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Lay definitions of family and social capital in later life

MYRIAM GIRARDIN AND ERIC D. WIDMER

University of Geneva, Switzerland

Abstract

This study explores the lay definitions of family in old age and their consequences for social capital in using an egocentric network approach. Data were derived from a subsample of 578 elders (aged 65 and older) from the Vivre/Leben/Vivere (VLV) study, a large survey addressing family life and health conditions of older people in Switzerland. A hierarchical cluster analysis was performed to create a typology of family networks based on family members who were cited as significant. We identified six family networks: *Conjugal, Son, Daughter, Sibling, Kinship,* and *Sparse.* These feature bonding and bridging social capital unequally. Therefore, one should take into account the lay definitions of family to better understand social capital within families in later life.

Family ties are major sources of solidarity in old age (Silverstein, Gans, & Yang, 2006) and therefore represent a key factor of well-being and self-identity in later life (Antonucci, 2001; Thoits, 2011). Support provided by family members, including informational support (advice and guidance), instrumental support (material and practical aid), and emotional support (love, caring, and encouragement), offers a protective effect, as it alleviates the feeling of isolation, which is one of the main dangers to one's health (House, 2001; Shor, Roelfs, & Yogev, 2013). Individuals who lack meaningful family ties have a greater probability of experiencing depression, lower levels of self-rated health and subjective well-being, earlier moves to care facilities, and higher risks of disease and mortality as they lack efficacious coping assistance and emotional sustenance (Pinquart & Sörensen, 2000; Shor et al., 2013; Thoits, 2011). These ties are even more beneficial at older ages because older adults face health declines and need greater practical and emotional support (Shor et al., 2013). Indeed, research shows that family members respond to health declines with increasing support and personal care, even in uncomfortable body tasks (Cornwell, 2009). Therefore, for older adults, family ties represent a large share of the available social capital, which they may mobilize in case of need (Cornwell, 2009; Cornwell, Laumann, & Schumm, 2008; Moren-Cross & Lin, 2006; Shor et al., 2013; Thoits, 2011).

Although the diversification of families in old age has been acknowledged (Silverstein & Giarrusso, 2010), the consequences of such diversification for the social capital of elders has seldom been addressed. To date, research in gerontology rarely considers how social capital varies in a larger context of family ties, shaped through both the pluralization of family arrangements and life trajectories. Rather than approaching the consequences of family diversity for social capital through demographics concerning marriage, parenthood, or household composition (Manning & Brown, 2011), we focus on the ways in which

Myriam Girardin, NCCR LIVES, Center for the Interdisciplinary Study of Gerontology and Vulnerability, University of Geneva, Geneva, Switzerland; Eric D. Widmer, NCCR LIVES, Department of Sociology, University of Geneva, Geneva, Switzerland.

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Correspondence should be addressed to Eric. D. Widmer, University of Geneva, NCCR LIVES, Department of Sociology, Uni Mail, 40 bd du Pont-d'Arve, CH-1211 Geneva 4, Switzerland, e-mail: Eric.Widmer@unige.ch.

individuals in old age define which family members matter. Using an egocentric network approach, we explore whether various lay definitions of family have distinct consequences for available social capital.

Switzerland is particularly interesting for the study of family networks in old age as, among European countries, it is classified as having an underdeveloped family policy due to its noninterventionist, liberal welfare regime (Armingeon, Bertozzi, & Bonoli, 2004; Bonoli, 2007; Korpi, 2000). In fact, social policies tend to avoid interfering with the family realm, and support for the elderly is primarily considered a private matter, a situation that may increase the importance of family networks compared to its importance in countries with a more active welfare state and institutionalized old-age support.

Changes in Family Demography

In recent decades, a series of demographic trends have changed the face of the family in old age. Increased life expectancy and decreased fertility have shaped "the beanpole family" with a complex mix of family generations (Bengtson, 2001; Bengtson, Rosenthal, & Burton, 1990). Because they are living longer, older people also have a greater likelihood of facing the death of family members of their own cohort, with some individuals even outliving their own children (Bickel & Girardin, 2008). The spread of birth control has individualized the timing of fertility and, as such, has contributed to more varied family structures in cohorts that have recently reached old age (Bengtson et al., 1990). Low fertility and delayed parenthood have contributed to the development of childlessness among different aging cohorts (Schnettler & Wöhler, 2014). In addition, new family forms, such as cohabitation, single parenthood, nonmarital births, and stepfamilies, have become more frequent since the 1960s (Manning & Brown, 2011), bringing with them an increased diversity of pools of relatives in old age (Silverstein & Giarrusso, 2010). Overall, individuals do not all have the same pool of family members: Some have partners while others are widowed or divorced, some have children while others are childless, and some are embedded in three- to four-generation kinship networks while others have outlived their partner, siblings, and even some of their children.

Significant Family Members and Lay Definitions of Family

Although distinct pools of relatives offer different alternatives for the development of significant family ties, the presence of such pools does not in itself guarantee that meaningful family relationships are developed. This depends on how these family relationships are negotiated over time and circumstances (Connidis, 2010). Indeed, scholars have, for instance, emphasized unequal intimacy linking individuals with their siblings in old age. In some cases, siblings provide companionship, and in other cases, relationships with siblings are rather distant (Cicirelli, 1995; Connidis, 2010).

The same is true for parent–adult child relationships (Bengtson, 2001). Because some life events, such as early divorce, may disrupt parent–child relationships (Shapiro & Cooney, 2007), some divorced individuals disengage from relationships with their adult children and compensate by considering emotionally invested friends as belonging to their family (Allan, 2001; Van Tilburg & Thomése, 2010; Voorpostel, 2013), following a process of suffusion between the family and friendship realms (Pahl & Spencer, 2004). Voluntary kin indeed provide not only complements to but also substitutes for and extensions to blood or legal kin (Braithwaite et al., 2010).

Additionally, the increasing diversity of elderly living arrangements, due to the large-scale development in recent decades of assisted living and full-care facilities in Switzerland and elsewhere in Europe (Colombo, Llena-Nozal, Mercier, & Tjadens, 2011), has impacted family relationships, making them more diverse in strength and content (Gaugler, 2005; Gaugler & Kane, 2007). In some cases, relationships developed with other residents and staff members in nursing homes or with professional in-home caregivers become significant enough to be

considered belonging to family (Karner, 1998; Street, Burge, Quadagno, & Barrett, 2007).

These trends suggest that research that defines significant family members a priori by a finite set of principles related to household membership or to blood or legal kinship are inadequate, and different means of identifying significant family are clearly required (Firth, Hubert, & Forge, 1970; Levin, 1993; Levin & Trost, 1992). Older individuals define their significant family members in a variety of ways. Some include as family only the most intimate family ties, such as a cohabiting spouse and children, but others take into account a wider range of significant others, related or not by blood or law (Braithwaite et al., 2010; Pahl & Spencer, 2004; Voorpostel, 2013). As such, individuals are expected to set significant family contexts in a variety of ways. Accordingly, some scholars have proposed that the identification of significant family members should be provided by survey participants rather than by a priori criteria imposed by researchers, however inclusive they may be (Braithwaite et al., 2010; Levin, 1993; Widmer, 1999). Little is known, indeed, about lay definitions of the family in old age, as, to our knowledge, only a few studies have so far applied a constructionist perspective on family boundaries in that age group.

Network Structures and Types of Social Capital

Personal networks are composed of the people who play a key role in the life of a focal individual. As such, they are often referred to as egocentric networks (Campbell & Lee, 1991), entourages (Bonvalet & Lelièvre, 2013), family networks (Widmer, Aeby, & Sapin, 2013), or convoys (Antonucci, 2001). Their importance to focal individuals in various life situations and transitions has been well documented (Antonucci, 2001; Bidard & Lavenu, 2005; Cornwell et al., 2008; Szreter & Woolcock, 2004; Widmer et al., 2013).

Social support is a central function of personal networks; it refers to their ability to respond to focal individuals' needs for assistance and comfort (Antonucci, 2001; Cornwell et al., 2008; Shor et al., 2013). A main concern about personal networks is the ability of their members to provide the focal individual with social capital (Cornwell, 2009, 2011; Moren-Cross & Lin, 2006). Social capital is classically defined as individual resources—such as support, companionship, and affection—stemming from the possession of a durable network of acquaintance or recognition (Bourdieu, 1986) that can be accessed and/or mobilized in case of need (Cornwell, 2009; Moren-Cross & Lin, 2006). Social capital relates to the potential of social support within family networks. The perception that social support would be available, should an individual wish to access it, has been shown to be strongly correlated with healthy aging (Antonucci, 2001; Moren-Cross & Lin, 2006).

