CARFAX

Big Cities, Big Problems: Reason for the Elderly to Move?

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Summary. In many European countries, data on geographical patterns of internal elderly migration show that the elderly (55 +) are more likely to leave than to move to the big cities. Besides emphasising the attractive features of the destination areas (pull factors), it is often assumed that this negative balance of migration of elderly people is caused by problems which mainly the big cities have to contend with and which would have a negative effect on living conditions, especially of the elderly (push factors). Although it is well-known that big cities in Europe are faced with several specific housing and neighbourhood problems, no detailed research has been carried out so far into whether these problems are indeed seen by the elderly themselves as very negative and, if so, whether these perceived problems result in an intention to move as a result of housing and neighbourhood dissatisfaction. The aim of this article is to shed empirical light on this matter for a case study in the Netherlands.

1. Introduction: From Facts to Explanation

For many decades, demographic data have shown that the four big cities in the Netherlands (Amsterdam, The Hague, Rotterdam and Utrecht)—like several large cities in other countries—have relatively more elderly persons (55 +) than most other parts of the country. In the near future, however, this phenomenon will probably change: in contrast to the national trend, the percentage of persons of 55 years and older in the four big cities has declined in the past few years (see Figure 1). If we take a closer look at the elderly in the four big cities by age group, it turns out that this decline is especially evident among persons of 55–64 years, followed by persons of 65–74 years. The proportion of the oldest age group (75 +) in the total popu-

lation, on the other hand, has increased in the period 1980–85, and has been more or less stable from the year 1985 (see Figure 2). According to the population forecasts for Amsterdam, the decline in the elderly population with respect to total population will continue up to the year 2001 (see Figure 3). This expected decline will mainly occur among persons of 75 years and over.

This decline in the proportion of elderly in the total population of the four big cities is mainly the result of the process of suburbanisation which had been taking place in the 1960s and 1970s. In those years, many young families moved from the big cities to the suburbs and to rural areas (Ginkel, 1979). Because of this overspill, the number of per-
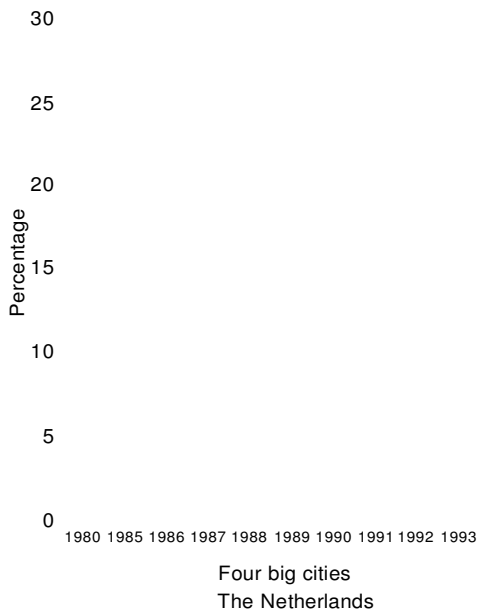
Figure 1. Persons aged 55 years and over, as a percentage of the total population of the four main cities and of the Netherlands, 1980–93. *Source:* CBS (1980–93).

Figure 2. Persons aged 55 years and over, by age group, as a percentage of the total population of the four main cities, 1980–93. *Source:* CBS (1980–93).

sons of 55–74 years is now relatively small in the four big cities. But the big cities are also faced with a negative balance of migration of elderly people: i.e. the percentage of elderly who move to the big city is smaller than those who leave. For instance in 1981–91, 0.9 per cent of the elderly moved to Amsterdam, while about 2.5 per cent of the elderly left this city (see Tables 1 and 2).

There is often a tendency to attribute entirely this negative balance of migration of elderly people to the problems which big cities mainly have to contend with, and which would have a negative effect on the living conditions of the population in general, and the elderly in particular. These factors will now be described in greater detail.

First, due to an increasing volume of traffic, the accessibility of the local neighbourhood in the big cities is deteriorating. People find it increasingly difficult to cross the street safely, especially highways, and to walk easily on the pavements. This is particularly so for the less healthy and less mobile elderly pedestrian (Wind *et al*., 1992).
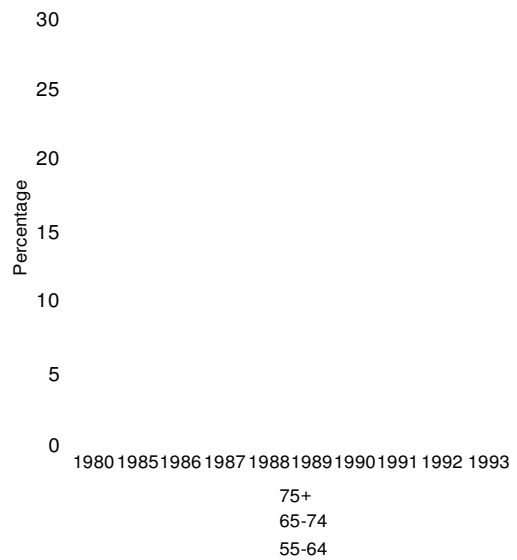
The second problem facing the four big cities is the rise in criminality. In 1980–92, for instance, the total number of crimes in Amsterdam notified to the police, increased by approximately 34 per cent to 127 877. Probably more important than these figures, which show the actual increase in crime, is the observation that people living in big cities have the feeling that their city has become less safe. Many people are having feelings of fear in some parts of their own neighbourhood, especially the elderly. For example, an investigation into feelings of fear and danger has shown that elderly persons living in Amsterdam are relatively more afraid of becoming victims in their own city or neighbourhood, and relatively often feel less safe in the streets or in their own home than younger persons (O + S, 1993). Nevertheless, the same study also shows that these elderly were less often victims of crime in the past year. This apparent paradox of low victimisation rates and high levels of fear of being victimised among the elderly is not only found in the Netherlands (e.g. Lindquist and Duke, 1982). An explanation often men-
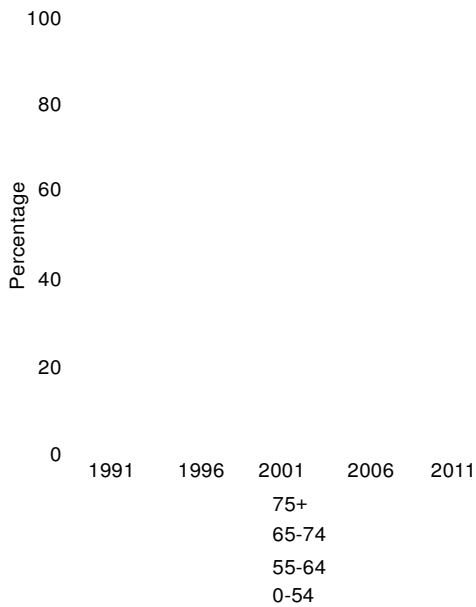
100

80

Percentage 60

40

20

0

1991 1996 2001 2006 2011

75+
65-74
55-64
0-54

Figure 3. Population forecasts for Amsterdam, by age group, as a percentage of the total population, for selected years. *Source:* O + S (1993).

tioned for the low criminal victimisation risk of the elderly concerns risk avoidance. Since elderly persons are usually more afraid, they will try to avoid risky situations, like the riskier areas and places in the city or neighbourhood, such as clubs and pubs; avoiding the riskier means of travel (public transport or on foot), and not leaving home in the evening. However, this 'differential exposure' explanation of low victimisation risks among the elderly has not been supported by Clarke *et al*. (1985). They have shown that even when frequency and riskiness (means of travel, destination and activity) of going out are taken into account, the elderly are still less likely to be victims than the middle-aged or young. Some other explanations could be the elderly's reduced chance of coming into direct contact with offenders or their lower 'attractiveness' as victims, being less desirable sexual targets and being seen as less likely to be carrying valuables (Clarke *et al*., 1985; van Dijk and Steinmetz, 1983).

Thirdly, the composition of the population of the four big cities has rapidly changed. In recent years, many non-indigenous groups have settled in the big cities. For instance, the percentage of foreigners in the four big cities is considerably higher than in all other parts of the Netherlands. In 1993, 15 per cent of the population in the four big cities consisted of foreigners, compared to a 5 per cent national average. It is noteworthy that these percentages do not give a complete picture of the number of non-indigenous persons. Many people of foreign origin who have a Dutch passport, including Surinamese and Antilleans, do not show up in these figures. The change in the composition of the population is of course not a problem in itself. However, the literature often states that the elderly in particular are afraid of this type of change. One thus argues that elderly persons will therefore not make contact quickly with these new neighbours and local residents. As a consequence, it is likely that elderly persons feel more and more isolated if they are faced with many new people of foreign origin. And in that case, feelings of uneasiness and, therefore, feelings of loneliness will be strengthened (Wind *et al*., 1992). However, caution is needed because this statement has never been confirmed with data on feelings of fear among the elderly regarding a high percentage of foreigners.

