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Living Alone and Living with Children: The Living Arrangements of Canadian and Chinese-Canadian Seniors

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SEDAP Research Paper No. 74

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LIVING ALONE AND LIVING WITH CHILDREN: THE LIVING ARRANGEMENTS OF CANADIAN AND CHINESE-CANADIAN SENIORS

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SEDAP Research Paper No. 74

March 2002

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Chinese-Canadian Seniors

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February 2002

ABSTRACT

Living arrangements have the potential to tell us far more than simply who lives with whom. Whether a senior lives alone, with a spouse, or with children will provide potentially distinct social support possibilities. From a policy perspective, the particular mix of these living arrangements also provides clues to the need for formal services. While work has been done on how income, gender and age shape the living arrangements of Canadian seniors, relatively little research has explored how ethnicity, language skill and immigration status further mediate living arrangements. Given the future combination of population aging and continued shifts in the source and type of immigration to Canada, additional research on how ethnicity and factors associated with immigration affect living arrangements is also warranted.

In this paper I explore the relationship between characteristics of Canadian seniors and their living arrangements. Ethnicity and immigration are further explored by focussing on the living arrangements of Chinese-Canadian seniors. Data for Canadians aged 55 and older from the 1996 individual census Public Use Microdata File (PUMF) (n=159,361), General Social Survey Cycle 11 (GSS11) (n=12,756) and National Population Health Survey (NPHS) (n=13,363) were used in this analysis. Logistic regressions using the PUMF and GSS11 data suggest that while personal income and characteristics of immigrants play important roles in encouraging living alone among older Canadians, their effects do not nullify the role of culture among Chinese-Canadian seniors. Importantly, these effects vary substantially by gender and age. These findings underscore the heterogeneity of Canadian seniors, which is often overlooked in the design and delivery of services to this segment of the population.

1 Introduction

Over a person's life-course major phases are often marked by changes in living arrangements. In older age, changes in living arrangements may come particularly fast. With children moving from the home and possibly the loss of a spouse, older Canadians face a may face a series of difficult and complex choices: will a senior live with children, live alone, or move into an institution? The particular mix of senior's living arrangements has direct implications on projections for the need for services. Seniors living alone, for example, may require more formal services than seniors in other living arrangements (Iacouvou, 2000). Just as important are the social implications of this mix. Although it is difficult to read the well-being of people directly from their living arrangements (Velkoff, 2000), it is reasonable to suggest that seniors co-residing with children have greater access to personal care and other forms of support than those who live alone. As De Vos (1998) succinctly put it, "the sharing of physical space is highly related to sharing other things", likely including the personal care that is of greater concern as people age (Rosenthal 2000).

Given the importance of living arrangements, surprisingly little research has been done on the factors influencing the choice of these living arrangements by community-living seniors. Less research still has assessed the relative impact of geography, health status, income, gender and ethnicity together. This paper explores these relationships with a particular emphasis on ethnicity. The focus is on differences in living arrangements between Chinese-Canadian and other Canadian seniors, primarily because of the growing importance of Chinese Canadian immigration from Hong Kong and the Chinese Mainland.

Gee (1999) outlines three reasons why the study of Chinese-Canadian seniors is important, all of which are relevant in the current study. Firstly, Chinese Canadians represent the changing ethnic composition of Canada's elderly population, which has increasingly come from non-European countries. Although Chinese seniors in Canada represented a relatively small 2.2% of all seniors in 1996 (PUMF 1996), they are the forefront of this demographic change, tripling their proportion between 1971 and 1991. Secondly, the timing of their immigration is important. European migrants to Canada have traditionally arrived in early adulthood. In 1996, nearly 70% of these migrants arrived in Canada prior to 1961. The experience of many Chinese Canadian seniors, however, has been quite different. In 1996, 47.9% of Chinese Canadian seniors had immigrated at ages 60 or higher (PUMF 1996). Thirdly, Chinese Canadians

have not experienced what Gee calls "'normal aging' in the Canadian context". Historically, the trend among elderly Chinese Canadian men was one of separation from their families and kin groups, aging and dying alone in Chinatowns. More recently, this has been replaced by a predominantly female structure "forging their aging experience in a … social environment that is less constrained and constructed by racist immigration policy" (Gee 1999). Migration from the Chinese Mainland is having an increasing impact on the Canadian social landscape, and it is therefore important to note how this may subtly change the patterns of living arrangements among Canadian seniors.

Methodologically, these issues are explored in part via models based on 1996 Canadian Census Public Use Microdata Files (PUMF) and the General Social Survey, Cycle 11 (GSS11). In these models, the likelihood of various living arrangements is determined, controlling for a variety of personal characteristics. These models provide a broad, detailed picture of the living arrangements of Canadian seniors, and illuminate the effects of ethnicity, language, immigration, place, health and income on who lives with whom.

2   Previous Literature on Living Arrangements

2.1   Definition

Living arrangements refer to whom a senior may live with rather than where, although these arrangements may have an aggregate, geographic component. Since an underlying theme in this paper is the role played by social support (or the lack thereof), certain living arrangements have received more attention in the literature. The typology of living arrangements used here reflects a spectrum that operates along an assumed support axis: increasing interaction with family equates to increased informal support, while increased isolation suggests a greater need for formal supports. This spectrum includes four specific living arrangements. In order of increasing involvement with family, we move from living alone, to living with a spouse, in multiple family arrangements, and with adult children. Living with a spouse and without children is the norm for most Canadian seniors, and in subsequent analyses I contrast living alone and living with family other than spouse to this base living arrangement.

2.2 *Factors Affecting Living Arrangements*

Living arrangements reflect both endogenous and exogenous factors. Monica Boyd (1991) notes that age, size of place, number of children, education, time since immigration, country of birth and income all affect the likelihood of a senior living alone. According to Boyd (1991), these same variables affect living with a child, since the latter is a "near mirror relationship" to living alone. In addition, health status, language skills, and demographic factors, including gender and the availability and number of children, may also influence living arrangements.

2.2.1 Gender

Gender plays an important role in defining living arrangements. In general, women outlive males, a point which becomes particularly crucial in the transition from living with a spouse to living alone. The result is that far more women than men live alone in later years, which is compounded by the substantially lower re-marriage rates of Canadian women. Thus, we would expect to see relative parity between men and women in terms of living with a spouse at earlier ages, but widely diverging living arrangement patterns as Canadian seniors age. Recognizing these gender disparities, a number of studies have concentrated specifically on the analysis of women's living arrangements (Boyd, 1991; Soldo, Sharma and Campbell, 1984; Wolf and Soldo, 1988). Wilmoth (2001) also delineates by gender, including analyses for both men and women (Wilmoth, 2001).

2.2.2 'Purchasing' Independence

Of all the factors influencing living arrangements, economic rationales have been most extensively studied. From an economic perspective, individual seniors may 'buy' their independence from restrictive extended families with increasing socio-economic status (Glick 2000). Thus, as overall incomes rise and governments increase support for seniors, there should be a corresponding rise in independent living. This relationship is not precise; in some less-developed Latin American countries, living arrangements parallel high economic status countries (Natividad and Cruz 1997). Low-income American seniors are more likely to live with others, particularly with children in their homes (Ward, Logan and Spitze 1992).

What do seniors 'purchase'? It may be a combination of privacy and respect, stemming from strong Western notions of the individual. For the most part, living independently – usually with a spouse – is perceived as 'normal' in developed nations (Ward, Logan and Spitze 1992). Given options, single seniors are thought to order their preferences towards a) living alone, b) living with a child, preferably a daughter, 3) living with another family member, 4) living with a non-family member, and – as a last resort – 5) in an institution (Mutchler and Burr 1988). To live alone, however, requires the economic stability to maintain housing and perform the basic tasks of daily living in the face of age-related declines in mobility and health. There is also a structural requirement; suitable housing must be available and within the means of individuals.

2.2.3 Kin Availability

Having a pool of available kin is another factor affecting the odds of living alone, reflecting what Wister (1984) calls a 'demographic availability hypothesis'. In his review of the living arrangement literature, Wolf (1994) states that having more children increases the odds of co-residence. In addition, the characteristics of individual children strongly influence living arrangements. Analyzing living arrangements from the children's perspective, Wolf's 1988 research found that daughters and unmarried children have a much greater tendency to live with parents. Older immigrants, however, do not migrate with all of their relatives, nor will the full range of kin be available in the host country, leading to quite

different combinations of relatives compared to natives (Glick, Bean and Van Hook 1999). Many later-in-life migrant Asians come to Canada primarily to be with their children; even so, the choice of whom to live with may be restricted if not all children – or other potential co-residents – live in Canada.

2.2.4   Health

The physical health of seniors may play an important role in living arrangements. Emily Grundy (1999) has extensively explored the relationship between living arrangements and health in developed countries. Although Grundy makes a strong theoretical – and intuitive – case for how living alone could be detrimental to health, her analysis of Great Britain's 1991 census microdata suggests that the relationship between long-term illness and co-residence is mixed. In her study, very old seniors who live alone have prevalence rates of long-term illness that are slightly better than those in other living arrangements. Among the younger elderly, rates of similar illness are slightly worse than those of other seniors. Rather than drawing the conclusion that living alone is protective in later years, Grundy emphasizes that these results may reflect selection, and that living alone among the very old is only attractive or an option among those in good health or with good support systems. For some older people, however, it must be emphasized that living alone is not a matter of choice or an expression of independence: it is the result of a lack of choice, because of the unavailability of kin, or the lack of an inclusive formal support system.

