The geography of family networks

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Introduction

Geographical proximity (living nearby) can be expected to have an important influence on contacts and solidarity between family members. The popular picture is that nowadays family members live further away from each other than they did a few decades ago. If that were indeed the case, then the preconditions for the giving and receiving of help and care to and from family members would be diminished.

Some forms of contact between family members are hardly influenced by geographical proximity, because they can take place by telephone, post, or e-mail. An example of contact with little sensitivity to distance is the exchange of emotional support (De Jong Gierveld & Fokkema, 1998). Other forms of contact are made easier by geographical proximity, but are still possible from a longer distance (incidental visits, an anniversary). For some other forms of contact proximity is of great importance. This applies in particular to the giving of instrumental support, particularly where frequent and/or immediate help or care is concerned. A few studies have shown that a strong decline with distance does indeed occur in instrumental support between family members (De Jong Gierveld & Fokkema, 1998; Joseph & Hallman, 1998; Litwak & Kulis, 1987) and in contacts and joint activities of family members (Bengtson & Roberts, 1991; Grundy & Shelton, 2001; Lawton, Silverstein & Bengtson, 1994; Smith, 1998).

Surprisingly enough, little is known about the actual distances between the residential locations of family members in the Netherlands. Some American and British studies have investigated how far away from their parents adult children live (Clark & Wolf, 1992; Lin & Rogerson, 1995; Rogerson, Burr & Lin, 1997; Rogerson, Weng & Lin, 1993; Silverstein, 1995; Warnes, 1984, 1986). For Britain, Warnes (1986) found that, depending on the social classes of the parents and the children, between 5 and 15 percent of the children of retired parents lived within one kilometre, between a quarter and just over half within five kilometres, and between four and 16 percent over 200 kilometres. For the United States, Rogerson, Weng & Lin found that for about one quarter of adult children the parents lived closer than at a distance of five miles (eight kilometres), and also for about a quarter they lived further than 250 miles (400 kilometres) away. Considering the completely different scale and geography of the Netherlands in comparison with the United States or Great Britain – the largest possible distance within the Netherlands is not much more than 300 kilometres –, the findings of these studies probably of limited relevance for the situation in the Netherlands. For the Netherlands, data on travelling time to family members are available in the NESTOR-LSN survey among older adults (Broese van Groenou et al., 1995). From these data, Dykstra and Knipscheer (1995) derived that 14.1%

of adults aged 55-89 with living children did not have any of their children living within 30 minutes travelling time, 24.5% had one, 27.3% had two, 15.6% had three, and 18.5% had four children or more living within that travelling time.

As far as we are aware, the Netherlands Kinship Panel Study (NKPS) is the first nationally representative survey containing data on the residential locations of a large number of family members, using a detailed indicator of location on a low spatial level. In this chapter, we explore the geographical distances between family members in the Netherlands using NKPS. A description is given of distances to parents, children, and siblings separately, and to all family members (including all mentioned and the parents-in-law). The research question of the chapter is as follows: How far do people live away from their family members, how do the distances to family members relate socio-economic status, educational level, age, household composition, housing tenure, degree of urbanization and health, and how have distances between family members changed through time? This question is answered using and both descriptive methods and OLS regression models.

Distances to family members: theory and previous research

It can safely be assumed that the vast majority of people start their life courses living with their parents and, if present, siblings. Therefore, the distances to parents and siblings of a person at one particular moment in time are the result of the residential relocations this person and his or her parents and siblings have undertaken during his or her life course. These relocations lead to changes in distance to family members either coincidentally or on purpose. Therefore, explanations for the distance to family members should be sought in factors hampering or enhancing residential relocations that lead to a change in distance either coincidentally or by means of a deliberate action to stay near, move closer to or move away from family members.

Factors influencing the likelihood of residential relocations

There are powerful mechanisms through which the distance to family members is likely to be short and to remain so over the life course. The low likelihood of people to change residence has also been termed residential inertia (Huff & Clark, 1978). A major cause for this inertia is that moving is costly in both a financial and non-financial sense, and will only take place if a rather strong trigger exists (Mulder, 1996). This is particularly the case for exactly those moves that cause a major increase in distance to family members: migrations over a longer distance. For people to migrate, the relative advantage of a new location should at least exceed the cost of moving (Sjaastad, 1962). The extra cost of migration compared with residential mobility (relocation over a short distance) has to do with the fact that local ties, also denoted as location-specific capital (DaVanzo, 1981) may be endangered by migration. Location-specific capital is therefore a major factor binding people to a place. It may have to do with the dwelling itself, or with its location with respect to work, friends, cultural facilities, and the like. The proximity of family members may in itself be an important part of location-specific capital.

Older people are considerably less likely to change residence than younger people. The vast majority of residential relocations take place in the years just after leaving the parental home (see, for example, Dieleman & Mulder, 2002). One might therefore expect that the present distance between parents and children is mainly caused by the past residential mobility of children. This was indeed found by Warnes (1986) for the United Kingdom. Growing older increases the likelihood of having moved in the past and it also increases the likelihood that one's children and siblings have moved. At the same time,

some older people might use their greater freedom in choosing a residential location after retirement and move towards their children. So, on balance, it is not clear beforehand what to expect for the distances to people's family members when they are older compared with when they are young.