Two types of social capital are defined in the literature. Bonding social capital is present in small and dense personal networks, in which most network members are interconnected through reciprocal supportive ties. Furthermore, as all members are interconnected by supportive relationships, focal persons are not central within their personal network. Given its structural characteristics, bonding social capital enhances expectations, claims, obligations, and trust to the focal individual because of the larger, collective nature of normative control and support (Coleman, 1988; Putnam, 2000). Bonding social capital has some advantages, as interconnected network members can coordinate within themselves to provide the necessary resources and organize caregiving duties when the focal person needs it—a situation that is shown to be beneficial in old age (Cornwell, 2009, 2011). However, bonding social capital, which characterizes dense networks and low centrality of focal persons, may also present obstacles to autonomy, a freedom highly valued by many older adults who face a growing dependency on others (Cornwell, 2009, 2011).

Bridging social capital, on the other hand, stems from the intermediary position of the focal individuals between various weakly connected subgroups in personal networks (Burt, 2001). Disconnections between these subgroups create holes that provide focal individuals—by being intermediaries between otherwise unconnected

members—opportunities to mediate and control the resources that make their network members interdependent. In that situation, focal persons are central, as intermediaries in their personal network, and need to be particularly active in providing and/or mobilizing support to maintain their connections with a variety of more weakly interrelated members. Therefore, bridging social capital requires that focal persons are in good health (Cornwell, 2009). Although quite demanding, bridging social capital also has some advantages. Network members in this case have more diverse family statuses, are less interconnected, and are more often based on achieved companionship stemming from a history of positive relationships than on normative obligations of support (De Carlo, Aeby, & Widmer, 2014; Widmer, 2010). Therefore, this type of networks enables focal individuals to access a variety of resources that can be activated under different circumstances and with a greater level of autonomy (Cornwell, 2009, 2011).

Social Capital and Lay Definitions of Family

Bonding social capital and bridging social capital are likely to be unequally distributed according to the definition of family constructed by focal individuals. The inclusion of a partner in one's definition is expected to increase bonding social capital. Indeed, married or cohabiting partners are usually dependent on each other through diverse resources, such as instrumental support, companionship, and emotional support, because of their shared residence, history, and activities (Campbell, Connidis, & Davies, 1999). Later life experiences such as the shrinkage of personal networks (by the death of siblings or friends), declining health, and the consequent loss of autonomy make partners even more dependent on each other (Cornwell, 2011). The inclusion of children and grandchildren within families also contributes to maintaining and reinforcing bonding social capital through reciprocal and intense supportive ties between family members of different generations (Bucx, van Wel, Knijn, & Hagendoorn, 2008). Therefore, focal individuals who define their family by including partnership and intergenerational ties are expected to develop bonding social capital, with dense and reciprocal supportive ties within their family networks. However, density and reciprocity of support may, in some cases, be challenged in such family networks because of the high levels of ambivalence and conflict that characterize intergenerational relationships (Connidis & McMullin, 2002; Lüscher, 2002).

The loss of a partner through widowhood, separation, or divorce is associated with a reorganization of family ties by focal individuals (Silverstein & Giarrusso, 2010). In order to compensate such loss, widowed and divorced people invest in other ties, such as those with siblings, extended kin, and friends (Campbell et al., 1999; Cornwell, 2011; Ha, 2008; Shapiro & Cooney, 2007; Voorpostel, 2013). Similarly, childless individuals also invest in alternative ties (Schnettler & Wöhler, 2014). Such ties depend to a large extent on electivity through affinity, shared interests, positive exchanges, and similar lifestyles rather than on normative expectations about family solidarity (Braithwaite et al., 2010; Campbell et al., 1999; Schnettler & Wöhler, 2014). Therefore, divorced, widowed, and childless older individuals have large and heterogeneous personal networks, which might directly translate into the definition of their family. By defining their family to include such a variety of family members, focal individuals are expected to develop bridging social capital.

In sum, family contexts have been diversified in cohorts currently reaching old age, with likely consequences for personal definitions of family and social capital. Depending upon the ways in which older adults define their significant family members, we expect them to develop distinct types of social capital. Therefore, the first hypothesis is as follows:

H1: *Focal persons who define their family to include partnerships and intergenerational ties (children, grandchildren) are more likely to present bonding social capital, with a high density of connections, high reciprocity, and low centrality in their family networks (H1a). However, those who define their family by mentioning siblings, extended kin, or*

friends are more likely to feature bridging social capital, with higher activity and centrality in support exchanges and a lower density and reciprocity of interconnections in their family network (H1b).

Gender Effects and Social Capital

In addition to the lay definitions of family, the development of bridging or bonding social capital may also depend on the focus of the family network on male or female members. Owing to their gendered kin-keeping and caregiving roles, women are normatively expected to be more active than men in linking family members to each other and in maintaining supportive family ties (Silverstein et al., 2006). For instance, wives—more often than husbands—link their partners to their other family members and close friends (Ajrouch, Blandon, & Antonucci, 2005; Antonucci, 2001). Daughters, compared to sons, develop closer ties and provide more personal care to their older parents (Pinquart & Sörensen, 2006; Silverstein et al., 2006). Daughters-in-law, much more than sons-in-law, are key actors in the development or maintenance of positive ties between their children and their partner's parents (Fingerman, 2004). Finally, sisters are more active than brothers in providing emotional support (Campbell et al., 1999).

The gender of focal persons is another key factor that may influence social capital. Some findings suggest that older women have a greater propensity than older men to have close and supportive relationships beyond primary family ties (Antonucci, Akiyama, & Sherman, 2007). Widowhood, which is more prevalent among women than among men, contributes to this difference, as widowed older adults develop closer relationships with siblings and friends while partnered older people, mostly men, remain dependent on their partners and children (Antonucci et al., 2007; Cornwell, 2011; Ha, 2008). Therefore, women hold a central position in their family networks, as they play an active intermediary role between unconnected family members. However, the higher prevalence of functional limitations among women than among men may limit women's access to bridging social capital (Cornwell, 2011). On one hand, maintaining ties outside of the household becomes difficult, as women's ability to provide support is jeopardized by health limitations (Broese van Groenou & Van Tilburg, 2007). On the other hand, the organization of support for older parents with functional limitations contributes to tightening ties within family networks (Cornwell, 2009), particularly for older women, as older mothers receive, on average, more support from their children than do older fathers (Silverstein et al., 2006). Therefore, older women with functional limitations might have access to as much bonding social capital as older men in their family networks. On the basis of the existing studies, the second hypothesis states:

H2: *Family networks comprising mostly female members are more likely to feature bonding social capital, with denser and more reciprocal supportive ties than family networks comprising mostly male members (H2a). However, as focal persons, older women are more likely than older men to have access to bridging social capital in their family networks, as women develop close and supportive relationships with a greater variety of family members (H2b).*

Other Factors Related to Family-Based Social Capital

Aging and health-related processes may also impact the types of available social capital in old age. Evidence shows that personal networks decrease and become denser with aging and declining health (Ajrouch et al., 2005; Cornwell et al., 2008). The reduced capacity to sustain active supportive ties (Broese van Groenou & Van Tilburg, 2007; Cornwell, 2009), as well as the more limited time to live, may prompt the oldest adults to decrease the number of family members with whom they interact by selecting the most emotionally rewarding family ties and withdrawing from less meaningful family relationships (Carstensen, 1992). In addition, family members coordinate among themselves to support parents with increasing

health problems, which may contribute to strengthening the density and reciprocity of supportive ties within family networks, developing bonding, rather than bridging, social capital (Cornwell, 2009). However, it is also possible that older adults will not lose their bridging social capital as they may develop ties with siblings, extended kin, or friends who are considered family members. Given these previous findings, the third hypothesis states:

H3: *As they are able to maintain active supportive relationships with a greater variety of family members, relatively young and healthy elderly focal persons are more likely to have access to bridging social capital than the oldest adults and those with disabilities.*

Method

Data and sample

The data were obtained from the Vivre/Leben/Vivere (VLV) study, which is a large, interdisciplinary survey on the life and health conditions of people aged 65 years and above in five cantons in Switzerland (see Oris et al., 2016). Stratified by sex and age, the overall sample of 3,635 participants is representative of the studied population. Data were collected by using in-home, face-to-face interviews. Based on practical issues associated with the availability of data, our analyses focused on the Geneva subsample ($N = 704$). On the whole, 126 individuals with cognitive impairments were dropped from the analysis because they were not able to answer the questionnaire themselves. An additional 15 were dropped because they did not answer the questions about family networks. Therefore, the final subsample included 563 community-dwelling or institutionalized respondents. The mean age in this subsample was 78 years, with an age range from 65 to 101 years. Table 1 presents descriptive statistics about the sample.

