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Research Article

Coping with ageing: An historical longitudinal study of internal return migrations later in life in the Netherlands

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Coping with ageing: An historical longitudinal study of internal return migrations later in life in the Netherlands

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Abstract

BACKGROUND
A return migration later in life can be seen as a coping strategy to deal with care needs and other difficulties. Understanding these return migrations requires a comprehensive approach that takes previous migrant trajectories into account.

OBJECTIVE
This study aims to investigate how long-term migrant trajectories, other relevant life course factors, and birth cohort impacted the risk of return migration later in life in the period 1900–1994.

METHODS
Using longitudinal data from the Historical Sample of the Netherlands, we combine sequence analysis and continuous-time event history analysis for recurrent events to estimate the effect of migrant trajectories from birth to age 50 and other individual characteristics on the risks of older adults' return migrations to birth/childhood and adulthood dwelling places; of short-, medium-, and long-distance returns; and of returns to rural and urban dwelling places. We also examine if these risks have changed in the 20th century Netherlands.

RESULTS
We identify nine distinct clusters of internal migrant trajectories based on residential municipality size. Persons with a stepwise migration trajectory are more likely to return

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later in life to places where they resided during adulthood. Deteriorating health status, low socioeconomic status, or having no partner are associated with a higher propensity to return to a birthplace or childhood dwelling place. However, returns to places of origin or childhood, to places of adulthood, and long-distance migrations decreased over time.

CONCLUSIONS AND CONTRIBUTION

The results underline the diversity of return migration types among elderly people according to past migrant experiences and other demographic events, indicating the importance of expanding the notion of return migration beyond place of origin.

1. Introduction

The aim of this study is to investigate whether internal migrant trajectories and other demographic events over the life course have an effect on internal return migrations later in life. Migrations later in life in general, and return migrations in particular, are of interest because they impact urban planning and healthcare. Understanding the factors involved in the decision-making of the elderly is therefore of great importance. This study does not regard the elderly as passive and dependent – "le modèle de la vieillesse dégradée" (Oris, Dubert, and Viret 2015: 205) – a representation that was dominant until recently. On the contrary, this study considers the elderly's agency (Elder, Johnson, and Crosnoe 2003) to return to a previously known location as a strategy for coping with ageing. Agency is one of the central concepts in life course theory, but it has received less attention in later life (Marshall 2000).

In our research, return migrations later in life are defined as moves after age 50 to municipalities within the Netherlands in which an individual has already lived for some time. We start from the premise that internal return migration can be a recurrent event, since repeat return migrations may have occurred to both one's birthplace and other places, thus extending the notion of 'return' to include diverse destinations where persons had lived over their life course (Newbold and Cicchino 2007: 213). Therefore, our interest is in all previous places of residence. We are primarily concerned with the role played by long-term migrant trajectories in later-life decisions. We reconstruct migration trajectories from birth until age 50 and relate these to the likelihood, distance, and destination of later-life (return) migrations. For this purpose we incorporate a recent procedure of event history analysis into the models by including past migrant trajectories derived from sequence analysis as predictor variables (Ritschard and Studer 2018). Our study covers an extensive period (1850–1994), because over time the social setting of old age care has shifted from the family to the public sector, which has probably led to a redirection of the migration trajectories of the elderly.

2. Theoretical framework

We will now discuss in more detail why return migrations of the elderly and the impact of previous migration experiences deserve more scholarly attention, why the life course perspective and sequence analysis approach are the most suitable approaches for this topic, and why tracing changing trajectories across the entire 20th century is of particular interest. Studies showing long-term empirical evidence regarding the determinants of later-life return migrations from a life course approach are still rare. With the notable exception of a paper on a 19th century rural population (Neven 2004), most research explores 20th or 21st century data by covering short follow-up periods (Percival 2013). In historical migration studies, international emigration has attracted much more attention than internal migrations, and within the latter field, return migrations have by and large been ignored (Harper 2005).

In social geography, Litwak and Longino's (1987) life course model of later-life migration has been widely accepted. It is mostly derived from evidence on old-age internal migrants in the United States during the 1970s. This model proposes a typology of migrations later in life (amenity- or lifestyle-driven moves, assistance moves close to adult children, and nursing home moves) that are linked to the main life course events in later life: retirement, living alone or living with spouse only, and health decline. This model has also been used in studies on contemporary Europe (Bloem, Tilburg, and Thomése 2008). Dutch researchers have showed more complex trajectories linking life events (Mulder and Hooimeijer 1999). However, the scope of these studies is frequently limited to small samples and units of analysis in specific cities. Moreover, although life course factors associated with relocations in later life constitute a growing field of research (Bloem, Tilburg, and Thomése 2008; van der Pers, Kibele, and Mulder 2015), Walters and Ower (2000) note that most models have only a modest predictive power in later-life migrations. Meyer and Speare (1985, cited in Walters and Owen 2000: 142) report that less than half of all elderly mobility is a short-term response to the major later-life course events that happen in old age. Therefore, it is likely that migratory moves are related to experiences much earlier in life. Although other areas of life course research, such as typically in the context of old-age health, carefully consider early life conditions and cumulative processes across adulthood (Burton-Jeangros, Cullati, and Blane 2015), this is rarely done in relation to migration (cf. Longino et al. 2008; Walters 2002).

Examples of such a life course approach, where migrations are embedded in individual life course trajectories, include Kaufmann, Dubois, and Ravalet (2018: 210), who show that migrant trajectories or 'mobility paths', in conjunction with socio-demographic characteristics, are essential aspects for understanding work-related mobility. In the same vein, Walters and Owen (2000: 142) emphasize the importance of migrant backgrounds to explaining migration later in life. Few studies investigate

previous moves in detail. Using data from the University of Michigan's Panel Study of Income Dynamics, DaVanzo (1981: 7, 54) studies internal return migrations of American married couples and finds that a previous return deters further moves and that past migrant experiences at various interstate and intercounty levels increases the likelihood of moving again. Rosenbaum-Feldbrügge (2018) shows that when a marriage partner dies the surviving spouse rarely migrates, but does so more often when s/he has migrated previously. His study is based on the same Dutch data and covers the same period as this study, but analyses younger age groups.

What does the inclusion of long-term migrant trajectories from birth until late adulthood imply? From our perspective, migrations across life give individuals the chance to discover places where they can elaborate social relationships, observe atmosphere, gain knowledge on housing conditions, and note the availability of care institutions. We are interested in all possible changes of municipality of residence, as when individuals decide to migrate, i.e., to 'return home' to where they grew up or return to another place where they have previously lived, they act on this accumulated knowledge and use it to make a choice. The portfolio of places forms a person's 'spatial capital', which can also be seen as the acquisition of general skills that can be used to migrate (Kesztenbaum 2008: 182). Spatial capital can be defined as experience and knowledge of and information on conditions, contacts, and opportunities in various places. Like Lévy (2013), we conceive it as a form of social capital which emphasises the spatial dimension of society, particularly its connection to the capacity to be mobile and to the set of resources accumulated by an actor which allows them to engage with places. Following the existing literature, other drivers that are worth considering are major life course transitions in the ageing process, such as widowhood, the onset of ill-health, and an individual's socioeconomic resources (since moving entails costs).

Prospective life course perspectives on migration are more common than those that include early-life events. Mulder (1993) shows gender differences in short- and long-distance migrations in the Netherlands at young and adult ages, suggesting work and family triggers for the move. A growing body of literature focuses on the effect of childbearing and partnership formation on adult migration (Kulu 2008; Michielin and Mulder 2008). A sequence analysis approach is often absent in migration studies, despite the relevance of age at previous moves, durations of residence, and connections with other life course domains such as family formation (Wingens et al. 2011; McCollum, Keenan, and Findlay 2020: 205). There are a few notable exceptions, such as Zufferey, Steiner, and Ruedin's (2020) study of contemporary international and internal migration trajectories in Switzerland. Sequence Analysis (SA) is a generalized pattern search method that allows us to classify migrant trajectories in order to obtain a comprehensive understanding of variation in migration histories in relation to the phenomenon of return migration in later life (Abbott and Tsay 2000: 5).

Our study covers an extensive period (1850–1994) in order to assess the impact of broad societal changes on elderly people's decision to return to a previous place of residence or to their birthplace. During this period the Netherlands underwent rapid demographic, societal, and economic change. Modern welfare institutions (Wintle 2000) were established, such as the State Commission for Unemployment (1909), which intervened in the labor market with legislation monitoring immigration and supporting emigration during periods of unemployment (van Eijl and Lucassen 2006: 158).

