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Difficult People: Who is Perceived to be Demanding in Personal Networks and Why Are They There?

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Abstract:	Why do people maintain ties with individuals whom they find difficult? Standard network theories imply that such alters are avoided or dropped. Drawing on an intensive survey of over 1,100 diverse respondents who described over 12,000 relationships, we examined which among those ties respondents nominated as a person whom they "sometimes find demanding or difficult". Those so listed composed about 15 percent of all alters in the network. Ego and alter traits held constant, close kin, especially women relatives and aging parents, were especially likely to be named as difficult alters. Nonkin described as friends were less, and those described as coworkers more, likely to be listed only as difficult alters. These results suggest that normative and institutional constraints may force people to retain difficult and demanding alters in their networks. We also found that providing support to the alter, but not receiving support from the alter, was a major source of difficulty in the relationship. Furthermore, the felt burden of providing support was not attenuated by receiving assistance, suggesting that alters involved in reciprocated exchanges were not less often labeled difficult than were those in unreciprocated ones. This study underlines the importance of constraints in personal networks.

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Difficult Ties:

Who is Perceived to Be Demanding in Personal Networks and Why Are They There?

In the development of social network analysis since the 1950s, researchers and popularizers have stressed the importance to individuals of egocentric networks as sources of emotional support, information, and material assistance in both mundane situations and emergencies. Also recognized, but trailing far behind in attention, is the importance of egocentric networks as sources of demands and difficulty. Scholars have noted that sometimes l'enfer, c'est les autres by showing that individuals are also connected to people who burden and stress them (Bertera 2005; Durden, Hill, and Angel 2007; Lee and Szinovacz 2016; Rook 1984, 1989; Thomas 2010), but have paid far less attention to difficult ties than to supportive or even "weak" ties (see, e.g., Kadushin's 2012 overview). The modest literature on difficult ties within networks, although alerting us to the complexities of relationships, insufficiently identifies who tends to be felt as difficult by whom and, more generally, insufficiently explains why individuals maintain such burdensome relationships. Studies of network formation, from either an agentic or a structural perspective, typically assume that difficult ties will be avoided and eventually dissolved (Harrigan and Yap 2017), thus making their presence and persistence in networks a puzzle.

In this article, we use rich data from the first wave of the University of California Social Network Study (UCNets) to learn about the prevalence, attributes, and correlates of difficult ties. UCNets is an extensive egocentric network survey of some 1,150 adults in the greater San Francisco Bay Area. The respondents described their relationships with over 11,000 alters drawn from their answers to six name-eliciting questions asking about the people with whom they were

involved in different spheres of activity. A major advantage of UCNets is that, in addition to these questions, the survey also asked respondents to name the people whom they found "demanding or difficult," thus allowing us to learn about the sources of burdens and difficulties in personal networks. We argue that individuals experience constraints that press them to continue engaging with others whom they would have preferred to avoid or to disengage from. Our study focuses on two types of constraints, role- and interaction-based, and examines their association with the likelihood that different alters would be named as participants in difficult ties in the network.

PREVIOUS RESEARCH ON DIFFICULT TIES

The observation that individuals may have ties that are partly or even predominantly costly to them would not be striking to scholars who analyze *whole* networks such as classrooms or work settings, where dislike, competition, and conflict are expected (e.g. Lyons and Scott 2012; Everett and Borgatti 2014), but the bulk of theory and research on personal, or egocentric, networks have focused on the supportive function of personal relationships (Cohen and Janicki-Deverts 2009; Fischer 1982a; House, Umberson, and Landis 1988; Wellman and Wortly 1990; Thoits 2011). These studies have typically stressed how family, friends, and even acquaintances assist respondents, connect them to various resources, and contribute to both their physical and mental health. (For a representative overview of a vast literature, see for example, Kawachi and Berkman 2001.) Considerably less attention, however, has been given to the role and implications of difficult relationships.

Karen Rook was one of the first few scholars to have addressed this issue. Rook (1984, 1989) found in her study of elderly women that the number of relationship burdens they reported

affected the women psychologically more than did the number of supportive relationships they described (see also Lincoln 2000). Importantly, she found that the number of difficult and of helpful ties the women reported were uncorrelated; indeed, specific friends and relatives could be both sources of help and of strain. More recently, in several surveys researchers have asked respondents to report support or strain from specific types of alters, such as their spouses or daughters (e.g., Bertera 2005; Birditt and Antonucci 2007), or from general categories of ties, such as family and friends (e.g., Chen and Feeler 2014; Durden et al. 2007; Shaw et al. 2007; Walen and Lachman 2000). Other researchers have estimated how many people provide support versus problems or how often they do so (e.g., how many of the people you listed "get on your nerves?" in Thomas 2010).

Additionally, studies of what has been labeled "psychological ambivalence" in the family literature emphasize that relationships with kin often involve simultaneously positive and negative contents (e.g., Birditt and Fingerman 2013; Connidis and McMullin 2002; Fingerman, Hay, and Birditt 2004). In a recent example, Lee and Szinovacz (2016), using the 2008 Health Retirement Study, found that respondents reported the greatest mix of positive and negative evaluations for their spouses and children, then next greatest for other relatives, and least for friends. In addition, they found that negative reports about spouses and children, but not about relatives or friends, correlated with various psychological well-being measures.

Overall, these studies commonly find that respondents who give more negative reports also tend to report higher level of stress and loneliness and lower levels of physical health and psychological well-being (see also Lee and Szinovacz 2016; Ailshire and Burgard 2012; Lund et al 2014; Rook 2003, 2015; for some complexity, see Antonnuci et al. 2010.) While the association between difficult ties and health and well-being appears to be robust, the causal paths

linking them have not been sufficiently studied. Difficult ties may impair well-being by increasing a person's sense of stress and burden, but it could also be that psychologically distressed people and those with a negative outlook of life tend to perceive others in an unpleasant way (e.g., Vinokur, Schul, and Caplan 1987).

Despite the consensus on the correlates of difficult ties, the existing literature has hardly addressed the question of which types of people and what kinds of ties are felt to be difficult. That is, it is important to understand not just whether individuals can identify stressful ties in their networks, but to also understand *which* specific alters and *which* specific ties - defined by relationship type and other features, such as alters' interactions with the individual - seem to provoke stress and feelings of burden. To our knowledge, the only approximate precedent to our analysis is a 1980s study by Leffler, Krannich, and Gillespie (1986), which asked residents of four Utah villages to name people with whom they had various positive interactions and to also name those who were overly demanding, would let them down, and made them angry. Our study uses a larger and more diverse sample and expands what we know about the relationships, allowing us to address the issue of *who* is viewed as creating stress and burden, and then permitting us to infer answers to the broader question of *why* individuals would maintain such relationships. Is it, as an exchange model would suggest, because people gain more than they lose in these ties, or is it because people cannot avoid those ties?

THEORIES OF TIE FORMATION AND THE QUESTION OF DIFFICULT TIES

The question of why individuals sustain connections to people whom they consider difficult and demanding directs us to the broader, and relatively unexplored, issue of how people build and maintain personal networks. The social science literature has proposed two main

complementary approaches. The first emphasizes the agentic nature of individuals and treats them as active and purposive builders of their social worlds. The second approach focuses on the structural locations in which individuals are embedded and how these locations provide opportunities for social connections. These two approaches, however, have not been applied to explain the existence and persistence of difficult ties in people's networks. We begin by briefly reviewing the two main approaches to tie formation, move on to address their limitations, and then discuss the idea of constraints to help resolve the puzzle of lasting difficult ties.

Tie Formation as a Purposive Process

The approach that treats tie formation as a purposive and deliberate process rests on the assumption that individuals are agentic actors who make strategic decisions regarding whom to include and whom to exclude from their networks. It highlights the mental process they engage in as they evaluate and screen potential network members. Explanations typically focus on the gains obtained from the connections or the utility of potential associates for fulfilling individual needs and interests.

The idea that people form and invest in a relationship with an eye to the benefits, both extrinsic and intrinsic, they can accrue from it is most explicit in earlier exchange theory approaches (e.g., Blau 1986; Homans 1958; Thibaut and Kelly 1959) and more recently in the investment model put forward by theorists of so-called "social capital." As Bourdieu (1986) explains "the network of relationships is the product of investment strategies, individual or collective, consciously or unconsciously aimed at establishing or reproducing social relationships that are directly usable in the short or long term" (249; see also Coleman 1990; Lin 2001). Tie formation and activation is thus treated as an instrumental process whose main motivation is

driven by the utility of the tie. Consequently, ties based on unreciprocated exchanges, or those in which costs outweigh benefits, are likely to be discontinued (Ikkink and van Tilburg 1999).

In research on social support, this approach resonates with the models of "targeted mobilization" (Small 2013) and "functional specificity" (Perry and Pescosolido 2010), which contend that individuals assess their own needs and then selectively turn to specific people to access their resources based on evaluations of how useful these people are. Consistent with this idea, research points to specialization in the provision of support by showing that different types of ties are mobilized for different types of support (e.g. Fischer 1982a; Pescosolido 1992; Wellman and Wortely 1990).