Table 1. *Descriptive statistics (*N = *563)*

Characteristic	%
Gender	
Female	49
Male	51
Age	
65–74 years old	40
75–84 years old	35
85 years old and over	25
Education	
Low education	16
Average education (high school or equivalent)	61
High education (university)	23
Citizenship	
Native born	66
Foreign born	34
Conjugal status	
Married	55
Cohabiting	4
Widowed	22
Divorced	12
Single	7
Demographic reservoir	
Has a partner, cohabiting or not	60
Has at least one living child	82
Has at least one living grandchild	69
Has at least one living sibling	68
Functional health status	
Performs ADLs alone	75
Has difficulty performing ADLs	25
Institutionalization	
Not institutionalized	93
Institutionalized	7

Note. ADLs = activities of daily living.

Measures

Lay definitions of family

Following standard procedures for collecting information on family networks (Widmer et al., 2013), respondents were asked, "Who are your significant family members?" and allowed to identify a maximum of five significant family members. The limit of five significant family members was necessary to maintain a manageable interview time. The term *family* was deliberately left undefined as respondents were asked to use their own definition. Participants were instructed that the term *significant* referred to people in their family who have played a role, either positive or negative, in their life during the past year. Note that this name generator, unlike other ego-network

studies (Scott, 1988), does not ask focal individuals to report "emotionally close" or "helpful" family members as family networks also include a large proportion of stressful, ambivalent, or even plainly negative relationships that are significant in their own right (Widmer, 2010). Participants first listed all significant family members using their first names or initials. Then they were asked to provide detailed description of their ties with each alter and of that alter's sociodemographic profile.

Social capital

To approach social capital, we focus on the available emotional support among family members, as perceived by the respondents. Emotional support was described as the ability to provide guidance and moral comfort and was measured using the following question: "Who would give emotional support to X [i.e., respondent and each individual included in the respondent's family network considered one by one] during routine or minor troubles?" Respondents had to evaluate not only their own supportive ties but also those among all their significant family members (Widmer et al., 2013). Then, network indexes, which were suitable for assessing properties of egocentric networks in relation to the structural characteristics of social capital (Hanneman & Riddle, 2005), were computed for all the respondents' family networks (Scott, 2000).

Size, density, and reciprocity were indicators of bonding social capital. Size indicated the number of family members included in the respondent's family network. This indicator varied from 0 to 5 ($M = 3.39$, $SD = 1.73$). Size was strongly correlated with density, as the smaller one's family network was, the denser the supportive ties were. Density referred to the extent to which all included family members were interconnected through support within the family network. This indicator was measured by the number of ties divided by the number of available pairs (i.e., potential ties) of family members, including respondents (Broese van Groenou & Van Tilburg, 2007). Ties were treated as directed, as the support given by family member A to family member B may be different from the support given by family member B to family member A. This index varied from 0 to 1, with 1 indicating that all included family members are interconnected ($M = 0.37$, $SD = 0.29$). Reciprocity indicated the extent to which support was exchanged in reciprocal connections among all family members (Broese van Groenou & Van Tilburg, 2007; Moren-Cross & Lin, 2006). Thus, it referred to the ratio of reciprocal ties in the number of connected dyads within family networks. This index varied from 0 to 1, with 1 indicating that all the connections within the family network are reciprocal ($M = 0.39$, $SD = 0.33$).

Bridging social capital was measured by three indexes. We computed the in-degree and the out-degree of respondents to measure respondents' prominence in support exchanges with their significant family members (support intensity). Respondents' in-degree indicated the number of family members for whom respondents were support providers. It reflected the importance of respondents as support providers within their family network. This index ranged from 0 to 5, with 5 indicating that all significant family members were supported by the respondent ($M = 2.11$, $SD = 1.67$). Respondents' out-degree concerned the number of family members who provided respondents with support. This index captured the capacity of respondents to mobilize support within their family network. It varied from 0 to 5, with 5 indicating that all significant family members supported the respondent ($M = 1.50$, $SD = 1.35$). Finally, respondents' betweenness centrality indicated the extent to which they were intermediaries between their significant family members. This was computed as the ratio of all the shortest paths between any two family members that went through the focal individual (Hanneman & Riddle, 2005). Focal individuals were considered central if they were lying between all, or almost all, of their family members' connections. This index varied from 0 to 1, with 1 indicating that all the family members went through the respondent to reach each other ($M = 0.15$, $SD = 0.22$).

Sociodemographic and health factors

We considered gender (1 = male, 0 = female) and age. The latter was divided into three

groups: focal individuals aged 65–74 years (young-old), 75–84 years (old-old), and 85 years and over (oldest-old; Suzman & Riley, 1985). To approach functional limitations, respondents were asked how much difficulty they had performing five basic activities: washing, dressing and undressing, eating and cutting food, moving in and out of bed, and moving around indoors (Katz, Ford, Moskowitz, Jackson, & Jaffee, 1963). Respondents were also measured on three activities of mobility: going up and down stairs, moving around outside, and walking at least 200 m (Rosow & Breslau, 1966). The eight items reached a reliability level (Cronbach's alpha) of 0.91. Respondents were classified according to their ability to perform these eight activities of daily living (ADLs) on their own (1 = has difficulties in performing one or more ADLs alone, 0 = no difficulty).

Control variables

To control for the effects of the pool of available relatives, when estimating the effect of the definitions of family, we considered respondents' conjugal status (1 = married, 2 = cohabiting, 3 = widowed, 4 = divorced, 5 = single) and whether respondents had at least one living child (1 = having children, 0 = no child), at least one living grandchild (1 = having grandchildren, 0 = no grandchild), and at least one living sibling (1 = having siblings, 0 = no sibling; see Table 1 for distributions). We also included a series of variables to account for possible confounding effects. Education (1 = low [below high school], 2 = average [high school and equivalent], 3 = high [university]), citizenship (1 = foreign-born, 0 = native-born), and institutionalization (1 = institutionalized, 0 = not institutionalized) were selected, as the literature shows that these factors are significantly related to supportive ties (Antonucci, 2001).

Data analysis

To measure the composition of family networks—translating respondents' personal definitions of family—we identified the most cited significant family terms. Respondents provided 1,906 citations of family members, using 97 different family terms. Fourteen terms were identified as the most commonly cited, given by at least 5% of respondents. These 14 terms comprised 85% of the 1,906 citations that were provided overall. Following standard factor- and cluster-analytical procedures as applied to family networks (Widmer, 2010), we first ran an exploratory factor analysis on these 14 terms, plus a residual category into which the other terms were gathered. Principal component analysis with varimax rotation was used to extract the initial factors. Following standard practice in factor analysis (Tabachnick & Fidell, 1996), six factors with eigenvalues of more than 1 were retained, which explained 55% of the variance. The six-factor scores were input into a hierarchical clustering analysis based on Euclidean distances and the Ward clustering algorithm (Lebart, Morineau, & Piron, 2002). A solution with six clusters was selected, based on cluster validity measures such as Calinski-Harabasz and silhouette indexes (Everitt, Landau, Leese, & Stahl, 2011).

For assessing social capital according to the composition of family networks, gender, age, functional health, and control variables, we first ran an analysis of variance (ANOVA) on the indexes of social capital. The *F* test and the Kruskal–Wallis test, a nonparametric version of a one-way ANOVA designed for cases of non-normally distributed variables, were applied. Then, two-step multivariate regressions with contrast deviation models (Chambers & Hastie, 1993) were carried out to predict each of the social capital measures. The first step examined the effect of family network composition on social capital scores. The second step controlled the effects of network composition for gender, age, education, citizenship, conjugal status, pools of available relatives, functional health, and institutionalization. All of these analyses were run in R (R Development Core Team, 2011).

Results

The composition of family networks

Table 2 shows the distribution of family terms, the percentage of respondents who cited each

Table 2. *Distribution of the 14 most commonly used terms (*N = *1,906)*

Terms	Respondents citing term		Respondents not citing term while having a corresponding person available (%)	Term's % of total terms cited	Cumulative %
	Number	%			
Son	355	71	26	19	19
Daughter	351	70	23	18	37
Partner	232	46	33	12	49
Sister	108	22	64	6	55
Brother	83	17		4	65
Female friend	105	21	—	6	60
Male friend	71	14	—	4	68
Daughter's daughter	64	13	—	3	72
Son's daughter	62	12	—	3	75
Son's son	48	10	—	3	78
Son's partner	45	9	—	2	80
Daughter's son	38	8	—	2	82
Daughter's partner	36	7	—	2	84
Female cousin	24	5	—	1	85
Other terms	284	57	—	15	100

term, the percentage of respondents who did not cite the term while having a corresponding person available, the percentage of the total number of citations pertaining to the term, and the term's cumulative percentage.

Overall, 70% of respondents cited some children as significant family members. A partner was cited by 46% of respondents. Siblings and grandchildren were also well represented. Interestingly, Table 2 also reveals that available family members are not guaranteed inclusion as significant family members, as some respondents did not include living sons (26%), daughters (23%), partners (33%), and especially siblings (64%) in their family networks. Alternatively, a substantial share of respondents extended their significant family members to distant relatives by including cousins, or other terms. In-laws were also largely cited: Daughters-in-law and sons-in-law were cited in 9% and 7% of the cases, respectively. Impressively, 21% of respondents cited female friends as significant family members and 14% cited male friends. By these counts, significant family members extended well beyond partners and children. Table 3 presents the average number of citations for each family term by cluster and the percentage of respondents included in each cluster.

