How Far Do Children Move?

Spatial Distances After Leaving the Parental Home

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Abstract

This research used geocoded data from 10 waves (2000 – 2009) of the German Socio-economic Panel Study to investigate the spatial distances of young adults' initial move-outs (N = 1,986). Linear regression models predicted moving distances by factors at individual, family, household, and community level. Overall, home leavers moved across strikingly small distances with a median value of less than 10 kilometers. Greater distances were found for well-educated and childless home leavers who moved out from high-income households at relatively early ages. The effect of young adults' education was moderated by the district's degree of urbanization, supporting the brain drain assertion. In line with developmental models of migration, young adults stayed closer if the parental household was still located at their place of childhood. We conclude that the prevalence of short-distance moves challenges the pervasive notion of leaving home as a "milestone" in young adults' lives.

Keywords: adolescence, community, geographic proximity, parent-child relations, regression

1. Introduction

How far do young adults move when they leave their parental home? Surprisingly, this straightforward question has not been addressed in previous research. Studies of parent-child proximity typically set in after children have left the parental household, that is, after geographical distance has already been produced. This gap of research is partly due to a shortage of suitable data on the distance of residential moves. In recent years, however, large-scale panel surveys that follow individuals and their descendents across their life courses have begun to make detailed geographical information available for scientific use. In the year 2000, the German Socio-Economic Panel Study (SOEP) started to collect data on the geo-coordinates of each sample household on an annual basis, allowing to calculate exact air-line distances of respondents' residential moves. Nine years later, this information was available for almost 2,000 move-outs of young adults who left the parental household between the years 2000 and 2009.

These new data present a unique opportunity to investigate the spatial distances of initial move-outs. In this study, we take an exploratory approach proceeding as follows. First, we discuss the relevance of spatial distance as an outcome worthy of theoretical import into analyses of leaving home. Then we review the literature on parent-child proximity, considering what factors at individual, family, household, and local community level may influence the spatial distance of move-outs. In our empirical investigation, we estimate air-line distances (in log-meters) of young adults' residential moves using linear regression models (OLS).

2. Why study the distance of move-outs?

Leaving the parental home is widely considered a milestone in the passage to adulthood, representing an important marker that has profound implications in individual and family spheres. Recent research, however, has challenged this view. For example, the model of "emerging adulthood" (Arnett 2000) argues that adulthood is signified by youths' subjective feelings of independence and responsibility rather than by experiencing demographic transitions. In contrast, social scientists maintain that moving out constitutes a role transition that alters adult identities (e.g., Benson & Furstenberg 2007; Liefbroer & Toulemon 2010). But this process requires not only entering an adult role but also permanent acquisition and enactment of that role. In this respect, the implications of moving out are rather unclear. On the one hand, young adults establish own households and therefore physical independence from their parents. But on the other hand, active parenting may extend beyond this event and prolong young adults' dependency. For example, if nest-leavers maintain daily face-to-face contact to parents and continue to rely on parental support in their everyday routines, the process of separation appears to be incomplete. This view challenges the assumption that moving out *per se* represents a key transition in the individual and family life course.

We propose that the spatial distance of a move-out is a useful criterion for assessing the importance of this transition. So far, most analysts have restricted their attention to the timing of exits from the parental home without taking into account their spatial dimension (e.g., Aassve et al., 2002; Ward & Spitze, 2007; White, 1994, for a review). The latter, however, may reflect the degree to which young adults are independent from their parents after moving out – at least as far as location-specific services and frequent personal contact are concerned. That is, local moves

may represent a minor transition not markedly different from continued coresidence, whereas longer-distance departures from the parental sphere and well-known local community may point to major transitions in the individual passage to adulthood.

From a family perspective, individual dimensions of residential choice are inextricably linked to the presence and quality of kinship ties. That is, "individual choices oriented towards reaching personal goals might compete or interfere with the desire to maintain family solidarity" (Michielin & Mulder, 2007, p. 656). Bengtson (2001) emphasized the increasing importance of intergenerational contacts in modern "beanpole" families. In the typology of intergenerational solidarity, residential proximity is seen as a measure that reflects earlier and present parent-child relationships as well as a factor that conditions other solidarity dimensions, pointing to future opportunities to maintain contact, share activities, and exchange support. In this respect, the relevance of young adults' early residential decisions is twofold: First, the spatial distance of initial move-outs may reflect earlier and present family life, including characteristics of family members and of the parental household. Parents and siblings, for example, may serve as role models influencing young adults' initial residential decisions. They also constitute "location-specific social capital" (DaVanzo, 1981) that increases the costs of moving far away, in particular when family relations are close. Second, geographical distance in early adulthood may have profound long-term implications for the development of parent-child relationships (Myers, 2005). For example, greater spatial distance reduces the opportunities to benefit from parental support and decreases contact frequency between the generations (Lawton et al., 1994), which in turn may also diminish the strength of affective ties and reduce levels of support exchange in later life.