So far, only the problems regarding the neighbourhood have been considered. But the housing stock of the four big cities in the Netherlands has some specific problems as well. First, a large number of houses are in bad condition, despite a wide range of urban renewal projects and activities focused on improvement of the existing housing stock. Many houses contend with problems such as draught, damp and poor foundations. According to the Dutch Housing Monitoring System (Kwalitatieve Woningregistratie), the quality of more than 10 per cent of the houses in the four big cities is very low, in contrast to a 4 per cent national average. In addition, some of the houses are still not provided with all the basic conveniences, like a separate bathroom or shower (Ministry of Housing, Regional Development and the Environment, 1993).

Table 1. Persons moving to Amsterdam, by age group, as a percentage of the population of that age group living in Amsterdam, 1981–91

Year	0–54	55 +	55–64	65–74	75 +
1981	5.5	0.6	0.7	0.5	0.4
1983	5.8	0.8	1.1	0.8	0.5
1985	6.9	0.9	1.3	0.9	0.5
1987	8.2	1.0	1.4	0.9	0.6
1989	7.2	1.0	1.5	0.8	0.6
1991	7.7	1.0	1.6	0.8	0.6
Average	6.9	0.9	1.3	0.8	0.5

Source: O + S (1933).

Table 2. Persons leaving Amsterdam, by age group, as a percentage of the population of that age group living in Amsterdam, 1981–91

Year	0–54	55 +	55–64	65–74	75 +
1981	6.9	2.8	3.3	2.7	2.1
1983	7.2	3.1	3.7	3.0	2.1
1995	5.7	2.4	2.9	2.3	1.9
1987	6.3	2.3	2.8	2.1	1.9
1989	6.9	2.5	3.0	2.3	2.0
1991	5.8	2.1	2.6	1.9	1.8
Average	6.5	2.5	3.1	2.4	2.0

Source: O + S (1993).

Secondly, in contrast to the rest of the Netherlands, the majority of the housing stock consists of flats of less than four storeys with no elevator. In itself this is not a problem. However, it becomes a problem for less healthy and less mobile elderly persons.

The last problem, which is related to the difference in type of housing between the four big cities and other areas of the Netherlands, concerns the average size of the houses. Persons living in the big cities usually have a small living room and fewer rooms. For a long time, it was taken for granted that elderly persons do not prefer a big house: partly due to health problems, a house with many rooms would be too inconvenient. Recently, however, data show that the elderly also wish to have a house with more living space (Rongen and de Heij, 1993).

Of course, besides these housing and neighbourhood problems, some features can be mentioned which are characteristic of big cities and which have a positive effect on the living conditions of the population in general, and the elderly in particular. A well-equipped public transport system, the availability of specialised services and facilities, and the location of houses in the direct vicinity of services and facilities are the most important attractive features. Another attractive feature which applies to a large share of housing in a big city is the level of rent. Although the rent of housing in the four big cities has risen more rapidly on average than in the suburbs, people in the big cities still live relatively very cheaply.

Given the housing and neighbourhood problems of the big cities mentioned above, it is not surprising that it is often assumed that these problems contribute to a negative balance of migration of elderly persons. However, the observation assumes that these problems are indeed perceived as very negative by the elderly themselves. In that case,

these problems would indeed affect living conditions negatively. This applies of course to everyone, but especially to the less healthy and less mobile elderly. They are then faced with unwanted changes in housing and neighbourhood characteristics. In other words, in such a case, the elderly will perceive discrepancies between their present and preferred housing and neighbourhood characteristics. According to the 'stress-threshold' approach, housing and neighbourhood discrepancies, together with personal characteristics and weak social bonds, lead to a certain amount of dissatisfaction and stress with their residential situation. When this dissatisfaction exceeds a certain threshold level, it can result in an intention to move (Brown and Moore, 1970; Fokkema *et al.*, 1993; Speare, 1974; Varady, 1980). To our knowledge, however, no detailed research has been carried out so far on the validity of these assumptions. Is it true that elderly persons indeed perceive the housing and neighbourhood problems of the big cities as very negative? If so, do these discrepancies, besides other housing and neighbourhood discrepancies, personal characteristics and weak social bonds, lead to residential dissatisfaction? And does this dissatisfaction result in an intention to move? The aim of this article is to provide an answer to these questions. This will be done through a comprehensive explanatory model based on path analysis and by using survey data among elderly persons (55+) in two contrasting districts of Amsterdam, in the Netherlands.

2. The Data

The data used in this article have been collected as part of a larger research project on the present and preferred living situation of the elderly population in two districts of Amsterdam, 'De Baarsjes' and ''Rivierenbuurt'', conducted by the Department of Sociology and Social Gerontology (SSG) and the Science Shop of the Free University in Amsterdam, and the Research Institute for Housing (RIW) at the Technical University in Delft, (Raaijmakers and Leene, 1992; Wind *et al.*, 1992). The primary objective of

this research has been to improve the independent living of elderly persons in these two districts through the development of policy strategies. Unlike other districts of Amsterdam, the percentage of elderly people is low in 'De Baarsjes' and high in the 'Rivierenbuurt' (19 per cent versus 29 per cent). In addition, 39 per cent of the population in 'De Baarsjes' consists of foreigners, compared to 16 per cent in the 'Rivierenbuurt'. Furthermore, the 'Rivierenbuurt' has always been an élitist neighbourhood; especially highly educated people live in this district. 'De Baarsjes', on the other hand, is, a typical working-class district. The second difference refers to the housing stock. On average, houses in the 'Rivierenbuurt' are larger and have more rooms. Moreover, the houses in this district are in better condition. In addition, the rent of the houses in the 'Rivierenbuurt' is higher on average. A final difference concerns the neighbourhood. While crime is the main problem in 'De Baarsjes', the 'Rivierenbuurt' especially contends with traffic problems.

In order to discover the opinion of the elderly themselves, face-to-face interviews were carried out among a sample of persons aged 55 and over during November 1991 to May 1992. The sample was drawn from the register of elderly people residing within the two Amsterdam districts. Of the 1233 elderly persons approached, 492 have actually been interviewed, which means a total response rate of only 40 per cent. The primary reason for non-response (90 per cent) was refusal: potential respondents refused to participate by either filling in an enclosed reply card or saying to the interviewer that they did not want to participate at the moment they were visited. Only a small percentage of the persons approached could not be interviewed because of death/illness (5 per cent), because they had moved (2 per cent), or because they could not be traced (2 per cent).

This low rate is not surprising since high non-response in social science research is a generally known, international phenomenon (Bethlehem and Kersten, 1986). In the last few years, the percentage of non-response

has clearly increased, especially in big cities. A first plausible explanation concerns a growing tendency towards smaller households, together with an increase in the mobility of the population, resulting in problems of reaching people. It is worthwhile noting that the main increase in the number of households consisting of one or two persons, which are usually the most difficult to reach, has been in the four biggest cities in the Netherlands. A second plausible explanation for this growing percentage of non-response refers to an increasing awareness of privacy, together with increasing interview fatigue caused by the increasing number of surveys being held, especially in urban areas. In addition, Bethlehem and Kersten (1986), analysis on non-response by age, have shown that the percentage of non-response is the highest among elderly, which is mainly caused by refusals and health reasons.

Nevertheless, caution is needed since a low response rate may result in some potential biases. This is the case if, due to non-response, certain groups in the population are under- or over-represented and behave differently with respect to the characteristics being investigated. Unfortunately, we lack data on those who did not complete the interview. Thus, we are not able to determine whether or not there are systematic differences in, for instance, the present and preferred living conditions between the participants and non-participants. However, in order to assess the representativeness of the two samples to a certain extent, selected characteristics of the respondents have been compared to census data for the two districts of Amsterdam.

With regard to the first district, 'De Baarsjes', the ratio of males to females, as well as the distributions regarding age and ethnicity in the sample, are nearly identical to those found in the census. The only bias in this sample relates to marital status: while married or cohabiting people are underrepresented in the sample, widows and widowers are overrepresented. When the sample relating to the second district, 'Rivierenbuurt', is compared to the census data, there is a somewhat lower percentage in the sample of per-

sons aged 65–74 and a somewhat higher percentage of persons aged 75 or older. In addition, as with the first district, an overrepresentation of the widowed and an underrepresentation of married or cohabiting people is found in the sample. The ratio of males to females and the ethnic distribution of the sample, on the other hand, are roughly equivalent to those of the census.

In summary, despite the relatively high non-response, the elderly in the two samples resemble the elderly living in the two Amsterdam districts in most respects, with the main exception of lower proportions of married or cohabiting people and higher proportions of the widowed. Since the present and preferred living conditions of the widowed are different from those who are married or live together, some caution is needed in generalising the results of this research. In addition, it should be noted that these data do not necessarily give a representative picture of all elderly living in the four big cities and, although these two districts contrast sharply with each other, it is also doubtful whether these data are representative of the elderly population all over the city. Nevertheless, it seems useful to analyse these data in order to get a plausible impression.

3. Discrepancies: Present versus Preferred Housing and Neighbourhood Characteristics

This section will focus on the question to what extent the respondents perceive a discrepancy with regard to several housing and neighbourhood features. We will not limit ourselves to the specific housing and neighbourhood problems of the four big cities in the Netherlands, discussed in Section 1; other discrepancies will also be considered. (see Tables 3, 4, 5 and 6).

