will promote the reciprocal exchange of services, especially minor services.

We measure contact between the participants and the members of their networks by taking the $\log_{10}$ of the days per year they are in face-to-face and telephone contact. To measure proximity, we use the $\log_{10}$of the distance (in miles) between the homes of the participants and the members of their networks. We use logarithms because the difference between one and two miles apart, for example, is much greater than difference between living 1,001 and 1,002 miles apart. Neighboring is measured by a dichotomous variable: 0,1

Social Characteristics

The social characteristics of people, as well as their relationships, clearly can affect the provision of social capital. For example, research supports the popular observation that women provide more emotional support than men. Women also receive more emotional support.[10] As the saying goes, "women express, men repress": women tend to interact "face-to-face" by exchanging emotional support while men tend to interact "side by side" by exchanging goods and services (Perlman and Fehr 1987, p. 21). Indeed, gender is the only social characteristic that our previous one-way research found to be related to the provision of social support, with women being more supportive than men (Wellman 1985; Wellman and Wortley 1990; Wellman and Frank 2001).

Research has not made clear the impact of *marital status* on support. One study has shown that the married give and receive more support (Campbell and Lee 1992). Their networks are larger, creating the potential for more support from a variety of sources. Yet another study contradicts these findings, showing that unmarried people are more likely to give and receive support (Liebler and Sandefur 2002). *Age* may also be a factor. Research has shown that middle-aged persons have larger networks and also give and receive more support (Campbell and Lee 1992; Haines, Hurlbert and Beggs 1996).

Finally, *socioeconomic status* can also play a role in the amount of social support exchanged between people. For example, many accounts have shown that poor people rely heavily on interpersonal relationships for their resources. The poor, lacking money or connections to institutional distributions, depend heavily on their friends and relatives. Reliance on interpersonal ties is not limited to the poor. As richer people have more money to give to others, they may be asked to help more often. They also have more awareness of the distribution of social capital in communities and networks (Lin and Dumin 1986; Espinoza 1999). While some studies show that people in higher status positions give and receive more social support (Campbell and Lee 1992; Haines, Hurlbert and Beggs 1996), others show that people of low economic status rely on informal unpaid labor most often for the provision of major and minor services (Pahl 1982). It may well be that both apparently contradictory situations are true, with high-status people more often called on for help and more often supplying it, but interpersonal help looming larger in the lives of poorer people.

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[10] See, for example, Kunkel and Burleson (1999); Wellman (1985); Wellman and Wellman (1992); Hogan, Eggebeen and Clogg (1993); Liebler and Sandefur (2002); Sherman, Ward and LaGory (1988); Wright (1989); Moore (1990).

Similarities between network members can foster support (Feld 1982; Gibbons and Olk 2003; Wellman & Gulia 1999; Wellman and Wortley 1990). Similarity analysts point out that people with similar characteristics tend to flock together in strong relationships. People with more things in common have more opportunities to talk, develop empathetic understandings and friendships, and their relationships often progress to mutual support (Lazarsfeld and Merton 1954; Feld 1982).

Hypothesis 6: Women will be more emotionally supportive.

We measure sex dichotomously: men = 0; women = 1. Similarities are measured by complex procedures discussed in Wellman and Gulia (1999).[11]

Network Characteristics

Exchanges of social support may depend not only on the characteristics of ties but on the nature of the networks in which these ties are embedded. *Size* probably matters, but in which direction? People with larger networks may be more network-savvy, able to garner more ties and a higher proportion of supportive ties. Moreover, larger networks are more diverse; increasing the likelihood that someone in the network will be supportive (Sammarco 2001**;** House, Umberson and Landis 1988**;** Hurlbert, Haines and Beggs 2000**;** Burton *et al*. 1995**;** Oxman and Hull 1997; Williams and Dilworth-Anderson 2002).

It is possible that quality compensates for quantity, with members of small networks more apt to pitch in for help, just as small numbers of bystanders are more likely than large numbers to intervene in emergencies (Latané and Darley 1976). Multilevel analysis – such as hierarchical linear modeling – is the best way to study how the characteristics of networks affect the supportiveness of ties embedded in them. Our research using the first East York data set (collected in 1968) found that the members of small networks were each more likely to be supportive (Wellman and Frank 2001). Yet the first East York study looked only at the five socially closest ties. Alas, although the second East York data set that we analyze here does contain information about more ties in a network, the sample size of participants is too small for multilevel analysis. However, network-level analysis of these data has shown that it is the larger networks that contain the highest percentage of supportive ties (Wellman and Gulia 1999).[12]

***Hypothesis** 7: Ties in larger networks will be more likely to reciprocate.*

Network size is the simple count of all active members in the participants' network. Network density is the proportion of all actually-occurring ties among network members (excluding ties to the participants) divided by all possibly-occurring ties.

Logistic Regression Analysis

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[11] We do not use measures of socioeconomic status (years of schooling, occupational prestige) in the final analysis because preliminary analysis did not show any association with reciprocity or the one-way provision of supportive resources.