3. Determinants of parent-child proximity

Previous research on parent-child proximity has examined the characteristics of young adults as well as factors at family, household, and local community level (e.g., Cadwallader, 1992; Elder, King, & Conger, 1996; Garasky, 2002). This classification provides a useful point of departure for the present study. Because we focus only on first move-outs that create spatial distance between the generations, we restrict the following discussion to factors that may be relevant for young adults' initial migration decisions.

3.1 Individual characteristics

An individualistic perspective posits that spatial distance results from young adults' locational choices. In standard economic theory, individuals choose a location that maximizes their utility (Helderman, Ham, & Mulder, 2005). Young adults weigh the expected gains of alternative locations against their costs. Gains and costs are both financial and nonfinancial (Greenwood, 1975; Sjastaad, 1962). For example, adult children may benefit from employment opportunities, but also from independence and privacy, in particular when moving to a partner. Costs may be incurred from the loss of parents' provision of low-cost services, but also from fewer opportunities of face-to-face contact, which is often highly valued.

Considering such costs and benefits, a number of individual characteristics are likely to influence young adults' location decisions at their first move-outs. Several analysts have reported that age is an important correlate of parent-child proximity. Adult children typically leave the parental home between the end of their teenage years and the end of their twenties (Corijn & Klijzing,

2001; Goldscheider & Goldscheider, 1993). At this early stage, many young adults still rely on their parents as a source of instrumental, emotional, and financial support, suggesting that initial move-outs rarely bridge greater geographical distances. Farley (1996), for example, reported that 80 % of young adults' residential moves in the United States between 1985 and 1990 were local. For Germany, Wagner (1989) found that the prevalence of young adults' short-distance migration even increased between 1950 and 1980: By the beginning of the eighties, about 50 % of all residential moves by German adults aged between 20 and 30 did not exceed a geographical of 20 kilometers.

If larger distances occur, one apparent motive is to move for educational or occupational purposes. According to human capital models, highly-educated individuals with more specialized abilities have higher propensities to migrate in order to make further progress and optimize their educational returns (Featherman & Hauser, 1978). Accordingly, numerous studies have shown that the spatial distance between the generations is positively associated with children's educational attainment (e.g., Malmberg & Pettersson, 2007; Silverstein, Parrott, & Bengtson, 1995).

With regard to gender differences, Fuguitt, Brown, and Beale (1989) posited that daughters are more likely to "escape" to urban areas because their personal autonomy is more strongly restricted by traditional gender roles in rural communities. Alternatively, daughters may put more value on face-to-face contact to parents because on average, they invest more in family relationships than sons (Rossi & Rossi, 1990). Given these ambiguities, it is not surprising that empirical findings on gender differences in spatial distance to parents are mixed. Analyses of register data from the Netherlands (Michielin, Mulder, & Zorlu, 2008) and Sweden (Malmberg & Pettersson, 2007) suggested that daughters lived farther away than sons in early and middle

periods of parent-child relationships. Other studies found no gender differences in parent-child proximity (Lin & Rogerson, 1995; Fokkema, ter Bekke, & Dykstra, 2008).

Another individual factor that may influence parent-child proximity is the child's relationship status. The direction of the expected effect is again unclear. Individuals who live in a relationship may be less mobile than singles, but the presence of a partner may also decrease the need for frequent contact with family members. Michielin and associates (2008) found that in the Netherlands, transitions to marriage or cohabitation (which implies a move) led to greater distances rather than local moves. In contrast, Lauterbach and Pillemer (2001) reported that married individuals lived closer to their parents than singles both in Germany and in the United States.

Finally, migration background has been discussed as an individual attribute influencing parent-child proximity. Immigrants strongly rely on local networks of relatives and friends from their country of origin that often constitute the only sources of social support (Aslund, 2005). Therefore, immigrants' offspring are expected to move primarily to locations within the same local community. This reasoning is supported by research on immigrants' residential behavior, indicating higher parent-child proximity (e.g., Mulder, 2007).

3.2 Family and household characteristics

A number of cross-sectional studies examined parent-child proximity at different stages of the family life course, assuming that spatial distance reflects specific age-related needs of both generations. At a general level, one consistent finding from this research is that although residential proximity tends to decrease temporarily when adult children reach middle ages, at

least one child lives within one hour from parents in most families (Hank, 2007; Lauterbach & Pillemer, 2001).