Very pronounced gender differences in migration are not usually found, but particularly in young adulthood women are somewhat more likely to migrate than men (see, for example, Boyle, Halfacree & Robinson, 1998). It has also been found that women are more likely to move long distances for reasons of marriage (Mulder & Wagner, 1993). This might lead them to live somewhat further away from their family than men.

The presence of other household members also ties people to a place. People living alone are indeed more likely to move than couples or families with children (Mulder, 1993). Apart from being less geographically mobile in general, families with children might be particularly reluctant to migrate away from family members. Families with children might attach particular importance to the proximity of family members, because they might value their support in caring for the children or the opportunity for their children to be in close contact with grandparents, aunts and uncles. Vice versa, grandparents might attach particular importance to living near their children and grandchildren; more so than parents of people without children value living near their children. We therefore expect the distance to family members, and particularly to parents, to be shorter for households with children than for other households.

Because of the greater dispersal of specialist than non-specialist jobs, the highly educated and those with high socio-economic status are much more likely to accept a job far from their home and to migrate for that job (Börsch-Supan, 1990; Mulder, 1993; Simpson, 1992; Van Ham, 2001). Highly educated are also more likely to have moved for educational reasons. We therefore expect the distance to family members to be greater for the highly educated than for others and to be positively associated with the socio-economic status. Those enrolled in education are also expected to live far from their family: we only observe those enrolled who live away from their parents, and it is likely that many of them have moved out because the school or university was located too far from the parental home to commute. It is not immediately obvious what to expect for dual-earner compared with one-earner households. All else equal, dual-earner couples are less likely to migrate than one-earner couples (Smits, Mulder & Hooimeijer, 2003). But at the same time, dual-earner couples are found most among the more mobile categories of the population: the highly educated, those with high socio-economic status, and the younger birth cohorts.

Home-ownership is an important source of local ties. Homeowners are much less likely to move or migrate than renters (Helderman, Mulder & Van Ham, 2004; Mulder, 1993). It is therefore expected that homeowners, and those who ever owned a home, live closer to their family members than renters.

In urbanized areas the availability of jobs and educational opportunities is greater than in rural areas. Those who currently live in urban areas are therefore quite likely to have migrated there at some point in time – most likely when they were young, and most likely away from their parents. Those who currently live in rural areas are more likely to have grown up there. So, we can expect people in urban areas to live further away from their parents than others. At the same time, the children of those who currently live in urban areas are likely to have grown up in that area and have had little necessity to move away, whereas those currently living in rural areas are likely to have seen their children move away. We can therefore expect people in urban areas to live closer to their children.

Health problems are likely to lead to an increase in the importance attached to proximity of family members. People with health problems may therefore be reluctant to move away from family members and likely to move towards them. They are therefore expected to live closer to family members than those without health problems.

In studies of the residential behavior of international migrants in various countries and cities (for example, Bowes et al., 1997; Murdie, 2002) it has been shown that migrants tend to move near to people from their country of origin upon first arrival and that the presence of family members plays an important part in determining the migrant's location. Furthermore, research has shown that there are differences in family solidarity between ethnic categories; migrants from certain non-western countries have stronger solidarity norms than the native born in western countries (Rosenthal, 1986; for migrant groups in the Netherlands: Abraham, 1996; Yerden, 2000). Migrants might therefore show a greater reluctance to move away from family members and a greater propensity to move near them. We therefore expect the distance to family members to be smaller among foreign-born than among native-born. Because a large part of the family of many migrants has stayed behind in their country of origin, foreign-born are expected to have fewer family members, and therefore also fewer living close by, than native-born.

Distances between parents and children versus distances between siblings

The vast majority of migrations are undertaken before people have children. So, typically, there is a fixed place of residence of the parents during a child's adult life. The child moves away from this place of residence upon leaving the parental home, either to start a separate household nearby or to move somewhere else for school or work. Further migrations may follow. These are typically also undertaken by the child rather than the parents. If we consider non-coresiding siblings, the picture is different. We then have persons of the same generation, each being equally likely to have moved away from the parental home. We therefore expect distances between siblings to be greater than distances between parents and their children.

Because most migrations are undertaken by the younger generation, it can be expected that characteristics of the children are more influential to the distance between parents and children than those of the parents. Therefore, the distance to parents is expectedly to a greater extent explained by individual and household characteristics than the distance to children. Because siblings belong to the same generation and are equally likely to migrate for their own reasons, we expect the smallest influence of individual and household characteristics on distances to siblings.

There is also another reason to expect that parents and children live closer to one another than siblings, and that there is a smaller influence of individual and household characteristics on distances between siblings than on distances between parents and children. Parents and children tend to feel more obliged to each other than siblings (Rossi & Rossi, 1990). So, to the extent that people deliberately undertake action to stay near or move closer to family members, one would expect them to do so more with respect to their parents or children than with respect to their siblings. Regrettably, we have no way of distinguishing with certainty between coincidental differences in distances and deliberate actions. But the origin of our hypotheses does differ: for health problems and for differences between those with children and those without children the hypotheses are (partly) based on expectations about deliberate actions, whereas for the other individual and household characteristics they are mainly based on coincidental changes in distance.

Changes through time in distances between parents and children

Although many would probably guess that people live further away from their family members than they did a few decades ago, changes in distance to family members have not been investigated before. The reasons why one might expect an increasing distance to family members over the last few decades ago mainly have to do with the growth in the proportion of highly educated. Those with high levels of education are particularly likely to migrate, so their likelihood of living far away from family members is probably also high.