[12] More *densely-knit* networks may also be more supportive, having the advantages of stability, reliability and consistency. (Durkheim 1897; Bott 1957; Thoits 1982; Fischer 1982b; Kadushin 1983, 2002; Marsden and Hurlbert 1988; Molm, Takahashi and Peterson 2000; Williams and Dillworth-Anderson 2002). Yet one widely-cited study has argued that more sparsely-knit networks are more heterogeneous, providing more connectivity to outside resources (Granovetter 1973). Our data for one-way support does not support either hypothesis, as it does not show any substantial relationships between the density of networks and the support they provide (Wellman and Gulia 1999). Nor did preliminary analyses of reciprocity show any density effects. Hence, density was deleted from the final analysis.

Our analysis relies on logistic regression. This statistical technique describes the relationship between the reciprocity of each type of resource – Emotional Support, Minor Services and Major Services – with the set of explanatory variables discussed in the section just before this one: from tie strength to network size and density. In logistic regression, the dependent (reciprocity) variables are categorical: either binary (yes/no) or – as in our case – an ordinal set of a small number of values. For each of the three reciprocity variables that we study, there are three values:

1. No resource provided by either participant or network member.
2. One-way resource provision by participant to network member, but not in the other direction.
3. Two-way -- reciprocal resource provision between participant and network member.

We use models that help describe the reciprocal exchanges of active network members. The explanatory variables in these models predict the probability of being in a higher category (two-way exchanges) rather than in a lower category. Our cumulative logit approach makes no assumption about the distances between observed categories. It takes into account the score test for the proportional odds, which tests the assumption that the three-value ordinal restrictions are valid, and with the desired high p-values. The score test of the proportional odds assumption evaluates the null hypothesis that the explanatory coefficients are equal.

We use the following proportional odds model to check for the appropriateness of using the three-value ordinal categories:

$$\text{logit}\,(\theta_i) = \alpha_i + \text{x}\beta\,.$$

The proportional odds model uses strict assumptions that imply that the odds ratios do not depend on the cutpoints, which in our case are: *1* (no exchange), *2* (one-way exchange), and *3* (reciprocal exchange). The approximate likelihood test of proportionality of odds across response categories tests that the coefficients for all variables are simultaneously equal.

We find that the proportional odds assumption holds when analyzing reciprocity for all three resources. Therefore, the cumulative logit model approach is appropriate.

Although we allow the intercepts to be different for different cumulative logit functions, the effect of the explanatory variables is the same across different logit functions. This means there are different intercepts (α's) for each of the cumulative odds, but only one set of explanatory estimates (β's) for all the cumulative odds. Therefore, all of the explanatory variables have the same effect on the odds of the dependent variable with no particular cutpoints. Hence, the equation of the three-category cumulative logit model that we use to estimate reciprocity is:

$$\ln\left(\frac{\Pr(y \leq j)}{\Pr(y > j)}\right) = \alpha_1 + \alpha_2 + \beta x$$

Each intercept applies to the corresponding cumulative logit, where intercept 1 (α_1) compares the category of two-way exchanges versus one-way and no exchanges and intercept 2 (α_2) compares the categories of reciprocal and one-way exchanges versus no exchanges.[13]

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[13] In our preliminary analyses, we also tested for interaction effects between the participants' provision of resource and other individual explanatory variables. This was done to explore the possibility of whether an explanatory variable (such as tie strength) has an independent or affects

Explaining Reciprocity

Baseline Models: Measuring the Golden Rule

We use five models to study the reciprocal exchange of each of emotional support, minor services and major services. We first examine whether the provision of a supportive resource in one direction is associated with reciprocity. We do this in two ways, the specific (restricted) exchange of a resource (Model 1: tit-for-tit) and the mixed (generalized) exchange of one resource for another (Model 2: tit-for-tat). Subsequent models will examine if tie and network characteristics (Model 3) and social characteristics (Model 4) add to the explanations provided by the Golden Rule.

Our operational definition of reciprocity is that the interviewed East Yorker has given a resource (for example, emotional support, etc) to a network member *and* that the network member has given that (or another) resource to the East Yorker. However, we do not have reliable information about in which direction the support was given first. In many cases, it is an ongoing dance of reciprocal exchange.

The first case straightforwardly supports a narrow definition of the Golden Rule: East Yorkers are significantly likely to do unto their network members as their network members have done onto them (the main diagonal of Table 3). Put another way, there are significant associations between the giving and receiving of emotional support, the giving and receiving of minor services, and the giving and receiving of major services. This does not mean that all who get a resource, give it in return, but they are more likely to do so than those who never got the resource. All three statistical associations are significant and large, with minor services having a somewhat stronger association than emotional support.: odds ratios of 7.5 and 5.4. (We repeat our caution that the small number of reciprocated cases of major services makes its statistics problematic, beyond basic percentages.)