Other studies, mostly ethnographies of family and community relationships, use a language that is not explicitly actor-based but that also assumes that people build networks in a deliberate and purposive manner. Nelson (2005), for example, shows how the low-income single mothers she interviewed in Vermont carefully selected network members by evaluating who in their social environments was most suited to fulfill their needs. Nelson refers to this screening process as "the work of sociability." Similarly, Hansen (2005) describes a process of sifting and sorting network members, referred to as "staging networks," which parents continuously go through in their attempt to build networks of care for their children. Hansen shows how parents assess network candidates based on their past behaviors, values, and child-rearing philosophy and how they follow relatively strict rules regarding what to ask from whom, when, and under what circumstances (Hansen 2004). These studies nicely demonstrate how individuals meticulously seek to gain information about potential network members and weigh both the benefits and costs of drawing someone into or excluding someone from the network (see also Domínguez and Watkins 2005; Menjívar 2000).

Tie Formation and the Context of Opportunity

The second approach focuses on the more contingent and idiosyncratic character of tie formation. It stresses that individuals often create connections with those people in their social surroundings who are accessible and available to them. Social contexts (or "foci," see Feld 1981) matter much more for network inclusion than agentic search models suggest. Simple inaccessibility, for example, rules out all but a small sliver of hypothetical relationships.

Consistent with recent developments in network research, this approach assumes that circumstances play a crucial role in shaping the compositional and structural features of social networks (e.g. Doreian and Conti 2012; Entwisle, Faust, and Rindfuss 2007; Mollenhorst, Völker, and Flap 2014; Small 2013; Small, Pamphile, and McMahan 2015). For example, studies show how people often form quite intimate and supportive ties with others whom they barely know and whom they had recently met, sometimes even unexpectedly, in different places, such as childcare centers (Small 2009), food pantries, neighborhood clinics, and homeless shelters (Desmond 2012), college classrooms (Kossinets and Watts 2009; Small 2013), beauty salons (Furman 1998), and diners (Torres, in press).

The broader social and institutional context is thus conceptualized as an opportunity structure for social meetings and the formation of new ties mainly because it determines the pool of potential associates and allows for the emergence of interactions with them (Blau and Schwartz 1984; Feld 1982; Fischer 1982a; Lazarsfeld and Merton 1954). This idea is key to research on homophily, which shows that the degree of similarity between associates is affected by the characteristics of the social contexts in which they meet and interact (e.g. Marsden 1990; McPherson, Smith-Lovin and Cook 2001; McPherson and Smith-Lovin 1987). In support of this view, Small (2013) indicates that students discussed important matters not just with others they

felt close to but also with acquaintances whom they met in various groups and associations.

Mollenhorst, Volker and Flap (2014), using longitudinal personal network data in the

Netherlands, found that many social ties were discontinued over time due of a lack of meeting opportunities.

The opportunity approach does not discredit the idea that within specific contexts individuals may select ties purposively, but its focus is elsewhere. It assumes that access, physical and/or social proximity, is key to the process of tie formation and maintenance. Experimental studies provide evidence showing how proximity contributes to the endurance of ties by facilitating regular interactions and the development of positive sentiments and trust between individuals (Lawler 2001). Further support is provided by survey research suggesting that even in today's digital world, propinquity is important for social interaction and the receipt of support (Mok, Wellman, and Carassco 2010).

TOWARD UNDERSTANDING DIFFICULT TIES IN EGOCENTRIC NETWORKS

People form ties in many different ways: some are purposeful, others incidental, or even spontaneous (Small and Sukhu 2016). The two approaches outlined above help distinguish analytically between the different mechanisms but, and most importantly for the present study, neither has been used to explain the maintenance of difficult ties in the network. Both approaches implicitly assume that those individuals who are difficult and demanding will be avoided, dropped from the network, or not recruited into it in the first place. For example, Nelson (2005) reports that mothers tended to socially disengage from those people who made burdensome demands, failed to reciprocate their gestures, or were judgmental. Similarly, Desmond (2012) found that the "disposable ties," which evicted tenants created with new acquaintances and from

whom they obtained important support needed for their daily survival, were typically short-lived and frequently dissolved following unexpected crises, emergencies, and mounting relational tension (for other examples see review in Offer 2012).

The prediction that difficult ties will be avoided or dropped is based on the idea that people can freely choose with whom they want, or not, to associate. The focus on individual choice is explicit in the agentic model, but it is also part of the structure of opportunity approach, which specifies that people can freely choose their associates from the pool of available candidates. Little account, however, is given to how the social environment can restrict individual freedom and constrain behavior (Granovetter 1985, 2002; Emirbayer and Goodwin 1994). Yet people often feel pressured to continue engaging socially with others whom they would have preferred to avoid or disengage from, thus further souring the relationship. Scholars have often overlooked this aspect of personal relationships. For example, in his study of childcare centers in New York City, Small (2009) describes how the centers served an important brokerage function by giving mothers the opportunity to connect with each other and with other organizations through routines and activities, such as drop-off and pick-up times, parties, and fieldtrips, but he only briefly mentions instances when parents felt coerced by the centers to cooperate with parents whom they found annoying.

Seeking to understand which ties are perceived as difficult and why they are part of the network, we elaborate on the agentic and structure of opportunity approaches of tie formation by articulating two distinct types of constraints on individual choice and behavior. Consistent with the structural approach, the first type is *role-based* and refers to the source or context ("focus" in Feld's terms) of the relationship between the individual and the alter and the normative, institutional, and material limitations imposed by it. Consistent with the agentic model, the

second type is *interaction-based* and refers to the patterns of social exchange between the individual and the alter and the potential utility derived from their relationship.

STUDY HYPOTHESES

Role-Based Constraints

Individuals' roles in the network emerge from the contexts in which they participate and these contexts vary in their level of constraint. According to Feld (1981), highly constraining contexts produce highly interconnected networks, which are likely to engender not only positive, but also negative sentiments because they tend to bound or force people to interact with the other members. Hence, and consistent with the structural model, the contexts in which individuals are embedded determine not only the pool of potential associates whom individuals can choose, but also people whom individuals have no choice but to engage with even if they'd rather not. As Brashears and Brashears (2016) explain, in the absence of mechanisms to "eliminate" them, such ties are likely to endure: "negative ties are more likely to be found in a persistent form when interaction is unavoidable. By extension this suggests that stable negative ties will rarely exist outside of some overarching framework (e.g. a larger family grouping, a workplace)" (23).³

Contexts can be bounding for different reasons. For example, normative pressures exist in the context of the family, which Feld identifies as one of the most constraining foci. Most family-of-origin ties are inherited and typically characterized by high emotional closeness, strong commitment, and norms of care (Bengtson 2001; Silverstein, Gans, and Yang 2006; Swartz 2009; Wellman and Wortly 1990). The high level of interconnectedness among family members also constitutes an important mechanism of norm reinforcement and social control. Families often pressure their members to comply, cooperate, and share resources while sanctioning those

who do not abide (Coleman 1988; Portes and Sensebrenner 1993; Stack 1974). Hence, strong normative pressures within families may force people to retain ties to relatives, especially close ones, who are viewed as difficult and burdensome (see Brashears and Brashears 2016).

Other contexts are likely to impose practical and material constraints that may force people to preserve difficult ties. This is most evident in hierarchical contexts that create power asymmetries and where people occupy subordinate positions which make them highly dependent on others (Burt 2000; Emerson 1962). The workplace provides an excellent example of such a context because people cannot easily disengage from their supervisor or manager nor limit interactions with difficult workmates unless they quit their jobs (e.g., Levine 2013). Similarly, the complexities of moving may make it difficult for people to evade annoying and disturbing neighbors by simply leaving (Goering and Feins 2003; Lee, Oropesa and Kanan 1994).

Greater freedom, however, exists in ties originating in voluntary associations, including religious congregations. In these contexts, people can relatively easily turn away from bothersome fellow-members, leave the church or even the denomination (Fischer and Hout 2006; Wuthnow 1988). Similarly, friendship ties are less constraining in nature (Bliezner and Roberto 2004), particularly those that are "just" friendships untangled in any other current role relationship (Fischer 1982b). Friendship ties may therefore be more easily disbanded if they are distressful or burdensome. Nevertheless, even though they are more voluntary in nature than kinship ties, friendships may also be subject to normative constraints. What will people say if a person drops his friend when she needs him? Here, too, normative pressures may be heightened if the friendship is part of a larger web of other relationships within the same context (Feld and Carter 1998), as people care for their self-image and reputation and seek approval from others in their surroundings (Blau 1986; Podolny 1993).

In sum, the structural model predicts that for normative, institutional, material and other reasons, people may feel pressured to retain difficult ties. We thus predict that the probability of being perceived as difficult will be greater for alters in contexts that most constrain an individual's ability to dissolve the tie:

Hypothesis 1: Ties to kin will more likely be perceived as difficult than ties to non-kin.

Hypothesis 2: Ties to non-kin associated with more constraining contexts will more likely be perceived as difficult than ties to non-kin associated with less constraining contexts.