First of all, a discrepancy can be assessed for those housing and neighbourhood characteristics of which the present as well as the preferred situation is known. A simple comparison of the present with the preferred situation shows how many elderly perceive a discrepancy. In addition, we may identify

Table 3. Perceived discrepancy with respect to the specific housing problems of the big cities, by elderly, in two districts of Amsterdam

	Percentage
Storey ($N = 482$):	
No discrepancy	52.7
Discrepancy:	47.3
—too low	2.5
—too high	44.8
State of repair	
Cracks in walls ($N = 488$):	
No	62.1
Yes	37.9
Possibility of heating the house ($N = 490$):	
Good	62.0
Reasonable	15.3
Moderate	9.4
Bad	13.3
Is house kept in good condition by owner ($N = 487$):	
Good	29.4
Moderate	28.3
Bad	42.3
Number of rooms ($N = 489$):	
No discrepancy	47.7
Discrepancy:	52.3
—too few rooms	14.7
—too many rooms	37.6
Size of the living room ($N = 484$):	
No discrepancy	88.2
Discrepancy:	11.8
—too small	11.2
—too large	0.6
Separate bathroom or shower ($N = 490$):	
Yes	94.7
No	5.3

which type of discrepancy the elderly are facing. In principle, a discrepancy is two-sided: on the one hand, a specific characteristic of the house or neighbourhood is preferred by an elderly person, but is seen as being in short supply under the present circumstances. On the other hand, a specific characteristic may be available but less desirable. Both types will be considered as separate discrepancies, unless stated otherwise.

Secondly, the elderly have been asked to give their opinion on two housing features, viz., the size of the living room (Table 3) and the ratio between their living costs and their income (Table 6).[1] The answer to these two questions indicates directly to what degree these two characteristics are in conformity with their preferences.

Finally, for some housing and neighbourhood characteristics, only the present situation is known: the availability of a separate bathroom or shower (Table 3), housing characteristics concerning the state of repair (Table 3), neighbourhood characteristics concerning accessibility (Table 4) and neighbourhood characteristics concerning safety (Table 4). Nevertheless, a discrepancy can be identified because it is reasonable to assume

Table 4. Perceived discrepancy with respect to neighbourhood accessibility and safety problems of the big cities, by elderly, in two districts of Amsterdam

	Percentage
Accessibility of the neighbourhood	
Cross the street safely ($N = 481$):	
Yes	63.5
No	36.5
Walk on the footpath freely ($N = 482$):	
Yes	65.9
No	34.1
Safety of the neighbourhood	
Feel safe during the day in the district ($N = 481$):	
Yes	94.4
No	5.6
Avoid certain parts of the district during the day ($N = 480$):	
No	86.7
Yes	13.3
Leave the house in the evening ($N = 480$):	
Yes	44.8
No	55.2
Feel unsafe alone in the house ($N = 486$):	
No	87.9
Sometimes	6.8
Yes	5.3
House ever burgled ($N = 490$):	
No	67.8
Yes	32.2
Burglary in the neighbourhood recently ($N = 483$):	
No	37.5
Yes	62.5
Be annoyed in the district ($N = 481$):	
No	84.0
Yes	16.0

that everyone basically has the same preferences. For instance, it seems plausible that the elderly may see a discrepancy if they live in a house which is in a bad state of repair or if they live in a dangerous neighbourhood. As a consequence, the discrepancy of these characteristics is one-sided.

From Tables 3, 4 and 5 it appears that a considerable number of respondents have problems with various current housing and neighbourhood features which are quite often considered to be the problems of the big city. With regard to the house (see Table 3), first, the elderly are particularly unhappy with the storey on which they live: 47 per cent of the respondents see a discrepancy in this respect. Because in our data set almost everyone lives in a flat with no lift, it is not surprising that the majority of them prefer to live on a lower storey. Although one would expect that this discrepancy would be seen sooner by either older people or those who need care, from the data it appears that this discrepancy is especially found among people aged 55–64 years.

Secondly, many houses are in a bad state of repair: cracks in the walls and houses not kept in good condition by the owner are the

main problems in this regard. As expected, the state of repair is strongly related to the construction of the dwellings: 48 per cent of the elderly live in an old house which is not renovated and has big cracks in the walls, compared to 20 per cent of the elderly living either in a new house or in an old house which has been renovated. In addition, the elderly living in a non-renovated house more often see the chance of heating their house as poor (16 per cent compared to 7 per cent) and that their house is not properly maintained by its owner (58 per cent compared to 15 per cent).

Thirdly, a considerable number of the respondents see a discrepancy with respect to the number of rooms. However, this discrepancy does not correspond well with our expectations. As houses in the big city are generally not so large, it is surprising that they would rather have a house with fewer rooms than a house with more rooms. The size of the living room, on the other hand, should preferably be larger instead of smaller. Further analysis of these two discrepancies shows that seeing a discrepancy as regards the number of rooms can neither be related to age and need of care of the respondents nor to household size. Seeing a discrepancy with respect to the size of the living room, however, holds especially for those elderly living in 'De Baarsjes'. Finally, not all houses of the respondents have a separate bathroom or shower.

With regard to the neighbourhood (see Tables 4 and 5), first, a high percentage of the elderly thinks that the accessibility of their neighbourhood is poor: they have problems crossing the street safely (37 per cent) as well as walking on the footpath freely (34 per cent). One would expect that the perceived accessibility of the neighbourhood would depend on the two highly correlated variables 'age' and 'need of care'. From the data, however, a significant relationship exists only between 'walking on the footpath freely' and 'need of care'. The elderly who do not need care more often think that they can walk on the footpath freely. In addition, it seems that poor accessibility in the neigh-

bourhood does not influence the frequency of going out: the elderly who see the accessibility of their neighbourhood as poor are not significantly less likely to leave their home.

Secondly, a large number of the elderly are to some extent afraid of crime. This is not surprising, because most of the respondents have actually been confronted with some kind of crime. Despite the fact that most of the respondents feel safe in their district during the day (94 per cent), 13 per cent of the elderly still avoid certain parts of their district. Moreover, a high percentage of the elderly (55 per cent) do not leave their house during the evening. In addition, 12 per cent of the respondents reported that they sometimes feel unsafe in their own home when they are alone. This percentage is relatively low, considering the fact that 32 per cent of the elderly have experienced attempted burglary of their house. Moreover, nearly two-thirds of the respondents (63 per cent) said that several burglaries had taken place in the neighbourhood recently. Furthermore, only 16 per cent of the elderly has ever been annoyed in the district. When the four variables referring to fear or danger (Table 4) are related to the age of the respondents, differences show up between the three age groups (55–64, 65–74, 75+) on the one hand, and 'feeling safe during the day in the evening' and 'leaving the house in the evening' on the other hand. The elderly of 75 years or older do not feel safe in their district during the day. And while 71 per cent of the respondents aged 55–64 leave their house in the evening, only 45 per cent of the respondents aged 65–74 and no more than 23 per cent of the respondents of 75 years or older go out during the evening. From the latter finding one may not draw the conclusion immediately that the elderly are obviously more likely to be afraid to go out during the evening as age increases, since it appears that 'leaving the house in the evening' is also significantly related to the need of care among the elderly. In addition, it seems that feelings of danger do influence the frequency of leaving the home. Elderly persons are less likely to go out if they do not feel safe in

Table 5. Perceived discrepancy with respect to ethnic composition, by elderly, in two districts of Amsterdam

	No discrepancy		Discrepancy	
	Present, preferred	Not present, not preferred	Present, not preferred	Not present, preferred
Neighbours by ethnic origin (N = 484)				
Dutch	97.3	—	0.8	1.9
Turkish	5.4	45.0	9.1	40.5
Moroccan	7.9	46.9	8.3	37.0
Surinamese/Antillean	10.5	42.1	11.0	36.4
South European	4.8	49.4	4.5	41.3
Other	9.5	45.7	7.9	37.0
Local residents by ethnic origin (N = 481)				
Dutch	98.8	—	—	1.2
Turkish	37.8	15.6	36.0	10.6
Moroccan	38.9	16.8	34.9	9.4
Surinamese/Antillean	39.5	16.2	33.3	11.0
South European	25.2	33.1	16.0	25.8
Other	26.2	31.2	19.1	23.5

their district during the day, if they do not leave their house during the evening, or if they have ever been annoyed in their district. Furthermore, a significant relationships exists between feelings of danger and the degree of loneliness. Elderly persons who do not feel safe in their district during the day, elderly who do not leave their home during the evening, elderly who do not feel safe alone in their house, elderly who live in a neighbourhood where recently several burglaries have taken place, as well as those elderly who have ever been annoyed in their district, are more often found among those elderly who experience a high degree of loneliness.