> Table 3 about here: Patterns of Resource Exchange <

The only other Golden Rule phenomenon is between emotional support and major services. Participants who have given emotional support to network members have received major services from them. However, we do not know which came first: the hug or the caregiving.

Although importantly supporting the Golden Rule, the analysis based on Table 3 looks at reciprocal exchange only in isolation from other potential explanatory variables. Hence, we performed fuller logistic regressions that include the potential explanatory variables discussed earlier (tie strength, etc.) Tables 4, 5 and 6 present these for emotional support, minor services

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the dependent reciprocity variables in the presence of other explanatory variables. We did not find interaction effects. Therefore, this analysis uses only models that describe the main effects of the explanatory variables on three different kinds of the reciprocal exchanges of network members.

[14] In our preliminary analyses, we also tested for interaction effects between the participants' provision of resource and other individual explanatory variables. This was done to explore the possibility of whether an explanatory variable (such as tie strength) has an independent or affects the dependent reciprocity variables in the presence of other explanatory variables. We did not find interaction effects. Therefore, this analysis uses only models that describe the main effects of the explanatory variables on three different kinds of the reciprocal exchanges of network members.

and major services respectively. Although they contain many variables, they are the pared-down result of many logistic regressions. For example, because kinship and network density are statistically associated, we decide to ignore network density as an explanatory variable and use a number of kinship measures. Similarly, preliminary analysis led us to retain a variable indicating whether a network member was a neighbor or not and to delete a measure of residential distance between network members and participants. Although we include Table 6 for major services, we do not discuss it extensively because of its problematic statistical nature.

> Tables 4, 5 and 6 about here: Logistic regressions

Model 1 in the three tables is the baseline model, examining the narrow definition of the Golden Rule. The statistics for this model repeat those found in Table 3 above: giving emotional support, minor services or major services in one direction strongly increase the odds of receiving it in the other direction.

Model 2 examines the generalized Golden Rule. With these different statistics, there are minor variations from what was discussed above for Table 3. The association between participants giving emotional support and getting major services is joined by a weak association between giving minor services and getting emotional support.

Taken together, the two Golden Rule models show that most exchanges are for similar resources, such as minor services for minor services. However, all of the other associations for resource exchange are positive, suggesting that there is an additional tendency towards some generalized exchange. Hypothesis 1 is clearly confirmed, and there is some support for Hypothesis 2. Not only are a few generalized exchanges statistically significant, but the goodness of fit increases from Model 1 to Model 2: the logistic likelihood statistic (–2 Log Likelihood) decreases in each of Tables 4, 5 and 6.

The combination of specific and generalized exchanges shows up clearly in a widow's account of giving emotional support to her neighbor when her neighbor's husband was sick.

> So, I see them practically every day, like when Jim was sick, I called every night after she came home from the hospital because when they took him to the hospital, they didn't think he was going to get better. He had a heart attack; a pretty severe one. So, I phoned every night when she came home from the hospital to see how he was, so I talked to her every night.

She received help with emotional or minor services from the neighboring couple in return:

> Well I feel outside of being able to phone them when I need help, I think I could discuss about a family matter with them, I could discuss finances with them. Well just say, I hope it never does, but if the time ever came when I was in debt and couldn't meet it, I wouldn't hesitate and going and ask Jim if they could help me out for a few days. That's how close I feel to them. There isn't very much I wouldn't discuss with them.

Another woman tells how her husband and her neighbor:

> are usually buying equipment 50-50: like they have a photography lab and this sort of thing. Also, say something has happened, Ann will say, "Can you send Ed over?" if her husband isn't around. And her husband isn't a handy man at all either, so we are back and forth that way.

Relationships and Reciprocity

Is it all just support bringing forth reciprocal support, or are there other influences on when the Golden Rule is observed? We start by adding to the baseline models measures of other aspects of the ties between participants and network members. ***Model 3*** adds measures of tie strength, frequency of contact, and indicators of role relationships: parent/adult child, sibling, friend, and neighbor.

We were astonished when first looking at the statistical tables to find that tie characteristics add little to the Golden Rule items in explaining the likelihood of getting reciprocal resources. (The Golden Rule items of specific and generalized reciprocity continue to remain significant in these two models.) There are no significant tie characteristics related to the reciprocal exchange of emotional support in Model 3. However, being a neighbor, a parent or an adult child is associated with reciprocally receiving minor services in addition to the Golden Rule. Similarly, being a parent or an adult child – but not being a neighbor – is associated with reciprocally receiving major services. Tie strength has no impact, nor does frequency of contact – either face-to-face or by phone – or being a friend or a sibling. In short, there is no support for Hypothesis 3 (tie strength), and only partial support for Hypothesis 4 (the parent-child kinship relationship) and Hypothesis 5 (neighboring).[15]

The strongest positive relationship for the parent-adult child relationship is an adjusted odds ratio of 10.7 for the exchange of major aid. This means that the odds of a parent and adult child exchanging major aid is more than ten times the odds for other role relationships.[16] As only a small number of all ties exchange major services, these odds are not reliable, but they do suggest that parent-child relationships dominate this type of exchange, and not close friends or other kinfolk. For example, a daughter speaks about her father helping her and her family:

> He gave us the loan of money when my husband's father died, to go for the funeral. So, he gave us the loan of the fare. …We considered it a loan, he didn't but we did.