Interaction-Based Constraints

A second type of constraint arises from the social exchanges between the individual and the alter, with some exchanges being more constraining than others. Based on the agentic model, individuals consider the utility derived from the interaction with the alter -- in our data, various forms of social support -- and what would be lost by terminating the tie. Moreover, the receipt of support engenders a sense of obligation, commitment, and indebtedness to the alter which pressures her to reciprocate and sustain the tie (Blau 1986; Mauss 1990 [1923]; Simmel 1978 [1950]). These pressures can constitute a source of constraint that further bounds the receiving individual to giving alters and restricts her ability to disengage from the difficult ones. In Emerson's (1962) terms, obtaining support from an alter creates power-dependence relations which do not allow individuals to "overcome resistance" by simply severing ties to those alters perceived to be difficult. Dependence on a tie for unequal exchanges may thus generate tension, rivalry, and conflict and lead to what Blau (1986) refers to as a process of "differentiation," in which the failure to reciprocate serves to establish a status hierarchy and validate claims of superiority (see also Mauss (1990 [1923]).

We expect these interaction-based constraints to be stronger if the utility of the good or

service rendered is high, such as in emergency situations. By contrast, the constraint will be of lower magnitude in cases that involve a lower sense of obligation, such as engaging in leisurely activities. This leads to the following prediction:

Hypothesis 3: Ties to alters who provide critical types of support will more likely be perceived as difficult than ties to alters who provide less critical types of support.

Nevertheless, the constraining effect associated with the sense of commitment and obligation that the receipt of support creates in the individual may be attenuated if she also provides support to the alter. Research shows that for both normative and practical reasons, people strive to maintain reciprocal relationships with others by returning favors and avoiding social debts (Blau 1986; Gouldner 1960; Plickert, Côté, and Wellman 2007; Roberto and Scott 1986; van Tilburg 1992) and that failing to do so can lead to feelings of distress and guilt (Menjívar 2000, Nelson 2005; Offer 2012) and to tie dissolution (Blau 1986; Ikkink and Van Tilburg 1999). That is, in situations in which a person is reciprocating the alter's support, or providing more than the alter does, she is less dependent on the alter and may more easily disengage from him or her if that alter is viewed as difficult. Hence, we further hypothesize that:

Hypothesis 4: Non-reciprocal exchange ties providing unilateral benefits to ego will be more likely perceived as difficult than reciprocal exchange ties.

DATA AND MEASURES

The UCNets Data

We use the University of California Social Networks Study (UCNets), a longitudinal egocentric network survey on personal relationships, life events, and wellbeing,⁵ to examine who is considered difficult and why they are part of personal networks. The UCNets participants were drawn from two distinct age groups in the greater six-county San Francisco Bay Area: 50-to-70

and 21-to-30 year-olds. The study focused on these two age groups so as to maximize the number of key transitions and life events respondents would likely experience between waves of the survey. Using address-based sampling, people in the eligible age range were solicited to participate (for pay) in the three-wave survey of personal networks. While this procedure sufficed with the older cohort, it fell short with the 21-to-30 year-olds. To increase their number, we added about 300 complete surveys of respondents in that age group largely by recruiting through Facebook. As part of a mode experiment, respondents were randomly assigned to either an in-person or a web version of the survey at a 3:1 ratio. All Facebook-recruited respondents did the survey online. The two instruments were substantively identical and we control for mode effects in all the analyses.

The data we use in this study are based on the first wave of the UCNets, which includes 666 respondents aged 50-to-70 who completed the survey and named 6,689 alters and 480 respondents aged 21-to-30 who completed the survey and named 5,064 alters⁶ (see Appendix A for a full description of the respondents' demographic and socioeconomic characteristics). All the analyses employ weights that adjust for combinations of gender, age, race, Hispanic ethnicity, marital status, and education to match the corresponding age-specific population of the region.⁷

Methods: The Extended Egocentric Survey

UCNets used an extended egocentric name-eliciting method to draw a detailed map of respondents' personal networks and collect information about their social connections. The first stage in this procedure, name-eliciting, asked respondents to name the people to whom they were connected. A major advantage of the present study is that unlike most other egocentric network studies, which are mainly based on the General Social Survey "discuss important matters"

question (e.g. Brashears 2014; Marsden 1987; Small 2013), the UCNets survey generated names using seven distinct name-eliciting questions. Research has shown that this extended procedure yields greater reliability than methods that use a single or restricted number of name-eliciting questions (Killworth, Shelley, and Robinson 1990; Marin 2004; Marin and Hampton 2007; McCallister and Fischer 1978).

The first six name-eliciting questions asked respondents to name the people with whom they engaged in various spheres of social activity (see details below). The last name-eliciting question asked respondents to name the people whom they "sometimes find demanding or difficult." This question, which has been rarely used in previous egocentric network research, is the major focus of our study as it allowed us to examine the prevalence and role of difficult ties in personal networks.

The second stage in the procedure applied several name-interpreting questions to obtain descriptions of the named alters and of the ties respondents had with them, including role relationship categories, felt closeness, geographic proximity and homophily in gender, age, religion, and race and ethnicity. In addition, the UCNets survey collected detailed information about the demographic, socioeconomic, and health characteristics of the participants.

Variables

Difficult Ties. Based on respondents' responses to the "difficult" name-eliciting question and to the six name-eliciting questions tapping engagement in various social activities, we created two distinct measures of difficult ties that serve as our dependent variables: (1) difficult only ties — names that respondents mentioned only in response to the difficult name-eliciting question and who did not appear on any of the other six name-eliciting questions tapping social exchanges, and (2) difficult engaged in exchange ties — names that respondents mentioned in

response to *both* the difficult question *and* at least one of the other six social exchange nameeliciting questions.

Role-Based Constraints. We use the role-relationship categories as proxies for the role-based constraints. Using prefixed categories, respondents were asked to specify how they were connected to each of the alters whom they named. We distinguish between kin and non-kin. The kin category includes wife, husband, mother, father, adult daughter, adult son, sister, brother, female romantic partner, male romantic partner, and other relative used as the reference category. The non-kin variables include a series of dummies referring to different role relationships specifying whether the alter is a housemate, neighbor, workmate, schoolmate, churchmate, friend, or acquaintance. Note that the non-kin variables are not mutually exclusive. Hence a person could be mentioned, for example, as both a workmate and a friend or another as a brother, housemate, and friend.

Interaction-Based Constraints. The first six name-generating questions compiled a list of the people with whom respondents engaged in different types of social exchanges. We use these types of exchanges as proxies for interaction-based constraints. They include: (1) Socializing—the people with whom respondents usually get together and do social activities such as visiting for meals, going to cultural events, or just hanging out; (2) Confiding in—the people in whom they confide about relationships, important things in life, or difficult experiences; (3) Advice—the people they turn to when seeking advice for making important decisions; (4) Practical help—the people who had in the previous few months given respondents practical help such as doing repairs, looking after a child, and providing a ride; (5) Emergency help—the people whom they would ask if they were seriously injured or sick and needed some help for a couple of weeks with things such as preparing meals and getting around; (6) Providing support—the people whom the

respondents help out in different ways. Respondents could mention up to nine names in answering the socializing question and up to six names for all the other questions.

Table 1 shows the distribution of all the alters named in the network by role relationship and type of social exchange. Overall, the networks of the respondents were quite varied. Most notably, the majority of alters (close to 60 percent) were labeled as friends. More than half of the alters mentioned in the network were people with whom respondents socialized. This, however, may be the result of allowing respondents to name up to nine names in this item as compared to only six names in the other name-eliciting items. About a third of the alters were named as confidants, advisors, and sources of emergency help for the respondent. Forty percent of the alters were named as people to whom the respondents provided support. Finally, we see expectable age differences, for example, in the presence of spouses, parents, housemates, and schoolmates.

---Insert Table 1 about here---

Controls. At the tie level, we include controls for the sociodemographic characteristics of the alter, most of which are measured in terms of homophily with the respondent. These include gender (for non-kin alters), age, religion, race and ethnicity, and political orientation. Other controls refer to the characteristics of the relationship between the respondent and the alter, such as whether the respondent had met the alter in the previous year, feels emotionally close to alter, lives with alter in the same household, lives within 5 minutes from alter, and lives over 1 hour away from her or him. Descriptive statistics for all the tie-level controls are presented in Appendix B. Finally, we control at the individual-level for the respondent's sociodemographic

background and health.

PLAN OF ANALYSIS

The major objective of this study is to reveal which ties are perceived as difficult and why they are part of the network. To examine these questions, we use two distinct dependent variables: (1) difficult only ties and (2) difficult engaged in exchange ties. We begin with basic descriptive statistics by calculating the prevalence of the two types of difficult ties and examining their distribution by role relationship and types of exchange.

In the next stage, we test the study hypotheses, positing that difficult ties are maintained in networks because of role- and interaction-based constraints, by estimating a series of multilevel models (with HLM 7.01 by Raudenbush, Bryk, Cheong, and Congdon 2013). The advantage of multilevel modeling is that, rather than using aggregated measures at the individual level or simply examining all ties together as if they were independent of each other, this method accounts for the nested structure of the data (i.e. alters or ties nested within individual networks) and the non-independence of observations within individuals which allows us to simultaneously estimate variables at different levels (Raudenbush and Bryk 2002; van Duijn et al. 1999; Wellman and Frank 2001). Since our outcome is a binary variable (i.e. whether the alter is named as difficult or not), we use the binomial sampling distribution with the logit link function.