It is likely that there is a set of physical limitations that, once crossed, prompt people to make the transition from living alone to living with others or into institutions. Douglas Wolf (1994), in a study of both Canadian and American seniors, found that none of the Activities of Daily Living1 (ADL) were associated with living alone in a group of Americans. However, Wolf did find that the ability to perform specific instrumental limitations2 – money management, meal preparation and the use of telephones – significantly affected the odds of living alone. Among Canadians, the inability to prepare meals and shop for groceries were associated with a reduced likelihood of living alone. Despite the obviousness of health as a determinant of living arrangements, the literature is not entirely clear on some issues, such as where

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[1] Specific examples of ADLs include personal care (feeding, dressing, grooming, toileting); ability to climb in and out of bed; and mobility within the home (MCHPE 2001).
[2] Instrumental limitations (IADLs) are specific activities which are related to independence.

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seniors go when they can no longer live on their own. Mutchler and Burr (1991) found that poor health was related to moves to institutions or to dying, but not to the probability of living with others. Wolf and Soldo (1988) found evidence that the probabilities of living with a child increased with poorer health, but the probabilities of living with other extended households did not. Iacovou (2000) suggests that the ambiguous results between health and living arrangements partially stem from the difficulty of measuring 'health' and its confounding with age. Another possibility may be that rapid changes in health status are more influential in moving some seniors towards different living arrangements.

In Canada, there is a relationship between health and the living arrangements of seniors. Multiple family households with seniors living in them are associated with lower rates of functional ability, but the data are not clear on whether it is the seniors – or other members of the household – that are impaired. Based on an activity limitation question in the 1996 census[3], 40% of three-generation households included someone with an activity limitation. Fully 70% of these limitations were expected to last at least six months. In the same year, 6% of Canadian households contained someone with a disability. For three-generation households, that percentage more than doubles to 13% (Che-Alford and Hamm 1999). While the assumption might be that the disabled in these households are seniors, the data suggests that they were as likely to come from the younger generation. It is possible that some seniors move to their children's homes to care for their grandchildren – examples where the benefits cross generations, and are not solely extended to grandparents. In some instances children's needs have been found to outweigh those of their parents. In an analysis of parents of older children in the Albany, New York area, Ward, Logan and Spitze (1992) found that, regardless of parent or child age, the needs of never-married and, to a lesser extent divorced or separated children, prompted co-residence.

2.2.5 Ethnicity and Migration

The inclusion of ethnicity highlights the tension between economic and cultural rationales for particular living-arrangements. Some authors have suggested that cultural factors play a greater role than economic

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[3] The question these data are based on is dichotomous: "Is this person limited in the kind of activity that he/she can do because of a long-term physical condition, mental condition, or health problem". Because it leaves the interpretation to the respondent, it differs from measures of IADLs or ADLs.

pressures in the likelihood of certain living arrangements, such as family extension (Tienda and Angel 1982). Level of acculturation may also have a strong effect on living arrangements. After controlling for income, less-acculturated Latino-American families in the United States tend to have more complex structures than more independent and acculturated Latino households (Burr and Mutchler 1993). In much of the literature surrounding Chinese family structure in North America, the dominant binding force is the notion of filial piety to elders. However, it is also apparent that the living arrangements of older adults, regardless of ethnicity, are dependant in part on their economic circumstances.

Living arrangements of ethnic families have been hypothesized to become either more complex or tend towards greater nucleation with an increase in economic resources. Burr and Mutchler (1993) synthesize the literature into two streams – hypotheses resulting from either *cultural manifestation* or *cultural convergence*. Studies based on manifestation argue that culturally-based preferences are only manifested in behavior when affordability permits; thus, as socio-economic status increases, the family has the resources to 'afford' expressions of culture. From another perspective, complex, multi-generational households are central to cultural identity and increased resources should lead to an increased likelihood of those arrangements. Conversely, cultural convergence theories suggest that economic or social class dominate behavior. As the family becomes wealthier and rises through social classes, the trend is not to cultural distinction but towards convergence with the dominant culture. Living arrangements – if viewed initially as a cultural norm – follow suit, with the family discarding complex households in favor of a nuclear norm. This view is a family-oriented perspective; from the senior's view, the role of status may be somewhat different.

In the case of Chinese-Canadian seniors, the economic influences on living arrangements are compounded. Firstly, concentrations of Chinese-Canadian seniors in urban areas highlight an important tension. Urban seniors may have access to a wider range of housing options than those living in rural areas, but the costs may be prohibitive. Secondly, Chinese-Canadian seniors do not have access to retirement income supports for ten years after immigration, limiting their ability to live independently (Boyd, 1991). If income in an important factor in the propensity to live alone, the availability of government supports underscores the role of policy in shaping the living arrangements of Canadian seniors.

2.2.6 Immigration and Language Skills

Time since immigration likely impacts living arrangements for a mix of economic and social reasons. Financially, more recent immigrants face a different set of obstacles to pension security. Private pension schemes require residence and work history; the Canada Pension Plan is contribution-based, with benefits based on payments into the system, generally from payroll deductions. Eligibility for the Old Age Security (OAS) programs requires ten years of residence in this country. Guaranteed Income Supplements (GIS) are contingent on receiving OAS (Boyd, 1991). Some immigrants qualify for pensions if they have paid into a pension scheme in their home country that has a social security agreement with Canada; as of 2001, no such scheme exists between Canada and the People's Republic of China, Taiwan or Hong Kong (HRDC, 2001). Time since immigration will therefore likely result in a substantial disparity in the available resources to seniors, particularly in the pre-and-post ten year time frame. This is reflected in Boyd's (1991) finding that a shorter time since immigration substantially increased the likelihood of an divorced, widowed or separated older immigrant woman living with family.

Secondly, patterns of co-residence in the country of origin are likely to replicate themselves in Canada. For Chinese-Canadian seniors, however, the assumption that living arrangements will follow the patrilineal, multi-generational joint-stem families traditionally associated with Chinese family life may be too broad. Rowland (1992) estimated that the percentage of multi-generation families in pre-Revolutionary China approached 50% of all families, but had decreased to around 19% by 1992. Additionally, most immigrants classified as Chinese have in fact arrived from Hong Kong, a far more urban and presumably less traditional region than the mainland (Ng 1999).

Language ability in either French or English may also impact living arrangements. In a recent study, Chiswick and Miller (2001) modelled acquisition of one of Canada's charter languages among immigrants to Canada whose native language was not English or French using 1991 census data. Their analyses demonstrated how educational attainment, duration of residence in Canada and age were significant predictors of language attainment and use. The odds of learning English or French, and using it in the home, were substantially reduced with increasing age. In one of the few papers to incorporate language skill into a model of living arrangements, Wilmoth (2001) found that poor English proficiency significantly increased the odds of an immigrant living with an extended family for both unmarried and

married men and women. By gender, the coefficients were consistent in magnitude and direction for both men and women.

2.2.7 Place

How the location of seniors may affect living arrangements is more difficult to sift through, given the lack of data in that arena. Still, we do have a sense that seniors in rural areas have higher rates of home ownership, which should stabilize couples living together. Additionally, the amenities available in larger cities should provide more opportunities for seniors to live alone, resulting in higher rates in those areas. Later in life, with the loss of a spouse, some people may also tend to remain in place while in other cases loss may generate a move. Between the cities of Vancouver and Toronto, however, theorizing any difference in living arrangements rests primarily on the notion that delineating seniors by city helps to capture urban elements that are not directly measured in PUMF data. These may include elements such as the availability (and cost) of housing, and to a lesser extent potential cultural differences in these two cities.

Ethnicity alone cannot explain the living arrangements of Canadian seniors, nor would we expect it to. Other factors, such as economic independence, health, age, gender, availability of kin and geography all likely play fundamental roles in particular living arrangements. Furthermore, new arrivals and seniors with strong ethnic identities are subject to the same factors; the question is how much ethnicity and time of arrival interacts with factors common to all Canadian seniors.

3   Data and Methods

Living arrangements can be viewed as a characteristic of the family, the household or the individual. Although the analysis could centre on households, there are practical considerations favouring an analysis of individuals. From the perspective of household demography, the incidence of seniors living in multi-generational situations is actually quite low. More fundamentally, if we are interested in the welfare of seniors – which this research is – the proper focus should be on seniors themselves. In this paper, sources of individual data were emphasized over household or family-centred data.

Seniors are defined here as Canadians 65 or older, although this definition is somewhat arbitrary. In Canada, the norm of 65 as the break-point between middle and old age is firmly entrenched. Paradoxically, however, this division has shifted depending on the point of view taken. From a life-course (and firmly economic) perspective, age of retirement is an important watershed, and with the arrival of early-incentive retirement packages the definition of 'senior' may have to embrace lower ages. On the other hand, interest in seniors can also be focussed on issues of declining health and increasing dependence. Given the improving health of older Canadians, it may be questionable whether 65 adequately delineates old age. For our purposes, both perspectives are of interest, and much of the analysis that follows centers on three age groups: the pre-elderly, 55 to 64 year-old cohort; early elders between 65 and 74; and an older group aged 75 and older.

The data sources used for this analysis focus on different dimensions of the living arrangements of Canadian seniors. The 1996 Census Public-Use Microdata file Individuals File (PUMF), with 159,361 Canadians over the age of 55, has the advantage of size and scope. National in coverage, and with a very large sample size, the PUMF contains a wide variety of economic and social data, but without information on health status. Complementing this is the 1996-97 National Population Health Survey (NPHS), which lacks strong economic and ethnic data but does provide strong health status information, albeit with a smaller sample size than the PUMF (n_{65} = 13,363). The 1996 General Social Survey Cycle 11 (GSS11) straddles the PUMF and NPHS in a number of ways by incorporating health, personal information and data on social networks for 12,756 older Canadians. Taken together, these three sources provide a more complete picture of seniors than the individual datasets. The characteristics of the variables extracted for modelling, performed using only the PUMF and GSS11 data, are presented in Table 1. In each instance, cases were limited to the appropriate group. Thus, for models representing living with a child, the analysis was limited to those seniors who were married, widowed, divorced or separated. Similarly, for the PUMF models and descriptive statistics where ethnicity was considered, cases were removed from the analysis if they resided in the Yukon or Northwest Territories or the Maritimes (n=13,120) because of a lack of complete ethnicity data for these regions. The final PUMF dataset comprised 145,980 individuals 55 or older. Of these, 137,961 (94.5%) are non-Asian, 3,938 (2.7%) were of Chinese ethnic origin, and 4,081 (2.8%) reported other Asian ethnicities. Other data sources included Statistics Canada's *ESTAT* facility,

primarily to produce various aggregated data at the census division (CD) scale, and the National Population Health Survey (NPHS) 1994 Institutional File to produce estimates of Canada's institutionalized population.