How is Dutch societal 'modernization' connected to internal migration? Over the last 200 years, during the transition from a pre-industrial to an industrial society, the rate of migration within European countries such as Germany and the Netherlands rose and then declined. This is especially true of the European countries where the industrial transition took place at the end of the 19th century. Zelinsky's mobility transition theory (1971: 221–222) postulates that the modernization process is characterized by definitive patterns in the intensity of migrations. His 5-stage development model proposes a progressive change from a pre-modern transitional society with few moves, to a super-advanced society in which there is an intensification of mobility, especially of circulatory urban-to-urban and intra-urban moves. Based on German data, Steve Hochstadt (1999: 275–276; also Sander 2018: 230) proposes a more dynamic and interactive model based on circular migrations between rural and urban settlements, which likely applies to the Netherlands as well (Lucassen 1999). In his view, migration rates were already high before industrialization, and phase 1 of the transition was characterized by a prevalence of circular moves throughout the country. Then, in phase 2, moves to the industrial areas and large cities increased. At first these later moves were partly or largely inscribed in the preceding circular logic, and then they tended to become more autonomous. Finally, in phase 3, after a peak around 1900, internal migration declined in the 20th century, particularly after World War I, which Hochstadt relates to a more stable job market. The introduction of railroad commuting and the economic situation also contributed to a decrease in labour migrations (Schwarz 1999: 230–233). In the Netherlands, until the late 19th century, young unmarried people frequently undertook life-cycle service[4] (Bras and Kok 2004), implying many circular migrations during youth (i.e., frequent returns to the parental home) (Kok 1997). The migration rates of 15–44 year olds were highest around 1880 (Kok 2004: 143). Industrialization started in the southern and eastern parts of the

[4] Life-cycle service refers to the work experience undertaken by many young people on farms or as domestic urban servants in middle-class households to save for marriage and family formation in Western European countries from the preindustrial period until the Second World War (Bras, Liefbroer, and Elzinga 2010: 1015; 1025). While farm work declined during the industrialization period in the 19th century, domestic labour increased, particularly female domestic service in urban areas (Bras 2004: 242).

country and developed later in the western areas, where the main port cities such as Amsterdam or Rotterdam are located.

The Netherlands had a long tradition of elderly persons – especially from the farming and middle classes – who managed to remain independent by coresiding with an unmarried child, hiring help, or making use of commercial or charitable elderly care institutions. Given the country's small scale and high population density, additional support could easily come from children living nearby (Boele et al. 2018: 381; Kok and Mandemakers 2012). Coresidence with married adult children was generally uncommon and declined even further in the 20th century. When elderly parents were taken in, it was most likely the wife's widowed mother (Kok and Mandemakers 2010: 306–307). The border areas with Germany were an exception. Here, extended families were common among farmers and the married male household head was supposed to care for his parents until their death. However, after the Second World War this practice came to be regarded as too restricting for the younger generation and began to be discouraged; e.g., by the churches (Kok and Mandemakers 2009: 152).

What changes can we expect over time in the (return) migrations of the elderly? Poor relief supplemented the incomes of the elderly, especially women (Schmidt 2007), but the desire to have children nearby must have remained unchanged. The possibility for poor people to migrate improved in 1870 due to a change in the poor laws. Until that year, the municipality where an impoverished migrant lived could request that their birth municipality reimburse the costs of poor relief, but after 1870 the municipality of residence had to assume all the charges. Indeed, small, rural municipalities were eager to see their poor leave for the cities (van Leeuwen 1998). The introduction of a non-contributive old-age pension in 1913 brought some relief, and pension-receiving parents were more often welcome in the households of their children. However, the system did not provide enough financial security for the elderly to relocate close to their kin and remain independent (Bulder 1993: 88–90). It was not until 1957 that a universal pension scheme was established, 'institutionalizing' the life course with a fixed retirement age and defining the legal status and rights of the elderly population (Kohli 2007; Oris et al. 2017). Institutional elderly care expanded rapidly in the Dutch territory after World War II (van Hooren and Becker 2012). With the introduction of the General Social Security Law in 1963, poor relief became the responsibility of the Dutch welfare state (van der Valk 1986, cited in Bras, Liefbroer, and Elzinga 2010: 1015). This evolution follows the pattern postulated by modernization theories, where local social support (generally associated with community engagement and family ties) weakens across time as nationally organized institutional care gains prominence (Skocpol 1997). All this implies that the dependency of the elderly on children living nearby declined further.

3. Research hypotheses

Our expectations regarding long-term migrant trajectories, other life course predictors, and changes over time in relation to return migration later in life can be formalized in five hypotheses. Hypothesis 1: Past migrant histories were associated with internal return-migration types later in life, especially with returns to places lived in during adulthood, as this is a life course stage when migrant experiences related to work and family formation are accumulated, which affect decisions in later life (Longino et al. 2008; DaVanzo 1981). A process of stepwise migration during the life course is significant for later life as it represents an individual adaptation strategy, generally moving from rural birthplace to a (large) city via an intermediate small town (Conway 1980: 6). When people return later in life to previous places of residence other than their birthplace, they accumulate spatial capital based on experience, knowledge, and social connections (Newbold 2013: 44). The propensity to return later in life will vary according to a portfolio of previous migrant experiences at the inter-regional, intra-regional, and intra-provincial levels, as part of the individual migration history (adapted from DaVanzo 1981: 54).

A relevant issue in contemporary social gerontology is relocating in later life when health is deteriorating, especially to care institutions. Health decline in elderly people is the most important predictor of moves to institutional care facilities (residences) (Bloem, Tilburg, and Thomése 2008). Internal returns to adulthood places tend to be associated with the search for institutional care, and therefore a higher propensity to choose that kind of destination is expected if the elderly migrant person has severe health problems. However, this kind of move can also be considered a preventive strategy to deal with frailty in old age, known as 'adjustment relocation', involving maintaining autonomy at home while living close to persons or services (Lalive d'Epinay and Spini 2008; Nowik and Bringé 2016). Poor health implies that short- or medium-distance migrations are preferred to long-distance migrations. Hence Hypothesis 2: Deteriorating health status after age 50 was associated with a higher propensity to return to not-too-distant places**.**

Moreover, when ageing results in accumulated vulnerabilities, moving to avoid isolation is a reasonable option. According to the nuclear hardship hypothesis (Laslett 1988), in pre-welfare-state societies where the dominant household type was nuclear – as in most of the Netherlands – children moved out one by one, ultimately leaving their old parents in an empty nest (Oris and Ochiai 2002). This family dynamic has to be related to the notion of 'linked lives' – an important component of the life course approach – and how they affect individual agency (Elder, Johnson, and Crosnoe 2003). For ageing individuals, exercising agency implied balancing constraints and opportunities. We approach constraints through the household dependency ratio; i.e., the ratio between adults of active age and dependent members. Household composition informs us about

the proximity of kin, which contemporary studies show mediates migrant decisions in old age (Wiseman and Roseman 1979; van der Pers, Kibele, and Mulder 2015; Bolzman 2013). In the past, households often functioned as units of production or income-pooling. Hence Hypothesis 3: Migration of family groups, especially over long distances, was more difficult when there was a high dependency ratio and the balance between producers and consumers was unfavourable. Whatever the constraints affecting the probability of migration and the length of the move, individual agency appeared in the choice of destination – a choice necessarily framed by the opportunities offered in the Dutch space. We start from the premise that internal return migrations to places lived in during adulthood are a search for institutional care, while returning to one's birthplace is a search for social support from siblings, extended kin, or the community.

Elderly internal return migrants can be positively or negatively selected in terms of socioeconomic position and partnership status. Existing studies show divergent results depending on variation in the source, population under study, and context. For example, using longitudinal data on elderly international return migrants leaving Sweden, Klinthäll (2013) finds a polarized pattern or a U-shaped relationship between return migrations and socioeconomic characteristics, with more returns from those of both high and low socioeconomic status (SES). However, other studies on internal return migrations to birthplaces in Sweden show a higher risk of returning only for those of low SES and the unmarried (Lundholm 2012: 80). A transition in partnership status is considered an important predictor of moving in later life (Serow 1988). Elderly people who have lost a partner are more likely to move (Litwak and Longino 1987), particularly when recently widowed (Longino et al. 2008). Moreover, widowed, single, and divorced persons are more likely to move long-distance (Nowik and Bringé 2016). The higher prevalence of these civil statuses among the oldest elderly women (Arber and Ginn 2005: 592) explains why they are more mobile than men (Schumacher and Moreau 2018: 11). From this evidence, and by adapting Lundholm (2012), we formulate Hypothesis 4: Not having a partner or being of low SES was associated with a higher propensity to return. Moreover, the poorer elderly moved shorter distances due to moving costs at old ages. Women, especially the unmarried or widowed, migrated to urban places visited as adults because they were better helped by poor relief and charity associations, which were historically more developed in towns and cities (van Leeuwen 1998; Oris and Ochiai 2002).

In line with the attachment theory, empirical studies have evidenced that those born in rural areas return to their birthplace more frequently (Lundholm 2012). However, new generations tend to have fewer links to rural areas (Warnes and Law 1984). Thus, we expect that ties to the place of origin weakened over time. Moreover, in Hochstadt's (1999) interpretation, internal migration declined after 1900, and in contemporary Dutch society old-age mobility has become less frequent (Fokkema, Gierveld, and Nijkamp 1996), which Bloem, Tilburg, and Thomése (2008: 38) attribute to a well-developed

public welfare system and the short time needed to travel across the country. Hence Hypothesis 5: Returns to the birthplace decrease in the younger birth cohorts, as do returns to places of residence in adulthood, although to a lesser extent. The expansion of institutional care provision across the country would make return migration to adult places less necessary under the premise that this is a search for institutional care. Distance should matter less and less for cohorts born 1860–1890 compared to cohorts born between 1850 and 1860.

The next section describes the unique database that supports this historical and longitudinal project and the limitations that have to be taken into account when selecting methods and proposing an analytical approach. We follow that with some descriptive statistics, then in section 5 present the results of the multivariate models, and end with a concluding discussion in section 6.