We estimate separate sets of models to predict the log-odds of the two outcomes using the role-relationship variables as proxies for role-based constraints and the types of exchange variables as proxies for interaction-based constraints. All models control for the sociodemographic characteristics of both the tie and the respondent. The first set of models predicts the log-odds that an alter would be named as a *difficult only* tie as opposed to all other

ties (i.e., ties that are either not difficult or difficult but otherwise engaged in the network). The latter set of models excludes the difficult only ties and estimates the log-odds that an alter would be named as a *difficult engaged in exchange* tie as opposed to a tie that is not difficult. We estimate these two outcomes separately not only for practical reasons (i.e., the second set of models include additional variables, measures of social exchanges), but also because we believe that they are conceptually distinct. The difficult only ties are more similar to what is referred in the literature as "negative" ties, that is ties characterized by antagonism and dislike which typically lead to disconnected networks (Everett and Borgatti 2014), whereas difficult engaged in exchange tie are more ambivalent in nature and constitute a source of both positive affect and hardship (Connidis and McMullin 2002).

THE PREVALENCE AND DISTRIBUTION OF DIFFICULT TIES

How many difficult ties do respondents have in their network? The upper panel in Table 2 shows the overall proportion of difficult ties and then distinguishes between difficult only and difficult engaged in exchange ties. These estimates are calculated at the aggregated individual-level out of the total number of ties in the respondent's network. The results show that the vast majority of participants, about three-quarters in the young cohort and two-thirds in the older cohort, nominated at least one person in their network as difficult or demanding. The proportion of difficult ties in the network, however, was relatively small. About 16 percent of the ties in the networks of the young respondents and 13 percent in the networks of the older respondents were labeled as difficult. Additionally, relatively few alters appeared only in answer to the "difficult" name-eliciting question: for both cohorts, only five percent of the alters. Nearly 70 percent of the respondents did not report any such tie. Hence, most of the alters who had been named as difficult were reported as engaged in the network in some other way. Overall, these accounted

for 12 percent of all the ties of the young cohort and 8 percent of those of the older cohort.

----Insert Table 2 about here----

The middle panel in Table 2 shows, at the tie-level, the proportion of alters who were named difficult by role relationship. The first column in each cohort refers to the difficult only ties. Within the family, among the 21-to-30 year-olds, brothers were the most likely to be labeled solely as difficult (13 percent). Among the 50-to-70 year-olds, these were mothers and sisters (13 and 10 percent, respectively). Interestingly, no spouses or romantic partners were mentioned in the network solely in response to the difficult name-eliciting question. This may be the result of a selection bias process by which intimate relationships that became highly strained were eventually terminated. Unlike other close kin relations, most notably parents and adult children, ties to spouses and intimate partners are more voluntary in nature and may thus be - despite the stress involved - easier to dissolve. Another possible explanation is that in a culture emphasizing marital satisfaction, people may be less inclined to report that their relationship with their intimate partner is mainly a stressful and burdensome experience (Hackstaff 1999). Among non-kin, workmates and acquaintances were the most likely to be named as difficult.

The second column in each cohort refers to the difficult engaged in exchange ties. By and large, the percentage of difficult ties among those who engaged in social exchanges was much higher for kin, and especially close female kin, than for non-kin. This finding points to the complex and perhaps ambivalent role these alters play in personal networks. Particularly high was the percentage of difficult engaged in exchange ties among wives (27 percent), mothers (24 percent), and sisters (30 percent) for respondents in the young cohort, and among parents (29 and

24 percent for mothers and fathers, respectively) and female romantic partners (28 percent) for respondents in the older cohort.

Finally, the lower panel in Table 2 indicates how those difficult engaged in exchange ties were involved in the network. The numbers here are also calculated at the name-level and they refer to the proportion of all the alters mentioned in answer to each of the social exchange questions who were also named as difficult. Overall, similar patterns were observed for the two age groups. About 10 percent of the alters whom respondents named as socializing partners, confidants, and provider of practical help were subsequently named as difficult. Alters who provided emergency support were slightly more likely than those who did not provide such assistance to be viewed as difficult (15 and 11 percent of alters among respondents in the young and older cohorts, respectively). This finding may reflect the type of alters who typically provide help in emergency situations (i.e., close kin.) The percentage of alters considered difficult among those who provided advice was also relatively high (nearly 15 percent), but only in the young cohort. Most notably, it appears that the type of network involvement most related to the tie being considered difficult entailed the respondent providing support to the alter: nearly 17 percent of the alters to whom the respondent provided support in the young cohort and 15 percent in the older cohort. In the next section, we further examine which ties are likely to be viewed as difficult and why they are part of the network using multilevel models that control for both alter and individual characteristics.

WHO ARE THE DIFFICULT TIES AND WHY DO THEY APPEAR IN THE NETWORK?

Testing for Role-Based Constraints

Our first two hypotheses predicted that difficult ties would more likely be present in

contexts where individuals have a limited ability to exercise choice in selecting their associates or are pressured to socially engage with them. The models testing these hypotheses are presented in Table 3 showing, for each cohort, the results of the two sets of multilevel regressions. The first two columns show the models predicting the log-odds that a tie would be named as difficult only (Analyses 1 and 2 for the young and old cohort, respectively); the last two columns show the analyses predicting the log-odds that a tie would be named as difficult engaged in exchange (Analyses 3 and 4 for the young and old cohort, respectively).

----Insert Table 3 about here----

Hypothesis 1 postulated that within the family, close kin would more likely be perceived as difficult than more distant relatives. Overall, our results provide support to this prediction. Analysis 2 shows that among the 50-to-70 year-olds, the log-odds of close relatives, and especially female relatives, to be named only in response to the "difficult" name-eliciting question were significantly higher than more distant relatives. Mothers, adult daughters, and sisters were over twice as likely as more distant relatives to be named as a difficult only tie. To better illustrate this effect, for each kin category we calculated the predicted probability of being named as a difficult only tie while holding all the other alter- and individual-level variables constant at their mean levels. These probabilities are presented in Figure 1, which shows that mother, daughters, and sisters have an approximately 10 percent probability of being perceived as a difficult only tie. No such effect was found for respondents in the young cohort (see Analysis 1). This important age group difference may reflect the higher demands imposed by elderly relatives on the advanced middle-aged respondents and the lower ability of those

respondents to respond to them, thus leading them to view relatives as exclusively difficult and burdensome, or perhaps among young respondents, close kin are more often a source of support.

---Insert Figure 1 about here---

The results in Table 3 further indicate that close relatives were substantially more likely to be named as both difficult and otherwise engaged in social exchange than more distant relatives. In the young cohort, wives, male romantic partners, mothers, brothers, and sisters had higher log-odds to be named as difficult engaged in exchange alters than other relatives (Analysis 3). In the old cohort, these were female romantic partners, mothers, fathers, daughters, sons, and sisters (Analysis 4). Here too, to ease interpretation we calculated for each kin category the predicted probability of the alter to be named as a difficult engaged in exchange tie. The results, presented in Figure 2, indicate that the probabilities were highest in the young cohort for sisters (14 percent) and wives (12 percent), and in the old cohort for aging parents (approximately 12 percent for both mothers and fathers).

---Insert Figure 2 about here---

Taken together, and consistent with Hypothesis 1, these findings suggest that in general relationships to close kin, perhaps due to the familial obligations these relationships entail and their level of intensity and embeddedness, are more likely to be viewed as difficult or ambivalent (i.e., involving both supportive and burdensome experiences.) They also highlight the particular role of female kin as a source of difficulty in the network.

Hypothesis 2 made a similar prediction with respect to ties outside the family. We hypothesized that here too, ties in more constraining and less voluntary contexts would more likely be named difficult. The results in Table 3 provide some support to our prediction. As expected, in both the young and old cohorts, workmates had higher, and friends lower, log-odds to be labeled as difficult only ties (Analyses 1 and 2, respectively). Figure 3 presents the predicted probabilities we calculated for each of the non-kin role relationship categories. It shows that among the 21-to-30 year-olds (panel A), workmates had a 15 percent probability of being named as difficult only ties whereas the probability for non-workmates was reduced by more than half. A similar trend, but of smaller magnitude, was observed among the 50-to-70 year-olds (panel B). By contrast, the probability of friends to be named as difficult only ties was as low as 4 percent in the young cohort and 2 percent in the old cohort. The probability of alters who were not considered friends to be named difficult only was substantially higher (16 and over 10 percent in the young and old cohort, respectively). Contrary to our expectation, neighbors were not more but rather less likely to be named as a difficult only tie (and only in the young cohort, see Analysis 1). Furthermore, no effect was found for any of the other non-kin role relationships.

---Insert Figure 3 about here---

Testing for Interaction-Based Constraints

Hypothesis 3 tested the interaction-based constraints. It posited that alters providing more critical forms of support would more likely be named as difficult than alters providing less critical forms of support. Overall, however, the results did not lend support to our expectation.

As Analyses 3 and 4 in Table 3 indicate, none of the types of support received from the alter was significantly associated with the log-odds that the alter would be labeled difficult, expect for giving advice to the respondent in the old cohort only (Analysis 4). By contrast, alters who were recipients of respondents' help appeared to be important sources of difficulty in the network. Alters whom respondents helped had substantially higher log-odds to be named as difficult ties compared to alters whom the respondents did not name as recipients of their help. The calculated probabilities for these effects are displayed in Figure 4. They suggest that much of the burden in networks is driven by helping others.