Because living arrangements are discrete phenomenon, logistic regression was used extensively to model their relationship with the potentially influential factors described earlier. Logistic regression models the odds of a dichotomous event, such as living alone, controlling for a series of independent variables. The variables used in this analysis are presented in Table 1. In general, conceptually similar variables were matched in both the PUMF and GSS11 datasets. In practice, direct comparison of many of these variables between datasets is not possible because of differences in the definitions used. Ethnicity and income, for example, reflect similar but not identical concepts in the PUMF and GSS11 data.

Particularly important are the differing definitions of ethnicity captured in the PUMF and GSS11 datasets. In the PUMF data, the detailed data allowed the analysis to compare three categories based on self-reported ethnicity: non-Asian, Chinese Canadian, and Other Asian seniors. Grouping seniors in an Other Asian category does not mean that ethnicities stemming from Asian regions outside of China's borders are homogenous. Instead, this category represents people whose immigration, language and socio-economic experiences in Canada are likely similar to those of Chinese Canadians, and their inclusion is important from a comparative perspective. If there are substantial differences between Other Asian and Chinese Canadians, it would suggest that there is more heterogeneity in the living arrangement experience of these seniors than might be inferred by simply categorising them as 'Asian'. In the GSS11 data, detailed ethnicity data are not available. Instead, seniors are grouped into two place-of-birth groups, which are not conceptually equivalent to self-reported ethnicity since they are restricted to immigrants. In this analysis, Asian place of birth comprises one group, all other places of birth another.

TABLE 1. VARIABLES EXTRACTED FOR MODELLING LIVING ARRANGEMENTS, PUMF AND GSS11

		PUMF	GSS11
Dependent (binary)	Lives alone	YES	YES
	Lives with a child	YES	YES
Independent			
Economic	Income	Continuous (censored below $1000)	Categorical
	Income^2	Continuous	N/A
Demographic	Gender	YES	YES
	Age	Continuous	Categorical
	Age^2	Continuous	N/A
	Geography	Census Metropolitan Area: 0=non-CMA, 1=other CMA, 2=Toronto, 3=Vancouver	Rural / Urban: 1=urban, 0=rural
Immigration / Ethnicity	Recent (five years or less since immigration)	YES	YES
	No official language	YES	YES
	Ethnicity	0=non-Asian, 1=Chinese, 2=Other Asian	Place of birth: 0=non-Asian, 1=Asia
Health			Health Status Index (Continuous)
Still-living children		N/A	YES

4   Results

4.1   *General Trends in Canadian Living Arrangements*

4.1.1   Gender and Age

Overall, in 1996 just over half of community-living Canadians over 55 lived with a spouse (Table 2). Living in multiple families is relatively rare among Canadian seniors, as is living with non-family. When split by gender, however, another story emerges. Canadian women aged 55 or older are nearly 2.5 times more likely to live alone than Canadian men; conversely, men are far more likely to live with a spouse than women. This is largely attributable to the greater longevity of women. Although women and men at age 55 are approximately balanced, women quickly out-number men as they pass through the lifecourse (Figure 1). Less than half of the seniors aged 85 or older are male. This discrepancy by gender leads to a fundamental split in how living arrangements are experienced by men and women.

TABLE 2. PERCENTAGE OF NON-INSTITUTIONALIZED PERSONS OVER 65 BY LIVING ARRANGEMENT, CANADA, 1996

	Family				
	With Spouse Only	**With Children**	**Multiple Families**	**Alone**	**Non-Family**
Females	39.7	14.4	2.4	38.3	5.3
Males	64.1	13.6	3.5	15.6	3.1
Total	50.2	14.1	2.9	28.5	4.3

Source: Statistics Canada, 1996 Census Public Use Microdata File

FIGURE 1. SENIORS BY GENDER, CANADA, 1996
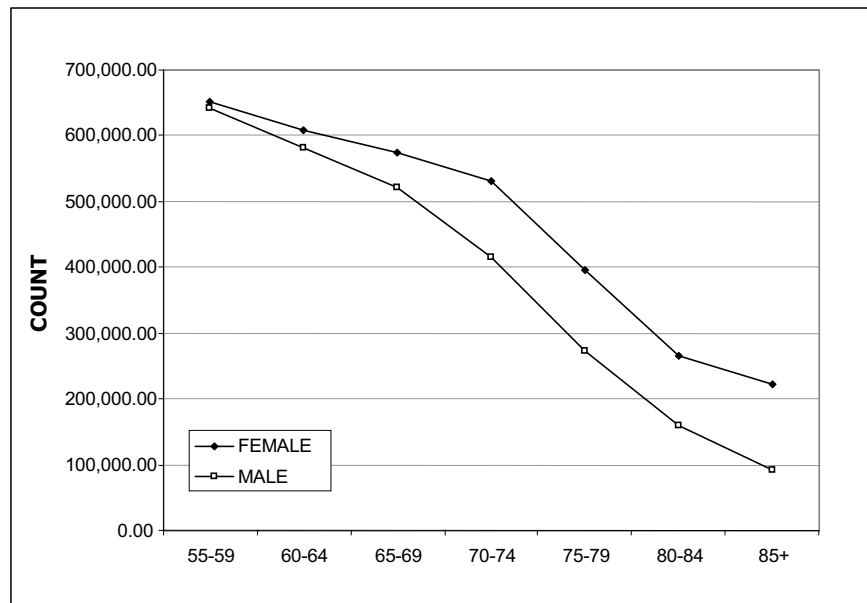
Source: 1996 Census Public Use Microdata File

Compared to men of a similar age, the proportion of women who live alone is slightly greater at earlier ages (Figures 2, 3[4]). However, the proportion living alone accelerates among women *vis-a-vis* men as they age, resulting in a substantial differential among the oldest old. Although institutionalization is not a central aspect of this paper, it is clear that there are strong age and gender trends at work. At the age of 85 and older, institutionalization of women in particular represents a large proportion of senior's living arrangements. For men, the same acceleration in the proportion living in institutions takes place, but at a lesser rate than for women.

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[4] Tabular data for these figures are included as Appendix 1.

FIGURE 2. LIVING ARRANGEMENTS OF CANADIAN SENIOR WOMEN, 1996
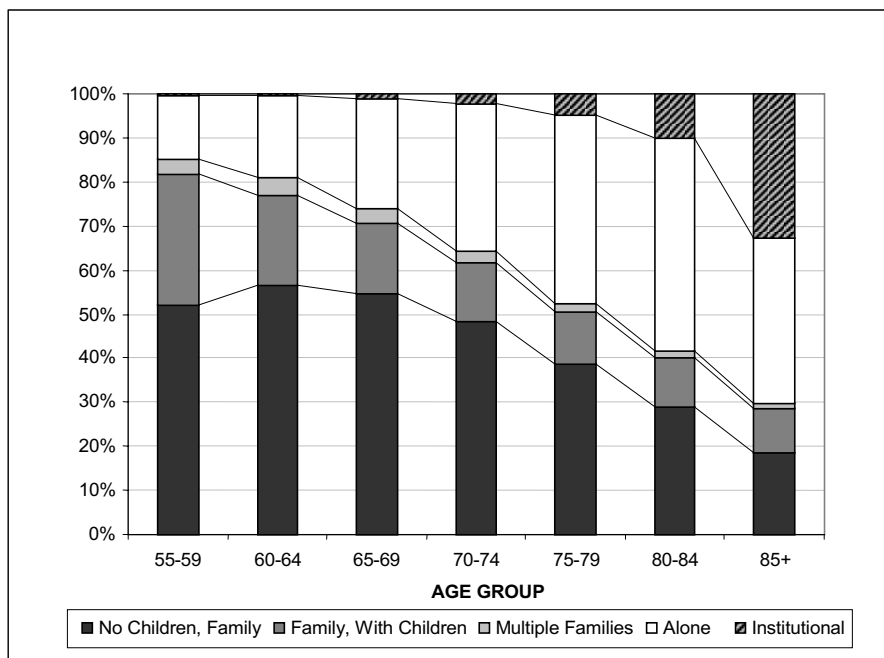
Source: 1996 Census Public Use Microdata File