Finally, although the majority of the respondents seems to have no problems with the composition of the population by ethnic origin in their neighbourhood (Table 5) still a considerable number of elderly who live next to or near people of foreign origin do not prefer this situation. This is especially the case if the local residents by ethnic origin are taken into consideration. The percentage of elderly who see this discrepancy is quite high, particularly given the high probability of socially desirable answers. But the opposite discrepancy occurs as well: a considerable number of respondents with no persons of foreign origin around them, prefer to live next to them. Although it is of course possible that people prefer to live in a multiracial neighbourhood, it is questionable to what extent these elderly really perceive a discrepancy. One can imagine that socially desirable answers may especially occur among people who are not faced with people of foreign origin in their present situation. Therefore, this perceived discrepancy will not be included in our further analysis.

However, the elderly do not only see a discrepancy with respect to the specific housing and neighbourhood problems of the big city (see Tables 6 and 7). First, among many elderly, the present type of housing is not in conformity with their preferences (Table 6). The majority of them live in a 'normal' house, while they would actually prefer a type of housing which is more suitable for the less healthy and less mobile elderly, like a retirement home, or an old people's home. In addition, this perceived discrepancy appears to be significantly related to age: the older the respondents are, the more often they see a discrepancy between their present and their preferred type of housing. While

Table 6. Perceived discrepancy with other housing characteristics, by elderly, in two districts of Amsterdam

	Percentage
Type of housing (N = 435)	
No discrepancy	56.8
Discrepancy:	43.2
—Not sufficiently meant for (less healthy and less mobile) elderly[a]	41.4
—Too much meant for (less healthy and less mobile) elderly[b]	1.8
Ownership (N = 458)	
No discrepancy	98.3
Discrepancy:	1.7
—Rented house at present, owner-occupied house preferred	0.2
—Owner-occupied house at present, rented house preferred	1.5
Rated share of living costs in income (N = 478)	
Good	18.2
Moderate	57.3
Bad	24.5

[a]The elderly who live in a 'normal' house (e.g. flat, single-family dwelling), but prefer to live in either housing meant for the less healthy and less mobile elderly (e.g. adapted houses, retirement homes) or old people's homes.
[b]The elderly who live in housing intended for the less healthy and less mobile elderly, but prefer to live in a 'normal' house.

the majority of the respondents aged 55–64 and 65–74 currently live in their preferred type of housing (72 per cent and 53 per cent), their present housing corresponds to their preference among only 44 per cent of the respondents of 75 years or older. This is not surprising, since getting older generally goes together with failing health. Therefore, a significant relation is also found between the perceived discrepancy concerning the type of housing and the need for care: a difference between the present and preferred type of housing is more often found among elderly persons who need care.

Secondly, although the average rent in the big cities is relatively low, a large number of elderly feel they have to spend a large amount of their income on living costs (Table 6). As expected, those elderly with low incomes view the proportion of their income spent on living costs as excessive.

Thirdly, many respondents see a discrepancy concerning housing facilities because a preferred facility is not available in their present dwelling (see Table 7). This is especially the case with respect to an inter-

com system, social alarm system, central heating and antislip devices in the bathroom. It is remarkable, however, that some elderly who have a certain facility in their present dwelling, do not want this facility in another house. This especially applies to an extra telephone connection, central heating, and special hinges and locks. Because it is very doubtful whether these elderly really see a discrepancy, this will not be considered as a discrepancy in our further analysis. Obviously, it has been verified whether there is a significant relation between the discrepancies seen with regard to the housing facilities (i.e. not available but preferred) on the one hand, and age and need of care of the elderly on the other hand. It follows that especially the elderly aged 65–74 years see a discrepancy with respect to a sunken doormat in the floor. In addition, this age group as well as the elderly of 75 years or older would like to have a special seat in their shower. Furthermore, the discrepancy seen with regard to hand grips is especially found among the elderly of 75 years or older. Moreover, it emerges from the data that the two perceived

Table 7. Perceived discrepancy with various housing facilities, by elderly, in two districts of Amsterdam

	No discrepancy		Discrepancy	
Housing facilities $(N = 491)$[a]	Available, preferred	Not available, not preferred	Not available, preferred	Available, not preferred
Extra telephone connection	29.5	28.7	27.1	14.7
Central heating	20.6	26.9	40.9	11.6
Alarm system	1.4	63.5	34.4	0.6
Special hinges and locks	10.6	54.2	24.0	11.2
Sunken doormat in floor	2.9	62.9	31.4	2.9
Hand grips	14.7	49.3	29.9	6.1
Lower doorsteps	7.9	60.3	26.9	4.9
Seat in shower	3.7	56.4	35.6	4.3
Wider doors	0.8	87.4	11.2	0.6
Adapted toilet	6.3	57.6	33.6	2.4
Ramp beside path	1.2	87.8	10.4	0.6
Social alarm system	2.6	54.2	41.8	1.4
Intercom system	11.4	39.5	46.2	2.9
Antislip device in bathroom	9.0	45.8	39.5	5.7
Adapted kitchen	1.4	75.4	22.8	0.4
Stair lift	0.4	80.2	18.3	1.0

[a] An intercom is a system near the front door, allowing voice contact with whomever has rung the doorbell; a ramp is an incline near the front door for wheelchair access; a social alarm system is used to request assistance in the event of an emergency; an alarm system is intended to safeguard the home against burglars.

discrepancies concerning hand grips and a special seat in the shower are not only related to the age of the respondents but also to the need of care.

Finally, the present composition of their neighbours and local residents, either by family phase or by age, does not always correspond with their preferred composition (Table 8).

4. Explaining Moving Plans of the Elderly I: The Stress-Threshold Model

Having considered the extent to which the elderly in this study see discrepancies between a number of their present and preferred housing and neighbourhood characteristics, it is interesting to examine which of these discrepancies are so important that these caused the elderly to wish to move. For that purpose, the stress-threshold approach served as the starting point for our analysis.

Brown and Moore (1970) belong to the first researchers who advocate the stress-threshold

approach. One important contribution of Brown and Moore to the development of a theory concerning moving is the distinction of two phases in the decision-making process. They view the act of moving as a result of two distinct, yet interrelated, decisions of the household: first, the decision *whether* to move from the present place of residence (the intention to move); secondly, once the first decision has been made, the decision *where* to move. Although this article will only focus on the first phase—i.e. which factors play an important role in the decision-making process that leads to the intention to move—the second phase will be briefly discussed as well.

In the first phase, it is possible that a household perceives some stress due to a discrepancy between its present and preferred living conditions which is assumed to be caused by either internal or external stressors. Internal stressors are changes in the circumstances within the household, resulting in changes in needs and preferences. Applied to elderly persons, an example is a

Table 8. Perceived discrepancy with respect to various neighbourhood population characteristics, by elderly, in two districts of Amsterdam

	No discrepancy		Discrepancy	
	Present, preferred	Not present, not preferred	Present, not preferred	Not present, preferred
Neighbours by family phase (N = 488)				
Single persons	75.2	1.8	4.3	18.6
Married couples/persons living together	72.7	3.3	4.9	19.1
Families with children	42.0	18.4	16.4	23.2
Neighbours by age (N = 484)				
0–12 years	29.3	25.0	13.2	32.4
12–20 years	25.0	25.8	8.5	40.7
20–35 years	59.3	7.2	14.9	18.6
35–55 years	64.5	5.2	7.2	23.1
55–75 years	71.5	2.5	0.8	25.2
75 years and older	46.3	7.4	3.9	42.4
Local residents by family phase (N = 479)				
Single persons	93.1	0.6	4.0	2.3
Married couples/persons living together	92.3	0.8	3.8	3.1
Families with children	75.4	4.6	15.0	5.0
Local residents by age (N = 482)				
0–12 years	72.4	7.1	13.9	6.6
12–20 years	73.7	5.2	13.9	7.3
20–35 years	84.9	0.6	11.0	3.5
35–55 years	90.7	0.8	5.4	3.1
55–75 years	96.1	0.6	1.0	2.3
75 years and older	86.9	2.7	4.6	5.8

physical decline which may result in a desire to move to a house on the ground floor, an adapted house and/or a house near services and facilities. In addition, a decline in income due to being retired may result in a desire to move to a less expensive house. External stressors, on the other hand, are changes in the present living conditions, outside the household. Examples of such stressors are deterioration of the house, increased traffic and crime, and an undesired change in the composition of the population.

If this stress does not exceed a certain threshold level, there is no reason for the household to consider moving and hence it remains in the present dwelling. On the other hand, if this stress does exceed the threshold level, the household faces a stress situation which may result in an intention to move. However, this is not the only alternative for removing the stress; the household can also adapt the house, neighbourhood or some of the preferences.