4. Methods

4.1 Data

This study uses data from two sources: population registers from 1850 to 1940, consisting of household registration in bound volumes and loose family cards, and 'personal cards', an individualized form of population register introduced in the late 1930s that replaced family cards. They are the key sources for the Historical Sample of the Netherlands (HSN), a large national database of individuals born in the Netherlands between 1812 and 1922, based on a 0.5% random sample drawn from birth certificates comprising over 78,000 individuals (Mandemakers 2000, 2006a). A subset of the HSN database, Data Set Life Courses Release 2010.01 (International Institute for Social History 2010), comprises longitudinal micro-level information on 36,680 individuals from Dutch birth cohorts 1850–1922. The HSN has a longitudinal structure and traces persons from birth until death or until end of observation – mostly due to international emigration in the case of persons still living (Mandemakers 2006b, 2010).

Detailed sociodemographic information and individual residential changes were retrieved from population registers for the period 1850–1940. Dutch population registers were introduced by Royal Decree in 1850, and local authorities were in charge of updating the document according to information provided by citizens, including date and place of departure, and with information from decennial censuses. The quality of Dutch population registers is widely recognized, but any registration system tracking residential changes is imperfect. Nonregistration of short-term moves, especially those associated with life-cycle service or seasonal work, was inevitable (Bras and Kok 2004). Moreover,

though the sample members have been carefully followed from place to place within the Netherlands, this was not done for all members of the household.

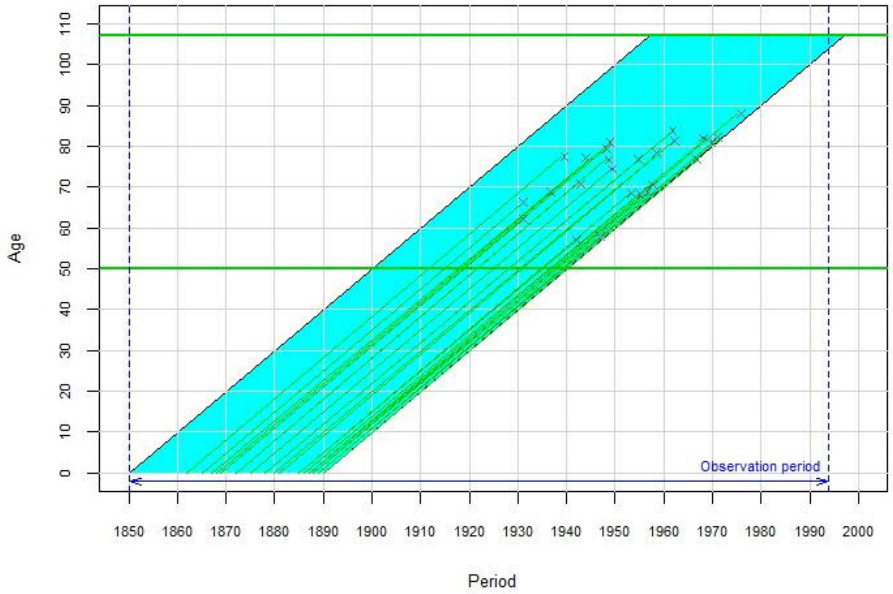
In 1940 the population registers were replaced with a new system known as personal cards, and in 1994 the system was automated, with even less information available for research. This study has linked the data produced by the two systems so that individuals belonging to birth cohorts 1850–1890 are followed from 1850 until 1994 (Figure 1). Critical information about individual marital, occupational, and internal migration changes has been collected at all ages.

Our study deals with internal migrations, defined as changes in municipality of residence within the frontiers of the country. For the purpose of this study, a subset of internal migrants still alive at age 50 (those belonging to birth cohorts 1850–1890) has been selected (n = 8,214) (Table A-1. Selection procedure of the individual's subset. Online Appendix). Internal return migrations later in life are defined as moving back, after age 50, to a municipality where the person had lived during their life course before age 50. This broad definition of return migration therefore includes returns not only to birthplaces but also to other places of residence, which allows for a better understanding of migration patterns among the elderly (Newbold 2013: 44). 'Older people' are defined in our study as the population aged 50 and over, in line with historical and contemporary research measuring outcomes in old age (Tsuya and Nystedt 2004; Börsch-Supan, Brandt, and Schröder 2013: 2). We investigate the risks of experiencing an internal return migration above the age of 50 (this study's sample members reached this age between 1900 and 1949) until 1994. One of the explanatory variables is the individual's past migration trajectory during their first 50 years of life; thus, the period between 1850 and 1949.

During this broad study period the Netherlands reduced the number of municipalities from 1,209 in 1850 to 1,054 in 1940, and finally to less than 400 in 1994. This research applies the 1939 classification as the common unit of spatial analysis for the Dutch municipal population registers.[5] Guided by an exhaustive repertoire of historical changes in Dutch municipalities (van der Meer and Boonstra 2011), the names and sizes of municipalities were harmonized for the whole period of study, following previous works (Stovel and Bolan 2004).

[5] Dutch municipalities provide updated statistical information to the Central Bureau of Statistics on a yearly basis by law, including size and name of municipalities. Information from 1939 is part of a yearly series of reports from 1920 to 1970.

Figure 1: Lexis diagram illustrating the subsample of four 10-year birth cohorts (1850–1890) of internal migrants alive after age 50 in the Netherlands. Random subset of 25 individuals



Source: Own elaboration based on the Historical Sample of the Netherlands (HSN), Data Set Life Courses Release 2010.01 and Data Set Personal Cards version 3:51.

4.2 Dependent variables

Different definitions of internal return migrations, the failure event under study, are operationalized according to a life course perspective and from a geographical point of view. We consider that an individual is at risk of experiencing returns later in life from age 50 until death or last observation. We find 1,639 events of internal return moves after this age for 8,214 older migrants. Of these events (or return moves), 66% correspond to a first return migration and the remaining 34% to more than one return (repeated or recurrent event). In other words, 13% of the elderly ever-migrated persons in the subset experienced a return migration after age 50, and 7% of them had more than one return, i.e., repeat return migration. Of the total events, 798 are returns to the place of birth or childhood (where the individual lived when aged 0–15), and 803 to places where the studied individual lived during adulthood (when aged 22–49). A few individuals who returned later in life to places where they lived during their youth (when aged 16–21)

were excluded from analysis in order to focus on the two previous well-defined types of returns identified from a life course perspective.

Following previous studies on Dutch internal migrations (Kok, Mandemakers, and Mönkediek 2014), we define short-distance migrations as moves of less than 10 km, medium-distance migrations as moves between 10 km and 40 km, and long-distance migrations as moves over 40 km. Thus, we obtained 406, 489, and 447 events of returns later in life, respectively. It was not possible to calculate the distance covered in 18% of the events, due to unknown previous place of residence before returning to any of the past locations where the person lived previously. Lastly, rural and urban internal return migrations later in life were identified, 26% of which were in rural settings using a criterion of less than 5,000 inhabitants (Bairoch and Goertz 1986), and then applied to municipalities in Dutch municipal population registers as described in 1939.

4.3 Explanatory variables

A knowledge of the opportunities offered across the Dutch space is central in our hypotheses. To identify the relevant trajectories we used Sequence Analysis (SA), which is a holistic approach in life course research that uses longitudinal data to produce typologies of sequences or trajectory patterns over time and applies specific dissimilarity measures according to the research questions (Studer 2013; Studer and Richard 2016). In this study we aim to analyse the impact of previous migration trajectories on the propensity to return later in life. Therefore, to identify ideal-type patterns of migration trajectories, our interest centres on the previous long-term migrant trajectories of each individual (*i)* at each year (*y)* from birth until the person reached the age of 50. Thus, the sequences are aligned based on age. The subset's longitudinal structure allows for reconstructing individual internal migrant trajectories by distinguishing between 'native' municipalities of residence (i.e., place of birth or first observed residence) and others. Dutch municipalities according to the 1939 classification can be divided in three categories: rural (< less than 5,000 inhabitants), medium (5,001–100,000), and large cities (> 100,000 inhabitants). Combining information about place of birth and location-type, we recode the information on living place as 7 types: (a) native large city, (b) native medium-sized city, (c) native rural location, (d) non-native large cities, (e) non-native medium-sized cities, (f) non-native rural locations, and (g) unspecified, where information about the residence locality was unavailable.

We apply a data-mining-based technique to investigate past migration patterns in the long term. Optimal matching analysis measures the dissimilarity between two sequences at the minimum total cost of transforming one sequence into another. We follow a state attribute-based costs strategy by using the Gower dissimilarity algorithm

(Gower 1971). According to Studer and Ritschard (2016), this distance measure is suitable to determine the pairwise substitution costs for a combination of qualitative and quantitative attributes – such as place of birth and residential municipality size in this study – allowing measurement of the distance between all attribute vector pairs that comprise the categorical states of migrant trajectories. We apply the 'features' method (the Gower distance-between-state features) to generate substitution costs by means of the function 'seqcost' developed in the TraMineR package (Gabadinho et al. 2011a). Among the 10 tested solutions (for 2 to 10 cuts), the 9- and 10-cluster solutions indicate the highest average silhouette width (ASW = 0.43 and ASW = 0.45, respectively). We keep 9 groups as the best solution to test how a pattern of stepwise migrations – cluster 4 discussed below – has a strong effect on the propensity for return migrations in old age. The partition into a 10-cluster solution homogenises this trajectory. Aside from the best quality criteria obtained from the ASW quality measure, a final 9-cluster solution allows describing a typology of migrant trajectories linked to the theory. The TraMineR package (Gabadinho et al. 2011a) was used for the SA and the WeightedCluster package for the cluster analysis (Studer 2013). Figure 2 displays the final typology of past migrant trajectories.