On an even longer term, changes in the structure of the economy have undoubtedly also played a role in changes in distance. The decrease in farming jobs, for example, has led to a substantial flow of rural-urban migration up to the 1960s, which has probably led many family networks to become more dispersed.

It should be stressed that an increase in the distances between family members has not necessarily led to a decrease in opportunities for contact. Even if the distances have increased, greater travel speed might well have offset the extra time needed to cover greater distances. This greater speed was caused by increased car ownership and improvements in infrastructure.

Investigating distances to family members using NKPS

The data are from the main sample of the first wave of the Netherlands Kinship Panel Study, conducted in 2002-2003 among 8155 respondents representative of the Netherlands population aged 18-79 and not living in institutions. From these, we selected those respondents living independently from the parents (N = 7877). The data contain a wealth of information about relations between so-called Anchor respondents and their partners, parents, parents-in-law, children and siblings.

The residential locations of the Anchor and all these family members were measured in detail using the full six-digit postcode. A postcode is usually assigned to only one side of part of a street and thus to up to a few tens of addresses. Distances to family members were derived from the co-ordinates of these postcodes rounded to 100s of metres. They were measured along a straight line. Distances were only calculated for non-coresiding family members. Furthermore, distances to people living outside the Netherlands are not included. Because the Netherlands is a small country, this leads to a rather short maximum distance to family members compared with larger countries. The observed maximum distance to any family member in the analysis is 281.6 kilometres (quite close to the theoretical maximum of not much over 300 kilometres).

The measurements of most independent variables (age, household situation, level of education completed, employment status) were straightforward. The socio-economic status of the job held by the Anchor respondent was measured using the International Socio-Economic Index (ISEI; Ganzeboom, De Graaf & Treiman, 1992). In the multivariate analyses, those not having a job were assigned the average ISEI. This is a standard procedure to obtain a reliable parameter estimate while not having to exclude respondents with no known ISEI from the analysis. The ISEI was divided by 10 to obtain better interpretable parameter estimates. The variable ‘ever homeowner’ indicates whether the respondent had ever become the owner of a home in which he or she lived. Degree of urbanization was measured as the address density of the municipality inhabited by the respondent, provided by Statistics Netherlands. Respondents were categorised as having health problems whenever they reported their general health was bad or very bad or whenever they reported they had prolonged illnesses, health disorders or handicaps that caused severe or light limitations in their daily activities.

With the available data we have only limited opportunities to study changes through time in the distances between family members. We do have some information about the proximity of grandparents when the NKPS respondents were fifteen years old: respondents were asked whether their grandparents lived in the same place of residence at that time. Using this information for respondents of various ages, we can reconstruct the percentage living near grandparents through time, and thereby also the percentage of people with 15-year-old children living near parents.

Descriptive statistics are given of the association between individual and household characteristics and various indicators of distances to family members: the number of family members outside the household; the average distance to all family members together (that is, parents, children, siblings and parents-in-law); the average distances to the parents, the children and the siblings separately; the number of family members living at a distance below one kilometre; and the percentage having at least one family member living that close. For the descriptive statistics, we use the NKPS weights for individuals that correct for selective non-response and the use of an address rather than a person sample.

Next, OLS regression models of average distances are used to investigate the influence of individual and household characteristics of the Anchor respondent on the average distance to all family members and the average distances to parents, children and siblings separately. The regressions are estimated using unweighted data. To ensure comparability with other chapters in this book, so-called adjusted means based on analysis of variance are also given (see Appendix 1). A great advantage of using distance directly in regression models is the ease of interpretation of the findings – any parameter or adjusted means is expressed in kilometres. It can be argued, however, that distance in kilometres is not the best specification of the dependent variable. This is because it is likely that many factors matter more to a one-kilometre difference in distance close by (say, a difference between one and two kilometres) than to such a difference far away (say, a difference between 100 and 101 kilometres). To acknowledge this difference between short and long distances, additional regression models have been estimated using the natural logarithm of the distance as the dependent variable. Before the calculation of logarithms, distances between 0 and 1 kilometre were recoded into one kilometre. These additional models are presented in Appendix 2.

Findings on distances between family members based on NKPS

Descriptive findings

People have on average about five family members (parents, children, siblings or parents-in-law) living outside the household and in the Netherlands for whom a distance is known. The percentage not having any of these family members is small (3%, not shown in tables). Only among the foreign-born is this percentage substantial: 23%. The average distance to these family members is 33.8 kilometres (Table #1). As expected, the average distance between parents and children is smaller than the average distance between siblings. This difference is quite substantial: the distance between parents and children is estimated to be just over 29 kilometres, whereas the distance between siblings is 39 kilometres. People have on average 0.6 family members living at a distance under one kilometre. 32% have at least one family member living at such a short distance.

<Table #1 about here>

Family members living abroad are not included in Table #1. Just to give an impression of how many people have family members abroad: Among all those who have a father who is alive, whose address is known and who lives outside the household, 7% report their father lives abroad. The same holds for 6% of mothers, 5% of children, 9% of siblings, 9% of fathers in law and 8% of mothers in law. Among those who have any living parent not sharing their household whose address is known, 7% have at least one parent abroad. Calculated in the same way, 9% have at least one child abroad, 16% at least one sibling and 9% at least one parent-in-law.