More specifically, a number of family and household characteristics have been related to different levels of parent-child proximity. Parents' education and economic resources, for example, were found to be positively correlated with spatial distance to adult children both in Germany (Lauterbach & Pillemer, 2001) and in the United States (Garasky, 2002). One possible reason is a motive of status maintenance, suggesting that parents from higher social strata are more inclined to accept greater distances resulting from children's moves to areas that allow maximizing educational attainment and returns to education. A related pathway is intergenerational transmission of behavior: If well-educated parents' own initial move-outs bridged greater distances, they may constitute points of reference for their children's later residential decisions. With regard to parents' economic resources, the standard hypothesis refers to transferable versus location-specific types of intergenerational assistance. A negative effect on proximity is expected because well-off parents have the financial means to support their children across greater distances.

The marital status of parents indicates, on the one hand, whether young adults' families of origin are intact. Because marital disruption was consistently found to increase the tension between the generations, it appears straightforward to postulate greater distances when leaving the parent with whom the children remained. An alternative view is that the decision to leave behind a "lone parent", typically the mother, is more strongly restricted by feelings of affection and obligation, leading to short-distance moves that facilitate emotional support exchange.

Another influential factor at family level is the presence of a child of their own, augmenting young adults' need for parental help. Regular childcare assistance from parents is a location-

specific type of support that requires residential proximity. Accordingly, cross-sectional evidence indicated higher parent-child proximity in the presence of a grandchild (e.g., Malmberg & Pettersson, 2007).

Characteristics of siblings represent a further set of family-related factors that may influence residential decisions. One aspect is sibship size: If parents' resources are distributed over a larger number of siblings, the reduced supply of support may lower a child's expected utility of living near the parental home. Accordingly, a number of studies have shown that the number of siblings is negatively correlated with parent-child proximity (e.g., Shelton & Grundy, 2000). A second aspect is birth order: One hypothesis that has been advanced in the literature is that first-borns are less constrained in their location decisions, whereas later-born children must consider residential choices of their siblings who moved out before (Konrad et al., 2002).

3.3 Characteristics of the community

We consider two perspectives on the influence of the community in which the parental household is located (see Garasky, 2002; Goldscheider & DaVanzo, 1985). First, demographic push-pull models posit that individuals are attracted by prospering areas and pushed from regions that are less developed and/or in decline. In Germany, the standard of living remains considerably higher in the West of Germany compared to the new federal states (former GDR) even two decades after reunification. This suggests that young adults from Eastern regions are more likely to move across greater geographical distances. Furthermore, substantial gender differences in mobility were found among East Germans living in the periphery. Young women frequently depart from these areas whereas men are left behind. The resulting surplus of young men has received a lot of attention in the public debate. The most common assumption is that

women's higher levels of education drive this selective outmigration (Kroehnert & Klingholz, 2007). Considering young adults' initial move-outs, the local youth unemployment rate is another relevant factor at community level. If the parental household is located in a district with a high level of youth unemployment, difficulties to find adequate jobs locally should necessitate greater moving distances. A further aspect reflecting occupational and educational opportunities is the degree of urbanization. As discussed above, it is reasonable to assume that the relationship between urbanization and parent-child proximity is moderated by educational attainment and aspirations. That is, children from suburban and rural areas move farther away only if they have reached higher educational degrees that, in turn, necessitate moves across greater distances to locations where tertiary education and specialized job markets are available (Hektner, 1995).

Second, developmental models of migration emphasize the individual's familiarity with his or her home region. Young adults are not only emotionally attached to the local community where they grew up, but they also have better access to its resources, such as the job and marriage market, through dense networks of friends and relatives (Goldscheider & DaVanzo, 1989). If social capital is tied to the community of the parental home, it increases the costs of long-distance migration (Elder et al., 1996). The duration of residence at a specific location before leaving home should therefore reduce moving distances, in particular if the parental household is still located where young adults spent their childhood. A study by Lin and Rogerson (1995) supported this reasoning, reporting a negative relationship between the years that parents spent in their current residence and the spatial distance to their adult children.

4. Materials and methods

Our empirical analyses are based on data from the German Socio-Economic Panel Study (SOEP), which is a large, representative household and person study (Wagner, Frick, & Schupp, 2007). Each person in a household aged 17 or older gives his or her own answers. For children under 17, proxy information is available from the parents' and household questionnaires. In 1984, the SOEP started in West Germany with a sample of over 12,000 individuals in almost 6,000 households. Several new subsamples were added in the following years, notably a sample of East Germans in the year of reunification (1990) and a major enlargement in the year 2000. In the 2009 wave, the study population consisted of 18,587 individuals in 10,394 households. Since the year 2000, information on geographic coordinates is available for each household, allowing the calculation of exact air-line distances between households. Our analysis draws on these data from an observation period covering 10 waves between the years 2000 and 2009.