Besides the clusters of trajectories based on birthplace and rural–urban hierarchy, we constructed three separate indicators at intra-provincial, intra-regional, and inter-regional level between birth and age 50 by using a threshold of one, two, or more than three movements. The other explanatory variables consist of those identified in the literature as possible predictive life course factors influencing the propensity to migrate later in life and return migrate. These predictors comprise proximity to death as a proxy for health status at age 50 and other sociodemographic characteristics (age group, sex, marital status, household composition, occupational status, religious affiliation, and place of birth). Based on a previous study (van der Pers, Kibele, and Mulder 2015), a proxy for deteriorating health status was created with the variable 'proximity to death'. The individual's subset allows calculating how close (less or more than 5 years) elderly people were to death after age 50. The date of death was recorded for almost all individuals in the study, except for 1.54% whose last observation was after 1890 (right censored). Of these, only 30 individuals belong to the youngest cohort, who were presumably alive at the end of the observation window in 1994. The birth cohorts are divided into four 10-year groups: 1850–1859, 1860–1869, 1870–1879, and 1880–1890.

Marital status refers to the person's relationship situation at age 50, differentiating between married, widowed, divorced, and unmarried. The variable also contains a time-varying category that reflects changes in status from married to widowed from age 50 until death. Becoming widowed is considered a risk factor in migrations later in life (Bonnet, Gobillon, and Laferrère 2010). The dependency ratio at the household level at age 50 is calculated as the sum of children less than 14 years old and adults older than 64

years old, divided by the total members in the household (Mandemakers and Kok 2010: 8). Using the HISCLASS code (Mandemakers et al. 2018), the variable 'occupational status at age 50' differentiates between elite, lower-middle class, self-employed farmers, skilled workers, unskilled workers, and unknown. Due to the frequent underregistration of female employment in historical population registers (Janssens 2014), women's occupation is complemented with information from marriage certificates. We are aware that in most cases many years separated marriage from age 50, but it was the only option to locate women within the socioeconomic structures. Religious affiliation is classified as Liberal Protestant, Orthodox Protestant, Catholic, Jewish, other denomination, without, or unknown affiliation (Kok 2017). We differentiate place of birth according to the four main country regions. The summary statistics on independent variables are reported by sex in Table 1.

Table 1: Summary statistics, the Netherlands, elderly individuals born between 1850 and 1890, ever migrated within the country (n = 8,214)

	Women	Men			
	Percentage	Percentage	Mean	Min.	Max.
Past migrant trajectories from birth until age 50					
Unspecified	10.9	12.7			
Native to unspecified	14.1	15.0			
Stable medium city	16.3	17.8			
Stepwise migration	13.9	12.8			
Lateral rural	6.5	6.7			
Medium city	12.9	10.8			
Stable rural	6.1	7.7			
Unspecified to native	7.9	6.8			
Stable large city	11.3	9.8			
Dependency ratio. Women, age 50			0.2	0	0.8
Dependency ratio. Men, age 50			0.2	0	0.9
Civil status, age 50					
Married	47.1	50.9			
Divorced	1.1	0.5			
Widowed	7.9	3.9			
Unmarried	29.8	32.2			
Unknown	14.2	12.5			
Occupational status, age 50					
Elite	0.7	4.2			
Lower middle class	7.5	20.3			
Self-employed farmer	6.3	28.2			
Skilled worker	2.6	14.4			
Unskilled worker	39.2	25.1			
Unknown	43.8	7.7			

Table 1: (Continued)

	Women	Men			
	Percentage	Percentage	Mean	Min.	Max.
Religious affiliation					
Liberal Protestant	53.4	53.3			
Orthodox Protestant	7.1	6.7			
Catholic	29.9	30.7			
Jewish	1.5	1.4			
Other/Without/Unknown	8.2	8.0			
Closeness to death, age 50					
Died within 5 years	3.8	3.4			
Did not die within 5 years	96.2	96.6			
Birth cohorts					
1850–1859	7.2	7.3			
1860–1869	23.2	22.9			
1870–1879	28.8	27.5			
1880–1890	40.8	42.3			
Birth region					
North Netherlands	20.3	20.1			
East Netherlands	14.4	13.8			
West Netherlands	49.0	50.2			
South Netherlands	15.4	15.2			
Unknown	0.9	0.7			
Intra-provincial migrations, age 0–50					
0 migrations	34.1	37.7			
1 migration	23.1	22.2			
2 migrations	16.2	16.3			
>2 migrations	26.6	23.9			
Intra-regional migrations, age 0–50					
0 migrations	62.8	67.4			
1 migration	13.2	12.2			
2 migrations	9.7	9.2			
>2 migrations	14.4	11.2			
Inter-regional migrations, age 0–50					
0 migrations	76.4	80.0			
1 migration	9.8	8.7			
2 migrations	7.4	6.4			
>2 migrations	6.4	4.9			

Source: Own elaboration based on HSN data.

4.4 Analytical strategy

We first perform cluster analysis to determine types of past migrant trajectory, then use continuous-time event history analysis (EHA) from age 50 until death in which recurrent events can occur (Allison 2014) to assess the association of those previous migrant trajectories and sociodemographic factors with the 7 (not mutually exclusive) types of internal returns later in life, derived from theories of migration and previous research, which we delineated in the introduction: returns to 'home'; to adulthood dwelling places; those engaging in short-, medium-, or long-distance moves; and returns to rural and urban places. We use a continuous-time event analysis instead of a discrete-time event analysis because it observes the occurrence of returns in later life more accurately. We then employ dates at which these events occurred instead of rounded years.

Hypothesis 1 tests whether previous migrant processes were associated with internal returns later in life to birth/childhood or adulthood places, and whether other previous migrant background had a strong effect on the likelihood of returning. The statistical analyses allow assessing what effect being close to death had on the propensity to make a return migration late in life (Hypothesis 2). Hypothesis 3 tests whether a higher household dependency ratio was related to lower return migration hazards and to the choice of destination. We test Hypothesis 4 regarding the effect of not having a partner or having a low SES on the likelihood of experiencing the different types of internal return moves. Finally, to examine Hypothesis 5 regarding the decrease of internal return migrations across time, we look for the association between birth cohort and return migration. (See Online Appendix 2 for details of the sensitivity analyses.)

5. Results

5.1 Unravelling past migration trajectories

Migration is a multifaceted phenomenon, implying that the timing and sequence of moves and the duration of residence in diverse contexts are all important aspects. First, migration is considered a socio-historical and age-dependent process. The timing of migration is indicative of the life course stage and the normative 'scripts' associated with a move, such as being young and single during life-circle service (Bras and Kok 2004). Second, according to the urban hierarchy hypothesis (during adulthood) or its reverse, the counter-urbanization hypothesis (during old age) (Friedrich and Warnes 2000; Stockdale 2016) the sequencing order of the states or places where a person has lived may matter, particularly in stepwise migrations. Lastly, the duration or exposure time spent in places is a relevant issue regarding the cumulative capital of migrant experiences according to

location type (Stovel and Bolan 2004). All these dimensions are present in our typology of 9 internal migrant trajectories based on cluster analysis (see Figure 2).