In the *Conjugal* cluster, respondents' significant family ties were centered on their own children and their current partner. On average, 0.63 partners were included in the *Conjugal* family network against 0.41 in the whole sample. Note that in 42% of the cases, this partner is not the parent of the focal persons' children. This happens in case of the focal person's divorce or widowhood, followed by repartnering. The second cluster, the *Son* family network, focused on biological sons ($M = 1.35$), their partners ($M = 1.05$), and their children. The sons' children were, on average, less frequently cited ($M = 0.37$ for sons' daughters, $M = 0.19$ for sons' sons). In *Daughter* family networks, daughters ($M = 1.18$) and daughters' daughters ($M = 1.00$) were largely included as significant family members. Interestingly, daughters' partners in this network were much less often included ($M = 0.23$) than were sons' partners ($M = 1.05$) in *Son* family networks. Cluster 4, *Sibling*, mainly included sisters ($M = 1.08$)

Table 3. *Average number and standard deviations of citations for each term, by cluster*

	Family networks							
Terms	*Conjugal* ($n = 222$) 39%	*Son* ($n = 43$) 8%	*Daughter* ($n = 62$) 11%	*Sibling* ($n = 87$) 15%	*Kinship* ($n = 45$) 8%	*Sparse* ($n = 104$) 19%	Total ($n = 563$) 100	$F(5, 557)$
Son	0.96 (0.81)	1.35 (0.72)	0.48 (0.54)	0.49 (0.76)	0.04 (0.21)	0.08 (0.27)	0.63 (0.78)	44.35***
Daughter	0.92 (0.86)	0.40 (0.54)	1.18 (0.59)	0.52 (0.70)	0.09 (0.29)	0.07 (0.29)	0.62 (0.77)	39.05***
Partner	0.63 (0.48)	0.30 (0.47)	0.45 (0.50)	0.44 (0.50)	0.20 (0.41)	0.04 (0.19)	0.41 (0.49)	28.53***
Sister	0.02 (0.13)	0.14 (0.35)	0.06 (0.25)	1.08 (0.60)	0.00 (0.00)	0.00 (0.00)	0.19 (0.47)	211.15***
Female friend	0.09 (0.35)	0.19 (0.45)	0.05 (0.22)	0.18 (0.50)	0.27 (0.54)	0.43 (0.97)	0.19 (0.57)	6.33***
Brother	0.08 (0.27)	0.02 (0.15)	0.05 (0.22)	0.53 (0.79)	0.18 (0.39)	0.07 (0.25)	0.15 (0.43)	19.95***
Male friend	0.08 (0.31)	0.09 (0.48)	0.05 (0.22)	0.16 (0.48)	0.07 (0.25)	0.28 (0.78)	0.13 (0.47)	3.35**
Daughter's daughter	0.00 (0.00)	0.02 (0.15)	1.00 (0.65)	0.01 (0.11)	0.00 (0.00)	0.00 (0.00)	0.11 (0.38)	218.14***
Son's daughter	0.17 (0.48)	0.37 (0.69)	0.11 (0.37)	0.01 (0.11)	0.00 (0.00)	0.00 (0.00)	0.11 (0.39)	8.88***
Son's son	0.14 (0.49)	0.19 (0.50)	0.11 (0.32)	0.01 (0.11)	0.00 (0.00)	0.00 (0.00)	0.09 (0.36)	4.40**
Son's partner	0.00 (0.00)	1.05 (0.21)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.08 (0.28)	2540.92***
Daughter's son	0.00 (0.00)	0.00 (0.00)	0.60 (0.61)	0.01 (0.11)	0.00 (0.00)	0.00 (0.00)	0.07 (0.28)	90.99***
Daughter's partner	0.05 (0.26)	0.12 (0.32)	0.23 (0.46)	0.06 (0.23)	0.00 (0.00)	0.00 (0.00)	0.06 (0.27)	7.09***
Female cousin	0.03 (0.16)	0.02 (0.15)	0.02 (0.13)	0.00 (0.00)	0.31 (0.63)	0.02 (0.14)	0.04 (0.24)	14.52***
Other terms	0.32 (0.59)	0.33 (0.64)	0.16 (0.45)	0.52 (0.82)	2.80 (1.14)	0.18 (0.41)	0.50 (0.95)	123.71***

Note. Means and (standard deviations) are reported.
**$p < .01$. ***$p < .001$.

and brothers ($M = 0.53$) as significant family members. Siblings' partners and children were rarely mentioned as stressed by additional analyses (results not shown). Cluster 5, *Kinship*, included many other terms, referring to a variety of relatives such as nephews/nieces, cousins, in-laws, stepchildren, and some voluntary kin (such as friends considered to be family members). Finally, Cluster 6, *Sparse*, included mostly respondents who either cited no significant family member or included only a few friends. In terms of the number of cases, *Conjugal* was most common (39%), followed by *Sparse* (19%), *Sibling* (15%), *Daughter* (11%), *Son* (8%), and *Kinship* (8%) family networks.

Social capital

Tables 4 and 5 present the mean of indexes measuring social capital for family networks and other variables, as well as the results of the *F* test and the Kruskal-Wallis test. The results are illustrated graphically in Figure 1, which represents emotional support (with the arrows pointing to resource providers) among the six sampled family networks.

Conjugal family networks had a small size (see Graph 1a) with high density and reciprocity and an average number of family members supported by and supporting the focal person. Respondents provided more support than they received within their family networks, as revealed by higher scores on in-degrees than on out-degrees. This network's average score on betweenness centrality showed that respondents did not hold central positions within their family networks. *Son* family networks were the largest and scored high on density and reciprocity. Respondents provided support to but also received support from a large number of their family members. Active within these family networks, respondents also featured high betweenness centrality (see Graph 1b). Given their high density and high reciprocity, *Conjugal* and *Son* family networks featured bonding social capital. In *Daughter* family networks, density and reciprocity were low. Strikingly, the number of family members providing support to and receiving support from respondents were lower in this cluster than in the *Son* cluster. Respondents in the *Daughter* family network provided significantly more support to their family members than they received from them. Their betweenness centrality was low, revealing that they were not central within their family network (see Graph 1c). Overall, respondents in *Daughter* family networks had low bonding and bridging social capital. *Sibling* family networks were large and scored high on both density and reciprocity. As illustrated by Graph 1d, respondents in this cluster were the most active in providing emotional support, but they did not receive as much in return. This cluster also featured the highest score on betweenness centrality. Given their high centrality, respondents in *Sibling* family networks had access to bridging social capital. *Kinship* family networks (Graph 1e) were quite large and featured low density and average reciprocity, with small numbers of family members supported by or supporting the focal person. *Sparse* family networks (Graph 1f) had the smallest size of all, with an average of 1.16 members. They displayed low scores in density, reciprocity, and betweenness centrality, and only a few of family members were supported by or supporting the focal person. Overall, respondents in *Kinship* and *Sparse* family networks had low bonding and bridging social capital.

Tables 6 and 7 include a set of regressions that estimate the effects of family network types on social capital measures while controlling for the effects of gender, age, education, citizenship, conjugal status, the pool of available relatives (children, grandchildren, siblings), functional health, and institutionalization (see Model 2). The overall results of the regressions confirm the impact of family networks found in Table 4.

As expected, *Conjugal* family networks were smaller ($\beta = -0.24$, $p < .05$) and had a higher density ($\beta = 0.11$, $p < .001$) and reciprocity ($\beta = 0.07$, $p < .01$) than average. *Son* family networks were larger ($\beta = 0.76$, $p < .001$) and had a higher density ($\beta = 0.12$, $p < .01$), more people supported by the focal person ($\beta = 0.48$, $p < .05$), and more people supporting the focal person ($\beta = 0.83$, $p < .001$) than average, which stresses the active role

Table 4. *Social capital indexes by predictors,* F *test, and Kruskal–Wallis test*