----Insert Figure 4 about here----

In additional analyses, we examined which other types of social exchange were associated with the alter being perceived as difficult by excluding those alters to whom respondents provided support. Because of the overall low percentages of difficult ties in these categories, we estimated a logistic regression model at the alter-level rather than a multilevel model. The results are presented in Figure 5, which shows the predicted probabilities that the alter would be named difficult by type of social exchange (for full results see the supplementary materials online). In line with Hypothesis 3, the results indicated that in the old cohort (panel A), being an alter who would provide emergency help was significantly associated with being labeled as difficult. This finding suggests that individuals may keep critical helpers in their network even if they are difficult because of the support they could get from them in times of need. In the young cohort (panel B), confiding was associated with lower, and advice with higher, log-odds that the alter would be named difficult.

----Insert Figure 5 about here----

According to Hypothesis 4, we expected reciprocated relationships (i.e., those in which the respondent both receives from and provides support to the alter) to be less likely considered difficult than non-reciprocated relationships (i.e., those in which the respondent only receives support from the alter). Although none of the types of support received from the alter was statistically significant, we were still able to test this hypothesis about reciprocation because we found that providing support to the alter was associated with an increased likelihood that the alter would be named as a difficult tie. Thus, in the next stage, we examined whether the effect of providing support to the alter was counterbalanced by help received from the alter. We tested this by adding to the model interaction terms between the variable providing support to the alter and the five exchange variables tapping support received from the alter (see Table 4). However, by and large, the results did not support our fourth hypothesis. They indicate that for the respondents in the young cohort, receiving support from the alter did not matter much as none of the interaction terms was statistically significant. In the old cohort, only the interaction effect with receiving advice from the alter was significant. Alters to whom the respondent provided support who also gave advice had lower log-odds to be labeled difficult than those who did not give advice but received support from the respondent. None of the other interaction effects was significant.

----Insert Table 4 about here----

Considering the strong effect of providing support to the alter, in a post-hoc analysis we examined whether this effect varied by who the alter was. That is, we examined whether providing support to certain kinds of alters was considered especially burdensome and difficult. We tested this possibility by adding interaction terms between providing support to alter and role relationship. The results, presented in Table 5, reveal several interesting results. Among the young cohort, providing support to wives and sisters, as compared to others, was associated with higher log-odds of that woman being seen as difficult. Providing support to acquaintances was also associated with higher log-odds that the alter would be viewed as difficult, perhaps due to the low social expectations involved in relationships with acquaintances. In the older cohort, significant effects were obtained for parents and sons. To better illustrate these effects, we calculated their predicted probabilities (see Figure 6). Among the 50-to-70 year-olds, both mothers and fathers to whom the respondent provided support had a 25 percent probability of being viewed as difficult, compared to only 8 percent for other relatives whom the respondent helped. The predicted probability for female romantic partners was also 25 but the effect was not statistically significant. Similar probabilities were obtained for providing support to wives and sisters in the young cohort. From this we conclude that the perception of difficulty associated with providing support varies by who the person is who receives that support.

----Insert Table 5 about here----

----Insert Figure 6 about here----

DISCUSSION AND CONCLUSION

Previous research has pointed to the detrimental effect of difficult ties for individuals' health and well-being (Ailshire and Bugard 2012; Bertera 2005; Durden et al. 2007; Lee and Szinovacz 2016; Lund et al. 2014; Rook 2003, 2015), yet little is known about who people find to be difficult and burdensome, what makes their relationships with the individuals difficult, and why they are present in the network. The extensive multifaceted egocentric method employed in UCNets allowed us to address these issues and expand over previous studies by shedding new light on the sources and mechanisms of difficulty in personal networks.

Our findings showed that the vast majority of participants (about three-quarters in the young cohort and two-thirds in the older cohort) nominated at least one person in their network as difficult or demanding. The proportion of difficult alters in the network, however, was relatively small and even a smaller fraction were named in the network solely as difficult alters who did not take part in any type of exchange with the respondent. This finding, that most alters were *not* considered difficult, can be explained by the tendency of people to avoid or exclude relationships that weigh on them (Harrigan and Yap 2017; Ikking and Van Tillburg 1999; Nelson 2005; Offer 2012). However, even though they constituted a minority, difficult ties *did* exist in the network. Theories of tie formation, either the agentic or the structure of opportunity approach, have not been applied to explain the existence and persistence of difficult ties in personal networks. The major contribution of this study is our examination of the different types of constraints that may pressure people to interact with others they would have otherwise preferred to avoid or to disengage from.

With respect to role-based constraints, overall, the results supported our second hypothesis that difficult alters are likely to be found in contexts where individuals have relatively low levels of freedom and where associations are less voluntary. We found that friends were

substantially less likely, and workmates more likely, to be mentioned in the network as solely difficult. Contrary to what our second hypothesis postulated, however, neighbors did not appear to be particularly seen as difficult. This result may seem surprising considering the popular view which often depicts neighbors as noisy and nosy. In fact, we found that respondents in the young cohort viewed their neighbors as less difficult than others. This result may reflect the younger participants' greater physical mobility or greater selectivity in dealing with neighbors.

Furthermore, as our first hypothesis postulated, the close family appeared to be a particularly constraining context. We found that close kin were substantially more likely to be considered difficult yet otherwise engaged in exchange as compared to more distant kin and non-kin. Many ties with close kin include negative elements perhaps because close family ties may, as the ambivalence literature suggests (Connidis and McMullin 2002; Lee and Szinovacz 2016; Fingerman et al. 2004; Birditt and Fingerman 2013), by their nature and long duration generate more multifaceted and intensive interactions, or because such ties are hard for individuals to drop due to strong normative constraints, or both. This finding suggests that despite the demographic and cultural changes of the last four decades and the prevalent discourse about the weakening of the family, expectations from kin and a sense of familial responsibility have remained strong (Bengtson 2001; Connidis 2015; Johnson 2003; Silverstein, Gans, and Yang 2006; Swartz 2009). Analyses we conducted with a subsample from the UCNets¹⁰ provided support to this interpretation by showing that respondents felt substantially more obligated to close kin than to more distant kin and non-kin (see results in online supplementary materials).

Another possible explanation is related to the level of embeddedness in the network. People may find it difficult to avoid or disengage from burdensome ties in highly interconnected contexts because, as Feld (1981) explains, the amount of constraint in such contexts make each

tie highly dependent on the entire set of relationships within it (for empirical support see Burt 2000). This is most typical of close family. We found some preliminary support of this view again using a subsample of names. We found that alters named as difficult were more likely to know well most of the other alters in the subsample (i.e., they were more highly embedded) than alters who were not named as difficult, and that this effect was especially prevalent among close kin (see results in online supplementary materials). Future research will benefit from a more comprehensive investigation of the role of network structure, including embeddedness, in the maintenance of difficult ties.

We also found that close kin were more likely to be named as difficult by participants in the older than in the younger cohort. This finding may reflect the particular status of the 50-to-70 year-olds in the study, who, "sandwiched" between two generations, face competing demands for their time and resources by both adult children and aging parents. Studies have shown that today middle-aged parents continue to support their adult children for long periods of time (Fuerstenberg 2010; Settersten and Ray 2010; Swartz 2009). Simultaneously, because of the increase in longevity, these mature adults may also need to provide care for their elderly and often frail parents (Birditt and Fingerman 2013; Grundy and Henretta 2006). Such dual obligations to the generations above and below can be a major source of stress, conflict, and strain for the 50-to70 year-olds, especially considering that at this age they themselves may start experiencing health, economic, and other challenges that make it harder to support others.

Additionally, respondents in the older cohort were almost two times more likely to label as difficult their aging parents than their adult children, suggesting that dealing with aging parents is more burdensome than dealing with adult children. This interpretation is consistent with the intergenerational stake hypothesis, that parents are more emotionally invested in their

children and report better quality relationships with them than with their parents (Giarrusso, Feng, and Bengtson 2004). The finding from the model with interaction effects in the old cohort, showing that the association between difficulty and providing assistance to aging parents was stronger than the association with providing assistance to adult children, further supports this interpretation.

Another important family-related finding indicated that generally female relatives were more likely than male relatives to be named as either difficult only ties or as difficult engaged in exchange ties. This gendered pattern may be explained by women's greater involvement in kinship networks (e.g. Fischer 1982a; Roschelle 1997; Sarkisian and Gerstel 2004; Wellman and Wortley 1990). Women typically assume the role of household managers and kin-keepers who bear the major responsibility for maintaining relationships with relatives (Gertsel and Ghallager 1993) and planning and organizing family activities and events (Daly 2002; Shaw 2008). Women's more intensive contact and interaction with kin and greater sense of obligation to kin may make them more vulnerable to experience criticism and stress and provide fodder for tension and conflict (Connidis and McMullin 2002; Gerstel and Gallagher 1993; Offer 2014).

This study also examined interaction-based constraints for those alters who were engaged in the network. The results, however, did not lend support to our third hypothesis that alters providing more critical types of support would more likely be perceived as difficult than alters providing less critical types of support. Almost none of the variables tapping support received from the alter was a significant predictor of being named to the "difficult" question. By contrast, providing support to the alter was a major source of difficulty in the relationship (for similar results see Durden et al. 2007; Lincoln 2000; Rook 2015). Furthermore, we did not find evidence to support our fourth hypothesis that reciprocated exchanges would be related to reduced

difficulty as compared to unreciprocated exchanges. Receiving support from the alter did not attenuate the effect of just providing support to her or him. These results seem to deviate from previous studies, which, based on the norm of reciprocity approach, found that generally people tended to feel more distressed by ties from which they overbenefited (i.e. gave less than they received) than by ties from which they underbenefited (i.e. gave more than they received) (see review in Uehara 1995). Rather, our findings seem to suggest that underbenefiting was a more negative experience.