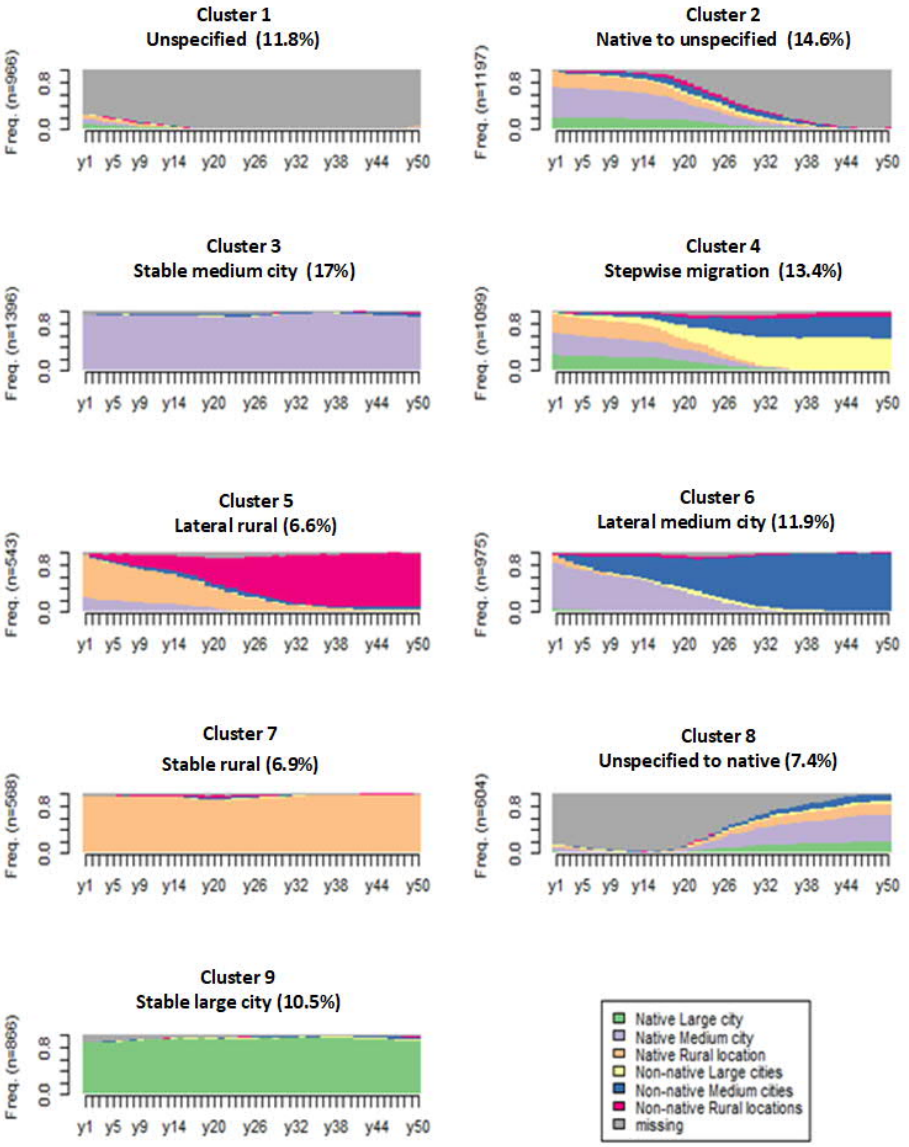
In the examples in Table 2 the municipality of origin is the first municipality recorded, Utrecht, Achtkarspelen, or Heerenveen, and each individual from each birth municipality is given a corresponding unique identification number (92, 477, 2343, respectively). 'Age start' and 'age end' give the age interval in which the individual was living in the municipality. They were calculated from residential dates. Persons with ID#92 and #477 represent short-term migrant trajectories until age 50. Individual #92 lived for around 33 years in their large birth city municipality, Utrecht, and subsequently migrated to Amsterdam. Their pattern is that of a person living in large cities until age 50 (cluster 9). Individual #477 lived mostly in their native medium city, Achtkarspelen, until age 50 (cluster 3). The last individual #2343 is an example of a person living until age 50 in their medium-sized city birthplace (cluster 3) and moving repeatedly in later life to other municipalities.

Table 2: Three examples of individual migrant trajectory

ID	Age start	Age end	Residential municipality	Cluster before age 50
92	0	20.1	Utrecht	9
	20.1	21.8	Driebergen-Rijsenburg	9
	21.8	35.3	Utrecht	9
	35.3	72.7	Amsterdam	9
477	0	4.2	Achtkarspelen	3
	4.2	16.9	NA	3
	16.9	30.3	Achtkarspelen	3
	30.3	32.2	Grootegast	3
	32.2	36.1	Achtkarspelen	3
	36.1	73.6	Grootegast	3
2343	0	63.3	Heerenveen	3
	63.3	69.6	NA	3
	69.6	70.1	Brummen	3
	70.1	70.5	Opsterland	3
	70.5	70.8	Zutphen	3
	70.8	74.8	Warnsveld	3

Source: Own elaboration based on HSN data.
Note: NA means not available or unspecified place of residence.

Figure 2: Clusters of internal migrant trajectories (1850–1940)



Source: Own elaboration based on HSN data.

The most common trajectory type is 'stable medium city (17%, cluster 3), a pattern consisting of individuals mostly living in medium-size cities of origin from birth until age 50. This cluster is used as the reference category in the event history analysis. Cluster 6 is very similar to cluster 3 and comprises **'**lateral medium city trajectories (11.9%): In this migration pattern we observe a gradual move between similar residential places, in this case between medium-sized cities after childhood.[6] These two clusters reflect the importance of this type of town in the Netherlands during the period studied. Next, 'stable large city' trajectories (10.5%, cluster 9) comprise individuals living predominantly in their native large cities until the age of 50. Completely the opposite, 'stable rural' trajectories (6.9%, cluster 7) comprise persons living in native rural places, and 'lateral rural' trajectories (only 6.6%, cluster 5) show a pattern of moving from native rural to other rural settings, which increased gradually from birth. These 'non-mover' trajectories (clusters 3, 7, and 9) represent persons who lived mostly in their native place until age 50, with little or no migrant experience (see examples in Table 2). A subset of 36% of individuals were non-movers before age 50 but moved later in life. They are distributed between clusters 1, 3, 7, 8, and 9 as follows: 25%, 28%, 12%, 17%, 19%, respectively. Overall, the trajectory types show that individuals tended to move within the same type of living environment, indicating that the accumulation of spatial trajectories was often limited. However, cluster 4, 'stepwise migration', shows that a fair proportion (13.4%) of people diverged from this dominant pattern, transiting across the urban hierarchy. Most migrants in this cluster moved from a rural place of origin (34%) or a medium-size city of origin (39%) to other medium-size city destinations or large cities.

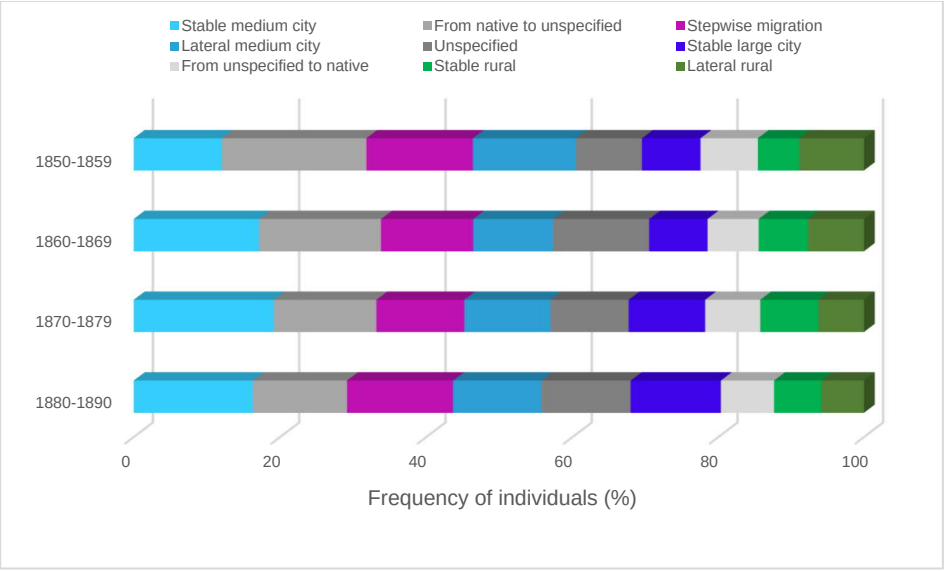
Three types of trajectory have unspecified places of provenance or destination effects. One corresponds to trajectories from native to unspecified places (14.6%, cluster 2), where follow-up is gradually lost after adolescence. Similarly, from unspecified to native locations (7.4%, cluster 8) reveals a pattern of lost followup between birth and young adulthood then a life in native places until age 50. Those two types of trajectory may reflect the sometimes-poor registration of life-cycle service. Finally, cluster 1 (11.8%) includes trajectories of unspecified place of residence, probably related to international emigrations.

The clusters derived from the sequence analysis appear largely dependent on the Dutch settlement structure based on the threefold classification: rural settings and medium and large cities. The most typical trajectories identified based on medium and large cities and stepwise migrations can be attributed to the distribution of the population across the urban hierarchy. As the medium and large cities were the most densely

[6] Lateral migrations mean here migrations between similar residential places (i.e., medium city to medium city or rural to rural) or versus different non-lateral migrations (i.e., rural to medium city, medium city to large city) (cf. Smith-Greenaway and Thomas 2014).

populated there was a greater possibility of a repeat pattern or typical sequence of migrant states in these environments than in the less populated rural areas.

Figure 3: Four 10-year birth cohorts, by internal migrant trajectory from birth to age 50, the Netherlands. Frequency of individuals in each trajectory, presented as horizontal cumulative bar plots



Source: Own elaboration based on HSN data.

Figure 3 displays, for each birth cohort, the percentage of individuals who experienced migrant trajectories from birth until age 50 and shows an inverse U-shaped pattern for the 'stable medium city' trajectory. The pathway of primarily living in medium-sized cities until adulthood became increasingly common until the 1870–1879 cohort (19%), after which it decreased in prevalence.

Cohorts born later moved less often from native to unspecified places than cohorts born earlier. In the oldest cohorts 20% of people experienced this trajectory, but only 13% followed similar pathways in the youngest groups, probably reflecting the decline of life-cycle service in the 20th century. The increasing significance of stepwise migration trajectories might indicate the growing importance of moves to cities during the agricultural crisis and the rural mechanisation process (Kok, Mandemakers, and Mönkediek 2014). Overall, Figure 3 shows an accumulation of trajectories in similar contexts, with prevalent trajectories in medium cities, and a pattern of living in mixed

environments, which is a distinctive feature of stepwise migrations. As alternative strategies, the pattern of accumulating spatial trajectories in similar environments extended to the stable pathways of living in large cities and, although less common, in rural settings.