4.1 Selection of young adults "at risk" of moving out

We proceeded in four steps to define a study population. First, we selected a gross sample including all observations of children aged 16 and older who lived with one or both parents in at least one of the twenty-six SOEP waves conducted between 1984 and 2009 (n = 9,955). Those included not only biological children, but also adopted, step, and foster children. Second, we restricted this sample to 6,004 persons observed at least once between the years 2000 and 2009, removing 3,951 young adults who left the parental home or dropped out of the survey before the SOEP began to collect information on the geocodes of residential moves. The third step was aimed at identifying *initial* move-outs. Although the rates of home returning are considerably

lower in Germany than in the United States (Corijn & Klijzing, 2001), some young adults living in the parental home might be "boomerang kids" who already experienced their first move-outs. To reduce the probability of such unobserved instances in our sample, we further removed 756 individuals who were living in the parental household but were older than 20 years when *first* observed in the SOEP, confining the study population to individuals who entered the panel aged 20 or younger. This restriction also reduced the potential age bias in our sample towards stay-at-home children who still lived with their parents at advanced ages. Fourth, we defined a further upper age bound because our focus is on residential mobility at earlier life course stages and the factors related to leaving home at older ages are distinctive. Even after the previous restriction, the theoretical maximum age of a child observed in the parental household between the years 2000 and 2009 remained rather high: A child who was first observed at age 20 in the year 1984 and never left the parental home would have entered our window of analysis in the year 2000 aged 36 and been followed up to the age of 45 in the year 2009. We therefore excluded further 27 individuals that crossed an age limit of 35 while living in the parental household between 2000 and 2009. After this final exclusion, the study population consisted of 5221 young adults "at risk" of initially moving out between 2000 and 2009.

4.2 Dependent variable

The SOEP assigns a household identification number to each respondent. All persons living in the same household share one household number. If a person leaves a household between two waves and is followed up in the later wave, a new household number is assigned to this person. A change of household numbers between two waves therefore indicates a residential move.

We defined a move-out from the parental home between two waves if (a) the child shared a household number with at least one parent in the earlier wave, (b) the child's household number changed between the waves, and (c) the child's new household number did not equal the household number of any one parent in the later wave. Therefore, our definition did not only identify departures from a household shared with both parents, but also move-outs from only one parent. Furthermore, it is important to note that this definition concentrated on young adults who established own households, that is, individual decisions to live independently. It did not include move-outs to colleges for post-secondary undergraduate education or residential moves that were forced by military service obligations. Based on this identification strategy, we observed a total of 1,986 young adults leaving the parental home between the years 2000 and 2009. After the move-out had taken place, our dependent variable was calculated from the geographical coordinates of each household as an exact air-line distance in meters between the parental home and the child's new residence.

4.3 Independent variables

The respondent's age, gender, education, relationship status, and migration background were included as individual characteristics hypothesized to influence the distance of move-outs. We defined quintiles from the age distribution over the entire sample of 1,986 move-outs to test for non-linear relationships. Young adults' education was measured by three indicator variables: education attained was equal or less than basic secondary school (9 or less years of education); education attained equaled intermediate secondary school (10 or 11 years of education); and education attained was equal or higher than upper secondary school (12 or more years of

education). Relationship status was operationalized through a binary variable indicating whether the respondent had a partner. Finally, we used an indicator variable for migration background.

The survey design of the SOEP allows combining individual data with detailed information on family members and household characteristics. We first included the father's education, measured by three indicator variables analogical to the respondent's education. As an indicator for economic resources, we used the logged per-capita income (in Euros) of the parental household. Furthermore, a binary variable indicated whether the respondent lived with only one parent. This variable was coded one if the parent was widowed, divorced or separated from the other parent. Sibling characteristics were operationalized by two measures, the logged number of siblings and an indicator variable for first-born children. Finally, we introduced two measures of fertility, one indicating whether a respondent already had a child of his or her own living in the parental household, the other, whether a respondent was pregnant.

All individual and household data collected by the SOEP can be linked to regional information from external sources using the Nomenclature of Units for Territorial Statistics (NUTS) geocode standard that is developed and regulated by the European Union (Goebel et al., 2008). At the NUTS-3 Level, regional data is available for 439 German districts. This enabled us to introduce two measures reflecting the economic and demographic conditions of each household's local community. First, we used the local youth unemployment rate (i.e., the proportion of the youth labor force aged 15 to 24 that is unemployed), a continuous variable, ranging from 1.7 % to 26.8 %, as an indicator for labor market conditions of the district in which the respondent resided before moving out. Second, we measured the urbanization of the district by four indicator variables according to the definitions of the German Federal Institute for Research on Building, Urban Affairs and Spatial Development. *Nucleated towns* are cities of more than 100,000

inhabitants. Outside nucleated towns, the urbanization of districts is defined by residential area and population density. Urban areas include urban districts of more *(urban hinterland*) or less (*rural hinterland*) than 150 people per square-kilometer. *Rural areas* include rural districts of more or less than 100 people per square-kilometer. In addition to these measures, a binary variable indicated whether the parental household was located in Eastern Germany (new federal states). Finally, we operationalized the duration of residence in the local community using information from the biographical questionnaire. Respondents reported on whether they still lived at the place where they spent their childhood. A binary variable was coded one if the parental household was no longer located at the respondent's place of childhood.