Reciprocally, when her mother (her father's wife) died:

> We went down to Barrie [90 miles away] to live with my dad for a while.

We have been astonished at the low number of associations between tie characteristics and reciprocity because these same data have shown all of the tie characteristics to be appreciably related to the *one-way* provision of supportive resources (see above; see also Wellman and Wortley 1990). We found an association then, why not now?

We believe that we have stumbled onto a chain of causality that is more complex than we had originally imagined. Tie strength, frequent contact, and role relationships affect the one-way provision of resources, but once these resources have been received, it is the sheer fact of getting them that engenders reciprocity, both specific and generalized.

Social Characteristics, Network Characteristics and Reciprocity

Do the social characteristics of interview participants and their network members affect reciprocity in addition to – or even instead of – the Golden Rule and tie characteristics? Once again, the Golden Rule measures remain strong and significant in ***Model 4,*** but there is an

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[15] As residential proximity is strongly associated with neighboring, we could not leave both in these models. We kept neighboring after preliminary analyses showed it to be more important for understanding reciprocity.

[16] We also have a large odds ratio for neighbors reciprocating major services. However, only two neighbors reciprocally exchange major services.

additional effect of one social characteristic: gender. Recall that our one-way analysis of social support (Wellman and Wortley 1990) had found one important phenomenon: women are more emotionally supportive. Model 4 shows that gender is important for reciprocity as well as for one-way support. Female participants significantly reciprocate emotional supportiveness. Hence, Hypothesis 6 is supported. There are also slight negative effects of the age of both participants and network members on reciprocated emotional support and of network members' age on reciprocated minor services.

Model 4 is our final model. It is the best fitting model for all types of reciprocity, as shown by the lower -2 Log Likelihood statistic in Tables 4, 5 and 6. The decreased statistic – indicating a better fit -- is especially apparent for emotional support (Table 4): the 11 percent decrease in this statistic from 518 to 462 shows how the social characteristics of sex and age better help to explain the likelihood of reciprocating emotional support.

Measures of the similarity of social characteristics were removed from Model 4 when preliminary analyses did not show any relationship between them and any form of reciprocity. The lack of importance of similarity suggests that the reciprocal exchange of resources is not based on “sameness” but on resources previously supplied. The implication is positive for societal cohesion that cuts across boundaries of class, gender, ethnicity, etc. Prior supportiveness fosters the bond of reciprocity and not class, gender or marital status.

Model 4 also includes network size, the only network characteristic retained for the final logistic regressions. The data show that the larger the network, the more likely each tie in the network is to reciprocally provide emotional support. Having more people in a network increases the chances for reciprocal exchanges. The quantity of ties implies the emotional quality of ties, rather than quality compensating for quantity. Hypothesis 7 is supported for emotional support and almost significantly for the reciprocation of minor services. However, major services depend solely on prior supportiveness and the parent-child bond.

The Golden Rule – and Self-Interest – Rule

The Relational Basis of Reciprocity

The evidence is extraordinarily clear on one subject. The overwhelmingly direct cause of reciprocity is giving support in the first place. Many people give emotional support or minor services in one direction, and the logistic regressions show that getting supportive resources from network members is the key to the East Yorkers reciprocating – usually in kind but sometimes with other forms of support (Figure 1). The parent-child bond is the only relationship that appears to operate without much regard to near-term reciprocity: providing minor and major services.

> Figure 1 about here: Pathways of support and reciprocity <

NetLab’s thirty-five years’ body of work analyzing these East Yorkers allows us to place the Golden Rule in context. As Don Corleone pointed out (Puzo and Coppola 1972), to get, you often have to give. And it is in the initial giving of supportive resources that characteristics of ties – such as their strength and their frequency of contact – are important. They set the chain of exchange in motion, and then the Golden Rule kicks in.

The practice of reciprocity is especially important for the exchange of resources that supply social capital for dealing with everyday matters: minor services and emotional support. And with the practical functioning of the Golden Rule, each exchange strengthens the bond and makes

further exchanges more likely. Our reading of the interviews suggests that both self-interest and norms are at work here.

The exception is the much rarer provision of major services where there is little evidence of reciprocity. Why is it that greater expenditures of time and money do not evoke return engagements? Perhaps our time frame was too short in the interviews to discover reciprocal exchanges. This is probable when the most common supply of major services is between parents and their adult children. It is a long time between parental help to children and young adults to filial help to their aged parents. Perhaps there is some social pressure from other kin to reciprocate appropriately. But given that we know that other kin are less supportive and that most ties largely operate independently of each other, we believe that the parent-child norm of mutual support has continued in East York even while other kinship norms have weakened.