FIGURE 3. LIVING ARRANGEMENTS OF CANADIAN SENIOR MEN, 1996

Source: 1996 Census Public Use Microdata File

4.1.2 Income and Marital Status

Living arrangements are also related to both income and marital status. In terms of living arrangements, widows are of particular interest, on the assumption that they are more likely to have available children, and thus have more living arrangement options compared to women who are never-married. Additionally, widowed women have a considerably different income profile than still-marrie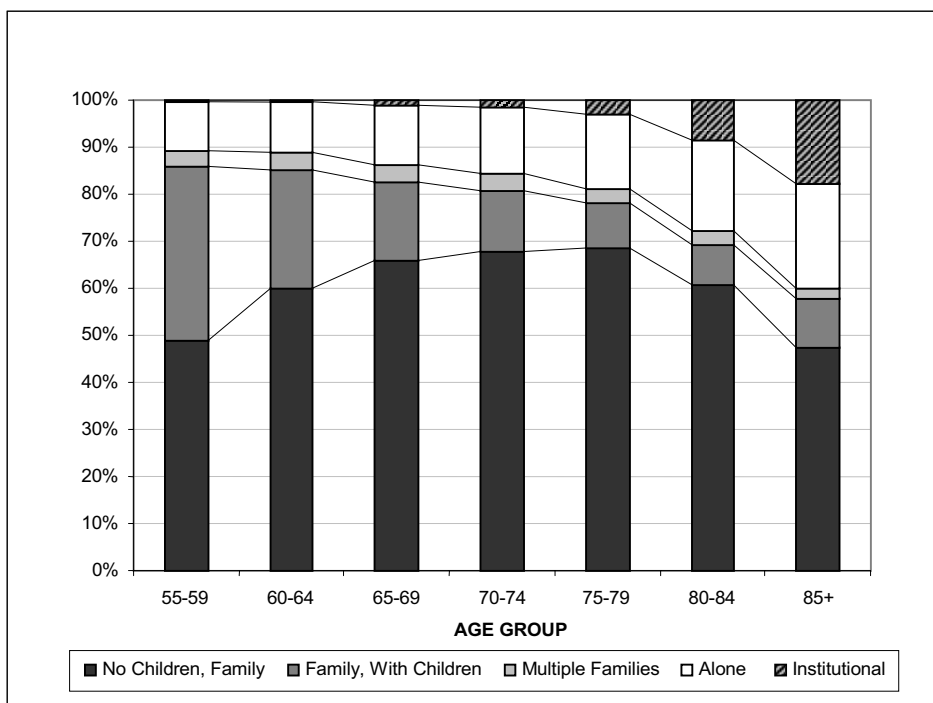d women or men. If we map out the relative risk[5] of living alone versus not living alone for widowed women by income group, a strong trend towards independence emerges as income increases (Figure 4). Of all possible living arrangements, living alone is likely the most directly affected by income level. There is obviously a minimum absolute level of income necessary to sustain a separate residence. It is not surprising that at very low levels of income, the relative risks are strongly in favour of not living alone for widows. At approximately $10-14,000, the odds of living alone are close to one and therefore balanced between living alone and not. Income increases beyond that point appear to lead to a strongly greater odds of living alone.

Men's experience is somewhat different, but the same general pattern holds. Only 16% of widowed seniors are men, but even so their living arrangements closely match those of women. However, when charted by income (Figure 5), the likelihood of living alone rises with income, but certainly not as dramatically as women's.

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[5] Relative risk, or risk ratio, is calculated as (probability of living alone) / (probability not living alone).

FIGURE 4. RELATIVE RISK OF LIVING ALONE / NOT ALONE, WIDOWED MEN AND WOMEN 65+, BY INCOME GROUP
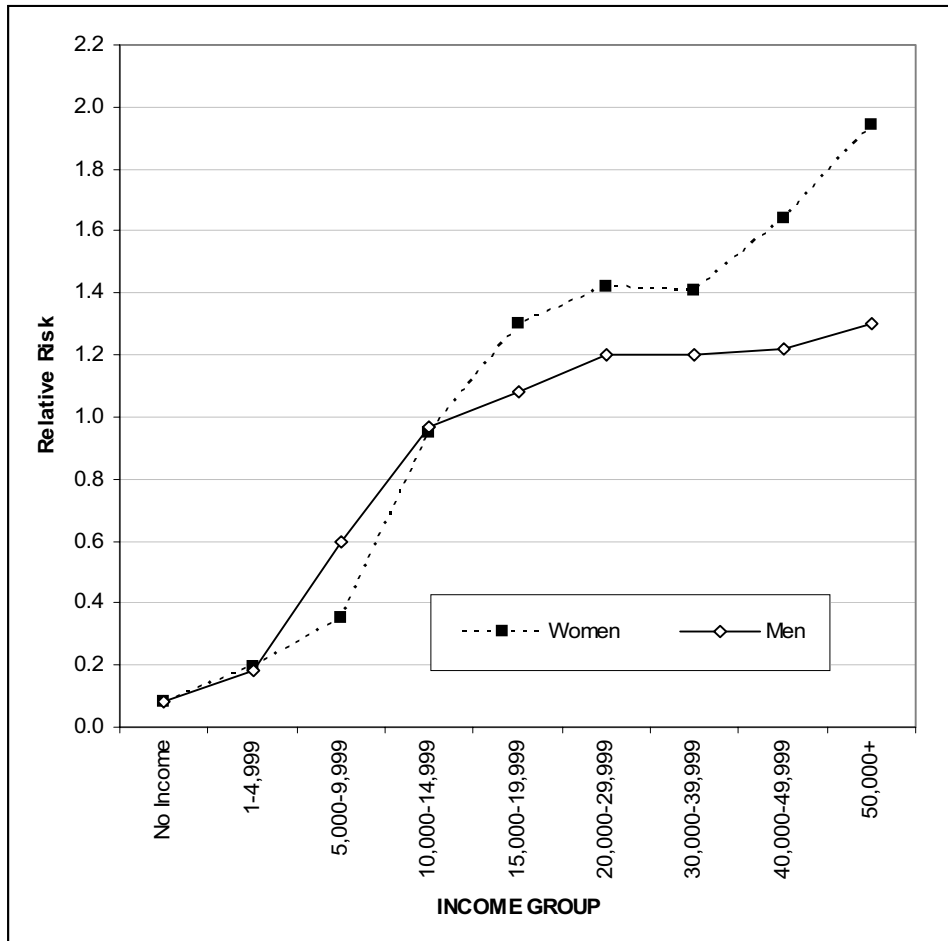
Source: 1996 Census Public Use Microdata File

4.1.3   Health Status

Health is intricately tied to living arrangements, gender and age. The main observation is that at younger ages health status along any of these dimensions is relatively similar. Initially, health status is relatively similar between all groups, with married seniors having a slight health advantage. Over time, relationships invert: at the end of the spectrum, males, both married and unmarried, have better health relative to women (Figure 5). These are survivors, as very ill males are likely either being selected out because of earlier mortality or moving to institutions. At older ages, women generally take on a care-taking role for their spouses, an echo of which can be seen in the declining health status of men relative to women in the 75 to

79 year old range. Importantly, at the oldest ages, women who live alone have the lowest health status among those living in the community. The notion that seniors who live alone necessarily have higher health status – while generally true – becomes less clear at older ages. By this age, single women who live alone may not have the options already exercised by women in younger age groups, including moves into institutions or with children.

FIGURE 5. HEALTH STATUS INDEX BY AGE, GENDER AND MARITAL STATUS
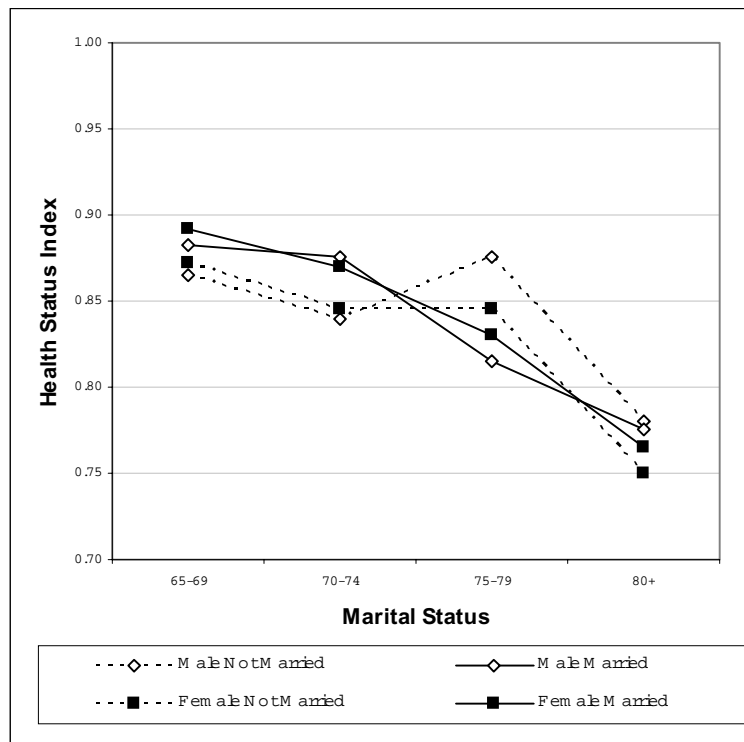
Source: NPHS 1996-97 Health File

Living arrangements appear to be markers of health status, although this relationship is not entirely clear at earlier ages (Figure 6)[6]. We can, however, still see general processes taking place. As before, health status is stable at earlier ages, with a slight downward trend occurring around the age of 70. One important dimension is the earlier decline in health status for those who live with children or others. For men and women, living with a child is the community-based living arrangement most associated with the lower

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[6] As in the previous Figure, the data that Figure 4-30 are based on for ages greater than or equal to 70 are presented with some qualification because of the high sampling variability of the estimates. Additionally, the values for the oldest age group for both living with a child and in the 'other' category are not reportable for this reason.

health status in later years. Those living with a child in later years – and hence with lower health status – may not have lived consistently with their children through their later adult span. Instead, lower health status may push older adults into making the transition, resulting in rapidly decreasing health status within that group.