The values for almost all predictor variables, including external data on the degree of urbanization and the youth unemployment rate, were obtained from the (year of) the earlier wave, that is, before a residential move took place. The only exceptions are the indicator variables for young adults' education: In Germany, educational degrees are mostly awarded in May and June. The annual data collection of the SOEP, however, is typically carried out in March. We therefore used the updated information on young adults' education from the later wave in which the move-out was observed.

4.4 Multiple imputation of missing data

Three variables had substantial shares (i.e., more than 10 %) of missing data: Information on the respondent's education was missing in 22.8 % of all cases; information on the father's education in 30.8 % of all cases; and spatial distances could not be calculated for 25.1 % of all move-outs observed. Missing values on the outcome variable represent unsuccessful attempts to follow up respondents after residential moves within Germany. In such cases, the spatial distance of a

move-out could not be calculated because geographical information on the location of the new residence was not available for respondents who dropped out of the SOEP. We imputed all missing data by a sequence of chained equations (Royston, 2009; van Buuren, Boshuizen, & Knook, 1999), generating 30 estimates for each missing value. The imputation procedure was based on a background model that included all variables from the multivariate models. Missing values on the metric measures (moving distance and parents' household income) were imputed using predictive mean matching, a procedure that imputes empirically observed values from similar cases instead of regression estimates. Parameter estimates and standard errors in the multivariate analysis were calculated by Rubin's rules (Rubin, 1987). Multiple imputation adjusts for the fact that imputation involves uncertainty with regard to the missing values and avoids underestimation of standard errors by taking into account the variation between and within imputations. Table 1 presents descriptive information on all variables before and after imputation of missing data.

- Table 1: Descriptive Statistics Before and After Imputation -

4.5 Model

We used ordinary least squares regression (OLS) models to estimate the spatial distance of young adults' move-outs. Because the distance variable was skewed to the right (M = 66.4 km, *Median* = 9.1 km), we estimated its logarithmic calculus which was distributed approximately normal.

The conventional estimator of variance in the OLS regression requires that the observations are independent. This was not the case in our data because we observed departures of two or more children from the same parental household in 869 of 1,986 cases (43.8 %). In the majority of these cases ($n = 676$), two children moved out from the same parental household. But we also observed 193 instances of three up to five children leaving the same household between the years 2000 and 2009. In technical terms, these observations are clustered within groups (i.e., households). Clustering does not affect the parameter estimates, but the standard errors of the estimated coefficients as the error terms are not identically distributed across all move-outs observed. One strategy to analyze such data is to calculate robust standard errors that account for clustering at the individual level (Bye & Riley, 1989). In the present study, we used the clustered sandwich estimator that allowed for intra-household correlation and only required that move-outs were independent across households.

5. Results

5.1 Descriptive results

Table 2 presents descriptive information on the distribution of the dependent variable, the spatial distance of young adults' initial move-outs. Overall, the distances were strikingly small. Ten percent moved across an air-line distance of less than 556 meters, the first quartile was less than 2 kilometers, and over half of the sample relocated less than 10 kilometers from the parental home. Even the 75 percentile (69.4 km) remained within one hour of travel time. Only the upper 10 percent of the distribution can be considered long-distance moves, bridging more than 240 kilometers.

- Table 2: Distribution of Moving Distance by Level of Education -

Table 2 further shows the conditional distribution of moving distance for different levels of young adults' education. We observed a clear-cut pattern reflecting the expected positive association between educational attainment and moving distance. This relationship held for each percentile displayed, but sizable differences appeared only in the upper half of the distribution. The 75 percentile, for instance, revealed a considerable educational gradient of moving distance. Three quarters of young adults with low levels of secondary education moved across less than 20 kilometers. At intermediate levels, the corresponding number was not much higher – but for respondents with upper secondary education it amounted to more than 125 kilometers. Overall, 9.7 % of low-educated respondents moved across 100 kilometers or more, compared to 14.9 % of those with intermediate secondary education and 29.5 % young adults with upper secondary education.