5.2 Event history analysis of internal return migrations later in life

Four 'worlds' emerge from the more than 70 hazard ratios reflecting the impact of the clusters of migratory trajectories between birth and 50 on return migrations later in life, constituting 21%, 12%, 11%, and 13% of migrants in the subset[7] (see Tables 3 and 4). The first one comprises individuals with rural roots who were attached to their native places and returned there when ageing. This is not a surprise regarding the 'stable rural' cluster, since people belonging to this group spent most of their life in their birthplace, but the association is also very strong for 'lateral rural' (HR 8.15 and HR 7.41, respectively, Table 4). In both cases these trajectories reflect a circular mobility in the countryside surrounding the village of birth, where returning in old age was easy and almost natural. A third type of migration experience is somewhat different: those who were lost to follow-up during their years of life-cycle service presumably moved to another location to acquire work experience, then returned and stayed most of the remaining time in their village of birth ('unspecified to native location'); when ageing they were more susceptible to moving back to the place that was most familiar to them, where they knew everybody and were well-known (HR 0.56, Table 3). What these trajectories have in common is that the distances were short.

Medium-sized cities, common across the Dutch territory, can be defined as a second world. Those who spent most of their life in this type of environment – lateral medium city trajectories, i.e., medium city to medium city – were the most prone to go back to their town of birth (HR. 0.76, Table 3). Such late-life return migration was mainly at short and medium distances (HR 0.73 and HR 0.95, respectively, Table 4). Similar characteristics describe the third world of the large cities, with just fewer short and more medium distances (HR 0.68 and HR 1.26, respectively, Table 4).

Lastly, a group of individuals travelled across these three largely distinct worlds with an upward progression in the urban hierarchy through stepwise migrations (i.e., from rural or medium-size city origin to large city centres). When old, their probability of returning home was lower than average (HR 0.58, Table 3). Among those who did return,

[7] Together with the reference category 'stable medium city' trajectory, which includes 17% of migrants, this sums up to 74% of migrants in the subset. The remaining 26% of individuals are contained in clusters 1 and 2 with underregistered data.

the most (one-third) returned to rural origin places (HR. 2.54, Table 4), followed by places discovered when they were adult (HR. 1.18, Table 3).

Since members of this cluster accumulated extensive experience of the Dutch space, this result is coherent with the others shown in Table 3. There was a tendency for a larger number of prior moves to result in an increased risk of old-age returns. Persons reporting two or more past intra-provincial and intra-regional migrations were much more likely to return to adulthood places (HR 3.86 and 5.76, respectively). The risk of returning to a birthplace was 1.64 times more likely for persons with two or more prior intra-provincial moves. However, past long-distance moves between the regions decreased the probability of old-age rural return migrations.

Among the other factors affecting old-age migrations, and especially return migrations later in life, closeness to death strongly increased the likelihood of returning to both birthplaces and adulthood places (HR 3.55 and HR. 2.40, respectively, Table 3), whether the distance was long, medium, or short (Table 4). As expected, the effects of the household situation of people at age 50 indicate that the higher the household dependency ratio, the lower the propensity to return during old age, especially to far-distant places (see Tables 2 and 3).

Widowhood elevated the probability of returning to far and medium-distance places (HR 1.43 and HR 1.42, respectively, Table 4) and divorced people moved back more often to medium-distance places (HR 2.07, Table 4) and urban places (HR 1.76, Table 4). Additionally, widows had a significantly higher likelihood of making short-distance return moves than widowers (HR 2.51, interaction term between gender and marital status. Online Appendix Table A-3). Divorced and widowed women returned to cities more often than married women (HR 2.14 and HR 1.37, respectively, model separated by gender. Online Appendix Table A-4).

Even when controlling for gender differences in the distribution of marital status in old age, women were more likely to return to places of origin (HR 1.21) and urban places (HR 1.42), and to make medium distance (HR 1.59) and long distance moves (HR 1.37). The results showed no gender differences in relation to adulthood places, short-distance migrations, and returns to rural settings.

Elite professional migrants were more often engaged in long-distance returns at old age than unskilled workers, while self-employed farmers and fishermen were half as likely to return to short-distance places (HR 1.73 and HR 0.52, respectively, Table 4). However, the levels of short-distance return migration for elite, lower-middle class, and skilled workers were similar to those for unskilled labourers. Additionally, self-employed farmers and fishermen returned less often to childhood or adulthood places than unskilled labourers (HR 0.81 and HR 0.74, respectively).

Individual life courses are linked to historical time through the concept of birth cohorts. From this perspective the results indicate a decline in the propensity to return to

places of origin (home). Compared to elderly migrants from the oldest cohort (1850–1859), those from the more recent cohort (1880–1890) were half as likely to return home (HR 0.59, Table 3). A decrease over time in moving back to adulthood places at old ages is also observed, although it is less intense. The risk was 25% lower for those born between 1880 and 1890 (HR: 0.75, Table 3) than for people belonging to the oldest cohort (1850–1859). Table 4 also suggests that medium- and long-distance return migrations later in life decreased over time. Finally, the results reveal that if the elderly migrant was born in the last cohort, the risk of returning to a town decreased by 30%.

Table 3: Hazard ratios of all internal return migrations, internal returns to birth or childhood places, and internal returns to adulthood places later in life, by demographic characteristics, persons aged 50 years or older (Cox proportional hazard models)

	All internal return types later in life [a]	Internal returns to birth/childhood places later in life	Internal returns to adulthood places later in life
Past migrant trajectories, age 0–50 (ref: Stable medium city)	1	1	1
Unspecified	0.82(0.65–1.04)	0.62(0.45–0.85)	0.45(0.26–0.77)
Native to unspecified	0.78(0.64–0.95)	0.66(0.51–0.86)	1.04(0.79–1.37)
Stepwise migration	1.04(0.86–1.25)	0.64(0.49–0.84)	1.18(0.91–1.54)
Lateral rural	0.89(0.71–1.12)	0.58(0.41–0.80)	0.83(0.60–1.14)
Lateral medium city	0.98(0.81–1.19)	0.76(0.57–1.00)	0.93(0.70–1.23)
Stable rural	0.95(0.74–1.22)	0.83(0.61–1.12)	0.78(0.51–1.19)
Unspecified to native	1.17(0.93–1.47)	0.56(0.38–0.81)	1.29(0.91–1.83)
Stable large city	1.12(0.92–1.38)	1.01(0.78–1.31)	1.05(0.75–1.45)
Gender (ref: men)	1	1	1
Women	1.32(1.17–1.49)	1.21(1.03–1.44)	1.12(0.94–1.33)
Civil status, age 50 (ref: married)	1	1	1
Divorced	1.55(1.05–2.31)	1.45(0.81–2.60)	1.45(0.83–2.53)
Widowed	1.11(0.94–1.30)	1.06(0.84–1.33)	0.96(0.75–1.23)
Unmarried	1.06(0.94–1.20)	1.00(0.84–1.20)	1.11(0.93–1.33)
Unknown	1.14(0.99–1.32)	1.07(0.86–1.32)	1.33(1.09–1.63)
Dependency ratio, age 50	0.63(0.48–0.81)	0.7(0.49–1.01)	0.51(0.35–0.74)

Table 3: (Continued)

	All internal return types later in life [a]	Internal returns to birth/childhood places later in life	Internal returns to adulthood places later in life
Occupational status, age 50 (ref: unskilled workers)	1	1	1
Elite	1.05(0.78–1.42)	0.72(0.42–1.22)	0.93(0.62–1.40)
Lower middle class	1.11(0.96–1.29)	0.92(0.74–1.15)	0.88(0.71–1.09)
Self-employed and farmers	0.80(0.68–0.95)	0.81(0.64–1.01)	0.74(0.59–0.94)
Skilled workers	1.17(0.94–1.44)	1.12(0.85–1.48)	1.08(0.79–1.49)
Unknown	0.74(0.65–0.86)	0.70(0.57–0.86)	0.80(0.65–0.99)
Religious affiliation (ref: Roman Catholics)	1	1	1
Liberal Protestant	1.11(0.98–1.27)	1.13(0.94–1.35)	1.08(0.90–1.30)
Orthodox Protestant	1.02(0.81–1.27)	1.06(0.78–1.45)	0.87(0.63–1.21)
Jewish	1.00(0.61–1.63)	0.12(0.02–0.86)	0.71(0.29–1.75)
Other/Without/Unknown	1.46(1.22–1.74)	1.24(0.94–1.62)	1.31(1.01–1.7)
Closeness to death, age 50 (ref. Did not die within five years)	1	1	1
Died within five years	2.93(2.45–3.52)	3.55(2.75–4.59)	2.40(1.81–3.18)
Birth cohort (ref: 1850–1859)	1	1	1
1860–1869	0.91(0.75–1.10)	0.68(0.52–0.88)	0.77(0.59–1.00)
1870–1879	0.94(0.78–1.13)	0.70(0.54–0.91)	0.85(0.66–1.10)
1880–1890	0.82(0.68–0.98)	0.59(0.46–0.77)	0.75(0.58–0.96)
Birth region (ref. West Netherlands)	1	1	1
North Netherlands	0.74(0.64–0.85)	0.54(0.43–0.67)	0.78(0.64–0.96)
East Netherlands	0.61(0.50–0.73)	0.52(0.4–0.68)	0.57(0.44–0.76)
South Netherlands	0.82(0.68–0.97)	0.80(0.62–1.02)	0.92(0.72–1.19)
Unknown	0.73(0.40–1.33)	0.96(0.48–1.94)	0.53(0.20–1.42)
Intra-provincial migrations, age 0–50 (ref. 0 migrations)	1	1	1
1 migration	1.37(1.18–1.59)	1.32(1.06–1.64)	2.75(2.08–3.62)
2 migrations	1.45(1.23–1.70)	1.56(1.25–1.94)	3.86(2.93–5.09)
>2 migrations	1.84(1.60–2.13)	1.64(1.33–2.01)	5.76(4.46–7.43)
Intra-regional migrations, age 0–50 (ref. 0 migrations)	1	1	1
1 migration	1.20(1.00–1.45)	0.63(0.45–0.88)	1.76(1.37–2.26)
2 migrations	1.50(1.24–1.83)	1.14(0.84–1.54)	2.11(1.63–2.74)
>2 migrations	2.00(1.66–2.40)	1.33(0.99–1.77)	3.10(2.45–3.93)
Inter-regional migrations, age 0–50 (ref. 0 migrations)	1	1	1
1 migration	1.12(0.91–1.37)	0.74(0.49–1.11)	0.86(0.65–1.13)
2 migrations	1.01(0.82–1.24)	1.02(0.73–1.42)	0.9(0.68–1.18)
>2 migrations	0.93(0.73–1.18)	0.83(0.55–1.26)	0.87(0.64–1.18)

Note: 95% confidence intervals in parentheses. 1 = reference category. [a] Combined model with all return migrations in Tables 3 and 4.
Source: Own elaboration based on HSN data.