FIGURE 6. HEALTH STATUS INDEX BY LIVING ARRANGEMENT AND AGE, CANADIANS, 1996-7
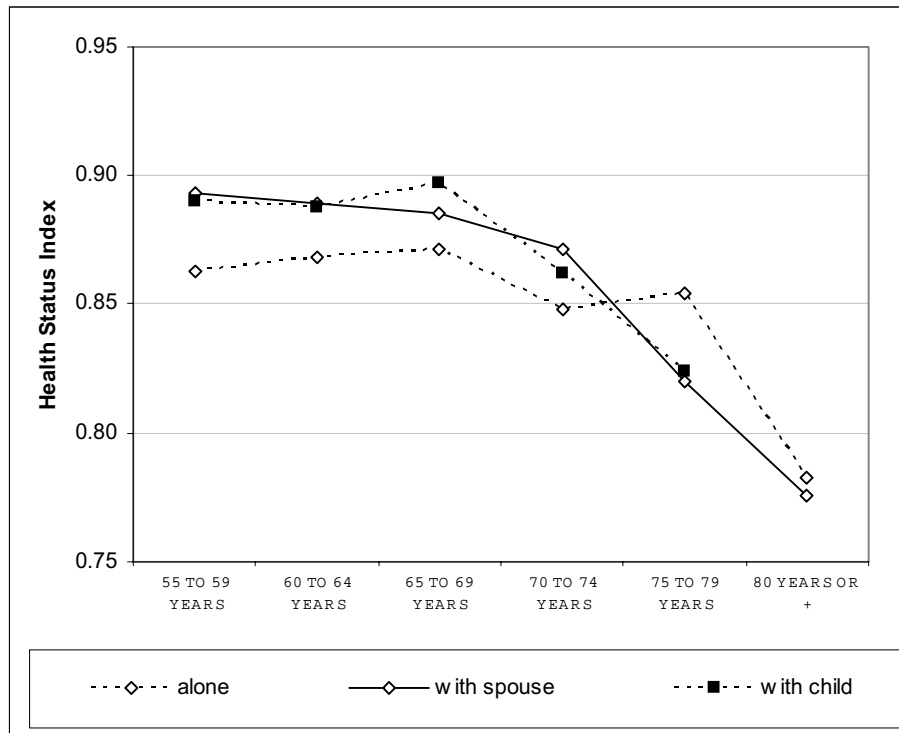
Source: NPHS 1996-97 Health File

4.1.4   The Availability of Children

The demographic story told through living arrangements – the 'ghosts' of past trends in fertility, marriage and divorce – are partially visible in the availability of children. Cumulative fertility in this cohort of seniors provide the basic framework for the likelihood of living with children. However, the simple availability of kin does not translate directly into reduced propensities of living alone. In fact, gender reasserts itself. Very little difference appears when the percentage of women living alone is viewed across

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the later life cycle by the availability of children (Figure 7). Even when more children are available, there is a general trend towards living alone as women age.

FIGURE 7. PERCENTAGE LIVING ALONE, BY AGE AND PRESENCE OF CHILDREN: WOMEN
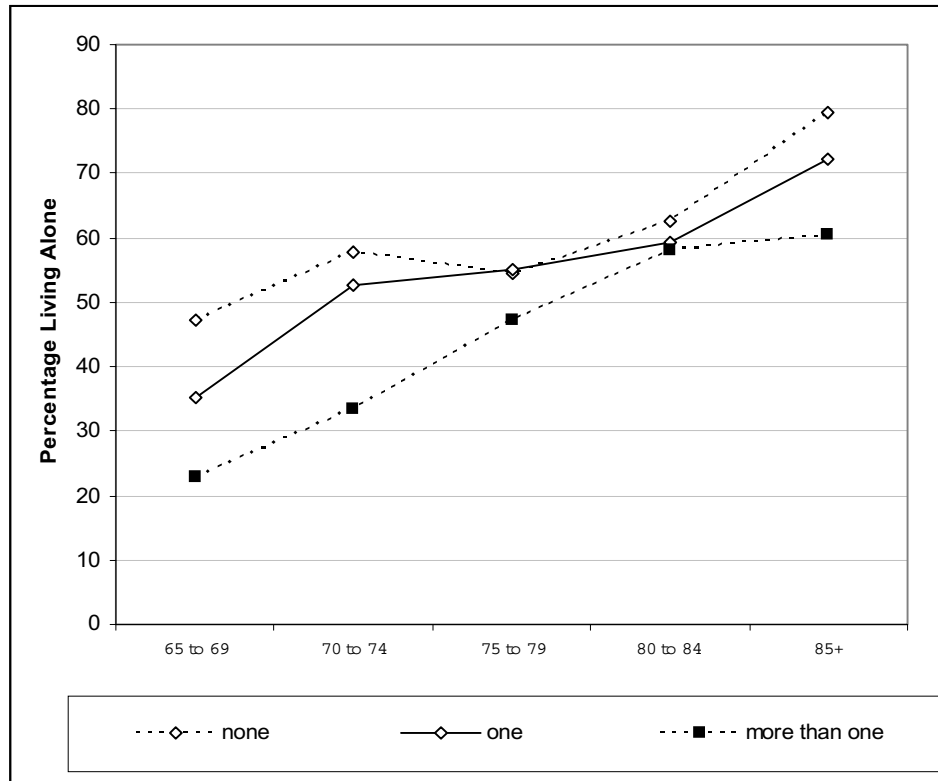
Source: General Social Survey, Cycle 11, 1996

Compared to women, older Canadian men have a strikingly different experience (Figure 8). Men who have no children are far more likely to live alone than are those with children. An unexpected result is that men who live alone and who have children have different propensities according to the number of children. The percentage of men living alone with one child decreases over time; the opposite, however, happens to men with more than one child. Because of differential mortality, men are more likely to live with their spouse; if their spouse dies and they are thrust into making a living arrangement choice, it appears that they will choose living with children given the option. Because the proportion of women grows in the later age ranges, this propensity among men is masked in overall trends towards living alone.

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FIGURE 8. PERCENTAGE LIVING ALONE, BY AGE AND PRESENCE OF CHILDREN: MEN
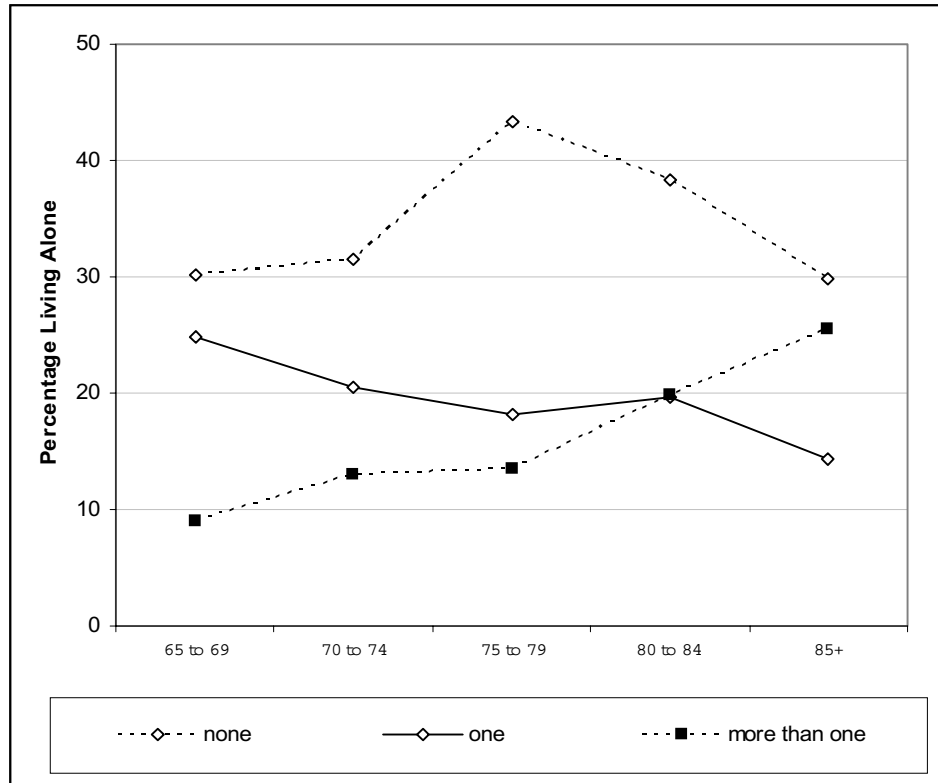
Source: General Social Survey, Cycle 11, 1996

4.1.5 Ethnicity

Compared to non-Asian men and women, the living arrangements of older Chinese Canadians differs substantially. Community-living Chinese-Canadian seniors are remarkable because of the greater likelihood of living with children or other families and also for the stability of these living arrangements over time (Figures 9 and 10)[7]. Chinese-Canadian seniors between 55 and 59 are nearly twice as likely to live with children (Appendix III). By age 80 to 85, older Chinese Canadians are 3.6 times more likely to live with children than non-Asians. The near absence of living in multiple families among non-Asian seniors is reflected by the finding that the likelihood of Chinese Canadian seniors living in these relationships is over 6 times greater at younger ages, increasing to just under 8 times in the 80 to 85 year range.

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[7] The data used to estimate the proportion living in institutions does not allow estimates by separate ethnicity.

**FIGURE 9. LIVING ARRANGEMENTS OF NON-INSTITUTIONALIZED
CHINESE-CANADIAN WOMEN, 1996**

Provinces West of the Maritimes
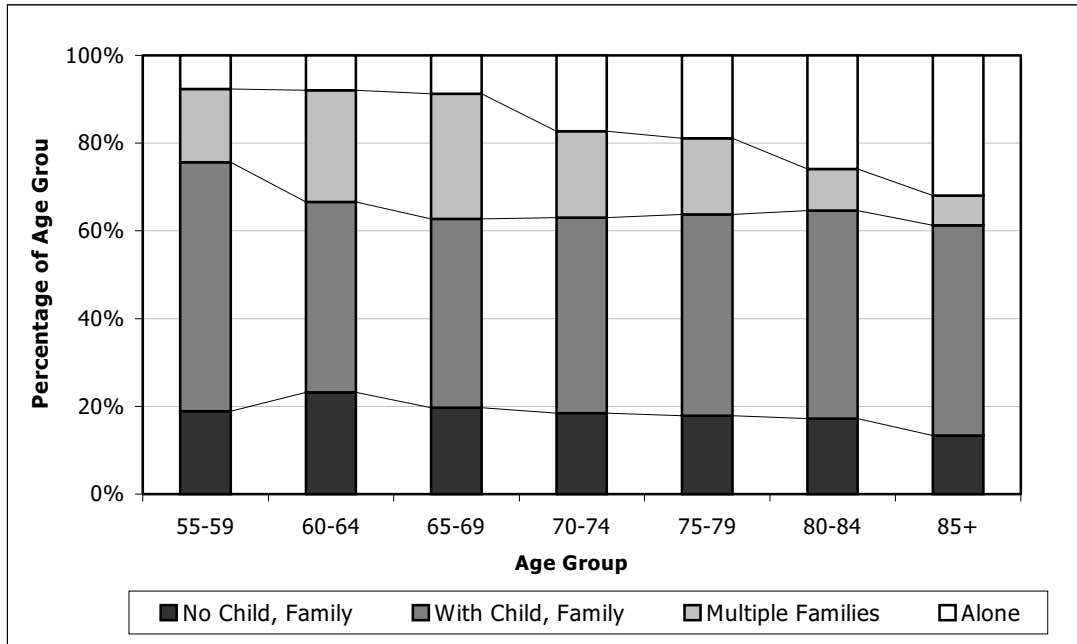
Source: 1996 Census Public Use Microdata File