However, if after considering possible actions the household intends to move, it ends up in the second phase of the decision-making process. In this phase, the household will first search for and select alternative residences. Next, these selected residential alternatives are compared with the present and preferred living conditions and evaluated. Moving is not always the result of the second phase; it is possible that a household cannot find its preferred residential location or that
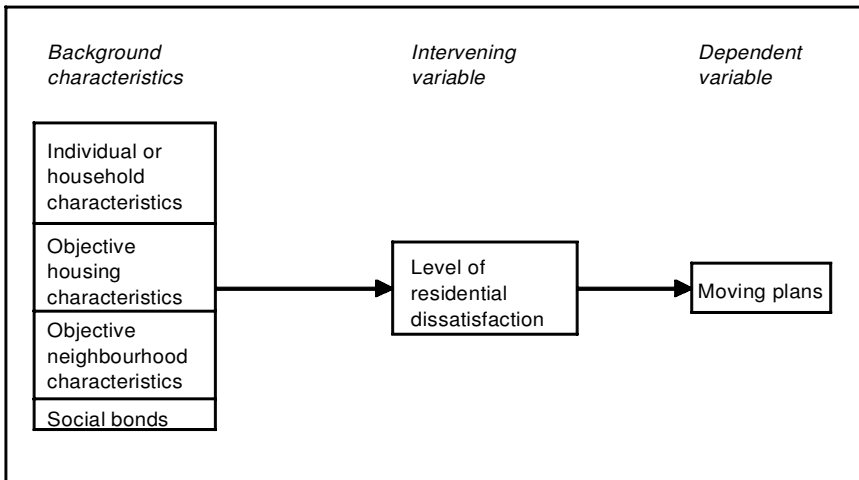
Figure 4. Speare's residential satisfaction model of relocation.

realisation is not possible (e.g. for financial reasons) and therefore does not move despite great stress. In that case, the household might improve its dwelling or neighbourhood or adapt the preferred living conditions in the direction of its present living conditions.

Several researchers have tried to put the ideas of Brown and Moore as well as their own thoughts into a structural model that can be tested empirically. One of the best-known models with regard to the first phase is the residential satisfaction model of relocation of Speare (1974; and Speare *et al*., 1975; see Figure 4). As one can see, Speare assumes that the background characteristics affect moving plans indirectly, i.e. they influence the level of residential dissatisfaction which in turn affects the likelihood of moving plans. Thus, in Speare's model, the level of residential dissatisfaction is viewed as an intervening variable between the background characteristics on the one hand and the moving plans on the other hand. When this model is compared to the ideas of Brown and Moore, three main differences emerge.

The first difference is minor. Speare prefers to speak about 'dissatisfaction' instead of 'stress' in order to avoid the connotation of mental tension. The second difference concerns the social bonds. According to Brown and Moore, the intention to

move will only be expressed if stress exceeds a threshold level. They assume that this level is mainly determined by social bonds to the present residence: if someone has strong social bonds, the threshold level will be very high, and therefore the person will be less inclined to move. In short, Brown and Moore have mainly emphasised the factors which push the persons to consider to move; social bonds have only been taken into consideration implicitly. Speare and other researchers (e.g. Huff and Clark, 1978; Varady, 1980; Preston, 1984; and Burby and Rohe, 1990), on the other hand, have suggested that factors which restrain people from considering moving should be considered explicitly. Therefore, Speare assumes that the social bonds to the present residence have an independent opposite effect on the level of residential dissatisfaction—i.e. these social bonds contribute to satisfaction with living there. Consequently, in his model, the decision whether to move is the result of two divergent forces.

Finally, the third difference refers to the absence of discrepancy between the present and preferred living conditions in Speare's model. Although Speare assumes that the level of residential dissatisfaction is caused by social bonds and by the perceived discrepancy between the present and preferred

living conditions which, in turn, is affected by internal and external stressors, only a causal connection between several background characteristics and the level of residential dissatisfaction shows up in his model. These background characteristics consist of personal characteristics, objective housing characteristics, objective neighbourhood characteristics and social bonds. The main drawback of this approach concerns the exclusion of the preferred housing and neighbourhood characteristics, with the result that the extent of perceived discrepancy between the present and preferred living conditions is actually unknown. Speare has tried to solve this problem by making two implicit assumptions so that the first three sets of background characteristics—personal, objective housing and objective neighbourhood characteristics—can be considered as indicators for the discrepancy between the present and preferred living conditions.

First of all, Speare assumes implicitly that certain personal characteristics reflect some discrepancies which are not included in the objective housing and neighbourhood characteristics. By assuming that older people are more able to live in dwellings they find congenial, for instance, Speare actually assumes that older persons in general experience less discrepancy between their present and preferred dwelling type and, therefore, are more satisfied with their residence. In addition, Speare assumes that certain personal factors provide inherent satisfaction. For example, he believes that residential satisfaction increases with age because older persons tend to be generally more satisfied. Although this assumption seems very crude and generalised, the results of Speare's study, as well as several other studies (e.g. Newman and Duncan, 1979; Varady, 1980), have shown that a number of personal characteristics are indeed significant predictors for the level of residential dissatisfaction.

Secondly, Speare assumes implicitly that the preferences of all respondents are the same for each incorporated objective housing and neighbourhood feature. For instance, he assumes that each person prefers a house with many rooms, and therefore it is hypothesised that people with large houses will usually be more satisfied than those living in small houses. This does not seem to be a correct assumption: people are different and therefore have different preferences. Varady (1980) has solved this problem partly by not only taking objective housing and neighbourhood characteristics into account, but also perceived housing and neighbourhood problems as background characteristics, like deterioration of the house and crime. It does seem plausible to assume that people see a discrepancy if they live in a house of low quality and in a dangerous neighbourhood. Although this approach is an improvement of Speare's model, it can be extended by considering both the present and preferred situation of those housing and neighbourhood characteristics for which different people are likely to have different preferences. We know only one study (Tazelaar, 1985) in which the discrepancy of all incorporated housing and neighbourhood characteristics is measured by ratings of present *and* preferred housing and neighbourhood conditions. In his study, however, the discrepancy is used as a substitute for the level of residential dissatisfaction.

In order to solve completely this problem inherent in Speare's model, our study modified his model by substituting 'perceived housing and neighbourhood discrepancies' for 'objective housing and neighbourhood characteristics' (see Figure 5). In addition, with regard to the level of residential dissatisfaction, a distinction was made between 'the level of housing dissatisfaction' and 'the level of neighbourhood dissatisfaction'. This allowed us to assess the relative importance of these two dissatisfaction variables. Finally, as it is likely that housing and neighbourhood dissatisfaction are related, a correlation between these two dissatisfaction variables is assumed.

5. Explaining Moving Plans of the Elderly II: The Analysis

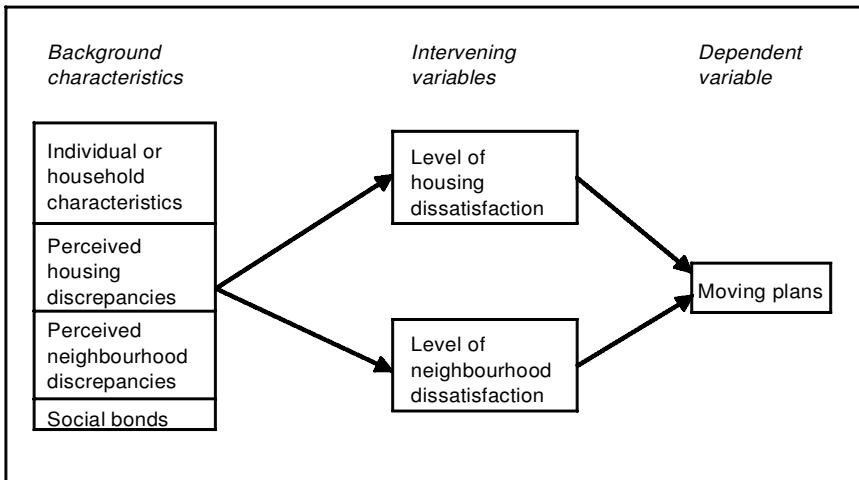In Section 3, it was shown that many elderly in our study indeed see a discrepancy be-

Figure 5. A new adjusted theoretical decision-making framework for studying the moving plans of the elderly. *Note:* see Appendix for full definitions of variables.

tween those housing and neighbourhood features which refer to the specific housing and neighbourhood problems of the big city. If these perceived discrepancies are of great importance to them, these discrepancies will have a very negative effect on their present living conditions. In that case, according to the stress-threshold approach, these discrepancies will lead, together with other housing and neighbourhood discrepancies, personal characteristics and weak social bonds, to residential dissatisfaction which in turn affects the likelihood of moving plans. The framework discussed in Section 4 (see Figure 5) is used to verify this. Therefore, a structural model based on path analysis is used.[2] One of the desirable features of path analysis is the opportunity it gives to examine the extent to which both the level of housing and neighbourhood dissatisfaction act as intervening variables: through path analysis, the total effects of the background characteristics on the moving plans can be decomposed into direct effects, which operate independently of the two intervening variables, and indirect effects, which operate through them. The indirect effects are measured by multiplying the coefficients of the background characteristics through the level of dissatisfaction with the house or neigh-

bourhood by the coefficients of the level of housing or neighbourhood dissatisfaction. Thus, although no arrow is drawn directly from the background characteristics to the moving plans in Figure 5, whether there is a direct effect is certainly examined.