As this is a book about social capital *on the ground,* it is gratifying that neighboring still has its pay-offs. Neighbors reciprocally exchange more services – both minor and major. Yet neighbors are only a small fraction of the East Yorkers' networks, and the advent of the phone, expressway, car and transit system meant that even in 1978, the distance between network members was only of secondary importance. Indeed, it plays an insignificant role in the exchange of social support. The phone takes much of the place of neighborly interaction, supplemented by intermittent trips by car or plane to visit with far-flung network members (Wellman and Tindall 1993). The internet and instant messaging – currently being joined by webcams and digital-network telephones – can only reduce the importance of physical proximity (Wellman 2001; Wellman and Haythornthwaite 2002). Yet, the importance of proximity will persist for services until it is possible to transport a cup of sugar electronically.

What do these findings mean for social capital? First, as the sages counseled, invest in your ties. Second, the advent of networked individualism means that the ties themselves are more important than the network (Wellman 2001; Wellman and Frank 2001). Network density has no effect on reciprocity and network size only a small effect. There is not much evidence of group pressure to reciprocate that as has been celebrated in scores of village and neighborhood studies in past decades.

Third, the supportive exchanges we have discovered focused on reproduction rather than on production. To some extent, this was because we did not focus on ties with co-workers. In their discussions, the East Yorkers rarely talked about using social – or other forms of capital – to go into business, to invest, or even to get a job. Their networks provide social capital for reproduction much more than production. They center on the household – with in-laws providing as much help as consanguines and secondarily on the network and the neighborhood. They rarely are concerned with earning a living. The East Yorkers' investments in their ties provide *havens*: a sense of belonging and being helped. When needed, the ties provide *bandages*: routine emotional aid and small services that help people cope with the stresses and strains of their everyday lives. More rarely, a few ties provide *safety nets* that lessen the effects of acute crises and chronic difficulties such as serious illness, childcare and unemployment. Even more rarely, the ties provide *leverage* to a few East Yorkers keen to change situations (houses, jobs, spouses) or to change the world (local school board politics, banning unsafe food additives, stopping cruelty to animals).

The sages got the reciprocity norm right: As Bakunin said:

> *No person can recognize or realize his or her own humanity except by recognizing it in others and so cooperating for its realization by each and all.*

But the sages were so concerned with normative precepts that, except for Don Corleone, they forgot self-interest:

Do for others so that they will do for you.

Reciprocity On and Off Line

Social capital continues to be alive and well and reproducing in East York. NetLab's *Connected Lives* project returned to East York in 2004-2005 to study of social networks and social capital on and off the internet. We are fascinated by the changes we see. East York, so homogeneous in appearance and demographics in 1978, is now a multicultural area. In addition to the traditional lawn bowling, there are now cafes and bars. There are many more high-rise apartment buildings, and they are filled with recent immigrants from Asia, Africa, Europe and Latin America.

The people have changed, but the active use of social capital persists. The big communications change is that the internet has created additional connectivity – adding on to telephone and face-to-face contact. At the same time, the shift to person-to-person connectivity is heightening the importance of individualized networking. The individualized nature of networking means that the self-interested amassing of favors between pairs of people is probably even more paramount today than in 1979. The weakening of groups (Putnam 2000) means that there is less visibility and less control over the behavior of individuals and pairs.

Yet social capital is flourishing in 2005, with the internet getting it higher off the ground and reaching out farther. Social capital gets mobilized locally – arranging babysitting – and globally – talking to the old folks across the ocean and even arranging marriages (with viewings by webcam). And the polyglot nature of contemporary East York means that its residents not only follow Jesus' Golden Rule and Don Corleone's strategy, but the precepts of Confucius, Muhammad, and Krishna as well.

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Table 1: Terminology Used for Exchange Partners and Resources Exchanged

EXCHANGE PARTNERS	RESOURCES EXCHANGED	
	Restricted (Similar)	Generalized (Mixed)
One-to-One	*one-to-one restricted*	*one-to-one generalized*
Network	*network restricted*	*network generalized*

Table 2. Percentage of Network Members Providing Support to Participants

Network Member	Emotional Support	Minor Services	Major Services
	%	%	%
No Exchange	39	36	71
One-Way Exchange			
-- Network Member to Participant	23	24	12
-- Participant to Network Member	20	19	13
Reciprocal Exchange	18	21	4
Total	**100%**	**100%**	**100%**

Number of Ties = 335

Table 3. Reciprocal Pattern of Resource Exchange Between Network Members and Participants

Participants' Support	Emotional Support		Minor Services		Major Services	
Network Members' Support	***b (s.e)***	***Odds***	***b (s.e)***	***Odds***	***b (s.e)***	***Odds***
Emotional Support	1.70**** (.16)	5.4	0.27 (.14)	1.3	0.87*** (.24)	2.4
Minor Services	0.37* (.15)	1.4	2.02**** (.18)	7.5	0.43 (.26)	1.5
Major Services	0.17 (.25)	1.2	0.02 (.24)	1.0	1.91**** (.27)	6.7
Likelihood Ratio	191.26		222.79		111.63	
N	335		335		335	