However, this interpretation should be taken with much caution because our data reflect only the perspective of the respondent and not that of the alter. Considering people's tendency to report that they give more help than they receive (Phan, Blumer, and Demaite 2009; Uehara 1995), self-report data can lead to biased results. Additionally, assessing the effect of reciprocity in a relationship based on self-report information and cross-sectional data is problematic because it does not account for generalized forms of reciprocity¹² and the sometime long time lag that takes place between receiving and returning support (Ekeh 1974; Yamagishi and Cook 1993; Sahlins 1972; Stack 1974). These two considerations are especially important when dealing with familial relationships (Hansen 2004; Nelson 2005; Plickert et al. 2007; Uehara 1990).

Several other study limitations are noteworthy. The question asking respondents to name the people they find difficult appeared last in the name-eliciting battery and was preceded by questions about positive exchanges. This may have led to the underestimation of the number of alters perceived to be difficult in the network. Additionally, although UCNets used an extensive name-eliciting methodology tapping a variety of exchanges, several social domains were not addressed. Thus, an alter named as a difficult only tie might have been one who, had we asked more name-eliciting questions, would have been named elsewhere, for example, as someone

consulted about work issues. This, in turn, may have led to overestimating the number difficult only ties. Finally, the cross-sectional nature of the data did not allow us to examine issues of causality and track difficult ties over time. Longitudinal data, which will be available in the next waves of the UCNets, will allow us to examine which difficult ties tend to persist in the network over time and which eventually disappear from it.

Nevertheless, despite these limitations, our study makes an important contribution to the literature on personal networks. By focusing on role- and interaction-based constraints, an insufficiently addressed issue in previous research, it helps identify who is viewed as difficult in personal networks and better understand why they are there. As such, this study provides a more comprehensive and complex view of personal networks, which is important for the understanding of the functioning of networks and their enduring role in the lives of individuals.

ENDNOTES

- 1. A debate, beyond the scope of this article, exists in the literature regarding the question of how to conceptualize accessibility, as an attribute of the potential alter that individuals take into account when making deliberate decisions about whom to include in their network or as a condition of the situation (see review in Small and Sukhu 2016).
- 2. Homophily scholars describe how structural constraints, by delimiting the pool of potential associates, determine not only who is available but also who is *not* available, thus leading to what is referred to in the literature as *induced* homophily (Blau and Schwartz 1984; Kossinets and Watts 2009; McPherson and Smith-Lovin 1987; Mollenhorst et al.2008). Our concept of constraint is different. We refer to the ways by which social and institutional contexts can coerce

people to interact with others they would rather avoid.

- 3. Brashears and Brashears (2016) use to term "negative tie" in their discussion of imbalanced structures while referring to the negative affect that individuals feel toward one another. In this article, we examine ties that tend to be complex and ambivalent, such as ties that even though they involve positive sentiments also constitute a source of hardship, and therefore employ the term "difficult."
- 4. Research suggests that the importance people attribute to the norm of reciprocity varies by context and role relationship. Specifically, relationships to close kin and longtime friends have relatively flexible terms of return and thus tolerate more unilateral exchanges as compared to relationships to more distant associates (Antonucci, Fuhrer, and Jackson 1990; Ikkink and Van Tilburg 1999; Nelson 2005; Plickert et al. 2007)
- 5. UCNets wave 1 data will be made available to researchers. Consult its website, http://ucnets.berkeley.edu/researcher-resources/, or the second author.
- 6. We excluded 10 respondents who failed to follow instructions and gave unsuable names, such as "family" and "sports" rather than real names.
- 7. We then "trimmed" weights above the 95th percentile and below the 5th percentile so that no case would count more than the 95th percentile or less than the 5th percentile and thereby carry undue influence in the results.

- 8. The fact that some of the respondents in the young cohort were eventually recruited through Facebook and personal reference may violate the assumption that the individual observations are independent since some of the respondents may be connected to each other through some shared ties. To address this issue, we estimated separate models for respondents recruited through Facebook and personal references and compared them to those obtained for the full sample. Overall, the models yielded similar results. The main difference was in the model predicting difficult engaged in exchange ties, where we found that among Facebook and personal reference recruits, husbands, and not just wives as in the full sample, had higher log-odds to be named as difficult ties whereas the effect for brothers was no longer significant (see results in the online supplementary materials). It should also be noted that in all our multivariate analyses we control for whether the respondent was recruited through Facebook or personal reference.
- 9. Consistent with previous longitudinal studies showing that most of the variance in ambivalent relationships over time was within rather than between individuals (Briditt, Jackey and Antonucci 2009), our multilevel models revealed that the likelihood of having difficult only and difficult engaged in exchange ties was little affected by the individual-level variables.
- 10. Respondents went through more intensive questioning about a subsample of up to five alters. For these names, respondents were asked, among other questions, about the extent to which they felt obligated to the alter if she or he needed a big favor. The alters in the subsample were drawn from the six name-eliciting questions and excluded members of the household who were kin. The procedure took the first name that qualified offered in answer to each of the six questions in order. Exploratory analyses showed that alters in the subsample tended to be more intimate than

alters in the overall sample, but besides this difference no other differences were observed between the subsample and overall sample of alters.

- 11. In the subsample, respondents were asked how well each pair of names knew each other ("know well", "know a little", or "do not know each other at all"). Answers to this question allowed us to calculate a measure of centrality, or embeddedness, for each alter in the subsample. At the descriptive preliminary level, we found that alters named as difficult had, on average and other traits held constant, higher centrality scores than alters who were not named as difficult (see results in the online supplementary materials). Most of these ties were close kin (the relatively small size of the subsample did not allow us to estimate multilevel models.)
- 12. The conditions and forms of return under generalized reciprocity are highly flexible and not stipulated in advance. Unlike restricted or balanced reciprocity, to use Sahlins' (1972) typology, generalized reciprocity does not require immediate return, return in the same domain, or even return from the same party (see examples in Stack 1974; Uehara 1990).

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Table 1. Percentages of Alters in the Network, by Cohort (Weighted)

	21-to-30 Year-olds	50-to-70 Year-olds
D. 1	(n = 5,022 alters)	(n = 6,613 alters)
Role relationship		
Kin		
Wife	1.2	3.1***
Husband	1.3	3.1***
Female romantic partner	1.7	0.8***
Male romantic partner	3.1	0.6***
Mother	8.0	2.7***
Father	5.2	1.5***
Daughter		5.2
Son		4.5
Sister	5.1	5.4
Brother	3.7	3.0*
Other female relative	4.6	7.2***
Other male relative	3.7	4.9**
Non-kin		
Housemate	8.7	3.3***
Neighbor	3.1	7.3***
Workmate	9.0	8.9
Schoolmate	12.0	1.7***
Churchmate	4.9	5.7
Friend	58.9	53.9***
Acquaintance	4.1	3.5
Type of social exchange		
Socialize	55.8	56.3
Confide	30.5	29.4
Advice	30.0	25.3***
Practical help	22.8	16.5***
Emergency help	31.5	29.3**
Provide support to alter	42.0	38.8***

Table 2. Mean Proportion of Difficult Ties in the Network, by Cohort (Weighted)

	21-30 Y		50-70 Y	
	(n = 480 re)	. /	(n = 666 res)	*
	Mean	% reporting no	Mean	% reporting no
	Proportion	difficult alters	Proportion	difficult alters
Difficult ties ^a	.162 (.149)	25.3	.131*** (.129)	33.0
Difficult only ties	.046 (.077)	69.1	.052 (.092)	67.1
Difficult engaged in exchange ties	.117 (.141)	42.0	.079*** (.112)	54.3
Difficult ties by role	% Difficult only	% Difficult	% Difficult only	% Difficult
relationship ^b	·	engaged in exchange	-	engaged in exchange
Kin		C		S
Wife	0.0	27.0	0.0	13.0*
Husband	0.0	20.0	0.0	15.0
Female romantic partner	0.0	14.0	0.0	28.0
Male romantic partner	0.0	19.0	0.0	14.0
Mother	4.5	24.0	12.7**	29.0*
Father	5.6	13.0	2.1	24.0
Daughter	0.0	0.0	6.0	16.0
Son	0.0	0.0	5.2	19.0
Sister	5.6	30.0	10.2*	8.0***
Brother	13.1	13.0	5.7*	5.0*
Other female relative	11.0	6.0	6.5	8.0
Other male relative	5.1	7.0	5.8	5.0
Non-kin				
Housemate	3.3	18.0	0.7*	24.0
Neighbor	0.7	5.0	2.7	3.0
Workmate	11.6	6.0	11.7	5.0
Schoolmate	2.5	9.0	3.6	4.0*
Churchmate	3.5	5.0	2.9	5.0
Friend	2.3	7.0	1.9	6.0
Acquaintance	11.7	9.0	15.5	6.0
Difficult ties by type of				
exchange ^b		2 -		0.07
Socialize		9.5		8.0**
Confide		11.8		9.0**
Advice		14.8		8.0***
Practical help		9.9		7.0*
Emergency help		15.2		11.2***
Provide support to alter		17.1		14.9**

^a Aggregated person-level measures

^b Name-level measures

^{*} p < .05. ** p < .01. *** p < .001 (two-tailed tests) for differences between cohorts.