**FIGURE 10. LIVING ARRANGEMENTS OF NON-INSTITUTIONALIZED
CHINESE-CANADIAN MEN, 1996
PROVINCES WEST OF THE MARITIMES**
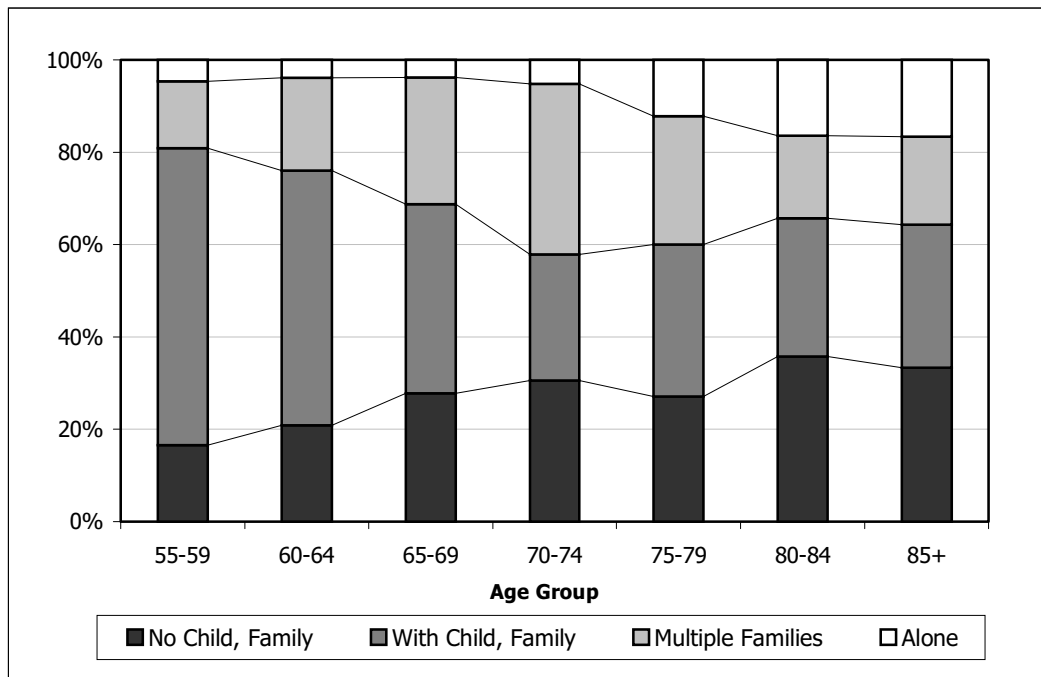
Source: 1996 Census Public Use Microdata File

Not controlling for other factors, income appears to be related to living arrangements, with lower income promoting living with children. Not surprisingly, the incomes of Chinese-Canadian seniors are considerably lower than those of other Canadians of a similar age. One indication of this are the stark differences by ethnicity in the level of benefits received through the Canada (or Quebec) Pension Plan (Table 3). The first distinction is by gender: non-Asian women receive only 62% of the annual benefits that non-Asian men do, a function of their lower lifetime earnings. Chinese Canadian men and women are certainly more equitable in relation to each other, but in comparison to the CPP/QPP benefits received by non-Asians fall remarkably short. Reliance on CPP/QPP, however, is considerably lower among Chinese-Canadian seniors, a finding consistent with Boyd's (1991) work on the living arrangements of recent immigrants.

TABLE 3. CANADA PENSION PLAN (CPP/QPP) BENEFITS RECEIVED BY 1996 PUMF RESPONDENTS AGE 65 AND OLDER, BY GENDER AND ETHNICITY

	Non Asian Men	Non Asian Women	Other Asian Men	Other Asian Women	Chinese Men	Chinese Women
Average	$4,576	$2,817	$2,248	$1,391	$1,637	$1,213
As a %age of Personal Income	18.5%	16.8	16.8	11.3	12.7	11.4
Category Divided by Non-Asian Men		0.62	0.49	0.30	0.36	0.27

Source: 1996 Census Public Use Microdata File

4.1.6 Immigration and Language Ability

Time since immigration is associated with more complex family forms, particularly among Asian and Chinese Canadians immigrants. Of primary concern are recent older migrants, who arrive at a time in life when adaptation to Canadian norms may be more difficult. For all recent immigrants, the percentage of seniors living alone is considerably lower, while living with children or in multiple families is much greater than for all Canadian seniors (Table 4). It is likely that these trends are associated with lower acculturation and lower rates of dominant language adoption. Additionally, the motivation for immigration itself is focussed on reunification with family members, not the bundle of reasons associated with immigration for younger men and women.

TABLE 4. PERCENTAGE DISTRIBUTION OF LIVING ARRANGEMENTS OF RECENT (FIVE YEAR) IMMIGRANTS 65 OR OLDER, BY ETHNICITY

	No Children, Family	Family With Children	Multiple Family	Alone
Non-Asian	31.3	34.8	20.6	13.3
Chinese	14.1	44.0	39.5	2.4
Other Asian	15.7	49.3	34.7	0.4

Source: 1996 Census Public Use Microdata File

When time since immigration is examined, there does appear to be some convergence over time in the proportion of seniors living alone (Figure 11). Prior to 1961, Chinese-Canadian seniors appear to have a far lower proportion living alone, but there may be some bias from the small number of Chinese-Canadian seniors who are non-migrants or who arrived prior to 1961. Post-1961, the proportion living alone diverges by ethnicity.

**FIGURE 11. PROPORTION OLDER THAN 65 LIVING ALONE,
BY ETHNICITY AND TIME SINCE IMMIGRATION, 1996**
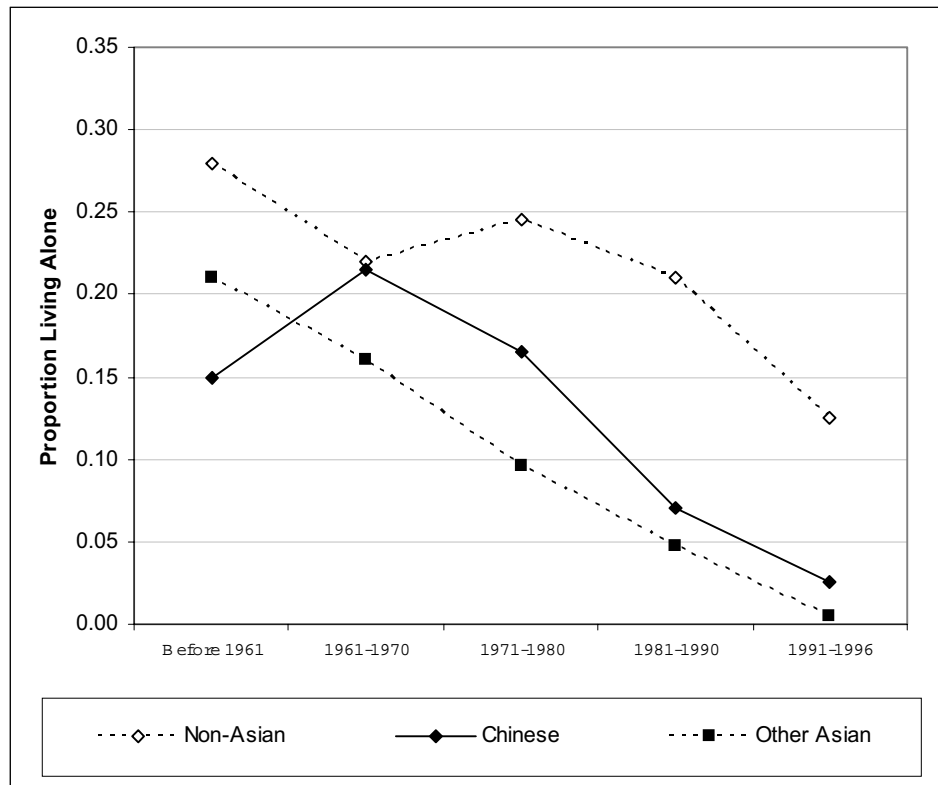
Source: 1996 Census Public Use Microdata File

4.1.7   Charter Language Ability

The ability to speak either of Canada's charter languages is another piece of the living arrangements puzzle tied intricately immigration. Not all of Canada's 220,120 seniors who could not speak French or English in 1996 are immigrants, but the vast majority (94.3%) are. It is not difficult to imagine the problems faced by the lack of language skills and we would expect them to impact on the living arrangements of these seniors (Table 5). What is surprising is that 19,116 seniors without functional ability in either English or French

live alone. Seniors who live alone without Charter language skills are not, however, necessarily without social support. It is likely that many of these seniors live close to kin if available, or live within ethnic neighbourhoods that provide alternative forms of social support.