There is not a very pronounced age pattern in distances to family members (also in Table #1). The youngest age category (18-29), however, does seem to occupy a special position: they have considerably longer distances than those aged 30-39. It should be borne in mind that the youngest category is selective with regard to having left the parental home: we particularly observe those who have left home at a young age, most likely for reasons of education or work. The distances indeed appear to be extra long for those aged under 25 (not shown). Another striking finding is the long distances found for people aged over 70. These long distances might be caused by a tendency towards a further dispersal of families as family members grow older. Alternatively, they might be caused by selective survival of mobile people. For example, it is known that highly educated live longer than others, and they also migrate more. The higher age categories are somewhat more likely to have at least one family member living at a distance closer than one kilometre.

Considering the family network indicators for people in different household situations (Table #2), several findings stand out. The largest numbers of family members, and also the largest numbers living within one kilometre, are found for those living with a partner, probably because many of these have living parents-in-law. As expected, the smallest distances to family members (mainly parents and siblings) are found for those who have children. The longest distances are found for singles aged under 30.

<Table #2 about here>

Level of education matters enormously to the dispersal of families (Table #3). For those with up to primary education, we find an average distance of 23.9 kilometres to all family members, whereas this distance amounts to 55.1 for the university educated. Distances to parents differ even more: 15.5 kilometres for those with up to primary education and 55.3 for the university educated. For most distance indicators, the differences between the higher levels of education are even more pronounced than the differences between the lower levels. Again, this finding is most pronounced for distances to parents: the difference between up to primary and lower secondary level is less than 3 kilometres, the difference between lower secondary and upper secondary is about 7.5 kilometres, the difference between upper secondary and higher vocational level is 10 kilometres, and the difference between higher vocational and university level is no less than almost 20 kilometres. The university educated also have the smallest number of family members living within one kilometre and the smallest likelihood of having at least one family member living within one kilometre.

<Table #3 about here>

The pattern for socio-economic status is similar to that for level of education (Table #4): those with high status live further away from their family than those with low status, and the differences are most pronounced for distances to parents. Those without jobs are somewhere in the middle; this is a heterogeneous category of unemployed, housewives and retired people. For employment status, we mainly see a difference between those in education and others, in the expected direction: those in education live considerably further from their family members (Table #5). There is no great difference between one-earner and dual-earner couples (Table #6).

<Tables #4, 5 and 6 about here>

For home-ownership, we see an interesting difference between distances to parents and distances to children (Table #7). For distances to parents, we find the expected shorter

distance among those who have ever become a homeowner; this difference is not great (about 3 kilometres) but it differs significantly from zero. This is true even though homeowners are mainly found among those with high socio-economic status and high level of education (see, for example, Mulder & Wagner, 1998). But for distances to children, we find a significant difference the other way around: those who were ever homeowners live significantly further from their children than those who were not (by about 12 kilometres). Possibly, this difference has to do with the greater selectivity and later timing of home-ownership among the older generation.

<Table #7 about here>

The greater the degree of urbanization of the municipality a person inhabits, the greater the average distance to family members (Table #8). As expected, this is particularly true for the distance to parents. The association between degree of urbanization and distances both to parents and siblings is not monotonous: in municipalities with the lowest degree of urbanization the distance is greater than in the category above that. Possibly, the greater dispersal of homes in these areas makes it less likely that family members find a place of residence near each other. Also as expected, the association between degree of urbanization and the distance to children is in the opposite direction: those in urban areas live closer to their children than those in rural areas.

<Table #8 about here>

According to expectations, those with health problems live closer to their family members than those without (Table #9). For distances to parents and to children this difference is greater (4.5 kilometres for distances to parents, 4.2 kilometres for distances to children) than for distances to siblings (2.4 kilometres).

<Table #9 about here>

Finally, as expected, the foreign-born have fewer family members living in the Netherlands than the native-born, fewer living within one kilometre, and a smaller likelihood of having at least one family member within one kilometre (Table #10). The average distance to family members is shorter for foreign-born than for native-born. The only exception is the distance to children. This distance is estimated to be longer for foreign-born, but the difference with native-born is not significant. Note that only a small number (107) of foreign-born in the NKPS main sample have children living outside the household and in the Netherlands.

<Table #10 about here>

Descriptive findings: changes through time

In Figure #1, we look at whether parents and their adult children live in the same place of residence, broken down in 5-year periods, starting from 1940-1944 and ending in the 1990s (10-year period). The reports are from the children of these children (hence, the grandchildren are the respondents) and pertain to the situation when the grandchild was 15 years of age. This implies that we only consider the relationship between adult children and parents for adult children who ever had a child and we are looking at these adult children in their child rearing years.

<Figure #1 about here>

The figure shows a clear downward trend in the percentage of men and women who live in the same place as their parents. The decline is somewhat irregular in the early period (1940-1965) but becomes much clearer after that. Consistent with the usual finding that women migrate somewhat more than men, particularly around marriage, it is found that men's parents are more likely to live in the same place of residence than women's. Overall, it seems that the percentage of parent-child ties living in the same municipality has declined from around 50% to between 35 and 40%. This is not a dramatic decline, but a substantial decline nonetheless, and also in the expected direction.