	Social capital indexes						
	Size	Density in family	Reciprocity in family	Number of family members supported by respondents (in-degree)	Number of family members supporting respondents (out-degree)	Betweenness centrality of respondent in family	% (*N*)
Total	3.39 (1.73)	0.37 (0.29)	0.39 (0.33)	2.11 (1.67)	1.50 (1.35)	0.15 (0.22)	100% (563)
Family network							
Conjugal	3.50 (1.38)	0.46 (0.29)	0.45 (0.34)	2.26 (1.53)	1.58 (1.24)	0.15 (0.22)	39% (222)
Son	4.58 (0.70)	0.44 (0.25)	0.43 (0.23)	2.74 (1.58)	2.35 (1.62)	0.17 (0.18)	8% (43)
Daughter	4.55 (0.86)	0.34 (0.20)	0.35 (0.24)	2.34 (1.47)	1.65 (1.27)	0.12 (0.18)	11% (62)
Sibling	4.02 (1.13)	0.41 (0.26)	0.47 (0.32)	2.89 (1.64)	1.93 (1.36)	0.22 (0.24)	15% (87)
Kinship	3.96 (1.09)	0.31 (0.23)	0.41 (0.36)	1.98 (1.57)	1.47 (1.16)	0.16 (0.25)	8% (45)
Sparse	1.16 (1.76)	0.16 (0.28)	0.17 (0.32)	0.82 (1.45)	0.55 (1.03)	0.08 (0.19)	19% (104)
$F(5, 557)$	81.99***	19.03***	12.84***	21.38***	18.30***	4.08**	
Kruskal–Wallis	185.37***	107.22***	71.48***	100.37***	110.16***	37.75***	
Conjugal status							
Married	3.63 (1.61)	0.41 (0.28)	0.41 (0.32)	2.35 (1.68)	1.66 (1.39)	0.14 (0.19)	55% (300)
Cohabiting	3.50 (1.91)	0.31 (0.26)	0.32 (0.25)	2.60 (1.90)	1.20 (1.20)	0.12 (0.13)	4% (20)
Widowed	3.27 (1.65)	0.37 (0.28)	0.38 (0.33)	1.95 (1.56)	1.45 (1.26)	0.19 (0.26)	22% (124)
Divorced	3.16 (1.87)	0.29 (0.25)	0.38 (0.35)	1.90 (1.65)	1.41 (1.43)	0.17 (0.25)	12% (68)
Single	2.50 (2.05)	0.30 (0.35)	0.35 (0.42)	1.37 (1.63)	1.00 (1.16)	0.08 (0.20)	7% (38)
$F(4, 545)$	4.57**	3.58**	0.73 (*ns*)	4.40**	2.71*	2.34 (*ns*)	
Kruskal–Wallis	15.43**	17.53**	4.50 (*ns*)	17.39**	13.10*	8.19 (*ns*)	
Having at least one living child							
No	2.62 (1.94)	0.34 (0.34)	0.37 (0.38)	1.53 (1.64)	1.18 (1.29)	0.10 (0.19)	18% (102)
Yes	3.56 (1.63)	0.38 (0.27)	0.39 (0.32)	2.24 (1.65)	1.57 (1.35)	0.16 (0.22)	82% (461)

Table 4. *Continued*

	Social capital indexes						
	Size	Density in family	Reciprocity in family	Number of family members supported by respondents (in-degree)	Number of family members supporting respondents (out-degree)	Betweenness centrality of respondent in family	% (*N*)
Total	3.39 (1.73)	0.37 (0.29)	0.39 (0.33)	2.11 (1.67)	1.50 (1.35)	0.15 (0.22)	100% (563)
$F(1, 561)$	25.65***	1.13 (*ns*)	0.33 (*ns*)	15.56***	7.22**	5.72*	
Kruskal–Wallis	20.27***	4.24*	1.62 (*ns*)	16.43***	10.06**	9.62**	
Having at least one living grandchild							
No	2.80 (1.87)	0.36 (0.32)	0.39 (0.37)	1.90 (1.70)	1.28 (1.24)	0.14 (0.23)	31% (173)
Yes	3.65 (1.59)	0.38 (0.27)	0.39 (0.32)	2.21 (1.65)	1.60 (1.38)	0.15 (0.21)	69% (389)
$F(1, 560)$	30.60***	0.62 (*ns*)	0.02 (*ns*)	4.13*	7.00**	0.10 (*ns*)	
Kruskal–Wallis	27.00***	2.06 (*ns*)	0.35 (*ns*)	4.59*	7.15**	1.07 (*ns*)	
Having at least one living sibling							
No	3.22 (1.71)	0.35 (0.27)	0.35 (0.33)	1.95 (1.59)	1.24 (1.11)	0.14 (0.21)	32% (178)
Yes	3.46 (1.73)	0.38 (0.29)	0.40 (0.34)	2.18 (1.70)	1.62 (1.44)	0.15 (0.22)	68% (378)
$F(1, 554)$	2.32 (*ns*)	0.88 (*ns*)	2.27 (*ns*)	2.38 (*ns*)	10.05**	0.32 (*ns*)	
Kruskal–Wallis	3.21 (*ns*)	0.51 (*ns*)	2.54 (*ns*)	1.98 (*ns*)	6.83**	0.44 (*ns*)	

Note. Means and (standard deviations) are reported.
*$p < .05$. **$p < .01$. ***$p < .001$.

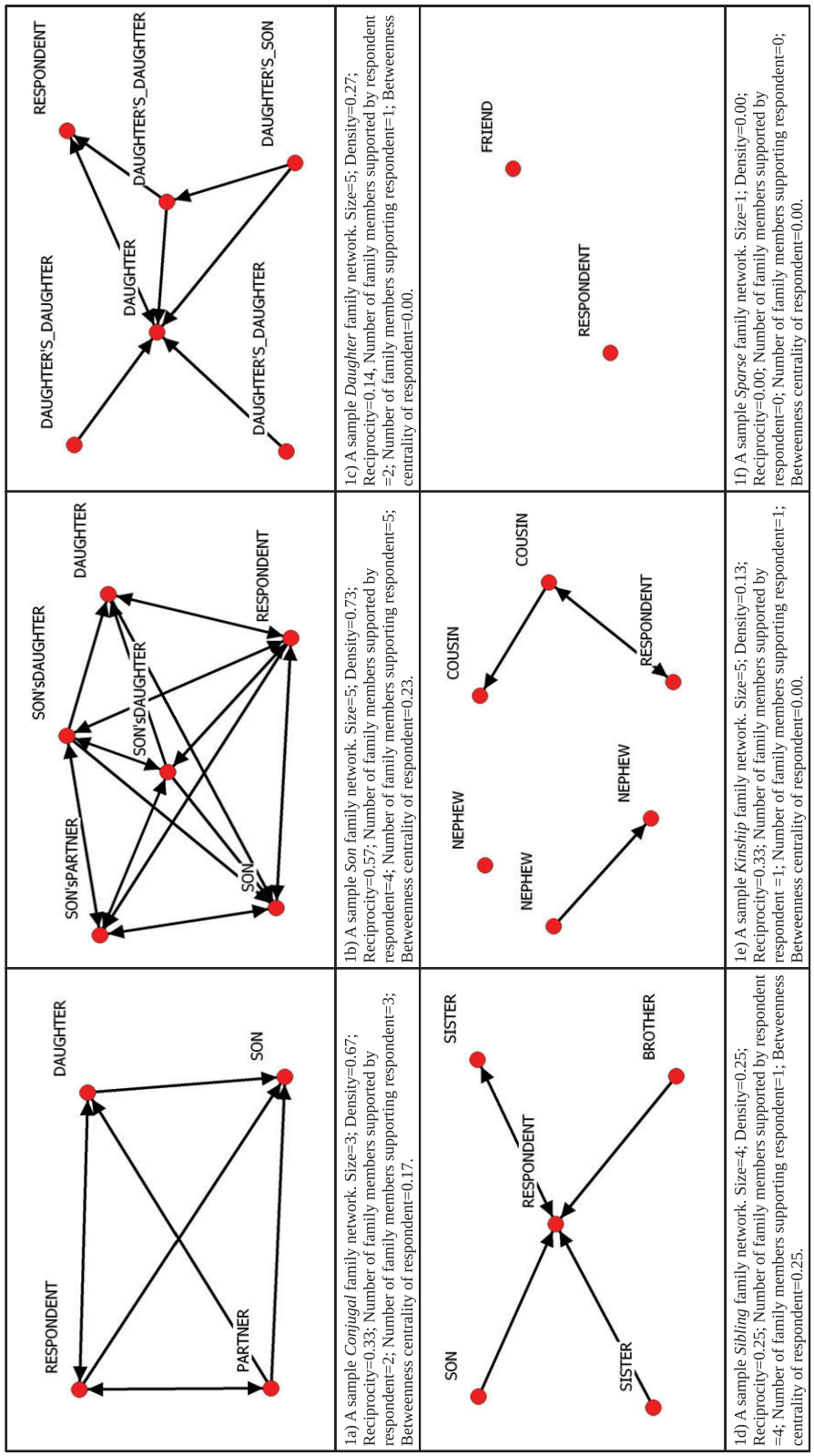
Table 5. *Social capital indexes by predictors,* F *test, and Kruskal–Wallis test*