TABLE 5. LIVING ARRANGEMENTS OF CANADIAN SENIORS, BY LANGUAGE ABILITY, 1996 (%)

	Spouse Only	Spouse, Children	Multiple Families	Alone
Can Speak an Official Language	55.0	19.5	2.4	22.7
Cannot Speak an Official Language	26.4	41.3	23.7	8.6

Source: 1996 Census Public Use Microdata File

4.1.8   Demand For Home Care

Living arrangements are primarily a personal matter, but there are also public dimensions as well, since the scope and kinds of support that seniors receive in the private realm impact the demand for services. As an example, home care use among Canadian seniors illuminates how relationships between living arrangements and health play out in policy. As we would expect, there is a trend towards increased use of home care with age (Figure 12). These trends are fairly similar between various living arrangements and by sex, but at the oldest ages an important point emerges: women who live alone are more than twice as likely to use home care compared to married men. This differential reflects the differences in health status alluded to earlier and points directly to support; married men have spouses, and may require less in the way of formal services. It follows, then, that unattached seniors living alone will rely more heavily on formal support as a replacement for informal services. In the NPHS, women consistently report lower self-rated health. Thus, the ability of women to live independently likely hinges in part on the availability of these formal supports. A paradox results from recent attempts to reduce health-care costs through the erosion of home support programs. If the heaviest users of these services – the oldest women living alone – have by this point no other alternatives, the only option available may be institutionalization. This result is not only more expensive, it may seriously affect the quality of life of these seniors.

FIGURE 12. PROPORTION USING HOME CARE BY AGE, SEX AND LIVING ARRANGEMENT
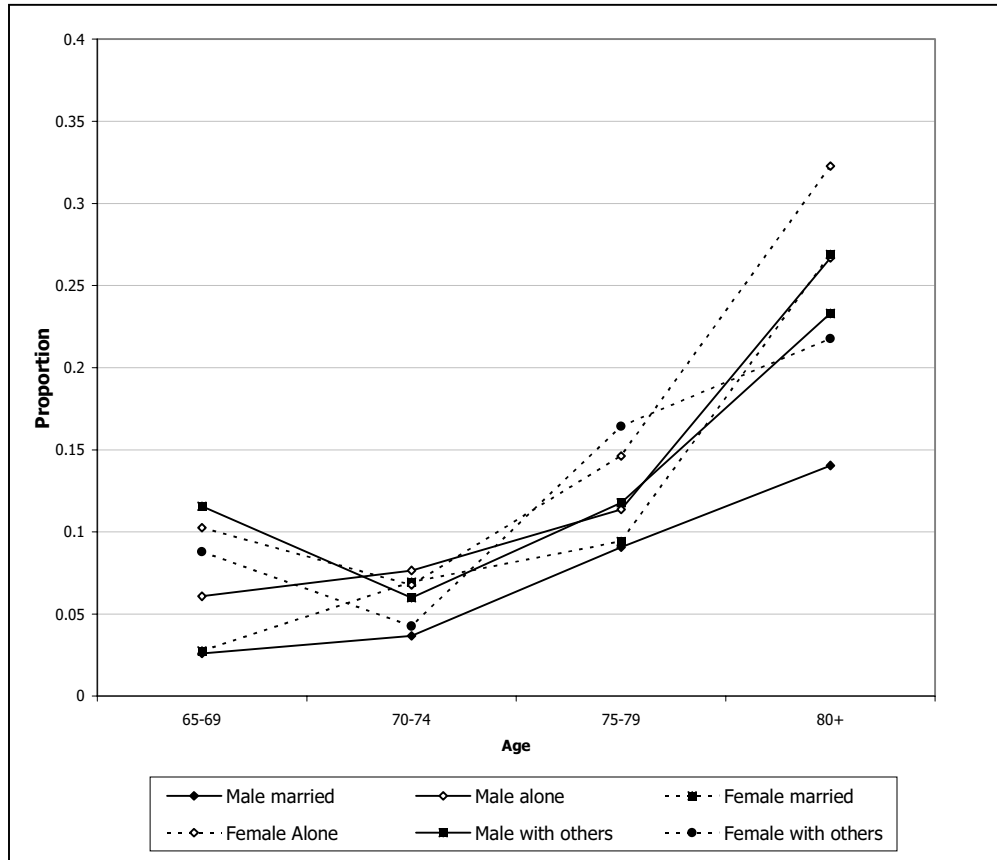
Source: National Population Health Survey, 1996-97

4.1.9   Social Support

Social support and living arrangements intersect because of the potentially direct connection between future or current care for seniors and an increased sense of well-being – either of which may be of benefit to seniors. Living arrangements can either provide social support directly or act as a marker in conjunction with other avenues of support, such as the community or networks of friends and non-resident relatives. There is limited evidence in the NPHS that certain living arrangements are more closely associated with

increased social support, but the most dramatic differences are when gender and living arrangements are put into context together. Taking the specific case of women over 65, support is significantly higher[8] among those who live with a child compared with those who live with a spouse alone. Balancing this somewhat is the public face of support; older women who live with a child have significantly lower involvement in outside activities such as volunteering or church attendance[9]. The most striking aspect of social support, however, is the distinct difference between men who are not married compared to all others (Figure 13). Recently, attention has begun to focus on the specific problems of older women living alone. At the same time, the issues facing men have received less attention, largely because of their much smaller numbers and their economic security relative to women. Isolation, however, may be a much more pervasive aspect of living alone for males, and deserves attention.

FIGURE 13. SOCIAL SUPPORT INDEX BY GENDER AND MARITAL STATUS
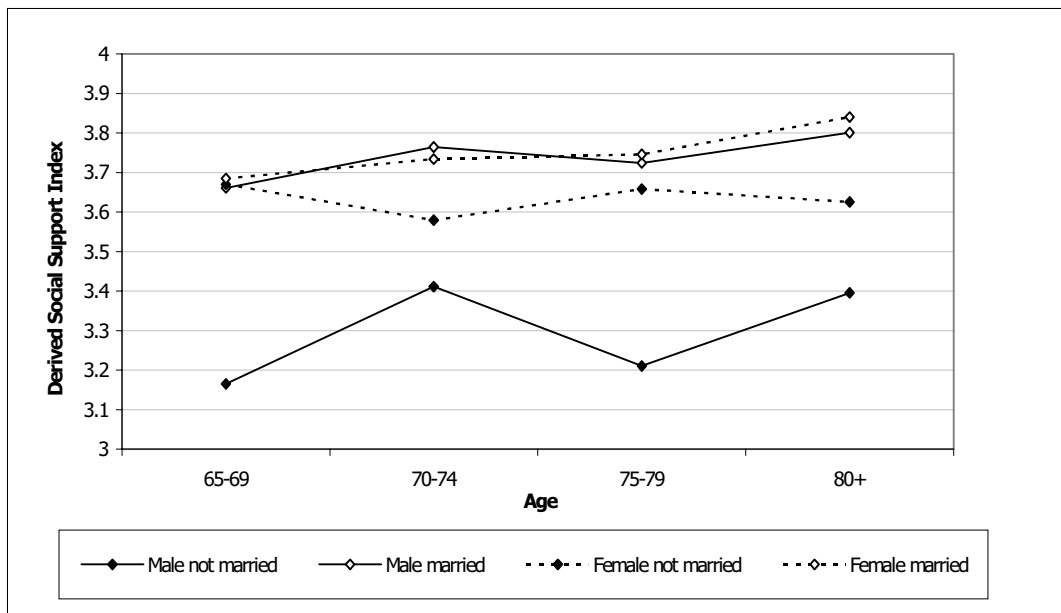
Source: National Population Health Survey, 1996-1997

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[8] $t = -2.21$, $df = 1136$; two-tailed p = 0.028
[9] $t = 7.18$, $df = 1021$; two-tailed p < 0.001

4.2   Modelling Living Arrangements

There are a number of messages that emerge from the previous descriptive work. One of the most prominent is that the relationships between living arrangements and seniors' demographic and economic lives are far from simple. For example, the notion of 'purchasing freedom' is difficult to assess on its own without taking into account the underlying demography of Canadian seniors. Furthermore, it is difficult to merge the relative importance of these factors when each is analyzed separately.

In this section, these relationships are assessed in a series of logistic regression models. Because of the important differences in the living arrangements of men and women, separate models were developed by gender for both living alone and with children. Both sets were developed using age as the initial variable, with additional covariates added to the model individually. Ethnicity was included in the main models, but sub-analyses also included distinct models by ethnicity to assess more clearly the differing trajectories of living arrangements among non-Asian, Other Asian and Chinese-Canadian seniors. A further sub-analysis was also run by separating the dataset into age strata.

What do these models tell us? It is important not to read these models as simply reflecting senior's decisions; living arrangements are more complex than that, and often reflect other people's decision-making processes and seniors' life-course events simultaneously. For instance, the odds of living alone are not purely the result of aging and economic circumstances. They also reflect the propensity for children to move away from their parents' house, differential mortality by gender, public policies that encourage living alone, and a host of other factors that cannot be extracted directly from PUMF or NPHS. Similarly, it must be re-emphasized that the data exclude those moving to institutions, which are not included in the PUMF. The models reflect propensities among community-living seniors, not the entire universe of seniors. The models do, however, provide strong evidence of the influence of the limited set of domains previously outlined.

The models presented here attempt to describe how these factors inter-relate. The modeling strategy rests on a priori assumptions of which variables would likely affect living arrangements, rather than finding the best fitting model using the full breadth of the variables from the available datasets. In addition to the factors described earlier, a number of additional variables were added to smooth out the

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non-linearity of age and income, as well as interaction terms introduced to control for the strong connections between age and sex.

4.2.1 Living Alone

The first model (Table 6) presents the simple relationship between living alone and age for men and women, which is also shown graphically in Figure 13. As we might expect, for both genders the probability of living alone increases as they age, although there is considerable difference between men and women. The trajectory of women's probabilities is steep; by their early 70's, women have made up the initial deficit compared to men, eventually reaching the maximum probabilities of living alone in their late 70's. The subsequent increase in declining proportions past this point is largely a function of the curve being fitted.