Table 4: Hazard ratios of internal short-distance return migrations, medium-distance returns, long-distance returns, rural returns, and urban returns later in life, by demographic characteristics, persons aged 50 years or older (Cox proportional hazard models)

	Internal short-distance return migrations <10 km, later in life	Internal medium-distance return migrations 10–50 km, later in life	Internal long-distance return migrations > 50 km, later in life	Rural return migrations later in life	Urban return migrations later in life
Past migrant trajectories, age 0–50 (ref: Stable medium city)	1	1	1	1	1
Unspecified	1.02(0.68–1.53)	0.79(0.51–1.23)	0.51(0.30–0.89)	4.01(2.11–7.62)	0.59(0.44–0.79)
Native to unspecified	0.49(0.33–0.74)	0.54(0.37–0.80)	0.74(0.50–1.08)	1.85(0.95–3.60)	0.72(0.58–0.88)
Stepwise migration	0.66(0.45–0.97)	0.82(0.58–1.17)	1.02(0.73–1.44)	2.54(1.33–4.86)	0.94(0.77–1.15)
Lateral rural	1.04(0.71–1.53)	0.85(0.57–1.29)	0.51(0.31–0.85)	7.41(4.01–13.69)	0.41(0.30–0.56)
Lateral medium city	0.73(0.50–1.08)	0.95(0.67–1.34)	0.74(0.50–1.07)	1.10(0.49–2.45)	0.93(0.76–1.14)
Stable rural	1.02(0.68–1.53)	0.76(0.47–1.24)	0.78(0.45–1.35)	8.15(4.47–14.84)	0.27(0.18–0.43)
Unspecified to native	0.68(0.41–1.12)	1.50(1.03–2.20)	1.32(0.87–2.01)	3.76(1.91–7.40)	1.00(0.77–1.28)
Stable large city	0.68(0.45–1.04)	1.26(0.88–1.79)	0.89(0.60–1.34)	0.95(0.42–2.15)	1.16(0.94–1.44)
Gender (ref: men)	1	1	1	1	1
Women	1.21(0.96–1.53)	1.59(1.28–1.98)	1.37(1.09–1.72)	1.02(0.78–1.34)	1.42(1.25–1.63)
Civil status, age 50 (ref: married)	1	1	1	1	1
Divorced	0.84(0.27–2.64)	2.07(1.12–3.84)	1.49(0.66–3.38)	_	1.76(1.19–2.62)
Widowed	1.06(0.77–1.46)	1.42(1.08–1.87)	1.43(1.07–1.90)	0.79(0.51–1.22)	1.17(0.98–1.39)
Unmarried	0.97(0.76–1.24)	1.14(0.90–1.43)	1.20(0.95–1.52)	1.34(1.04–1.72)	0.97(0.84–1.12)
Unknown	1.06(0.79–1.43)	1.15(0.87–1.51)	1.03(0.77–1.38)	0.86(0.58–1.27)	1.17(1.00–1.37)
Dependency ratio, age 50	1.19(0.73–1.93)	0.61(0.38–0.98)	0.28(0.16–0.48)	1.02(0.59–1.76)	0.56(0.42–0.76)
Occupational status, age 50 (ref: unskilled workers)	1	1	1	1	1
Elite	0.82(0.41–1.63)	0.54(0.24–1.24)	1.73(1.11–2.7)	0.62(0.25–1.54)	1.19(0.86–1.64)
Lower middle class	0.80(0.58–1.1)	1.49(1.14–1.94)	1.22(0.93–1.60)	0.91(0.62–1.32)	1.19(1.01–1.39)
Self-employed and farmers	0.52(0.37–0.74)	1.08(0.80–1.46)	0.73(0.52–1.02)	0.63(0.42–0.96)	0.85(0.71–1.03)
Skilled workers	0.93(0.64–1.36)	1.36(0.91–2.04)	0.52(0.27–1.02)	1.62(1.15–2.28)	0.86(0.64–1.15)
Unknown	0.58(0.44–0.77)	0.81(0.63–1.05)	0.84(0.64–1.10)	0.71(0.51–0.99)	0.76(0.65–0.89)

Table 4: (Continued)

	Internal short-distance return migrations <10 km, later in life	Internal medium-distance return migrations 10–50 km, later in life	Internal long-distance return migrations > 50 km, later in life	Rural return migrations later in life	Urban return migrations later in life
Religious affiliation (ref: Roman Catholic)	1	1	1	1	1
Liberal Protestant	1.02(0.79–1.32)	1.70(1.31–2.21)	0.98(0.77–1.25)	1.2(0.90–1.60)	1.09(0.95–1.27)
Orthodox Protestant	0.85(0.54–1.33)	1.45(0.95–2.22)	0.66(0.41–1.07)	1.37(0.89–2.1)	0.90(0.70–1.18)
Jewish	0.29(0.04–2.10)	1.16(0.47–2.90)	1.61(0.85–3.04)	_	1.10(0.67–1.81)
Other/Without/Unknown	1.42(0.99–2.03)	1.94(1.36–2.75)	1.42(1.02–1.99)	0.76(0.43–1.36)	1.58(1.30–1.91)
Closeness to death, age 50 (ref. Did not die within five years)	1	1	1	1	1
Died within five years	3.59(2.51–5.14)	5.02(3.82–6.61)	3.57(2.58–4.93)	3.36(2.22–5.09)	2.98(2.44–3.64)
Birth cohort (ref: 1850–1859)	1	1	1	1	1
1860–1869	1.18(0.76–1.83)	0.91(0.67–1.23)	0.63(0.45–0.87)	1.23(0.75–2.05)	0.85(0.69–1.04)
1870–1879	1.63(1.07–2.47)	0.7(0.51–0.96)	0.69(0.50–0.96)	1.20(0.73–1.98)	0.89(0.72–1.09)
1880–1890	0.94(0.61–1.45)	0.61(0.44–0.83)	0.53(0.38–0.73)	1.56(0.96–2.53)	0.70(0.57–0.85)
Birth region (ref. West Netherlands)	1	1	1	1	1
North Netherlands	0.59(0.44–0.81)	0.96(0.75–1.23)	0.65(0.49–0.85)	0.32(0.20–0.50)	0.86(0.73–1.00)
East Netherlands	0.61(0.43–0.85)	0.49(0.34–0.72)	0.65(0.46–0.91)	0.27(0.16–0.45)	0.74(0.61–0.91)
South Netherlands	0.76(0.54–1.05)	0.81(0.57–1.16)	0.53(0.36–0.78)	0.58(0.39–0.86)	0.92(0.75–1.12)
Unknown	0.74(0.24–2.31)	0.72(0.23–2.26)	0.44(0.11–1.77)	0.75(0.24–2.37)	0.75(0.37–1.51)
Intra-provincial migrations, age 0–50 (ref. 0 migrations)	1	1	1	1	1
1 migration	1.53(1.11–2.1)	1.44(1.09–1.89)	1.02(0.77–1.34)	1.69(1.21–2.37)	1.30(1.10–1.54)
2 migrations	1.64(1.17–2.30)	1.41(1.05–1.90)	0.88(0.64–1.20)	1.71(1.19–2.48)	1.39(1.16–1.66)
>2 migrations	2.48(1.85–3.35)	1.90(1.46–2.47)	1.48(1.15–1.90)	1.77(1.25–2.51)	1.86(1.59–2.17)
Intra-regional migrations, age 0–50 (ref. 0 migrations)	1	1	1	1	1
1 migration	0.67(0.44–1.03)	0.88(0.61–1.27)	3.01(2.19–4.14)	1.36(0.90–2.04)	1.2(0.97–1.48)
2 migrations	0.86(0.54–1.37)	1.71(1.21–2.40)	2.14(1.47–3.13)	1.35(0.84–2.16)	1.55(1.25–1.93)
>2 migrations	1.37(0.93–2.04)	2.17(1.57–3.00)	3.6(2.56–5.080)	1.73(1.12–2.65)	2.07(1.69–2.54)
Inter-regional migrations, age 0–50 (ref. 0 migrations)	1	1	1	1	1
1 migration	1.97(1.27–3.07)	1.15(0.78–1.68)	0.91(0.63–1.30)	0.56(0.31–1.01)	1.20(0.96–1.50)
2 migrations	0.68(0.39–1.19)	0.90(0.62–1.32)	1.58(1.12–2.23)	0.44(0.22–0.86)	1.10(0.88–1.38)
>2 migrations	0.54(0.28–1.04)	0.61(0.38–0.98)	1.45(0.99–2.13)	0.59(0.29–1.21)	0.98(0.75–1.27)

Note: 95% confidence intervals in parentheses. 1 = reference category.
Source: Own elaboration based on HSN data.