Regression results

With the regression results (Table #11) it is possible to evaluate to what extent the associations between personal and household characteristics remain discernible and significant after controlling for other characteristics. This is certainly the case for age and gender differences in distances to family members. The differences between household types are less pronounced after controlling for other individual and household characteristics than they are before. Living in a couple with children only has a significant effect on the average distance to all family members and the average distance to siblings.

<Table #11 about here>

Clearly, level of education is a very important determinant of the distance to family members. All else equal, a university education adds over 35 kilometres to the average distance compared with a primary level of education. After controlling for level of education and other variables, the differentiation by socio-economic status (ISEI) is modest: the difference between someone with the lowest (1.6) and highest (8.8) score of ISEI divided by 10 is estimated to be 7.2 times 0.7 or 5 kilometres. For distances to parents this difference is estimated at 14 kilometres. As expected, enrolment in education leads to a significant increase in the distance to family members.

The effect of ever having been a homeowner is in the same direction as in the descriptive results (negative for the distance to parents, but positive for the distance to children). However, it is not significant for distances to parents. Before controlling for degree of urbanization, these effects were stronger and significant. This seems to indicate that the difference between owners and renters is partly due to the fact that owners tend to live in less urban areas than renters. As expected, degree of urbanization has opposite impacts for distances to parents (it increases the average distance) and distances to children (it decreases the distance).

Those with health problems are estimated to have slightly smaller distances to family members than those without, but this difference is significant only for the distance to all family members and the distance to parents, and not significant if the logarithm of the distance is taken as the dependent variable (see Appendix 2). The expected smaller distance to family members among the foreign-born is only found for distances to parents.

The percentage of variance explained by the models (R squared) is not very large. This is not a very surprising finding, given the fact that the proposed explanation of the distances is to a great extent indirect. Distance is derived from residential locations. Residential locations in turn are the result of complex processes of location choice, migration and residential mobility. There does seem to be a difference in the percentage of variance in distances to siblings (0.08) and to parents or children (each 0.10), which is in the expected direction: distances to siblings are less strongly associated to a person's individual and household characteristics than are distances between parents and children. In

the models in which the logarithm of the distance is the dependent variable, the R squared is somewhat higher (between 0.10 and 0.14). In those models, it is indeed found that the distance to parents is explained better by the independent variables than the distance to children.

Conclusion

In this chapter we explored distances to family members living outside the household and the differentiation in these distances according to characteristics of persons, their households and their residential locations. We expected that distances to family members would be longer for people who had a high likelihood of having migrated at some time in their lives, and shorter for those who were likely to have a greater need of living near family members.

The average distance to family members appeared to be rather short; just over 30 kilometres. Characteristics associated with a high likelihood of having migrated were found to have a considerable influence on distances to family members. This was particularly true for level of education: particularly the university educated were found to live further from their family members than those with only primary education (by over 30 kilometres). But the influence of socio-economic status, enrolment in education and degree of urbanization on distances to family members was also substantial.

The association between distances to family members and a greater need of living near family members was found to be much less strong, but it was significant: couples with children and those with health problems lived a few kilometres closer to family members than couples without children and those without problems. It should be stressed, however, that this does not necessarily mean that these people or their family members undertook deliberate action to reduce this distance or not let it grow. It is also possible that couples with children, possibly particularly those who have had their children early and did not spend a long period as a childless couple, are less likely to have migrated than those without children. A similar reasoning could hold for health problems: those with health problems might be less likely to migrate. A relationship between distance and a supposed need for help was not found for age: those aged over 70, who supposedly have the greatest need for family members living close by, were found to have the greatest average distance to their family members of all age groups.

Only a limited part of the variation in average distances to family members was explained by the indicators of the likelihood of having migrated and the need for contact that were included in our models. More variation was explained of the distance to parents than of distances to children and siblings.

The data allowed for a limited analysis of changes through time in the distances between parents and children. The popular picture was indeed confirmed that people are less likely to live close to family members than they used to a few decades ago. This difference can probably be attributed to migration streams from rural areas to cities that went on up to the 1960s and to the increased proportion of highly educated.

The Netherlands Kinship Panel Study provides a unique opportunity to study distances to family members. The information about residential locations of family members available in NKPS is more detailed than in any survey we know of. In this chapter we only focused on average distances to family members. This is only one of the many possible ways of studying distances. Future research could focus on median or minimum distances rather than average distances, or on the geographical dispersion versus concentration of family networks. Of course, it is also important to widen the focus from distances as such to the role of distance in contact between family members and in the exchange of support. This role is substantial, as is shown in other chapters in this volume.