Table 3. Multilevel Results Predicting the Log-Odds that Alter Would Be Named as a Difficult Tie: Coefficients (Odds Ratios in Parentheses), by Cohort (weighted)

	Difficult only tie		Difficult engaged in exchange tie	
	21-to-30 Year-Olds	50-to-70 Year-Olds	21-to-30 Year-Olds	50-to-70 Year-Olds
	Analysis 1	Analysis 2	Analysis 3	Analysis 4
Intercept	-2.265** (.104)	-2.599*** (.074)	-4.214*** (.015)	-3.728*** (.024)
Alter-level variables				
Role relationship				
Kin				
Wife			1.937** (6.935)	.658 (1.932)
Husband			1.273 (3.573)	.498 (1.645)
Female romantic partner			1.036 (2.819)	1.736** (5.676)
Male romantic partner			.856* (2.353)	.964 (2.623)
Mother	703 (.495)	.963* (2.620)	1.541*** (4.669)	1.848*** (6.350)
Father	724 (.482)	190 (.304)	.827 (2.287)	1.716*** (5.563)
Daughter		.914* (2.493)		1.036*** (2.819)
Son		.404 (1.497)		1.231*** (3.424)
Sister	120 (.887)	.820* (2.271)	2.025*** (7.576)	.691*** (1.995)
Brother	.899 (2.458)	.083 (1.087)	.875* (2.400)	.062 (1.064)
[other relative]	,	, ,	,	,
Non-kin				
Housemate	587 (.556)	-1.488 (.226)	.278 (1.321)	.547 (1.727)
Neighbor	-2.265** (.104)	398 (.672)	210 (.811)	701 (.496)
Workmate	.844** (2.327)	.620* (1.858)	251 (.778)	149 (.862)
Schoolmate	403 (.668)	412 (.662)	.170 (1.185)	214 (.807)
Churchmate	355 (.701)	359 (.698)	182 (.834)	030 (.971)
Friend	-1.392*** (.249)	-1.756*** (.173)	244 (.784)	090 (.914)
Acquaintance	.453 (1.574)	.316 (1.372)	.515 (1.673)	.317 (1.373)
Type of social exchange	, ,	, ,	,	, ,
Socialize			.041 (1.042)	109 (.897)
Confide			403 (.668)	.038 (1.039)
Advice			.324 (1.383)	625*** (.535)
Practical help			001 (.993)	131 (.877)
Emergency help			.057 (1.058)	.198 (1.219)
Provide support to alter			1.476*** (4.376)	1.421*** (4.143)

114 1				
Alter descriptors	200 (1 227)	222 (1.205)	510 (1 601)	164 (940)
Female (for non-kin)	.290 (1.337)	.333 (1.395)	.519 (1.681)	164 (.849)
Same age	685 (.509)	.238 (1.268)	.563 (1.756)	.479** (1.615)
Older	246 (.782)	.471 (1.602)	.896 (2.449)	.387 (1.472)
Met in last year	173 (.841)	043 (.958)	421 (.656)	628 (.534)
Emotionally close	-2.242*** (.106)	-1.576*** (.207)	531* (.588)	434** (.648)
Share household	.768 (2.156)	115 (.891)	.276 (1.318)	.732** (2.080)
Live within 5 min	100 (.904)	738** (.478)	068 (.934)	125 (.822)
Live over 1 hr away	.636* (1.889)	.417* (1.516)	129 (.879)	309 (.734)
Same religion	.048 (1.049)	311 (.733)	.110 (1.117)	.213 (1.238)
Same race	091 (.913)	.158 (1.171)	168 (.846)	815 (.831)
Different political opinion	.910*** (2.485)	.521** (1.683)	.602*** (1.826)	.262 (1.299)
Respondent-level variables				
Male	206 (.813)	168 (.845)	377 (.686)	283 (.754)
Age 50-60		.061 (1.063)		205 (.815)
Asian	.279 (1.322)	660* (.517)	244 (.783)	282 (.754)
Latino	.248 (1.281)	.374 (1.453)	168 (.845)	.031 (1.031)
Black and other	.549 (1.731)	.701* (2.016)	201 (.818)	307 (.736)
Married	.329 (1.390)	.066 (1.068)	696* (.499)	.018 (1.018)
Partnered	.054 (1.056)	.258 (1.294)	278 (.758)	242 (.785)
Foreign born	.473 (1.604)	.550* (1.775)	007 (.993)	.272 (1.312)
New town	191 (.826)	.086 (1.09)	050 (.952)	392 (.676)
Educ LT BA	300 (.741)	429* (.651)	.437 (1.547)	.498** (1.646)
Educ BA	115 (.891)	.055 (1.057)	.251 (1.285)	.034 (1.034)
Income low	.466 (1.594)	.315 (1.370)	.118 (1.125)	.258 (1.295)
Income med	096 (.908)	.161 (1.175)	.428 (1.535)	.117 (1.124)
Health good	.215 (1.239)	004 (.996)	.062 (1.064)	.482** (1.619)
Health fair/bad	1.129 (.138)	.372 (1.451)	109 (.897)	.160 (1.173)
No health problem	267 (.766)	067 (.936)	147 (.863)	126 (.882)
Network size	.075** (1.078)	.036 (1.037)	065** (.937)	.007 (1.007)
Prop of kin in network	.098 (1.103)	722 (.486)	207 (.813)	.038 (1.039)
Web	.547 (1.728)	.154 (1.166)	.453 (1.573)	.152 (1.164)
Facebook	366 (.693)		120 (.896)	
Personal reference	284 (.752)		.156 (1.168)	
N alters	5,022	6,602	4,772	6,238
	,	,	*	,

N respondents	480	666	480	666	
Variance component					
Between-person variance	.515	.363	.208	.517	
Chi-square (intercept)	596.63***	745.524**	560.077***	745.344**	

^{*} p < .05. ** p < .01. *** p < .001 (two-tailed tests).

Table 4. Multilevel Results Predicting the Log-Odds that Alter Would Be Named as a Difficult Engaged in Exchange Tie with Interactions between Providing Support to Alter and Support Received from Alter: Coefficients (Odds Ratios in Parentheses), by Cohort (weighted)

	21-to-30 Year-olds	50-to-70 Year-olds
Providing support to alter	1.426*** (4.164)	1.732*** (5.652)
x socialize	.242 (1.273)	.033 (1.034)
x confide	140 (.869)	051 (.950)
x advice	171 (.843)	869*** (.420)
x practical help	001 (.999)	035 (.966)
x emergency help	008 (.992)	075 (.928)

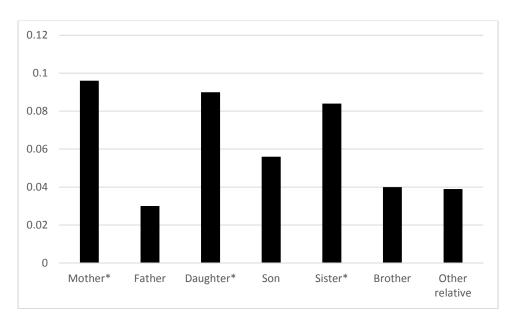
Note: Controlling for alter descriptors and social exchange variables at the name-level and for sociodemographic variables, network size, and proportion of kin in network at the person-level. p < .05. ** p < .01. *** p < .001 (two-tailed tests).

Table 5. Multilevel Results Predicting the Log-Odds that Alter Would Be Named as a Difficult Engaged in Exchange Tie with Interactions between Providing Support to Alter and Role Relationship: Coefficients (Odds Ratios in Parentheses), by Cohort (weighted)

	21-to-30 Year-olds	50-to-70 Year-olds
Providing support to alter	1.120*** (3.034)	1.414*** (4.111)
Kin	` ,	` ,
x wife	1.836*** (6.274)	437 (.646)
x husband	.727 (2.069)	438 (.645)
x female romantic partner	.483 (2.198)	1.283 (3.607)
x male romantic partner	.788 (1.621)	713 (.490)
x mother	.688 (1.989)	1.243** (3.465)
x father	444 (.641)	1.313* (3.717)
x daughter		.535 (1.708)
x son		.788** (2.199)
x sister	1.708*** (5.520)	089 (.915)
x brother	.378 (1.460)	539 (.583)
Non-kin		
x housemate	399 (.712)	.274 (1.315)
x neighbor	055 (.946)	408 (.665)
x workmate	072 (.931)	.009 (1.009)
x schoolmate	.364 (1.439)	-1.048 (.351)
x churchmate	856 (.425)	.601 (1.824)
x friend	.020 (1.021)	257 (.773)
x acquaintance	1.250* (3.492)	025 (.976)

Note: Controlling for alter descriptors and social exchange variables at the alter-level and for sociodemographic variables, network size, and proportion of kin in network at the person-level. * p < .05. ** p < .01. *** p < .001 (two-tailed tests).