	Social capital indexes						
	Size	Density in family	Reciprocity in family	Number of family members supported by respondents (in-degree)	Number of family members supporting respondents (out-degree)	Betweenness centrality of respondent in family	% (*N*)
Total	3.39 (1.73)	0.37 (0.29)	0.39 (0.33)	2.11 (1.67)	1.50 (1.35)	0.15 (0.22)	100% (563)
Gender							
Female	3.43 (1.68)	0.34 (0.27)	0.38 (0.33)	2.22 (1.66)	1.45 (1.30)	0.18 (0.23)	49% (276)
Male	3.34 (1.77)	0.40 (0.30)	0.40 (0.34)	2.01 (1.68)	1.55 (1.39)	0.12 (0.20)	51% (287)
F(1, 561)	0.32 *(ns)*	5.62*	0.36 *(ns)*	2.32 *(ns)*	0.74 *(ns)*	10.53**	
Kruskal–Wallis	0.10 *(ns)*	4.59*	0.24 *(ns)*	2.50 *(ns)*	0.29 *(ns)*	13.70***	
Age							
Young-old (65–74)	3.55 (1.70)	0.37 (0.27)	0.40 (0.32)	2.44 (1.74)	1.56 (1.37)	0.16 (0.22)	39% (222)
Old-old (75–84)	3.45 (1.73)	0.37 (0.29)	0.40 (0.34)	2.12 (1.63)	1.53 (1.32)	0.15 (0.22)	35% (198)
Oldest-old (85+)	3.05 (1.74)	0.36 (0.30)	0.35 (0.34)	1.59 (1.48)	1.36 (1.35)	0.13 (0.22)	25% (143)
F(2, 560)	3.83*	0.96 *(ns)*	1.36 *(ns)*	11.83***	1.01 *(ns)*	1.03 *(ns)*	
Kruskal–Wallis	8.81*	0.48 *(ns)*	3.51 *(ns)*	21.54***	3.09 *(ns)*	6.96*	
Education							
Low	3.44 (1.61)	0.44 (0.30)	0.45 (0.32)	2.30 (1.65)	1.66 (1.35)	0.17 (0.24)	16% (87)
Average	3.34 (1.76)	0.34 (0.27)	0.37 (0.33)	2.03 (1.64)	1.41 (1.31)	0.15 (0.21)	61% (338)
High	3.47 (1.76)	0.41 (0.31)	0.41 (0.35)	2.26 (1.73)	1.64 (1.45)	0.14 (0.22)	23% (129)
F(2, 551)	0.30 *(ns)*	5.17**	2.29 *(ns)*	1.44 *(ns)*	2.03 *(ns)*	0.38 *(ns)*	
Kruskal–Wallis	0.75 *(ns)*	9.42**	5.20 *(ns)*	2.76 *(ns)*	4.47 *(ns)*	0.87 *(ns)*	
Citizenship							
Swiss born	3.47 (1.70)	0.37 (0.28)	0.38 (0.32)	2.16 (1.68)	1.50 (1.35)	0.15 (0.21)	66% (368)
Foreign born	3.20 (1.79)	0.37 (0.30)	0.40 (0.36)	1.99 (1.65)	1.47 (1.35)	0.14 (0.22)	34% (191)

Table 5. *Continued*

	Social capital indexes						
	Size	Density in family	Reciprocity in family	Number of family members supported by respondents (in-degree)	Number of family members supporting respondents (out-degree)	Betweenness centrality of respondent in family	% (*N*)
Total	3.39 (1.73)	0.37 (0.29)	0.39 (0.33)	2.11 (1.67)	1.50 (1.35)	0.15 (0.22)	100% (563)
$F(1, 557)$	2.98 *(ns)*	0.00 *(ns)*	0.47 *(ns)*	1.20 *(ns)*	0.09 *(ns)*	0.13 *(ns)*	
Kruskal–Wallis	2.85 *(ns)*	0.07 *(ns)*	0.11 *(ns)*	1.20 *(ns)*	0.14 *(ns)*	1.00 *(ns)*	
Functional health							
Perform alone ADLs	3.50 (1.70)	0.38 (0.28)	0.39 (0.32)	2.29 (1.67)	1.55 (1.36)	0.15 (0.22)	75% (415)
Difficulties in performing ADLs	3.02 (1.79)	0.35 (0.31)	0.38 (0.37)	1.61 (1.55)	1.34 (1.30)	0.13 (0.22)	25% (141)
$F(1, 554)$	8.18**	0.70 *(ns)*	0.22 *(ns)*	18.04***	2.55 *(ns)*	1.49 *(ns)*	
Kruskal–Wallis	8.50**	2.34 *(ns)*	0.93 *(ns)*	17.69***	2.93 *(ns)*	4.91*	
Institutionalization							
Not institutionalized	3.41 (1.72)	0.38 (0.29)	0.40 (0.33)	2.18 (1.67)	1.53 (1.38)	0.16 (0.22)	93% (511)
Institutionalized	2.89 (1.85)	0.30 (0.29)	0.31 (0.34)	1.22 (1.38)	1.14 (0.96)	0.06 (0.12)	7% (36)
$F(1, 545)$	3.10 *(ns)*	2.44 *(ns)*	2.38 *(ns)*	11.38**	2.80 *(ns)*	6.11*	
Kruskal–Wallis	3.11 *(ns)*	3.36 *(ns)*	2.68 *(ns)*	11.54***	1.71 *(ns)*	7.38**	

Note: Means and (standard deviations) are reported. ADLs = activities of daily living.
*$p < .05$. **$p < .01$. ***$p < .001$.



1a) A sample *Conjugal* family network. Size=3; Density=0.67; Reciprocity=0.33; Number of family members supported by respondent=2; Number of family members supporting respondent=3; Betweenness centrality of respondent=0.17.

1b) A sample *Son* family network. Size=5; Density=0.73; Reciprocity=0.57; Number of family members supported by respondent=4; Number of family members supporting respondent=5; Betweenness centrality of respondent=0.23.

1c) A sample *Daughter* family network. Size=5; Density=0.27; Reciprocity=0.14, Number of family members supported by respondent =2; Number of family members supporting respondent=1; Betweenness centrality of respondent=0.00.

1d) A sample *Sibling* family network. Size=4; Density=0.25; Reciprocity=0.25; Number of family members supported by respondent =4; Number of family members supporting respondent=1; Betweenness centrality of respondent=0.25.

1e) A sample *Kinship* family network. Size=5; Density=0.13; Reciprocity=0.33; Number of family members supported by respondent = 1; Number of family members supporting respondent=1; Betweenness centrality of respondent=0.00.

1f) A sample *Sparse* family network. Size=1; Density=0.00; Reciprocity=0.00; Number of family members supported by respondent=0; Number of family members supporting respondent=0; Betweenness centrality of respondent=0.00.

Figure 1. Sampled family networks.

Table 6. *Regression coefficients for indexes of social capital (emotional support;* N = *514)*

	Indexes of bonding social capital											
	Size				Density in family				Reciprocity in family			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
Predictor	β	*SE*	β	*SE*	β	*SE*	β	*SE*	β	*SE*	β	*SE*
Family networks[a]												
Conjugal	−0.14	(.10)	−0.24*	(.11)	0.10***	(.02)	0.11***	(.02)	0.07**	(.02)	0.07*	(.03)
Son	0.93***	(.19)	0.76***	(.19)	0.10**	(.04)	0.12**	(.04)	0.06	(.04)	0.08	(.05)
Daughter	0.93***	(.16)	0.82***	(.17)	−0.03	(.03)	−0.02	(.03)	−0.04	(.04)	−0.03	(.04)
Sibling	0.40**	(.14)	0.42**	(.15)	0.06*	(.03)	0.05	(.03)	0.08*	(.03)	0.06	(.04)
Kinship	0.33	(.18)	0.56**	(.20)	−0.03	(.04)	−0.06	(.04)	0.05	(.04)	0.03	(.05)
Sparse	−2.44***	(.13)	−2.33***	(.14)	−0.19***	(.03)	−0.20***	(.03)	−0.21***	(.03)	−0.22***	(.03)
Male[b]			−0.15	(.13)			0.05*	(.03)			0.02	(.03)
Age[c]												
Young-old (65–74)			0.16	(.09)			−0.01	(.02)			0.01	(.02)
Old-old (75–84)			0.10	(.08)			0.01	(.02)			0.02	(.02)
Oldest-old (85+)			−0.27**	(.10)			−0.00	(.02)			−0.03	(.02)
Difficulties in performing one or more ADLs alone[d]			−0.05	(.15)			0.01	(.03)			0.03	(.04)
Institutionalized[e]			−0.05	(.28)			−0.01	(.06)			−0.06	(.07)
Education[f]												
Low			−0.01	(.11)			0.05*	(.02)			0.05	(.03)
Middle			−0.05	(.08)			−0.04*	(.02)			−0.04	(.02)
High			0.06	(.10)			−0.01	(.02)			−0.01	(.03)

Table 6. *Continued*

	Indexes of bonding social capital											
	Size				Density in family				Reciprocity in family			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
Predictor	β	*SE*	β	*SE*	β	*SE*	β	*SE*	β	*SE*	β	*SE*
Foreign born[g]			−0.17	(.13)			0.01	(.03)			0.02	(.03)
Conjugal status[h]												
Married			0.12	(.12)			0.04	(.02)			0.03	(.03)
Cohabiting			0.12	(.26)			−0.02	(.05)			−0.05	(.06)
Widowed			−0.02	(.14)			0.04	(.03)			0.02	(.03)
Divorced			−0.02	(.16)			−0.03	(.03)			0.01	(.04)
Single			−0.20	(.23)			−0.03	(.05)			−0.00	(.06)
Having children[i]			0.18	(.24)			−0.08	(.05)			−0.02	(.06)
Having grandchildren[j]			0.27	(.17)			−0.03	(.03)			−0.05	(.04)
Having siblings[k]			0.11	(.14)			0.02	(.03)			0.02	(.03)
χ^2	3,735.7***		3,848.4***		1,126.8***		1,174.6***		862.5***		871.6***	
$F(df)$	72.02***	(5, 508)	19.75	(20,493)***	17.82	(5,508)***	5.80***	(20,493)	11.60***	(5, 508)	3.53***	(20,493)
Adjusted R^2	0.41		0.42[l]		0.14		0.16[l]		0.09		0.09	

Note: Unstandardized β (*SE*) are presented. ADLs = activities of daily living.