Results

Figure 6 only includes those background characteristics which in the path analysis were found to have a significant effect on the moving plans of the elderly in our study, whether or not through the level of housing and/or neighbourhood dissatisfaction. Since all estimated coefficients are standardised in this figure, the relative impact of each of these background characteristics can be indicated. Table 9 shows the standardised indirect, direct, and total effects of the factors. Some interesting findings emerge from Figure 6 as well as Table 9.

First of all, it appears that most of the perceived discrepancies in respect of the specific housing and neighbourhood problems of the big cities do indeed affect moving plans significantly. Elderly persons are more inclined to move if their house has too few rooms, if the storey of their house is too high, if their house is in a bad state of repair,
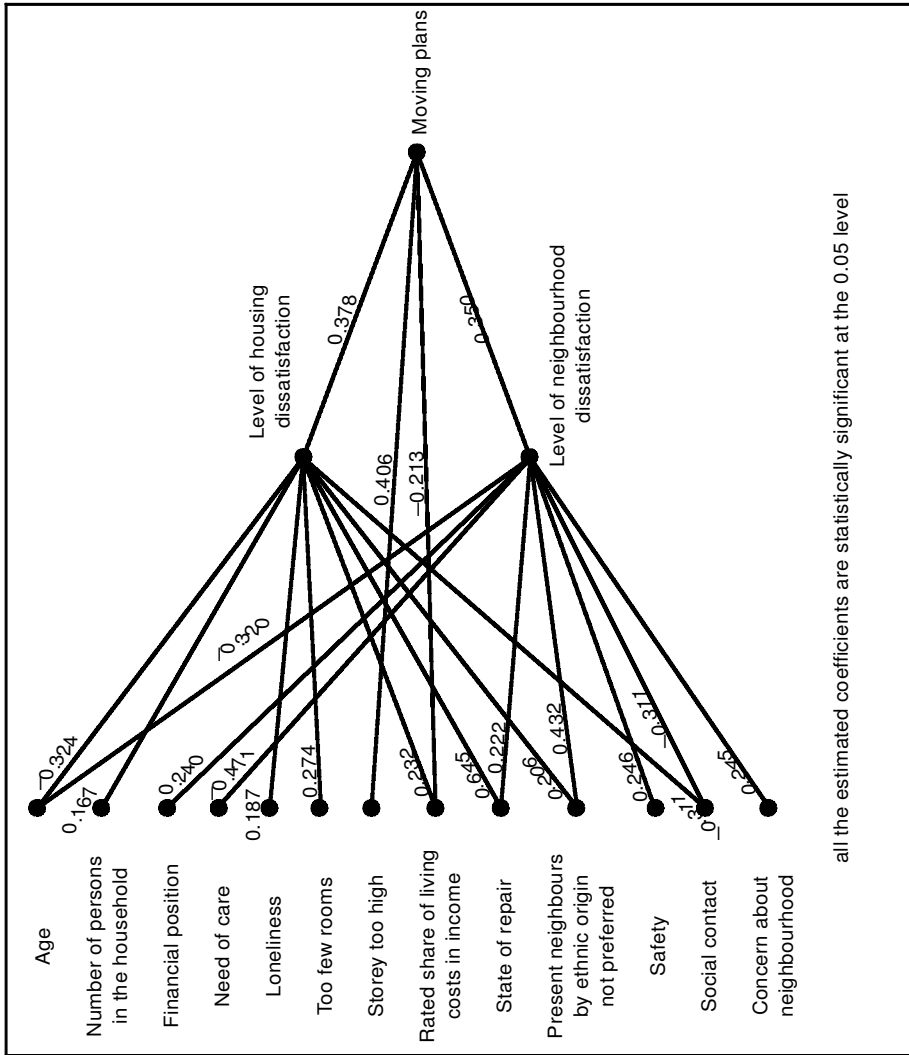
Figure 6. Paths influencing moving plans among the elderly in two districts of Amsterdam (standardised coefficients; $N = 394$).

Table 9. Total, direct and indirect effects of the significant factors influencing moving plans among the elderly in two districts of Amsterdam

				Indirect effect operating through	
	Total effect	= Direct effect +		The level of housing dissatisfaction	The level of neighbourhood dissatisfaction
Age	−0.234			−0.122	−0.112
Number of persons in the household	0.063			0.063	
Financial position	0.084				0.084
Need of care	−0.165				−0.165
Loneliness	0.071			0.071	
Too few rooms	0.104			0.104	
Storey too high	0.406	0.406			
Rated share of living costs in income	−0.125	−0.213		0.088	
State of repair	0.322			0.244	0.078
Present neighbours by ethnic origin not preferred	0.229			0.078	0.151
Safety	0.086				0.086
Social contact	−0.227			−0.118	−0.109
Concern about neighbourhood	0.086				0.086
Level of housing dissatisfaction	0.378	0.378			
Level of neighbourhood dissatisfaction	0.350	0.350			

if they live next to some neighbours of foreign origin whom they do not like, and if they see their neighbourhood as unsafe. It is interesting that 'living room too small', 'present local residents by ethnic origin not liked', and 'accessibility of the neighbourhood'—the other three specific housing and neighbourhood problems of the big cities included in the analysis—do not have a significant influence on moving plans. Elderly persons who see the living room of their house as too small, the elderly who have some local residents who are not liked by them because of their foreign origin, as well as the elderly who think that the accessibility of their neighbourhood is bad, do not have a significantly higher probability of formulating moving plans than the elderly who do not perceive these problems.

Secondly, most of the discrepancies seen in those housing and neighbourhood features which are not considered to be the specific problems of the big cities do not have a significant effect on moving plans. The elderly do not have moving plans sooner if they think they have too many rooms, if some preferred housing facilities are not available in their present dwelling and if the present composition of their neighbours and local residents by age as well as by family phase is not what they would like. The only exception refers to the rated share of living costs in income: those elderly who think they have to spend a large amount of their income on living costs are less often inclined to move.

Thirdly, Figure 6 shows that, following the stress-threshold approach, most of the significant housing and neighbourhood discrepancies seen affect the moving plans of the respondents in an *indirect* manner: the elderly who see these discrepancies are more dissatisfied with their house and neighbourhood and are therefore more inclined to move. This does not apply to the elderly who prefer to live in a home on a lower storey. Regardless of their level of housing and neighbourhood dissatisfaction, they are more often inclined to move. Two explanations can be given. First, it is possible that the respondents did not consider the storey of their home as one of the housing features when they answered the question to what

extent they are satisfied with their house. A second explanation is that these elderly are still satisfied with the storey of their home at this moment and therefore satisfied with their home entirely, but they think that the storey of their home will cause problems in the near future and therefore are already expressing the wish to move. From the data, it appears that almost all respondents live in flats with no elevator. Using the stairs in order to leave and enter the home becomes more difficult in the event of poorer health.

In addition, the variable 'rated share of living costs in income' has a significant positive indirect as well as a negative direct effect on moving plans. Those elderly who think that a large amount of their income goes towards paying their living costs are, on the one hand, less satisfied with their house and hence more often inclined to move. On the other hand, these elderly are less likely to have moving plans, regardless of whether they are satisfied or dissatisfied with their house. However, because of the stronger negative direct effect, the total effect of this variable is negative (see Table 9). An explanation for this finding can be given by emphasising that their present living costs are on average relatively low. In Section 1, it has been mentioned that the average rent in big cities in the Netherlands is lower than in the suburbs. In addition, it emerges from the data that most of the respondents have lived in their present house for a very long time. Although they have probably experienced a rent increase in the last few years, it seems plausible to assume that their current rent is still lower than the rent of people who have only lived in their house for a few years, due to rent regulations in the Netherlands. So, with these two points in mind, it is likely that the respondents would have to pay more rent if they were to move, a situation which results in a reduction of their income available for other needs. When one assumes that the elderly are aware of this, it is not surprising that especially the elderly who think they have to pay a large amount of their income on living costs at this moment are less inclined to move.

Fourthly, most of the significant perceived housing discrepancies only influence the level of housing dissatisfaction, while most of the significant neighbourhood discrepancies only affect the level of neighbourhood dissatisfaction. There are two exceptions: the 'state of repair' and 'present neighbours by ethnic origin not liked'. Elderly persons who live in a house which is in bad repair are not only more dissatisfied with their house, but also with their neighbourhood. This is not surprising, since a house in a bad state of repair is usually found in a neighbourhood where many other houses also have the same problem. And it is very likely that this general deterioration of the neighbourhood has contributed to dissatisfaction with the neighbourhood on the whole. The elderly living next to some neighbours who are not liked by them because of their foreign origin are less satisfied with their neighbourhood as well as their house. Unfortunately, it is still too often the case that people of foreign origin live in a neighbourhood where the quality of many of the houses is very low (Entzinger and van Praag, 1994). Many of these houses contend with problems of draught, damp and poor foundations, and they are often very noisy. Thus, this neighbourhood discrepancy probably also provides information on housing problems that is not incorporated in any of the housing variables.