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Table 1. Family network indicators by age group

Age group	Average N family members	Average distance to all family members	Average distance to parents	Average distance to children	Average distance to siblings	Average N family members within 1 km	% At least 1 family member within 1 km
18-29	4.6	35.0	34.1	- -	38.2	0.6	26
30-39	4.7	28.3	25.1	- -	32.3	0.7	32
40-49	5.2	33.6	29.2	33.6	38.1	0.6	31
50-59	5.4	36.3	33.7	29.1	42.3	0.5	31
60-69	5.5	35.0	- -	26.6	42.2	0.6	37
70-79	4.7	39.8	- -	31.9	48.3	0.6	34
Total	5.0	33.8	29.5	29.3	39.0	0.6	32
F test, significance	25.3, 0.00	13.8, 0.00	7.0, 0.00	2.8, 0.01	16.4, 0.00	4.4, 0.00	
Number of respondents	7624						

Table 2. Family network indicators by household situation

Household situation	Average N family members	Average distance to all family members	Average distance to parents	Average distance to children	Average distance to siblings	Average N family members within 1 km	% At least 1 family member within 1 km
Cohab/married no child	5.4	35.7	32.7	29.5	41.6	0.6	32
Cohab/married + child(ren)	5.3	30.0	25.6	31.4	35.0	0.8	36
Single parent	4.1	32.7	25.8	26.0	38.3	0.5	28
Single, age <30	3.7	44.9	43.1	- -	48.0	0.4	17
Single, age 30-60	4.0	35.7	32.0	22.0	39.7	0.4	23
Single, age 60-79, male	4.5	35.7	- -	29.0	42.4	0.5	27
Single, age 60-79, female	4.7	37.2	- -	28.9	42.5	0.6	34
Total	5.0	33.8	29.5	29.3	39.0	0.6	32
F test, significance	57.7, 0.00	12.6, 0.00	9.8, 0.00	1.5, 0.18	8.1, 0.00	15.2, 0.00	

Table 3. Family network indicators by level of education

Level of education	Average N family members	Average distance to all family members	Average distance to parents	Average distance to children	Average distance to siblings	Average N family members within 1 km	% At least 1 family member within 1 km
Up to primary	5.1	23.9	15.5	19.8	28.5	0.9	44
Lower secondary	5.4	25.1	18.1	22.6	30.0	0.9	42
Upper secondary	4.9	31.3	25.8	31.8	36.7	0.6	33
Higher vocational	5.0	41.2	35.8	38.8	48.5	0.4	23
University	4.5	55.1	55.3	49.1	55.7	0.2	13
Total	5.0	33.8	29.5	29.3	39.0	0.6	32
F test, significance	18.5, 0.00	135.6, 0.00	85.7, 0.00	40.5, 0.00	79.0, 0.00	67.8, 0.00	

Table 4. Family network indicators by socio-economic status

Socio-economic status	Average N family members	Average distance to all family members	Average distance to parents	Average distance to children	Average distance to siblings	Average N family members within 1 km	% At least 1 family member within 1 km
no job	5.0	35.0	29.0	28.2	41.7	0.6	35
lowest <25%	5.1	25.0	19.9	24.2	29.6	0.9	40
25-<50%	5.2	29.7	23.6	31.3	34.6	0.7	34
50-<75%	5.0	35.6	33.0	34.6	40.7	0.5	26
upper 25%	5.0	44.0	44.4	35.9	47.2	0.4	19
Total	5.0	33.8	29.5	29.3	39.0	0.6	32
F test, significance	0.88, 0.47	49,1, 0.00	45.2, 0.00	5.3, 0.00	31.0, 0.00	30.8, 0.00	

Table 5. Family network indicators by employment status

Employment status	Average N family members	Average distance to all family members	Average distance to parents	Average distance to children	Average distance to siblings	Average N family members within 1 km	% At least 1 family member within 1 km
No work, No education	5.0	34.3	26.6	28.1	41.1	0.6	35
Employed	5.1	32.5	28.8	31.3	37.2	0.6	30
In education	4.4	45.7	46.5	- -	47.3	0.6	27
Total	5.0	33.8	29.5	29.3	39.0	0.6	32
F test, significance	11.4, 0.00	22.7, 0.00	25.1, 0.00	2.7, 0.07	12.7, 0.00	0.28, 0.75	

Table 6. Family network indicators by employment and partner status

Employment and partner status	Average N family members	Average distance to all family members	Average distance to parents	Average distance to children	Average distance to siblings	Average N family members within 1 km	% At least 1 family member within 1 km
Employed, no partner	4.0	37.2	34.0	25.5	40.5	0.4	22
Not employed, no partner	4.3	36.8	34.5	27.3	43.2	0.5	29
One partner employed	5.4	32.1	28.1	28.9	37.2	0.7	36
Both partners employed	5.4	31.7	28.1	33.9	36.3	0.7	32
Both partners not employed	5.3	36.6	30.9	28.5	44.8	0.7	38
Total	5.0	33.8	29.5	29.3	39.0	0.6	32
F test, significance	78.1, 0.00	8.7, 0.00	3.8. 0.01	3.2, 0.01	9.9, 0.00	15.8, 0.00	

Table 7. Family network indicators by homeownership

Ever homeowner?	Average N family members	Average distance to all family members	Average distance to parents	Average distance to children	Average distance to siblings	Average N family members within 1 km	% At least 1 family member within 1 km
Never homeowner	4.6	32.6	31.6	20.8	38.1	0.7	33
Ever homeowner	5.2	34.3	28.7	32.5	39.3	0.6	31
Total	5.0	33.8	29.5	29.3	39.0	0.6	32
F test, significance	107.3, 0.00	3.3, 0.07	4.2, 0.04	57.5, 0.00	1.2. 0.27	1.3, 0.25	