6. Discussion

In this study of the Netherlands during the period 1850–1994, we investigated a range of hypotheses regarding the effect of long-term migrant trajectories, other important life course factors, and changes over time on the risk of 7 return migration outcomes in later life: return migrations to places of birth or childhood; return migrations to adulthood places; return migrations based on short, medium, and long distances; and the propensity to make rural and urban return migrations. An important contribution of this research is that we expanded the notion of return migrations beyond the place of origin to incorporate different destinations where elderly migrants resided during their life course (Newbold and Cicchino 2007). This work also adds to the literature on later life migrations and the life course by providing a more holistic view of past internal migrant trajectories and by deepening knowledge of the dynamics of past demographic events associated with internal return migrations in later life by using longitudinal methods over a large time span.

We used longitudinal register data from the Historical Sample of the Netherlands to reconstruct past migrant trajectories from birth until age 50 for four 10-year birth cohorts, using a sequence analysis approach to study their impact and that of other individual characteristics on internal return migrations later in life during the 20th century. Adding to the gerontological debate about social support and care needs in elderly populations (Aboderin 2004), we showed that distinguishing between return outcomes allows better understanding of older adults' return migrations in the Dutch space and how historically elderly people have used their agency to cope with necessity and take advantage of opportunities by means of repeat migrations.

We stated in Hypothesis 1 that past migrant trajectories were associated with return migration types later in life, and particularly with returns to places of residence in adulthood. Moreover, we argued that individuals with stepwise migration trajectories would be more prone to return to places where they lived during adulthood, as well as rural settings and long-distance places. Supporting our hypothesis, the analysis showed that persons with a stepwise migration trajectory and those with past intra-provincial and intra-regional migrations were more likely to return both to places where they resided during adulthood as well as return to rural places. These results can be interpreted as indicating that the elderly who have accumulated a knowledge of the Dutch space – especially a diversified knowledge – by moving across different environments have a portfolio of opportunities that they use for their mobility and settlement. This interpretation is in line with the assumption that during the first 50 years of their life, individuals accumulated 'spatial capital' – a location-specific combination of human and social capital. Migrating was thus also a learning process and previous migration

experiences had an impact on future migratory decisions (Kesztenbaum 2008; Kley and Mulder 2010).

In Hypothesis 2 we posited that health deterioration increased the likelihood of late-life return migrations to not-too-distant places. Our results confirm a higher risk of returns to birth or childhood places as well as to adult places, whatever the distance covered in 20th century Netherlands. They also agree with results from previous studies that indicate that return migrations in later life are largely explained by health. Ageing people with deteriorating health have been shown to be more likely to relocate than those in better health (Walters 2002), particularly to care institutions (van der Pers, Kibele, and Mulder 2015). Our findings also support the so-called 'salmon bias' hypothesis, which states that migrants with poor health, anticipating death, are more likely to return to their place of origin than healthier migrants (Lu and Qin 2014; Andersson and Drefahl 2017).

Household dependency was negatively associated with returns later in life to adult places and urban places, and long-distance returns. This suggests that as the dependency ratio increased, moving back decreased. These findings support Hypothesis 3 and are consistent with previous research on adult internal moves that indicates a lower propensity for extended households to migrate within the Netherlands (Kok, Mandemakers, and Mönkediek 2014). When the household has enough adult members to support both children and the elderly, intergenerational family solidarity makes migration later in life unnecessary, especially to an urban institution (Rodríguez and Egea 2006). The nuclear hardship hypothesis framework sees the development of institutions and pension systems in Western Europe, mainly during the 20th century, as the solution to the social problem of the severe poverty of older workers. When their health obliged them to stop working and their household could not sustain them, they faced a hard final life stage, especially in the late 19th century and first half of the 20th century, which has been extensively described in many studies (see Oris, Dubert, and Viret 2015 for a literature review).

As expected in Hypothesis 4, having a low socioeconomic status or no partner were associated with a higher propensity to return later in life than having a higher socioeconomic status or being married. First, ageing migrants with low socioeconomic status tend to return to places of origin more often (Lundholm 2012), which is seen as an indicator of traditionalism (Cribier 1980). Second, our findings support the literature in that widowhood in old age is an important disruptive event that triggers late-life readjustment relocations to be closer to family members (Litwak and Longino 1987; Nowik and Bringé 2016). Moreover, widows and divorced women were more likely to return than married women, which also supports Hypothesis 4. On the one hand, urban institutions considered widows to be 'deserving poor' and were usually inclined to help them (Oris and Ochiai 2002). On the other hand, at a time when divorce was still considered shameful, the divorced who moved preferred to stay in the relative anonymity

of urban life. Globally, women returned to their birthplace more frequently that men. The better social skills of women could explain this difference (Arber and Ginn 2005).

Moving back to birthplaces and adulthood places and returning to long-distance places later in life all decreased over time. The risk of return migration was lower among cohorts born between 1860 and 1890 than among those born between 1850 and 1860, as we posited in Hypothesis 5. This supports the interpretation that the historical development of Dutch welfare institutions made these types of return migration less necessary at old ages; for instance, in terms of care. Moreover, the literature has shown that young people could use a long-distance move to escape from family and community pressures and, for example, contract a love marriage at an early age. Filial piety meant that other long-distance migrants stayed in touch with their parents initially but progressively 'disappeared' (Oris 2000). In both cases, ties stretched to a breaking point, making a return migration, at least to the village of birth, unthinkable. Such conflicts and behaviours probably contributed to the historical trend that we observed across the birth cohorts: a decline in internal return migrations later in life, especially to the municipality where individuals were born and grew up. Thus, our research seems to support the modernisation theories that postulate a weakening of ties with native places.

A strength of this research is its use of rich historical longitudinal register data, covering a long study period from 1850–1994 for a selected subset of birth cohorts with the potential for follow-up from birth to death. Moreover, using the continuous registration of residential changes, we studied the risk factors associated with a diversity of return strategies – treated as recurrent migration events – experienced across the 20th century within the framework of welfare state developments and changing patterns of migration. We applied a novel approach in life course research that addresses the issue of combining different methodological cultures: SA based on an inductive data-mining approach, and event history analysis rooted in an inferential statistical approach. SA has been criticised because it does not allow for inferring explanations, and EHA aims to explain instantaneous risks of events and not patterns of change. However, the combination of both approaches reveals their strengths (Piccareta and Studer 2019). This procedure is useful in that it incorporates long-past internal migrant trajectories as explanatory factors, other migration indicators like past intra-regional migration, and life course events, including time-varying covariates. In future we aim to explore how individuals can change cluster membership over time and how such change affects their life prospects (Rossignon et al. 2018).

Although our findings shed new light on the elderly's historical internal return migrations, our study has limitations that require extended future research. First, in order to better estimate the role of place in coping with ageing, the mediating mechanisms of older people's relationship with place should be studied in more detail. This implies capturing the multiple dimensions of place, such as spatial or geographic features,

embedded service infrastructure, social and cultural aspects, and subjective elements of attachment and belonging (Urbaniak and Walsh 2019). Unobserved heterogeneity related to confounding or mediating factors that might play a role in predicting return migrations was not measurable in our data, and thus it should be addressed in future analyses (Huinink and Brüderl 2021: 490). Second, we were able to identify certain family mechanisms associated with types of internal return by using the indicators of marital status and dependency ratio at age 50, but the data used in this study did not allow measuring kin outside the household. Considering kin beyond the household would be fruitful, but is rarely possible, particularly using historical sources. Further nuanced research combining competing return-migration types and the influence of changes in partnership trajectories and kinship networks on the territory would imply new data generation based on a larger subset of internal return migrants, partnership histories, and kinship connections. Therefore, it would be interesting to perform Competing Trajectory Analysis (Studer, Liefbroer, and Mooyaart 2018).

Applying a novel analysis of the long-term effects of past migrant trajectories from birth until age 50 and interpreting the typologies of trajectories by combining missing states (unknown location in the Dutch context or emigration overseas) and their associations with return-migration types was challenging. Longitudinal data are vulnerable to missing values. Effective strategies to deal with incomplete observed sequences are one of the most important areas for future research (Picaretta and Studer 2019). In this study, as missing data were not randomly distributed but increased in time, with a higher concentration in recent cohorts, we opted to keep people with missing states in the SA. Excluding them could cause bias, as their concentration was more likely in individuals with volatile histories (Halpin 2016; Gabadinho et al. 2011b).

This study approached individual migration moves as the outcome of complex interactions of current choices and constraints and spatial experiences accumulated across the life course. We conclude that the study's findings contribute to a better understanding of the factors predicting late-life relocations from a long-term perspective and should assist in detecting vulnerable ageing populations more at risk of relocating.

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