5.2 Multivariate results

Table 3 presents unstandardized estimates predicting young adults' moving distance. The first equation (Model 1) includes only main effects of individual, family, household, and community characteristics. The second equation (Model 2) builds upon this specification, adding two types of multiplicative terms to test for interactions: The first interaction tested whether women moved farther away than men in Eastern Germany; the second, whether high education increased spatial distances only if young adults moved out from less urbanized areas.

- Table 3: Ordinary Least Squares Regressions of Logarithmic Moving Distance –

Model 1 shows that relatively young home leavers from the second quintile of the age distribution (aged 20) moved across the greatest distances whereas relatively late leavers from the fourth quintile (aged 23 to 25) stayed closest to their parents. Overall, women and men did not differ in their moving distances. Not surprisingly, the estimates for the respondents' education resembled the descriptive results. We did not observe statistically significant differences between low and intermediate educational levels, whereas high levels of secondary education were associated with significantly larger moving distances. Single and partnered respondents moved across similar distances and immigrants' moving distances did not differ from those of natives.

Among the family and household variables, the estimate for highly-educated fathers was positive but did not reach conventional levels of significance (less than 0.12). Previous studies on parent-child proximity interpreted parental education mainly as a proxy for economic resources (e.g., Garasky, 2002; Lauterbach & Pillemer, 2001). We were able to measure those more directly using an indicator for the logged per-capita income of the parental household. The latter showed a sizable positive effect net of the indicators of father's and children's education, pointing to the importance of transferable (as opposed to location-specific) intergenerational assistance for young adults' spatial mobility.

In regard to the presence of one or both parents, spatial distances did not differ significantly between young adults who were living with a single parent compared to those living in intact

families. The indicators for sibship size and birth order did not show any effects either, suggesting that sibling characteristics were not related to the spatial distances of initial move-outs. We tested a series of alternative specifications, introducing, for example, an indicator variable for only children, birth order as a continuous variable instead of an indicator variable for first-born versus later-born children, and an indicator variable for whether a sibling had moved out previously. All alternative specifications, however, led to a worse model fit (estimates not shown). Overall, no significant impact of sibling characteristics on moving distance was observed. With regard to the respondent's fertility, we found the expected relationships. Young adults who had a child of their own and therefore relied on location-specific social capital (i.e., parents' childcare assistance) stayed closer to their parental home. The indicator variable for pregnancy also pointed to smaller moving distances but was not statistically significant.

The results for community-level measures suggest, first, that a district's local youth unemployment is not a relevant push factor for initial migration decisions of young adult. We found marked differences, however, between the moving distances of East Germans and West Germans, pointing to greater distances of young adults' initial move-outs in Eastern regions. We further observed the expected relationship between a district's urbanization and moving distances. Move-outs from rural areas bridged significantly greater distances compared to departures from parental households that were located in nucleated towns. A sizeable effect was also found for the variable indicating whether the parental household was still located at the respondent's place of childhood. If this was the case, young adults were more likely to relocate within the same local community, moving across significantly smaller distances upon leaving home. This result is in line with previous studies from the United States (e.g., Lin & Rogerson, 1995) and supports developmental models of migration.

Finally, we turn to the interaction effects presented in Model 2. The first interaction tested whether young women were more mobile than young men in Eastern Germany. This interaction term was highly significant and once it was introduced, the main effect of Eastern versus Western Germany faded. This result supports the contention of female outmigration from the East of Germany, suggesting that the surplus of men in the Eastern periphery is at least to some extent an outcome of initial migration decisions. The remaining set of interaction terms indicated, as expected, that the relationship between urbanization and parent-child proximity was moderated by educational attainment. The interaction terms, although only marginally significant, showed that longer-distance moves from less urbanized areas were more likely among the well-educated children. This interaction partly accounted for the main effects of low urbanization and high education, supporting the brain drain assertion.

The model fit was improved by the inclusion of interaction terms in Model 2. But overall, the low R-squares indicated that a substantial share of the variance of moving distance remained unexplained in our models.

6. Discussion

The prime aim of this study was to shed new light on the initial migration decisions of young adults. Despite a considerable amount of research on the timing of exits from the parental home, nothing was known about the spatial distance of these move-outs. Our exploratory investigation addressed this deficit. Panel data from 10 waves of the SOEP (2000 – 2009) enabled us to predict moving distances by factors at individual, family, household, and community level. Rich personal and contextual information was available in high resolution for a substantial number of move-outs, allowing the inclusion of regional indicators at the district level and an exact

outcome measure of geographical distance in meters.

An important general finding from these data is that initial move-outs rarely bridged greater distances. Our detailed outcome measure enabled us to identify such short-distance moves and the results pointed to the prevalence of this type of move-out: One in four did not exceed 2 kilometers and over half of the sample moved across less than 10 kilometers. Even among the highly-educated, longer-distance move-outs were the exception rather than the rule. These findings suggest that spatial distances after children's initial move-outs are so remarkably small that the parental home not only remains within an hour of travel, but often within walking reach.