Table 8. Family network indicators by degree of urbanization

Degree of urbanization	Average N family members	Average distance to all family members	Average distance to parents	Average distance to children	Average distance to siblings	Average N family members within 1 km	% At least 1 family member within 1 km
Not urbanized	5.5	34.3	24.7	35.9	39.9	0.8	39
Hardly urbanized	5.7	30.0	22.2	32.3	35.7	0.9	41
Moderately urbanized	5.0	32.3	25.6	31.8	37.5	0.7	36
Strongly urbanized	4.8	34.1	31.5	25.2	40.8	0.5	26
Very strongly urbanized	4.3	38.9	41.3	20.6	41.2	0.3	21
Total	5.0	33.8	29.5	29.3	39.0	0.6	32
F test, significance	61.6, 0.00	12.2, 0.00	27.8, 0.00	13.0, 0.00	4.3, 0.00	64.5, 0.00	

Table 9. Family network indicators by whether respondent has health problems

Health problems?	Average N family members	Average distance to all family members	Average distance to parents	Average distance to children	Average distance to siblings	Average N family members within 1 km	% At least 1 family member within 1 km
No health problems	5.1	34.6	30.3	30.6	39.5	0.6	31
Health problems	5.0	30.9	25.8	26.4	37.1	0.7	35
Total	5.0	33.8	29.5	29.3	39.0	0.6	32
F test, significance	1.5, 0.22	14.0, 0.00	7.4, 0.01	8.0, 0.01	3.6, 0.06	1.2, 0.28	

Table 10. Family network indicators by whether respondent is foreign-born

Foreign-born?	Average N family members	Average distance to all family members	Average distance to parents	Average distance to children	Average distance to siblings	Average N family members within 1 km	% At least 1 family member within 1 km
Not foreign-born	5.2	33.8	29.8	29.1	38.9	0.6	33
Foreign-born	3.0	30.5	20.2	31.7	34.2	0.6	25
Total	5.0	33.8	29.5	29.3	39.0	0.6	32
F test, significance	172.5, 0.00	3.2, 0.04	3.2, 0.04	1.1, 0.32	5.2, 0.01	8.6, 0.00	

Table 11. OLS Regression of average distance to family members

	To all family members	To parents	To children	To siblings
	B	B	B	B
(Constant)	14.9 ***	6.6	17.7 ***	18.7 ***
Age group (18-29 = 0)				
30-39	-3.8 **	-5.4 ***		-3.3 *
40-49	3.9 **	1.8		4.8 **
50-59	7.1 ***	5.5 **	-2.4	9.3 ***
60-69	5.5 ***		-2.6	8.5 ***
70-79	12.7 ***		6.4 **	15.7 ***
Female (Male = 0)	1.60 *	2.5 *	5.2 ***	1.9 *
Household situation (Cohab/married no child = 0)				
Cohab/married + child(ren)	-2.8 **	-2.0	1.3	-2.5 *
Single parent	0.1	-4.8	0.9	-0.5
1 person	0.3	-1.8	-0.4	-0.5
Level of education (Up to primary = 0)				
Lower secondary	5.0 ***	3.1	1.7	5.6 ***
Upper secondary	13.5 ***	9.0 ***	12.0 ***	15.5 ***
Higher vocational	22.6 ***	17.6 ***	19.8 ***	26.5 ***
University	35.6 ***	32.7 ***	31.0 ***	33.5 ***
Socio-economic status (ISEI)	0.7 **	2.0 ***	0.3	0.6
Employment status (Employed = 0)				
No work, no education	2.0	0.5	2.5	2.1
In education	11.7 ***	13.7 ***		9.9 ***
Two earners	-2.2 *	-2.7	3.5	-2.2
Ever homeowner (Never owned a home = 0)	-0.2	-1.8	4.9 ***	-1.3
Degree of urbanization (Not urbanized = 0)				
Hardly urbanized	-3.9 ***	-0.9	-4.4 **	-4.3 **
Moderately urbanized	-2.5 *	0.9	-4.8 **	-3.2 *
Strongly urbanized	0.0	6.3 ***	-9.5 ***	0.2
Very strongly urbanized	0.7	10.3 ***	-15.4 ***	-2.8
Health problems (No health problems = 0)	-2.5 **	-3.0 *	-1.9	-1.8
Foreign-born	0.6	-6.6 *	4.1	-0.1
F test, significance	34.7, 0.00	23.5, 0.00	14.7, 0.00	23.3, 0.00
R squared	0.11	0.10	0.10	0.08

* p <0.10, ** p <0.05, *** p <0.01

Appendix 1. Adjusted means of average distance to family members

	To all family members	To parents	To children	To siblings
Age group				
18-29	31.4	30.6		34.9
30-39	27.3	25.1		31.6
40-49	35.1	32.4	30.4	39.7
50-59	37.9	36.1	34.2	44.3
60-69	36.5		34.1	43.4
70-79	43.4		15.9	50.6
Sex				
Male	33.1	28.5	29.8	38.4
Female	35.2	31.0	33.3	40.3
Household situation				
Cohab/married no child	35.7	31.6	34.2	40.6
Cohab/married + child(ren)	35.1	29.6	30.3	38.1
Single parent	32.5	26.8	33.5	40.1
1 person	34.9	29.8	31.9	40.1
Level of education				
Up to primary	20.3	17.6	19.9	23.6
Lower secondary	24.8	20.7	19.8	29.2
Upper secondary	33.3	26.6	30.0	39.2
Higher vocational	42.5	35.2	41.6	50.1
University	55.5	50.4	52.1	57.1
Employment status				
No work, no education	34.8	29.5	31.4	40.4
Employed	33.2	29.0	33.2	38.3
In education	44.9	42.7	32.2	48.3
Number of earners				
One earner	35.1	31.3	31.4	40.4
Two earners	33.0	28.6	31.4	38.2
Homeownership				
Never owned a home	34.2	31.2	30.0	40.5
Ever homeowner	34.4	29.4	32.4	39.1
Degree of urbanization				
Not urbanized	35.9	26.0	33.8	41.5
Hardly urbanized	31.8	25.1	29.9	37.3
Moderately urbanized	33.2	26.8	31.4	38.3
Strongly urbanized	35.4	32.2	33.6	41.7
Very strongly urbanized	35.6	36.3	30.4	38.8
Health problems				
No health problems	35.0	30.6	32.4	40.0
Health problems	32.4	27.5	29.9	38.2
Whether foreign-born				
Not foreign-born	34.4	30.2	31.9	39.6
Foreign-born	34.0	23.6	26.2	39.5