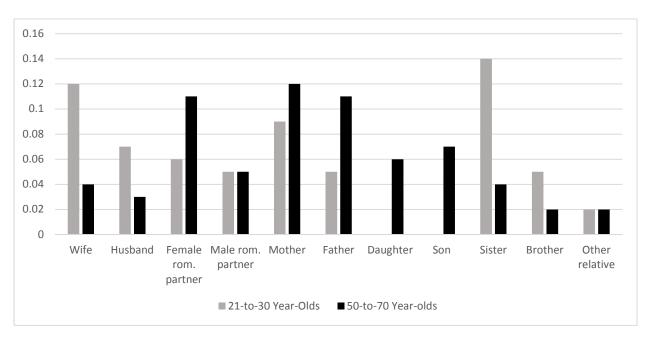
Figure 1. Predicted Probabilities of Kin to Be Named as Difficult Only Ties (50-to-70 Year-Olds)



Note: all alter- and individual-level variables are held constant at their mean levels.

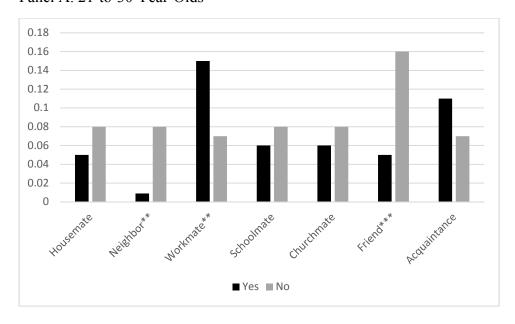
^{*} p < 0.05 (two-tailed test) for difference from "other relative"

Figure 2. Predicted Probabilities of Kin to Be Named as Difficult Engaged in Exchange Ties, by Cohort

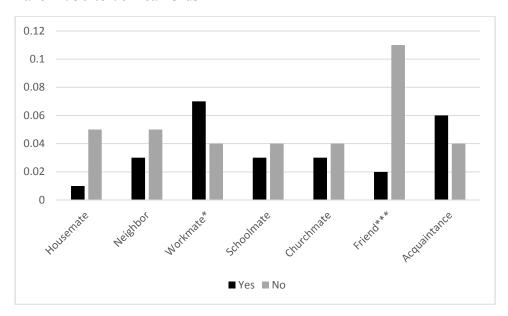


Note: all alter- and individual-level variables are held constant at their mean levels. In young cohort: effects for mother and sister significant at p < .001; wives significant at p < .01; male romantic partner and brother significant at p < .05 (compared to other relative). In old cohort: effects for mother, father, daughter, son, and sister significant at p < .001; female romantic partner significant at p < .01 (compared to other relative).

Figure 3. Predicted Probabilities of Non-Kin to Be Named as Difficult Only Ties Panel A. 21-to-30 Year-Olds



Panel B. 50-to-70 Year-Olds

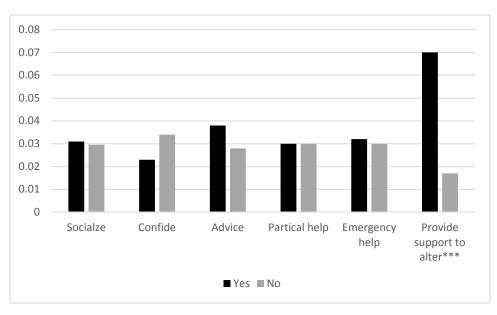


Note: all alter- and individual-level variables are held constant at their mean levels.

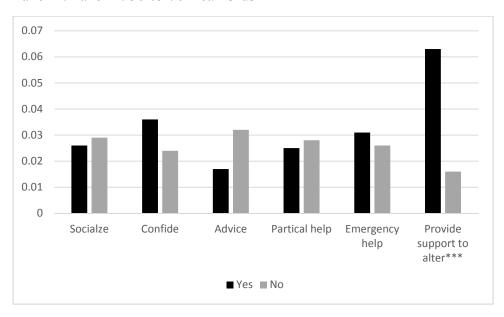
^{*} p < 0.05; ** p < 0.01; *** p < 0.001 (two-tailed test)

Figure 4. Predicted Probabilities of Alter to Be Named as a Difficult Engaged in Exchange Tie by Type of Social Exchange

Panel A. 21-to-30 Year-Olds



Panel B. Panel B. 50-to-70 Year-Olds

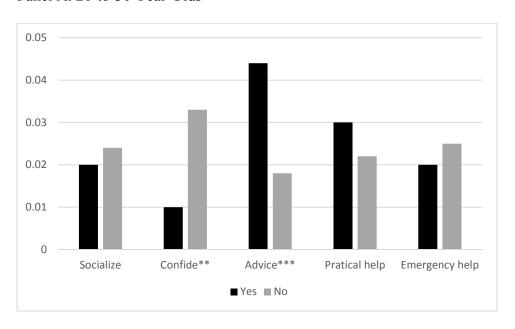


Note: all alter- and individual-level variables are held constant at their mean levels.

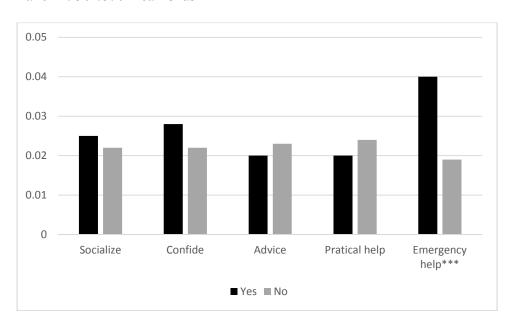
*** p < 0.001 (two-tailed test)

Figure 5. Predicted Probabilities of Alter to Be Named as a Difficult Engaged in Exchange Tie by Type of Social Exchange for Restricted Sample (Excluding Alters Who Provided Support to the Respondent)

Panel A. 21-to-30 Year-Olds



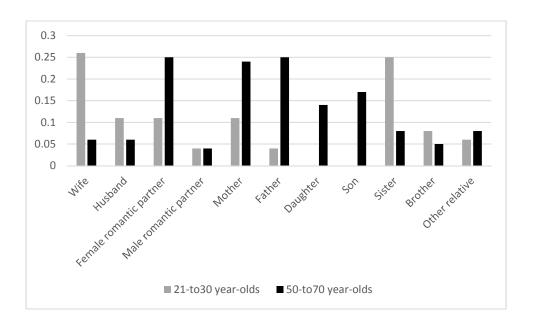
Panel B. 50-to70 Year-Olds



Note: all alter- and individual-level variables are held constant at their mean levels.

^{**} p < 0.01; *** p < 0.001 (two-tailed test)

Figure 6. Predicted Probabilities of Alter to Be Named as a Difficult Engaged in Exchange Tie for Providing Support by Kin Categories



Note: all alter- and individual-level variables are held constant at their mean levels. In the young cohort: effects for wife and sister significant at p < .001. In the old cohort: effects for mother and son significant at p < .01; father significant at p < .05 (compared to other relative).

Appendix A. Percentages for Respondent-Level Variables, by Cohort (unweighted)

	21-to-30 Year-Olds	50-to-70 Year-Olds
	(n = 480)	(n = 666)
Male	31.3	35.7
Age 50-60		44.6
Race/ethnicty		
White	50.0	75.2***
Asian	29.0	10.0***
Latino	14.8	6.0***
Black and other	6.3	8.7
Married	11.3	46.6***
Partnered	51. 7	16.7***
Foreign born	19.0	13.1**
New resident in town ^a	59.8	5.9***
Education		
Less than B.A.	23.5	29.9**
B.A.	54.2	24.8***
More than B.A.	22.3	35.3***
Income ^b		
Low (up to \$35,000)	49.0	18.3***
Medium (\$35,000-\$75,000)	27.1	26.9
High (\$75,000 and higher)	24.0	54.8***
Self-reported health		
Excellent	64.8	58.3*
Good	24.4	24.9
Fair or bad	10.8	16.8**
No health problem ^c	78.0	67.0***
Network size ^d	11.24 (4.25)	10.33 (4.47)***
Prop kin in network ^d	35.62 (19.43)	40.25 (24.02)***
Web	71.0	24.0***
Facebook	59.4	
Personal reference	7.3	

^a Living in current town for two or fewer years. ^b Total household income (before taxes) for married or partnered respondents; individual income for respondent living alone or with otherwise unrelated roommates. ^c Health problem refers to serious illness, recent hospitalization, and disability. ^d Mean and standard deviation (in parentheses) calculated at the aggregated person-level.

^{*} p < .05. ** p < .01. *** p < .001 (two-tailed tests) for differences between cohorts.

Appendix B. Alter Descriptors, Percentages by Cohort (Weighted)

	21-to-30 Year-olds (n = 5,022 alters)	50-to- 70 Year-olds (n = 6,613 alters)
Alter descriptors	(ii 2,022 uite15)	(11 0,013 411013)
Female (for non-kin)	32.6	35.9***
Same age	62.5	44.4***
Older	33.0	13.3***
Met in last year	15.5	5.4***
Emotionally close	45.0	46.3
Share household	13.0	9.9***
Live within 5 min	20.8	22.3*
Live over 1 hr away	30.3	21.9***
Same religion	49.2	45.9***
Same race	65.9	71.7***
Different political opinion	22.9	18.1***

^{*} p < .05. ** p < .01. *** p < .001 (two-tailed tests) for differences between cohorts.