* p<.05 ** p<.01 ***p<.001 **** p<.0001

Table 4. Summary of Cumulative Logit Analysis for Variables Predicting Reciprocal Emotional Support of Network Members (n = 335)

	Model 1			Model 2			Model 3			Model 4		
	b *s.e*		Odds	**b** *s.e*		Odds	**b** *s.e*		Odds	**b** *s.e*		Odds
Services by Participants												
Emotional Support	**1.85** *0.16*	****	6.38	**1.70** *0.16*	****	5.49	**1.68** *0.16*	****	5.38	**1.58** *0.17*	****	4.87
Minor Services				**0.37** *0.15*	*	1.45	**0.42** *0.16*	**	1.53	**0.55** *0.17*	**	1.73
Major Services				**0.17** *0.25*		1.19	**0.04** *0.27*		1.05	**-0.05** *0.29*		0.95
Relational Attributes												
Tie Strength (strong ties=1)							**0.01** *0.28*		1.01	**0.43** *0.31*		1.54
Frequency of Phone Contact							**0.01** *0.20*		1.01	**0.03** *0.23*		1.03
Frequency of Face to Face Contact							**-0.12** *0.23*		0.88	**0.07** *0.26*		1.07
Network Member's Role Relationship												
Parent/Adult Child							**0.81** *0.53*		2.24	**0.65** *0.60*		1.91
Sibling							**0.37** *0.38*		1.45	**0.74** *0.41*		2.10
Friend							**0.33** *0.37*		1.39	**0.61** *0.39*		1.83
Neighbor							**-0.31** *0.39*		0.74	**-0.56** *0.43*		0.56
Social Characteristics of Network Members												
Sex (female=1)										**0.86** *0.31*	**	2.37
Marital Status (married=1)										**0.36** *0.29*		1.44
Age										**0.03** *0.01*	**	1.03
Social Characteristics of Participants												
Sex (female=1)										**0.22** *0.34*		1.24
Marital Status (married=1)										**-0.01** *0.33*		0.98
Age										**0.09** *0.02*	****	0.91
Size of Network												
Netsize										**0.09** *0.03*	***	1.01
-2 Log L	535.4			526.5			518.0			462.0		
N	335			335			335			335		

† p < .10. * p < .05. ** p < .01. *** p < .001. **** p < .0001.

Table 5. Summary of Cumulative Logit Analysis for Variables Predicting Reciprocal Minor Services of Network Members (n = 335)

	Model 1		Model 2		Model 3		Model 4	
	b *s.e*	Odds	b *s.e*	Odds	b *s.e*	Odds	b *s.e*	Odds
Services by Participants								
Emotional Support			**0.27** *0.14*	1.30	**0.28** *0.15*	1.33	**0.28** *0.16*	1.33
Minor Services	**2.12** **** *0.17*	8.32	**2.02** **** *0.18*	7.52	**1.94** **** *0.18*	7.00	**2.04** **** *0.20*	7.67
Major Services			**0.02** *0.24*	1.02	**-0.03** *0.26*	0.97	**-0.05** *0.27*	*0.94*
Relational Attributes								
Tie Strength (strong ties=1)					**-0.002** *0.29*	0.99	**0.04** *0.31*	1.05
Frequency of Phone Contact					**-0.09** *0.21*	0.91	**-0.01** *0.22*	0.98
Frequency of Face to Face Contact					**0.12** *0.24*	1.23	**0.06** *0.25*	1.06
Network Member's Role Relationship								
Parent/Adult Child					**1.09** * *0.54*	2.97	**1.75** ** *0.60*	5.80
Sibling					**0.28** *0.40*	1.33	**0.31** *0.43*	1.36
Friend					**0.92** * *0.39*	2.52	**0.93** * *0.41*	2.53
Neighbor					**1.20** ** *0.40*	3.32	**1.22** ** *0.43*	3.42
Social Characteristics of Network Members								
Sex (female=1)							**-0.51** *0.30*	0.59
Marital Status (married=1)							**0.05** *0.29*	1.04
Age							**-0.03** ** *0.01*	0.97
Social Characteristics of Participants								
Sex (female=1)							**0.38** *0.33*	1.46
Marital Status (married=1)							**0.39** *0.33*	1.47
Age							**0.02** **** *0.02*	1.02
Size of Network								
Netsize							**0.04** † *0.02*	1.05
-2 Log L	501.4		498.0		482.2		465.2	
N	335		335		335		335	

† p < .10. * p < .05. ** p < .01. *** p < .001. **** p < .0001.