Fifthly, all personal characteristics considered in the analysis, as well as the two variables with regard to social bonds, also have a significant effect on the intention to move, through the level of dissatisfaction with the house and/or neighbourhood. Respondents of 75 years or older are more satisfied with both their house and neighbourhood and, as a result, they are less likely to have moving plans. Furthermore, while the number of persons in the household and the degree of loneliness are significant determinants of the level of housing dissatisfaction, the financial position as well as the need for care are crucial determinants of the level of neighbourhood dissatisfaction. Both the elderly who do not share their house with other persons, as well as those who are less

lonely, are more satisfied with their house. Neighbourhood satisfaction, on the other hand, is more often found among elderly who are in a relatively comfortable financial position, and among elderly who are no longer able to do their own housekeeping. In addition, the elderly who have strong social bonds are more satisfied with their house as well as their neighbourhood, and are therefore less inclined to move.

Finally, inspection of the standardised indirect effects indicates, as might be expected, that the state of repair of the house is clearly the most important determinant of the level of housing dissatisfaction. The discrepancy 'present neighbours by ethnic origin not liked' as well as the need for care, on the other hand, are the most important determinants of the level of neighbourhood dissatisfaction. When the standardised direct effects of the two intervening variables are compared, it appears that the level of housing dissatisfaction is as important as the level of neighbourhood dissatisfaction. It is interesting, however, that the discrepancy 'storey too high' exerts a direct effect on moving plans that is larger than both the level of housing and neighbourhood dissatisfaction. By inspecting the standardised total effects, it becomes clear that the state of repair and the discrepancy 'storey too high' are the two background characteristics which exert the greatest influence on moving plans. This finding highlights the importance of these two housing discrepancies in the decision-making process of moving by the elderly.

6. Summary and Policy Implications

Although the four big cities in the Netherlands are still the most ageing areas of the country, it is expected that the number of elderly persons will stagnate or even decrease in the near future. In addition to the process of suburbanisation which has taken place in the 1960s and 1970s, a negative balance of migration of elderly people also plays a role.

In order to offer an explanation why the elderly are more likely to leave than to move into the big city, one often refers to the problems which big cities mainly have to contend with. An increasing amount of traffic and therefore a decrease in the accessibility of the neighbourhood, an increase in (fear of) crime, and a rapid change in the composition of the population are the most important problems with regard to the neighbourhood. In addition, many houses in the big cities are in bad repair, some houses are still not provided with all basic conveniences, most of the homes are flats with no elevator, and the houses are relatively small.

If it is true that these problems are indeed seen as very negative by the elderly in the four big cities, then it seems plausible to assume that these problems have contributed to a negative balance of migration of elderly persons. In that case, these problems can be viewed by the elderly as undesired (changes in their present) housing and neighbourhood characteristics. According to the stress-threshold approach, perceived housing and neighbourhood discrepancies, together with personal characteristics and weak social bonds, lead to a certain amount of residential dissatisfaction which may well result in an intention to move.

This article has examined the extent to which these assumptions are valid for the elderly in two districts of Amsterdam. The results show that a considerable number of respondents indeed see a discrepancy in respect of the specific housing and neighbourhood problems of the big city. Furthermore, besides the rated share of living costs in income, personal characteristics and weak social bonds, most of these perceived housing and neighbourhood discrepancies emerge as important determinants of plans to move. In addition, most of these background characteristics affect plans to move through their effect on the two dissatisfaction variables, the level of dissatisfaction with the house and neighbourhood. Only the housing discrepancy 'storey too high' and the rated share of living costs in income affect moving plans directly.

Before ending this paper, two limitations

of this research will be noted. First, although it is shown in Section 2 that the two samples used are quite representative of the elderly population living in the two districts of Amsterdam in most respects, a bias is found with regard to marital status—that is, married or cohabiting people are underrepresented and the widowed are overrepresented. Therefore, some caution is needed when attempting to generalise the results of this research to all the elderly living in the two Amsterdam districts. In addition, generalising findings based on these data to Amsterdam and the other three big cities in the Netherlands must await further research. Secondly, this research has only focused on the intention to move. Of course, not all people who intend to move will actually move. This is highly dependent on the restrictions people are faced with, like limitations on the housing market. Nevertheless, we believe that the research discussed in this article is useful for several reasons. Since the data used contain both the present and the preferred situation of many housing and neighbourhood characteristics for which different people are likely to have different preferences, a correct impression could be gained of several housing and neighbourhood discrepancies seen by the elderly population studied. In addition, it is the first detailed study attempting to answer the question whether specific housing and neighbourhood problems of big cities are indeed the key factors resulting in an intention to move. Furthermore, the results reported do shed light on some issues which are particularly important for local government. There are three findings of this research which are very important from a policy perspective.

First of all, since a considerable number of the elderly in the two districts of Amsterdam see a discrepancy with several housing and neighbourhood features—including the specific housing and neighbourhood problems of the big cities—there is still a lot of work to be done in order to let all the elderly live in a decent house and a suitable neighbourhood.

With regard to the specific neighbourhood problems of the big cities, it emerges from the data that many elderly see the accessibility of their neighbourhood as bad: some streets cannot be crossed safely, and they can not always walk on the footpath freely. In order to improve the accessibility of the neighbourhood, one can think of more protected crossings, (giving pedestrians more time to cross the street safely), a stricter enforcement of anti-pavement parking policies, and restriction of shopkeeper's pavement displays. In addition, it is shown that some respondents feel unsafe in their neighbourhood and in their own house, that a considerable number avoid risky situations, and that the majority of the respondents have actually been confronted with some kind of crime. Actual crime on the street and therefore feelings of danger might be reduced by more police supervision on the street and by setting up neighbourhood watch groups. Alarm systems and the installation of an intercom system might decrease the feelings of elderly insecurity by the elderly in their own home. Finally, although the majority of the respondents do not see a discrepancy in the composition of the population in their neighbourhood by ethnic origin, a considerable percentage of the respondents living next to or near to people of foreign origin would prefer not to. This implies, among other things, an effort to improve contact between the elderly and neighbours and local residents of foreign origin. It is doubtful, however, whether local policy can interfere in this matter. In any case local government may create opportunities to improve contacts between neighbours by setting up 'street conversations' and by calling in a contact person who might act as mediator in case of neighbours' quarrels.

With regard to the specific housing problems of the big cities, it appears that the respondents especially see problems with the storey on which their dwelling is located—i.e. the storey they live on is too high. In order to remove this problem, several measures are possible. First of all, the dwelling could be adapted by installing a lift. However, due to the type of housing in the big cities, this will usually not be financially

possible. Secondly, one could ensure that enough new dwellings will be situated on the ground floor or with access to a lift. Thirdly, pressure could be put on housing corporations to adapt their allocation policy so that it will be easier for the elderly either to move to ground floor dwellings or to flats with a lift. Besides being located on the wrong floor, a considerable number of the dwellings are in a bad state of repair. This could be improved by the repair and renovation of the existing housing stock. However, in order to remove the overdue repairs to privately owned houses, it is necessary that occupants get organised in rent committees. Obviously, in case of serious defects, the building inspection authorities can force private owners to carry out overdue repairs to their houses.

Besides these specific housing and neighbourhood problems of the big cities, many elderly in our study also perceive a discrepancy with three other housing features. First of all, present housing type does not correspond very often with preferences, which means that the elderly who live in a 'normal' house at this moment prefer to live in a house which is more suitable for the less healthy and less mobile elderly. In order to meet these preferences, it is necessary to build enough suitable houses in the near future. Furthermore, several desirable housing facilities are often not available in the present dwelling. This especially applies to an intercom system, social alarm system, central heating and antislip precautions in the bathroom. Therefore, these types of housing facilities should be installed. Finally, although rent in big cities is relatively low on average, it is shown that many elderly feel they have to spend a large amount of their income on living costs.

The second finding which is highly relevant from a policy perspective, refers to the fact that the state of repair and the discrepancy 'storey too high' are the two housing discrepancies which exert the greatest influence on moving plans. This implies that efforts to keep older residents in their own house and/or neighbourhood through housing rehabilitation programmes, to built sufficient

new houses and to assign homes on the ground floor or with a lift especially to elderly, will probably be successful.

Finally, the results also highlight the need for local policies promoting moving by the elderly with high perceived living costs in relation to their income. Among these elderly, there is a tendency to remain despite their dissatisfaction with their house and/or neighbourhood. This is not surprising because it is very likely that a move to another (new) house will lead to a considerable rent increase which they often cannot afford.

Notes

1. Strictly speaking, the variable 'rated share of living costs in income' is a combination of a housing and personal characteristic. Nevertheless, this variable will be considered here as a housing feature.
2. Figure 5 can be viewed as a path diagram—i.e. a visual representation of a theory about the structural relationships in a set of variables. It contains three endogenous variables—housing dissatisfaction, neighbourhood dissatisfaction and moving plans—and a set of exogenous variables, the background characteristics. The assumed structural model can be tested against real-world data using the observed covariance matrix of the variable set. Because the endogenous variables are categorical in this particular application, the systems of equations are estimated by using the methodology developed by Muthén which is implemented in the computer program LISCOMP. The path analysis is based on 394 cases rather than the 492 cases noted earlier. This is due to the fact that the analysis required complete information on all the variables included in the path analysis; otherwise the case was deleted. Consequently, 98 cases were excluded.