With respect to our initial discussion of whether leaving home represents a minor or a major transition in the individual passage to adulthood, this result challenges the pervasive notion of moving out as a "milestone" in young adults' lives. We proposed that spatial distance to parents, at least to some extent, reflects individual autonomy and affects the degree to which an adult role is subsequently acquired and enacted. Focusing only on (the timing of) leaving home, however, implicitly assumes that moving next door is equivalent to relocating in a new local community outside the parental sphere. As a result, the literature on leaving home has neglected the heterogeneity of move-outs regarding their spatial distance. In this respect, we found that "stay-at-home's" are accompanied by a sizeable group of "stay-in-town's" who also continue to rely on parental support in many domains of their daily lives. Overall, our findings on the prevalence of short-distance move-outs suggest that leaving home *per se* does not represent a major transition in young adult's lives.

From a family perspective on the structural dimension of solidarity (Bengtson & Roberts, 1991), our study corroborates previous research that has consistently found high levels of intergenerational proximity. Most of these studies, however, used rather crude measures of high

proximity, such as "lives within one hour of travel" (e.g., Lauterbach & Pillemer, 2001). Within such categories, a potential right-skewed distribution of distances cannot be identified. Our results are therefore best compared with those of Malmberg and Petterson (2007) who analyzed Swedish register data and found that 38 % of adult children lived less than five kilometers from at least one of their parents and 18 % even less than one kilometer. It is important to note that their study population mainly consisted of adult children aged 40 to 50. The similarity to our results on move-outs in early adulthood points to the potential long-term relevance of distances produced by children's initial departures, suggesting a considerable temporal stability of very small geographical distances to parents.

There are some limitations to this study that should be noted. First, some potentially important variables were not available in our data. For instance, we lacked information on the strength of emotional ties in parent-child relationships. Although the SOEP collected information on the quality of parent-child relationships in the 2001 wave, valid responses were only available for a very small fraction of our sample. In terms of the model of intergenerational solidarity, these missing data precluded analyses on the relationship between the affective and the structural dimension of solidarity, investigating, for example, the early characteristics and emergence of "intimate but distant", "tight knit", or "detached" types of parent-child relationships (Silverstein, Bengtson, & Lawton, 1997).

Second, although we identified a number of predictors, a substantial share of the variance of moving distance remained unexplained in our models. As a result, our capacity of predicting the distances of initial move-outs is rather limited. This shortcoming calls for more refined modes that include additional predictor variables. Furthermore, we consider it worthwhile to look more closely at particular relationships. For example, we included an indicator variable for immigrants

in the present study. But given that immigrants rely more strongly on local networks of relatives and friends from their country of origin, a desirable model would additionally include the proportion of their ethnic group at the district level.

From a family life course perspective, future research should build upon this study to investigate long-term implications of spatial distances in early adulthood. How does local mobility affect parent-child relations compared to long-distance moves? How predictive are spatial distances of first move-outs for parent-child proximity in middle and later life? To answer these questions, information on initial move-outs should be combined with data on subsequent moves and later parent-child proximity as well as measures of support, affection, association, and conflict.

Along with the SOEP, other large-scale panel surveys with genealogical designs such as the Panel Study of Income Dynamics now provide geographical data in sufficient detail to investigate the distance of initial move-outs as well as their long-term outcomes over the family life course. Future research should capitalize on this potential for comparative longitudinal analyses. Until now, only one cross-sectional study by Lauterbach and Pillemer (2001) exists, suggesting that the determinants of parent-child proximity are surprisingly similar in Germany and the United States, despite considerable institutional variation in public welfare provision.

We began by noting that nothing was known about the spatial distance of initial move-outs, whereas many studies examined the timing of exits from the parental home. In view of that, it seems like a natural step for future research to incorporate both dimensions into joint decision making models of destination choice.