Appendix 2. OLS Regression of logarithm of average distance to family members

	To all family members	To parents	To children	To siblings
	B	B	B	B
(Constant)	1.86 ***	1.00 ***	1.71 ***	1.83 ***
Age group (18-29 = 0)				
30-39	-0.06	-0.23 ***		0.01
40-49	0.32 ***	0.09		0.42 ***
50-59	0.51 ***	0.26 ***	-0.02	0.61 ***
60-69	0.55 ***		0.15	0.65 ***
70-79	0.76 ***		0.56 ***	0.77 ***
Female (Male = 0)	0.08 ***	0.14 ***	0.19 ***	0.10 ***
Household situation (Cohab/married no child = 0)				
Cohab/married + child(ren)	-0.14 ***	-0.22 *	-0.02	-0.09 **
Single parent	-0.05	-0.03	-0.13	0.01
1 person	-0.02	0.15	0.06	0.03
Level of education (Up to primary = 0)				
Lower secondary	0.18 ***	0.47 ***	0.07	0.22 ***
Upper secondary	0.51 ***	0.89 ***	0.51 ***	0.54 ***
Higher vocational	0.87 ***	1.46 ***	0.81 ***	0.92 ***
University	1.26 ***	0.09 ***	1.25 ***	1.17 ***
Socio-economic status (ISEI)	0.05 ***	0.47 ***	0.03	0.04 **
Employment status (Employed, one earner = 0)				
No work, no education	0.01	-0.04	0.00	0.02
In education	0.30 ***	0.48 ***		0.29 ***
Two earners	-0.03	-0.05	0.14	0.00
Ever homeowner (Never owned a home = 0)	-0.01	0.03	0.23 ***	0.00
Degree of urbanization (Not urbanized = 0)				
Hardly urbanized	-0.14 **	-0.09	-0.08	-0.17 ***
Moderately urbanized	-0.08	-0.02	-0.16 *	-0.13 **
Strongly urbanized	0.03	0.27 ***	-0.35 ***	0.01
Very strongly urbanized	0.11 **	0.47 ***	-0.54 ***	-0.01
Health problems (No health problems = 0)	-0.03	-0.07	-0.01	0.01
Foreign-born	-0.10	-0.38 ***	0.15	-0.14
F test, significance	45.3, 0.00	34.3, 0.00	16.1, 0.00	31.1, 0.00
R squared	0.14	0.14	0.11	0.10

* p <0.10, ** p <0.05, *** p <0.01

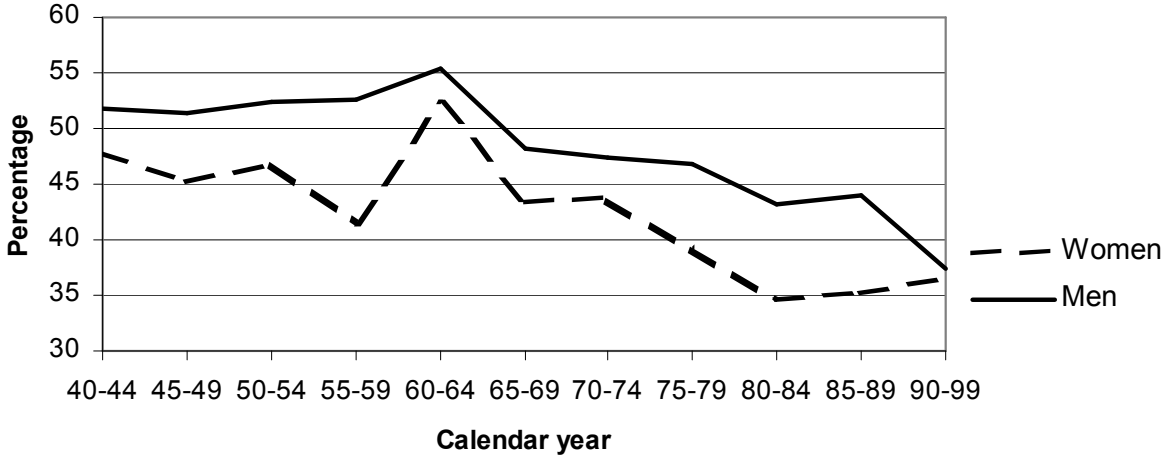

Figure #1. Percentage of parents of men and women with a child aged 15 living in the same place of residence