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Appendix

Personal or Household Characteristics

The first characteristic concerns the age of the elderly. A distinction is made between elderly aged 55–75 years (= 0) and elderly aged 75 years and older (= 1).

The second characteristic, the number of persons in the household, consists of 4 categories: (0) = single household; (1) = household with two persons; (2) = household with three persons; and (3) = household with four persons or more.

The financial position of the elderly is the third characteristic. Of course, the elderly have been asked about their income in a direct way. Although the elderly only had to mention which income group they belong to, a large percentage of the elderly did not answer this question. In addition, they were asked the question whether they think that their amount of money left, after the payment of fixed charges and living costs, is sufficient in order to do something extra, like a day out (0 = yes; 1 = no). Unlike the first question, most of the elderly answered this question. In order to avoid a very large reduction in the total cases and because the second question also gives better insight into disposable income, answers to the second question only served as indicators for the financial position of the respondents.

The fourth characteristic is the need of care. 'Whether or not they could do their own house-keeping' (0 = yes; 1 = no) served this purpose.

Loneliness is the final characteristic of the elderly which is included in the analysis. In order to get an impression of the degree of loneliness, the elderly person was first asked directly about their feelings of loneliness (0 = no; 1 = sometimes; 2 = regularly). Furthermore, the elderly were presented with 11 items and asked if they could indicate to what extent they agree with these items. The 11 items concern severe feelings of loneliness as well as less intense loneliness feelings, and were certainly not chosen at random. They belong to the items of the loneliness scale, an instrument developed by de Jong Gierveld and colleagues in order to measure the degree of loneliness in survey research. As a result, after some simple calculations, answers to the 11 different items can be summarised in the loneliness scale (see de Jong Gierveld and Kamphuis, 1985). Because this scale consists of 11 items, the scale varies from 0 'not or very slightly lonely' to 11 'very lonely'. In this study, preference is given to this loneliness scale.

Discrepancies with Housing Characteristics

In Section 3, the determination of the discrepancies is discussed. It is shown that some of these discrepancies are two-sided. With regard to the discrepancy concerning the number of rooms, for instance, an elderly person may have either too many or too few rooms. Because it seems plausible that these two types may have a different effect on the moving plans of the elderly, it is necessary to consider these two separately. As a result, with regard to the number of rooms, two dummies are included in the path analysis: 'too many rooms' (0 = no; 1 = yes; and 'too few rooms' (0 = no; 1 = yes).

The same method is followed for the discrepancy concerning the size of the living room—living room too small' (0 = no; 1 = yes) and 'living room too large' (0 = no; 1 = yes)—as well as the discrepancy concerning the storey—'storey too low' (0 = no; 1 = yes) and 'storey too high' (0 = no; 1 = yes). However, because it appears that only a small number of the respondents lives in a house of which the living room is too large or of which the storey is too low (see Section 3), these two discrepancies have not been included in the path analysis.

The variable 'rated share of living costs in income' consists of three categories: (0) = good; (1) = moderate; (2) = bad.

The variable 'state of repair' is a compound variable. The scale of this variable is the unweighted sum of the following three questions: (1) big cracks (0 = no; 1 = yes); (2) possib-ility of heating the house (0 = good; 0.33 = reasonable; 0.67 = moderate; 1 = bad); and (3) house kept in good condition by owner (0 = good; 0.5 = moderate, 1 = bad). Therefore, the scale has a minimum score of 0 (house in a very good state of repair) and a maximum score of 3 (house in a very bad state of repair).

The variable 'preferred housing facilities not available' is a scale which is composed of the questions about the present and preferred availability of 16 housing facilities (see Section 3). In Section 3, it is mentioned that we speak only of a discrepancy if a preferred housing facility is not available (0 = no; 1 = yes). Theoretically, the scale has a maximum score of 16; practically, however, it runs from 0 to 15.

Finally, the discrepancy concerning the type of housing, the ownership and the availability of a separate bathroom or shower are not considered. Including the first variable would result in a too large reduction in the total cases: a large number of respondents did not answer the preferred type of housing. The other two variables are not considered because only a very small number of the elderly perceive these discrepancies (see Section 3).

Discrepancies with Neighbourhood Characteristics

The first five variables concerning the neighbourhood—i.e. the discrepancies concerning the neighbours by family phase, age and ethnic origin—are constructed of the questions on the present and preferred composition of the neighbours. From Section 3, it appeared that they asked the elderly the question whether they would say for 3 family phases, 6 age groups and 6 ethnic groups, if some of their neighbours belong to these groups and if they prefer these groups. With these answers, two kinds of discrepancy can be determined by each family phase, age and ethnic group: 'present, not preferred' (0 = no; 1 = yes) and 'not present, preferred' (0 = no; 1 = yes). However, with regard to the neighbours by ethnic origin, it is mentioned in Section 3 that we speak only of a discrepancy if people live next to a certain ethnic group which they do not prefer. As a result, the two scales concerning neighbours by family phase—'present neighbours by family phase not preferred' and 'preferred neighbours by family phase not present'—run theoretically from 0 (no discrepancy with each of the 3 groups of neighbours by family phase) to 3 (discrepancy with all the 3 groups of neighbours by family phase). In addition, the other 3 scales—'present neighbours by age not preferred', 'preferred neighbours by age not present' and 'present neighbours by ethnic origin not preferred'—run theoretically from 0 to 6. The same applies also to

the next 5 scales, the discrepancy concerning the local residents by family phase, age and ethnic origin.

On the basis of the scores on the question about 'crossing the street safely' (0 = yes; 1 = no) and the question about 'walking on the footpath freely' (0 = yes; 1 = no), a scale is developed which is called the 'accessibility of the neighbourhood', with a minimum score of 0 and a maximum score of 2.

Finally, the variable 'safety' is the unweighted sum of the scores on the 7 questions which they have asked the elderly in order to get an idea of their feelings of risk: (1) feel safe during the day in the district (0 = yes; 1 = no); (2) avoid certain parts of the district during the day (0 = yes; 1 = no); (3) leave the house in the evening (0 = yes; 1 = no); (4) feel unsafe alone in the house (0 = no; 0.5 = sometimes; 1 = yes); (5) house ever burgled (0 = no; 1 = yes); (6) burglary in the neighbourhood recently (0 = no; 1 = yes); and (7) been annoyed in the district (0 = no; 1 = yes). As a result, the scale has a minimum score of 0 and a maximum score of 7.

Social Bonds

The elderly were asked whether they have (1) contact with their neighbours (0 = no; 1 = yes); (2) friends in their neighbourhood (0 = no; 1 = yes); (3) children nearby—i.e. in their own district of Amsterdam (0 = no; 1 = yes) and (4) other family members nearby—i.e. in their own district of Amsterdam (0 = no; 1 = yes). On the basis of these data, the variable 'social contact' is composed which has served as the first indicator for the extent of social bonds. The sum of the scores in these questions is divided by 4 for elderly with children and divided by 3 for elderly without children. In this way, this variable runs from 0 (no or weak social bonds) to 1 (very strong social bonds) for all respondents.

In addition, they were asked the question whether or not they are concerned about their neighbourhood   (0 = yes;   1 = somewhat;

2 = no). This variable served as a second indicator for the extent of social bonds.

Level of Dissatisfaction with the House

The elderly were asked to what extent they are satisfied with their present house. They could choose from the following answer categories: (1) satisfied (= 0); (2) moderately satisfied (= 1) and (3) dissatisfied (= 2). It appears that generally the respondents are satisfied with their house: 73 per cent of the elderly are satisfied and 22 per cent moderately satisfied with their house. Only 5 per cent of the respondents are dissatisfied.

Level of Dissatisfaction with the Neighbourhood

In order to get an impression of the extent of dissatisfaction with the neighbourhood, the respondents were asked how pleasant they think it is to live in this neighbourhood. The answer categories were: (1) very pleasant; (2) pleasant; (3) neither pleasant, nor unpleasant; (4) unpleasant; and (5) very unpleasant. The elderly are also satisfied with their neighbourhood: 82 per cent of the respondents answered this question by saying that their neighbourhood is pleasant (46 per cent) or very pleasant (36 per cent) to live in. Only 4 per cent said that their neighbourhood is unpleasant (3 per cent) or very unpleasant (1 per cent). In the path analysis, the answer categories (1) and (2) as well as (4) and (5) are combined: (1) + (2) = 0; (3) = 1; (4) + (5) = 2.

Moving Plans

The elderly were asked if they wish to move in the coming years and, if so, when. It turns out that a considerable number of the respondents are inclined to move: 29 per cent of the elderly have moving plans; 10 per cent of them wish to move as soon as possible, 2 per cent within one year, 6 per cent in one or two years, and 11 per cent in more than 3 years. This study only made a distinction between elderly with moving plans (= 1) and elderly with no moving plans (= 0).