[a]Overall mean of family networks as reference. [b]Female as reference. [c]Overall mean of age categories as reference. [d]Able to perform alone eight activities of daily living as reference. [e]Not institutionalized as reference. [f]Overall mean of levels of education as reference. [g]Swiss born as reference. [h]Overall mean of conjugal status categories as reference. [i]Having no children as reference. [j]Having no grandchildren as reference. [k]Having no siblings as reference. [l]Significant change in R^2.

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 7. *Regression coefficients for indexes of social capital (emotional support; N = 514)*

	Indexes of bridging social capital											
	Number of family members supported by respondents				Number of family members supporting respondents				Betweenness centrality of respondents in family			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
Predictor	β	*SE*	β	*SE*	β	*SE*	β	*SE*	β	*SE*	β	*SE*
Family networks[a]												
Conjugal	0.04	(.12)	−0.06	(.12)	−0.05	(.10)	−0.12	(.11)	−0.01	(.02)	−0.02	(.02)
Son	0.64**	(.21)	0.48*	(.22)	0.83***	(.18)	0.83***	(.19)	0.02	(.03)	−0.00	(.03)
Daughter	0.03	(.18)	−0.01	(.19)	0.04	(.15)	0.01	(.16)	−0.03	(.03)	−0.04	(.03)
Sibling	0.72***	(.16)	0.78***	(.17)	0.34*	(.13)	0.27	(.14)	0.07**	(.02)	0.08***	(.02)
Kinship	−0.07	(.21)	0.06	(.23)	−0.11	(.18)	0.02	(.19)	0.02	(.03)	0.04	(.03)
Sparse	−1.36***	(.15)	−1.26***	(.15)	−1.04***	(.13)	−1.02***	(.13)	−0.07**	(.02)	−0.06**	(.02)
Male[b]			−0.35*	(.14)			0.07	(.12)			−0.05*	(.02)
Age[c]												
Young-old (65–74)			0.23*	(.10)			−0.06	(09)			−0.00	(.02)
Old-old (75–84)			0.12	(.09)			0.05	(.08)			0.00	(.01)
Oldest-old (85+)			−0.35**	(.11)			0.01	(.10)			−0.00	(.02)
Difficulties in performing one or more ADLs alone[d]			−0.31*	(.17)			0.03	(.15)			−0.02	(.03)
Institutionalized[e]			−0.25	(.31)			−0.10	(.27)			−0.07	(.05)
Education[f]												
Low			0.17	(.13)			0.06	(.11)			0.01	(.02)
Middle			−0.21*	(.09)			−0.11	(.08)			−0.01	(.01)
High			0.04	(.12)			0.05	(.10)			0.00	(.02)

Table 7. *Continued*

	Indexes of bridging social capital											
	Number of family members supported by respondents				Number of family members supporting respondents				Betweenness centrality of respondents in family			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
Predictor	β	*SE*	β	*SE*	β	*SE*	β	*SE*	β	*SE*	β	*SE*
Foreign born[g]			−0.14	(.14)			0.07	(.12)			0.00	(.02)
Conjugal status[h]												
Married			0.16	(.14)			0.21	(.12)			−0.00	(.02)
Cohabiting			0.34	(.30)			−0.08	(.25)			−0.04	(.04)
Widowed			−0.03	(.16)			0.05	(.14)			0.05*	(.02)
Divorced			−0.12	(.18)			0.13	(.16)			0.03	(.03)
Single			−0.36	(.26)			−0.30	(.22)			−0.04	(.04)
Having children[i]			0.44	(.27)			−0.05	(.23)			0.09*	(.04)
Having grandchildren[j]			−0.19	(.19)			0.01	(.17)			−0.04	(.03)
Having siblings[k]			−0.12	(.16)			0.34*	(.13)			−0.01	(.02)
χ^2	1, 138.3***		1, 250.2***		822.4***		839.6***		271.1***		309.1***	
F (df)	19.78***	(5,508)	7.48***	(20,493)	16.59***	(5, 508)	4.95***	(20,493)	3.69**	(5,508)	2.45***	(20,493)
Adjusted R^2	0.16		0.20[l]		0.13		0.13		0.03		0.05[l]	

Note. Unstandardized β (*SE*) presented. ADLs = activities of daily living.

[a]Overall mean of family networks as reference. [b]Female as reference. [c]Overall mean of age categories as reference. [d]Able to perform alone eight activities of daily living as reference. [e]Not institutionalized as reference. [f]Overall mean of levels of education as reference. [g]Swiss born as reference. [h]Overall mean of conjugal status categories as reference. [i]Having no children as reference. [j]Having no grandchildren as reference. [k]Having no siblings as reference. [l]Significant change in R^2.

*$p < .05$. **$p < .01$. ***$p < .001$.

of respondents in providing and mobilizing support within these family networks. These results confirm that both the *Conjugal* and *Son* family networks presented the highest density among all types of family networks, giving respondents access to bonding social capital. In *Daughter* family networks, scores of all measures of social capital except for size ($\beta = 0.82$, $p < .001$) did not differ significantly from average scores. Respondents in such family networks were not as active as those in *Son* family networks in providing and mobilizing emotional support. *Daughter* family networks were, therefore, associated with low social capital. Respondents in *Sibling* family networks held a more central position than other respondents, with a higher betweenness centrality ($\beta = 0.08$, $p < .001$), as they were much more active in providing emotional support ($\beta = 0.78$, $p < .001$) than average. These results confirmed that *Sibling* family networks presented features of bridging social capital. In *Kinship* family networks, scores of all measures except for size ($\beta = 0.56$, $p < .01$) did not differ significantly from average scores. *Sparse* family networks had the lowest scores on all social capital indicators. Both *Kinship* and *Sparse* family networks were associated with low bonding and bridging social capital.

Males had denser family networks ($\beta = 0.05$, $p < .05$). Compared to females, they were also less likely to provide support ($\beta = -0.35$, $p < .05$) and be central ($\beta = -0.05$, $p < .05$) in their family networks. With regard to age, the oldest-old had smaller family networks ($\beta = -0.27$, $p < .01$) and were less likely to provide support to their family members ($\beta = -0.35$, $p < .01$), while the young-old were more likely to provide support to their family members ($\beta = 0.23$, $p < .05$). Likewise, the respondents who reported functional difficulties were less likely to provide support to their family members than those in better functional health ($\beta = -0.31$, $p < .05$).

Regarding control variables, results show that people who were less educated were more likely to be included in dense family networks ($\beta = 0.05$, $p < .05$), while respondents with a middle level of education were less likely to have dense family networks ($\beta = -0.04$, $p < .05$) and provide support to their family members ($\beta = -0.21$, $p < .05$). Older adults who were widowed (with no cohabiting partner) were more likely to be central ($\beta = 0.05$, $p < .05$) in their family networks. Citizenship had no significant impact on any index of social capital. Respondents who had at least one living child were more likely to be central ($\beta = 0.09$, $p < .05$) in their family networks. Having at least one living sibling was associated with receiving support ($\beta = 0.34$, $p < .05$). Overall, however, the inclusion of measures for the pool of available relatives did not challenge the significant effects of the composition of family networks on social capital.

Discussion

This study confirms that networks of significant family members are diverse in old age. Six types of family networks were found, with an unequal emphasis on partners, children, siblings, blood relatives, and friends, indicating that older adults develop a diversity of family networks beyond spouses and children.