Table 6. Summary of Cumulative Logit Analysis for Variables Predicting Reciprocal Major Services of Network Members (n = 335)

	Model 1		Model 2		Model 3		Model 4	
	b *s.e*	Odds	**b** *s.e*	Odds	**b** *s.e*	Odds	**b** *s.e*	Odds
Services by Participants								
Emotional Support			**0.87** *** *0.24*	2.40	**0.91** ** *0.26*	2.48	**0.97** *** *0.29*	2.65
Minor Services			**0.43** *0.26*	1.54	**0.21** *0.29*	1.23	**0.22** *0.29*	1.24
Major Services	**2.32** **** *0.26*	10.21	**1.91** **** *0.27*	6.78	**1.95** **** *0.31*	7.00	**1.97** **** *0.32*	7.22
Relational Attributes								
Tie Strength (strong ties=1)					**0.17** *0.42*	1.19	**0.16** *0.44*	1.17
Frequency of Phone Contact					**-0.02** *0.30*	0.98	**-0.005** *0.31*	0.99
Frequency of Face to Face Contact					**-0.32** *0.38*	0.72	**-0.42** *0.40*	0.66
Network Member's Role Relationship								
Parent/Adult Child					**2.30** * *1.13*	10.0	**2.52** * *1.18*	12.4
Sibling					**1.62** *1.12*	5.05	**1.61** *1.12*	5.00
Friend					**1.68** *1.12*	5.40	**1.70** *1.12*	5.51
Neighbor					**2.68** * *1.10*	14.7	**2.83** * *1.12*	16.9
Social Characteristics of Network Members								
Sex (female=1)							**-0.90** *0.44*	0.41
Marital Status (married=1)							**0.01** *0.43*	1.01
Age							**-0.01** *0.02*	0.99
Social Characteristics of Participants								
Sex (female=1)							**0.29** *0.48*	1.34
Marital Status (married=1)							**0.66** *0.59*	1.95
Age							**0.02** *0.02*	1.02
Size of Network								
Netsize							**0.03** *0.04*	1.03
-2 Log L	271.1		250.0		238.6		231.3	
N	335		335		335		335	

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$. **** $p < .0001$.

Figure 1a · Pathways to Reciprocated Emotional Support

Individual, Network, and Tie Characteristics	*Support from Network Member to Participant*	*Reciprocal Support from Participant*