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Table 1: *Descriptive Statistics Before and After Imputation (n=1,986)*

	Before imputation		After imputation		
Variables	Mean	SD	Mean	SD	Range
Distance	67,664.63	120,641.10	66,362.31	119,291.20	1 - 686,875
Distance: missing	.25		*		
Age	22.61	3.60	=	=	16 - 35
Female	.53		=		0 - 1
Education[a]					
Low	.16		.21		0 - 1
Intermediate	.27		.35		0 - 1
High	.34		.44		0 - 1
Education: missing	.23		*		
In a relationship	.50		.55		0 - 1
In a relationship: missing	.10		*		
Migrant[b]	.20		=		0 - 1
Father's education[c]					
Low	.25		.35		0 - 1
Intermediate	.24		.36		0 - 1
High	.21		.29		0 - 1
Father's education: missing	.31		*		
Per-capita household income[d]	881.21	466.28	882.47	466.93	100 - 5000
Per-capita household income: missing	.03		*		
Living with one parent	.21		.22		0 - 1
Living with one parent: missing	.02		*		
Number of siblings	1.39		=		0 - 11
Firstborn[e]	.59		=		0 - 1
Own child[f]	.03		=		0 - 1
Pregnant	.03		=		0 - 1
East Germany	.29		=		0 - 1
Local youth unemployment rate (%)	10.79	4.95	=	=	1.7 - 26.8
Moved from place of childhood	.14		.15		0 - 1
Moved from place of childhood: missing	.09		*		
District					
Nucleated town	.25		=		0 - 1
Urban hinterland	.42		=		0 - 1
Rural hinterland	.17		=		0 - 1
Rural area	.16		=		0 - 1

Note: SOEP, release 2010, own calculations. = no missing data. *all missing data imputed. [a,c] low = basic secondary school; intermediate = intermediate secondary school; high = upper secondary school. [b] First- and second-generation immigrants. [d] The Euro is the official currency in Germany since 2002; values in Deusche Mark (DM) from the years 2000 and 2001 were converted into Euros (1 DM = 0.5113 Euros). [e] Includes only children. [f] Own child living in the parental household.

Table 2: *Distribution of Moving Distance*[a] *by Level of Education*

Percentiles	Total	Level of education[b]		
		Low	Intermediate	High
	N = 1,986	*n = 413*	*n =702*	*n = 871*
5%	276	189	218	391
10%	556	414	443	903
25%	1,861	1,229	1,456	3,640
50%	9,119	4,728	6,424	24,425
75%	69,355	18,664	30,502	128,268
90%	243,348	100,785	173,408	299,317
95%	362,270	254,603	301,716	424,804

Note: SOEP, release 2010, own calculations. Analyses based on 30 sets of imputed data. [a] Distance of first move-out from the parental household (in meters). [b] low = basic secondary school; intermediate = intermediate secondary school; high = upper secondary school.

Table 3: *Ordinary Least Squares Regressions of Logarithmic Moving Distance (N = 1,986)*

	Model 1		Model 2	
Variables	B	SE B	B	SE B
Individual Factors				
Age quintiles (ref.: 3rd: 21 – 22)				
1st: 16 – 19	.23	.17	.24	.17
2nd: 20	.58**	.19	.59**	.19
4th: 23 – 25	-.33*	.16	-.34*	.16
5th: 26 – 35	-.29	.18	-.30†	.18
Female (ref.: male)	.13	.12	-.04	.14
Education[a] (ref.: low)				
Intermediate	.22	.17	.21	.17
High	1.21***	.18	.83**	.28
In a relationship (ref.: *no*)	-.14	.11	-.14	.11
Migrant[b] (ref.: *no*)	-.02	.16	-.03	.16
Family and Household Factors				
Father's education[c] (ref.: low)				
Intermediate	-.03	.14	-.03	.14
High	.28	.18	.28	.18
Per-capita household income (log)	.36**	.14	.37**	.14
Living with one parent (ref.: both)	-.17	.15	-.18	.15
Number of siblings +1 (log)	.09	.14	.10	.14
Firstborn[d] (ref: *no*)	-.07	.12	-.07	.12
Own child[e] (ref.: *no*)	-.81**	.31	-.84**	.31
Pregnant (ref.: *no*)	-.38	.35	-.38	.36
Community Factors				
East Germany (ref.: West)	.75***	.20	.44†	.25
East Germany x Female			.60**	.26
Local youth unemployment rate	-.03	.02	-.03	.02
Moved from place of childhood (ref.: *no*)	.52**	.15	.51**	.15
District (ref.: nucleated town)				
Urban hinterland	.12	.15	-.11	.20
Rural hinterland	.23	.20	-.04	.27
Rural area	.66**	.21	.38	.25
Urban hinterland x Education high			.45	.28
Rural hinterland x Education high			.52	.39
Rural area x Education high			.64†	.36
Constant	5.99***	1.03	6.27***	1.04
R^2	.13		.14	
Adj. R^2	.12		.13	

Note: SOEP, release 2010, own calculations. Analyses based on 30 sets of imputed data. [a,c] low = basic secondary school; intermediate = intermediate secondary school; high = upper secondary school. [b] First-

and second-generation immigrants. [d] Includes only children. [e] Own child living in the parental household. Number of clusters: *1,515*. $^{\dagger}p < 0.1$. $*p < .05$. $**p < .01$. $***p < .001$.