The various ways of defining significant family members foster distinct types of social capital. Following H1a, the inclusion of a partner and children as significant family members in *Conjugal* family networks is associated with bonding social capital, as these networks featured high density, high support reciprocity, and low centrality. Partners are interconnected by reciprocal support because of their shared residence and history (Campbell et al., 1999). Because of aging and health decline, partners become even more dependent on each other. Thus, they tend to be more connected to the same alters, such as their children (Cornwell, 2011). Bonding social capital is also dominant in *Son* family networks, as density and reciprocity are also high. As revealed in previous studies, the presence of children and grandchildren in families contributes to the increasing density of networks and their intergenerational closure (Coleman, 1988) by fostering exchanges and collective activities among members from several generations (Bucx et al., 2008). In *Son* family networks, older adults are under the scrutiny of their sons and their sons' partners, who can collectively supervise and take care of them in

case of need (Cornwell, 2009, 2011). Indeed, respondents benefit from a large amount of support from their family members. However, contrary to respondents in *Conjugal* family networks, those in *Son* family networks are also very active in support provision. Although dense sets of family relationships are highly supportive, they are also associated with a decrease in older adults' autonomy and self-control (Cornwell, 2011) and with a large level of ambivalence and conflict (Connidis & McMullin, 2002; Lüscher, 2002).

By contrast, and in accordance with H1b, bridging social capital is mainly present in family networks focused on siblings. In these family networks, respondents—who are often single and childless—represent an important source of support within their family networks, as they are actively involved in providing support to their siblings. They actually provide more support to them than they receive from them. Sibling relationships are well known for the provision of emotional support, particularly by older individuals without children or partners (Campbell et al., 1999; Connidis, 2010). Despite this imbalance between support received and support provided, focal persons in *Sibling* family networks benefit from a larger structural autonomy, which gives them access to bridging social capital.

Focal individuals in *Kinship* family networks have family connections with a variety of more remote kin, such as in-laws, cousins, nephews/nieces, and stepchildren, as well as friends who are considered family members. This diversity is conducive to a rather low level of bonding or bridging social capital. However, the number of potentially supporting significant family members and the overall reciprocity remain fairly high, which shows that family networks based on *Kinship* feature some social capital. This is not the case for focal persons in *Sparse* family networks, which show low scores in both bonding and bridging social capital. Approximately one in six focal individuals belongs to this family network, a situation of isolation from family members whose negative consequences have been stressed in the literature (House, 2001; Pinquart & Sörensen, 2000; Shor et al., 2013; Thoits, 2011). Interestingly, friends who are considered to be family members are overrepresented in *Sparse* family networks, whereas in other life stages, *Friendship* family networks were distinct from *Sparse* family networks (Widmer, 2010).

As hypothesized (H2a), the gender composition of family networks also makes a difference for family-based social capital but not in the expected way. While *Son* family networks are dense and reciprocal, family networks focused on daughters are sparse and feature a low level of reciprocity, with a low centrality of the focal person. *Daughter* family networks are associated with low bonding and bridging social capital. Although these results challenge the expectation that family networks with a larger number of women develop more bonding social capital, gendered processes are at the forefront as explanations. Daughters-in-law in *Son* family networks are much more often included as significant family members than sons-in-law in *Daughter* family networks. Thus, daughters-in-law are largely involved in support exchanges with older adults, which explains the high density of *Son* family networks and, more generally, the bonding type of social capital that these family networks provide. The bonding social capital dominant in *Son* family networks has much to do with the key role of daughters-in-law, particularly those having a high-quality relationship with their mothers- and fathers-in-law, in maintaining positive ties between their own children and their husband on one side and their husband's parents on the other side (Fingerman, 2004).

This is not the case in *Daughter* family networks, in which focal persons did not include their sons-in-law as significant family members; respondents did not need sons-in-law as support providers, as they can count on their own daughters, who are normatively expected to fulfill their caregiving roles (Silverstein et al., 2006). Interestingly, the inclusion of grandchildren in *Daughter* family networks does not contribute to an increasing density of supportive ties, as in *Son* family networks. Instead, it contributes to the imbalance between support received and given—respondents provided much more support to their family members than they received from them. Furthermore, older adults'

daughters played the role of intermediaries in these family networks, connecting their older parents with their own children and channeling support within their family networks. This structure has consequences for social capital, as daughters have to face the task of providing care to their older parents alone (Pinquart & Sörensen, 2006; Silverstein et al., 2006); sons, on the other hand, strongly involve their female partners in support relationships with their aging parents. This may challenge density, reciprocity, and respondents' centrality within family networks of older adults focused on daughters. The results show that family networks focused on daughters provide less bonding social capital than family networks focused on sons, despite the larger role of women in support provision. Overall, this study suggests that gender norms and expectations regarding support have unintended consequences for social capital among the elderly.

This is also true for the older adult's gender. Although older women are more central and more active than older men in providing support to their family members, they also have less dense family networks and a lower bonding social capital (but a larger bridging social capital). This result confirms our hypothesis (H2b) and is consistent with other studies that show the greater propensity of women to develop close ties with a variety of family members (Antonucci et al., 2007). Older men's more pronounced selectivity and stronger focus on partners and children (Shaw, Krause, Liang, & Bennett, 2007) may explain the smaller number of family members they support and the higher density of their family networks. This gender-based inequality in the strength of family-based bonding and bridging social capital may explain gender differences related to health and self-identity.

With regard to age, the oldest-old mention fewer significant family members than do the young-old and the old-old, a result that is consistent with the socioemotional selective processes by which aging adults select the most emotionally rewarding ties while disengaging from those that are less meaningful (Carstensen, 1992). Likewise, the oldest-old and people with disabilities provide less support than those who are younger and healthier, a result that shows that age and poor health may limit older adults' capacity to play an active role in sustaining support intensity in family networks (Broese van Groenou & Van Tilburg, 2007). However, contrary to our hypothesis (H3) and to previous findings (Cornwell, 2009), density and centrality do not differ according to age and functional health, which means that the oldest-old and those with functional limitations remain central and, to at least some extent, maintain access to bridging social capital in their family networks.

These results hold when statistically controlling for a set of additional variables related to the pool of available relatives. Most research on personal networks in old age relates variations in social capital to demographics (Ajrouch et al., 2005; Antonucci, 2001; Broese van Groenou & Van Tilburg, 2007; Cornwell et al., 2008; Moren-Cross & Lin, 2006). The results of this study further elaborate on the fact that focal individuals' definitions of family has many more consequences for social capital in old age than the mere fact of having partners, children, or siblings in their pool of relatives. One's presence in the pool of relatives does not necessarily translate into being considered a significant family member. Similar to networks in other age groups (De Carlo et al., 2014), family networks in old age are, indeed, the outcomes of a mix of agency and structural influences.

Implications

This study has some implications for future research. First, when exploring families in later life, scholars should take into account these different definitions of family, not only household composition and legal or blood kin. This matters, as lay definitions of family are associated with distinct types of social capital. More research linking lay definitions of family and the egocentric network approach is needed to explore how older adults' family-based social capital influences health and well-being in later life. Finally, the results of this study have important policy implications. The plural definitions of family in old age are usually not acknowledged by legal systems, and they often

contradict the legal definitions of family, which are typically (including in Switzerland) based on biological and marital criteria. Legally, only blood or legal family members are authorized representatives in important decisions (hospitalization, institutionalization, and medical treatments) regarding older parents in situations of diminished legal capacity (e.g., in the case of Alzheimer's disease). This is true even if the family members do not belong to the focal persons' significant family. Alternatively, voluntary kin are usually disregarded as authorized representatives. This may be even more critical in countries with liberal welfare regimes (Esping-Andersen, 1990), such as Switzerland; this type of regime increases the primacy of the legal family in order to avoid state interference within the family realm.

Limitations

This study has some limitations. The first limitation holds that the name generator of family members was limited to five alters to keep the interview time manageable within the frame of a multifaceted survey such as VLV. Based on evidence stemming from other age groups (Widmer, 2010), it is quite likely that the inclusion of a greater number of alters would have revealed an even larger diversity of family networks in old age by allowing respondents to include weaker family ties. Indeed, the limitation to five alters focused the study on core family members, as the most salient alters are cited first in free-listing tasks (D'Andrade, 1995). The limit to five alters, however, also had some advantages. First, it allowed us to reduce the respondents' burden in completing the VLV survey, as increasing the number of alters listed could jeopardize the data's quality (Merluzzi & Burt, 2013). The limit to five alters also enabled us to control for interviewers' effects on the size of family networks, which is a widespread bias in surveys on personal networks (Marsden, 2003). Following previous validation studies (Widmer, 2010), the name generator was limited to citing "significant family members" and therefore did not explicitly refer to "family-like relationships," which would have provided a greater diversity of family members not based on legal or blood kin (Braithwaite et al., 2010). The results of our study nevertheless showed that, even with this rather restrictive name generator, many individuals in old age define their significant family members well beyond partners and children. Finally, we collected cross-sectional data, and therefore, we could not study the development of family networks and social capital across the various transitions that occur in old age. To address this shortcoming, future research on family networks in old age should include longitudinal designs.

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