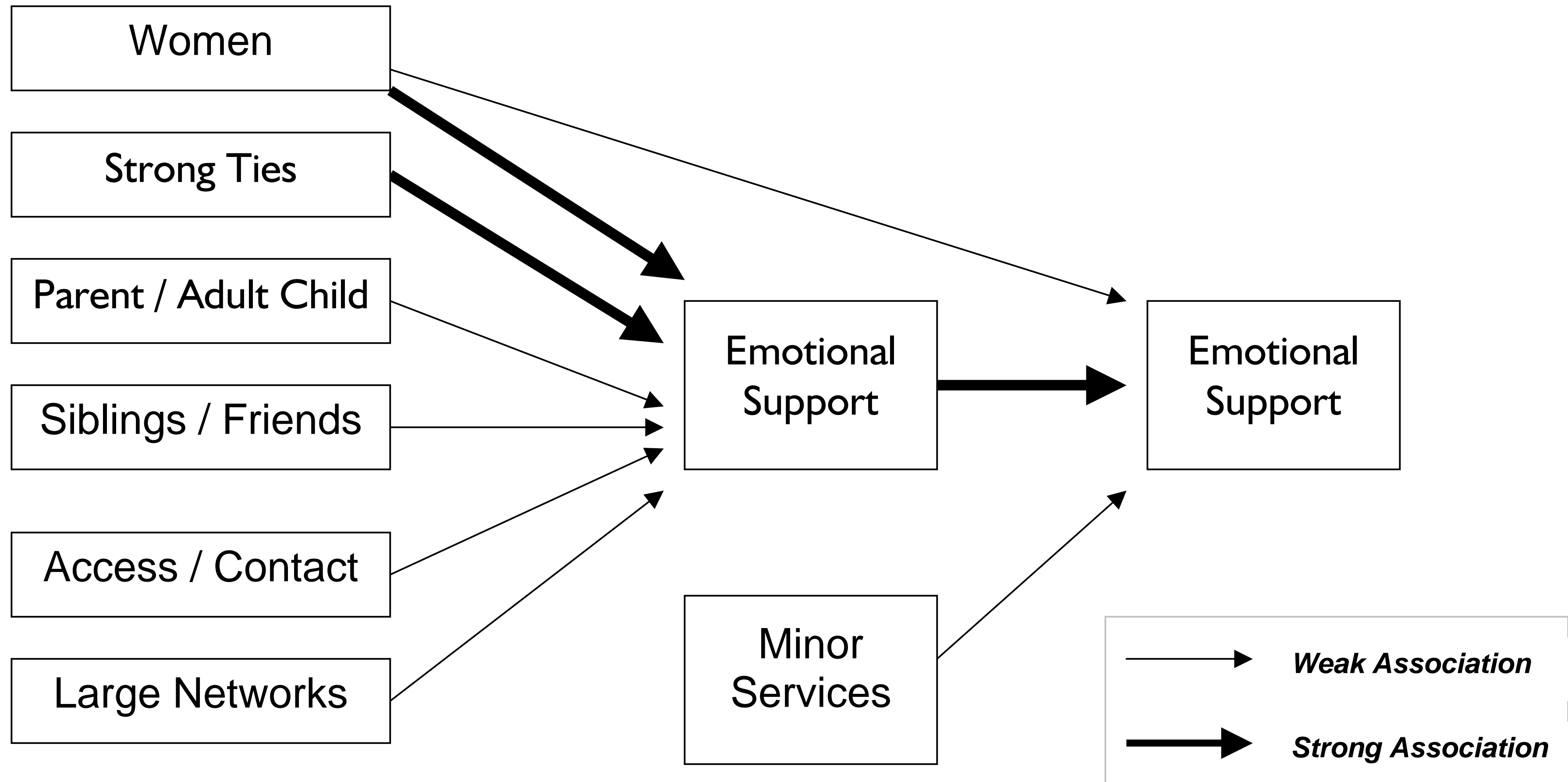

Figure 1b · Pathways to Reciprocated Minor Services

Tie and Network Characteristics	*Support from Network Member to Participant*	*Reciprocal Support from Participant*

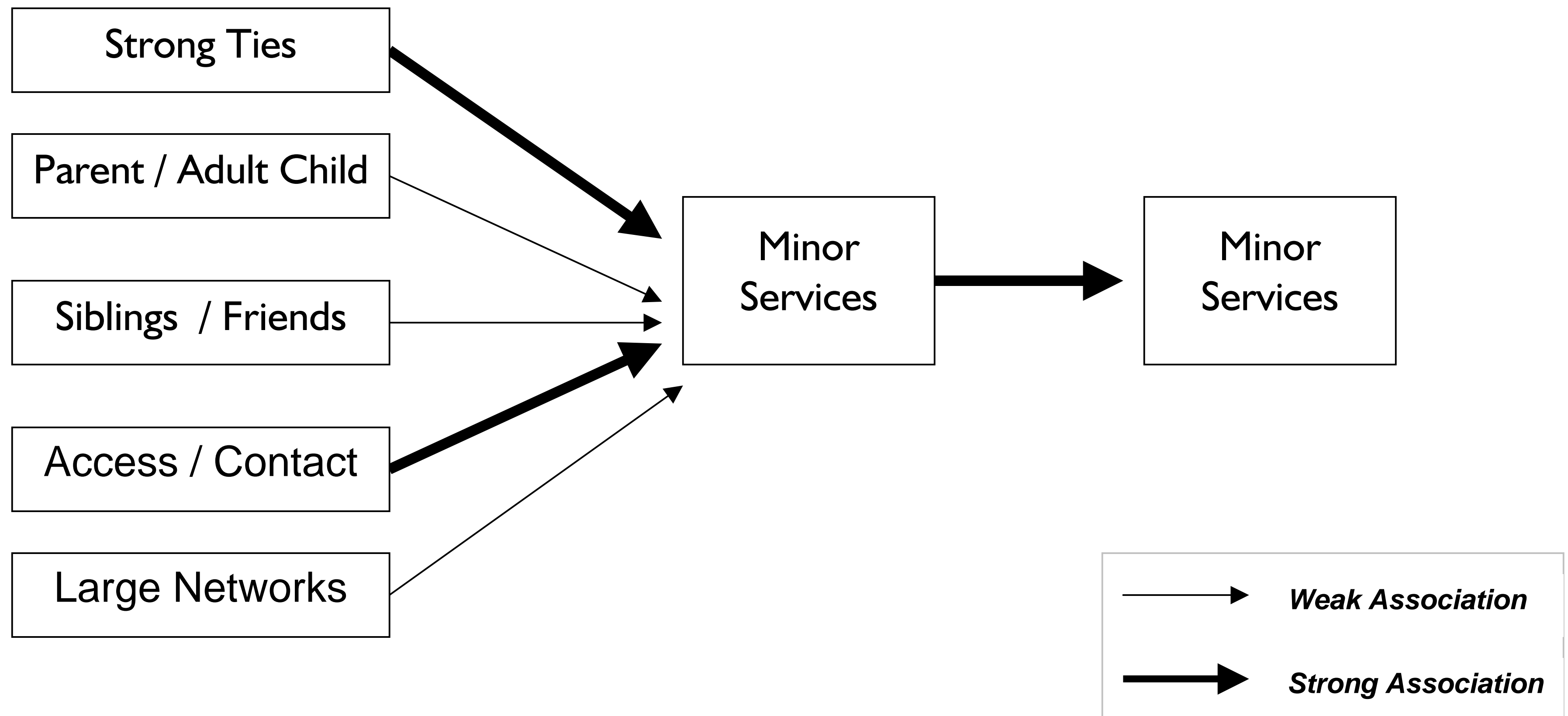

Figure 1c · Pathways to Reciprocated Major Services