**TABLE 6. LOGISTIC REGRESSION RESULTS, DEPENDENT = ALONE
DIVORCED, WIDOWED AND SEPARATED, 55+, NON-MARITIME OR TERRITORIES**

	ALL CASES			WOMEN			MEN		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Age	0.256	0.021	1.291 ***	0.29	0.018	1.346 ***	0.217	0.039	1.243 ***
Age Squared	-0.002	0.000	0.998 ***	-0.002	0.000	0.998 ***	-0.002		0.999 ***
Intercept	-8.934	0.695	***	-10.309	0.608	***	-7.12	1.333	***
-2 Log Likelihood	50,648.29			38,490.92			12,106.10		
Model Chi-Square	457.46			459.59			48.90		
df	2.00			2.00			2.00		
Sig.	-			-			-		
n	40,243.00			30,650.00			9,593.00		

*** Significance >= 0.01

Source: 1996 Census Public-Use Microdata File

FIGURE 13. PREDICTED PROBABILITY OF LIVING ALONE BY GENDER DIVORCED, WIDOWED AND SEPARATED, 55+, NON-MARITIME OR TERRITORIES
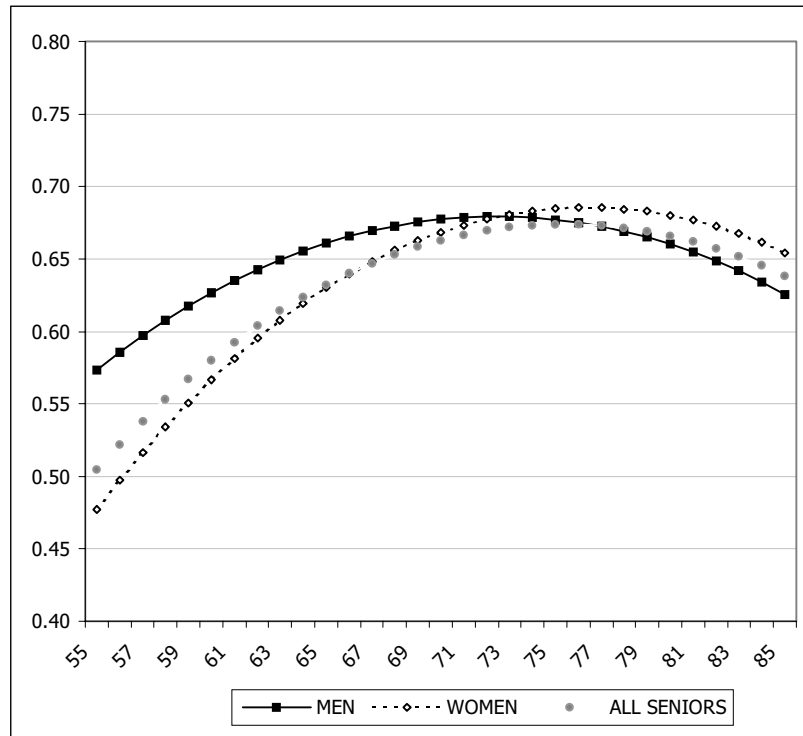
Source: 1996 Census Public-Use Microdata File

Split by gender and age, the models of living alone begin to reflect more of the complexity in living arrangements (Table 7), particularly among older women. For these women, continuous age is the dominant factor associated with the odds of living alone, which again likely reflects differential mortality. Men's experience is the opposite: age dominates in the younger age category, but becomes insignificant in later years. Income becomes significant in all cases, although its influence changes substantially by sub-group. Controlling for age and location, the effect of income is more strongly felt among women then men. Except for younger men, this relationship is not linear, decreasing in rate as income increases.

In these models, the reference category for the geographic variables is 'non-CMA'. Surprisingly, there are wide gaps between the two cities of interest – Toronto and Vancouver – in relation to non-CMA areas in Canada. Controlling for income and age, divorced, widowed and separated Canadians over 55 in these cities are less likely to live alone compared to their non-CMA counterparts. When examined by city, the divergence widens; older divorced, widowed or separated men living in Toronto are only half as likely

to live alone compared to non-CMA seniors. In Vancouver, similar men are only 18% less likely to live alone.

Some of the apparent difference between non-CMA and CMA seniors in terms of living alone can be attributed to differences in the composition of the populations of these areas (Table 7). Chinese-and other Asian-Canadian seniors are far less likely to live alone once other characteristics are controlled for, although the effects of ethnicity are not entirely consistent and appear to be age-related. Chinese ethnicity is not significant for either men or women over the age of 70. Ethnicity is, however, significant among Other Asians over age 70, which helps illuminate how Chinese and Other Asian seniors differ in their living arrangements.

Time since immigration has an important effect on living arrangements once other factors are controlled, but the results differ greatly by gender and by age to some extent. The most consistent effects of time since immigration on the odds of living alone are among women under 70. In this group, increasing time since immigration consistently increases the odds of living alone relative to non-immigrants, to the point where there is no significant difference for those arriving prior to 1960. The odds of living alone also decrease in much the same way for older women, although immigration prior to 1960 is significantly associated with higher odds of living alone. Time since immigration has a considerably different effect among men, with only very recent immigrants having significantly lower odds of living alone compared to non-immigrant seniors. Not surprisingly, seniors without skills in either French or English are significantly less likely to live alone, a finding that is consistent across age and gender dimensions.

TABLE 7.
MODEL 3: LOGISTIC REGRESSION RESULTS, INCOME, GEOGRAPHY, ETHNICITY AND IMMIGRATION DEPENDENT = ALONE
(DIVORCED, WIDOWED AND SEPARATED, 55+, NON-MARITIME OR TERRITORIES)

	WOMEN				MEN			
	Less Than 70				Less Than 70			
	B	S.E.	Exp(B)		B	S.E.	Exp(B)	
Age	0.210	0.146	1.233		0.135	0.218	1.145	
Age Squared	-0.001	0.001	0.999		-0.001	0.002	0.999	
Income (10,000s)	0.123	0.030	1.130	***	0.016	0.026	1.016	
Income Squared (10,000s)	-0.007	0.004	0.994		0.001	0.002	1.001	
Other CMA	-0.031	0.045	0.967		-0.139	0.068	0.870	
Toronto	-0.491	0.063	0.612	***	-0.318	0.097	0.728	***
Vancouver	-0.031	0.085	0.970		-0.185	0.126	0.831	
Chinese	-0.668	0.169	0.513	***	-0.616	0.283	0.540	
Other Asian	-1.112	0.146	0.329	***	-1.075	0.221	0.341	***
Period of Immigration								
1960 or Earlier	-0.073	0.064	0.930		-0.018	0.094	1.010	
1961-70	-0.305	0.081	0.732	***	-0.203	0.118	0.839	
1971-80	-0.346	0.105	0.707	***	-0.125	0.156	0.880	
1981-90	-0.943	0.130	0.390	***	-0.178	0.247	0.965	
1991-96	-1.999	0.224	0.135	***	-1.572	0.410	0.241	***
No Charter Language	-0.979	0.128	0.376	***	-1.226	0.273	0.313	***
Intercept	-7.709	4.507			-4.498	6.704		

*** Significance <= 0.01

-2 Log Likelihood	15,255.25		6,590.66	
Model Chi-Square	1,383.69		208.92	
df	15		15	
Significance	.000		.000	
N	12,452		5,264	

	WOMEN			MEN		
	70 or Older			70 or Older		
	B	**S.E.**	**Exp(B)**	**B**	**S.E.**	**Exp(B)**
Age	0.927	0.131	2.527***	0.184	0.257	1.202
Age Squared	-0.006	0.001	0.994***	-0.001	0.002	0.999
Income (10,000s)	0.374	0.039	1.453***	0.156	0.047	1.169***
Income Squared (10,000s)	-0.026	0.004	0.975***	-0.005	0.004	0.995
Other CMA	-0.167	0.040	0.847***	-0.146	0.079	0.864
Toronto	-0.414	0.055	0.661***	-0.481	0.109	0.618***
Vancouver	-0.061	0.074	0.940	0.188	0.153	1.207
Chinese	-0.239	0.139	0.788	-0.307	0.268	0.736
Other Asian	-1.072	0.143	0.342***	-1.709	0.319	0.181***
Period of Immigration						
1960 or Earlier	0.122	0.048	1.130***	0.178	0.090	1.194
1961-70	-0.246	0.095	0.782	-0.296	0.192	0.744
1971-80	-0.523	0.092	0.593***	-0.006	0.205	0.994
1981-90	-1.047	0.120	0.351***	-0.671	0.248	0.511
1991-96	-1.600	0.222	0.202***	-2.126	0.493	0.119***
No Charter Language	-1.323	0.089	0.266***	-1.039	0.196	0.354***
Intercept	-35.238	5.078	***	-6.038		

*** Significance <= 0.01

-2 Log Likelihood	20,014.64			4,999.98		
Model Chi-Square	1,992.93			337.59		
df	15			15		
Significance	.000			.000		
N	18,198			4,329		

Source: 1996 Census Public-Use Microdata File

4.2.2 Living with Children

In general, the results of modeling the likelihood of living with children are as expected. Since our sample includes those over 55 who are married, men are more likely – at the beginning of their older years – to live with children. It is highly likely that these children are their original families, and that the steadily-decreasing probabilities of living with a child (Table 8, Figure 14) represent children moving out of the

family fold. Around the age of 70, however, likelihoods begin to shift. While men's probabilities continue to decline, those of women have levelled off, and remain fairly consistent with some increase among the very oldest. By the end of the age spectrum, the likelihood of women living with children is higher than that of men, reaching a still-low maximum of around 15% of non-institutionalized women.

TABLE 8. LOGISTIC REGRESSION RESULTS, DEPENDENT = WCHILD
DIVORCED, WIDOWED AND SEPARATED, 55+, NON-MARITIME OR TERRITORIES

	ALL CASES				WOMEN				MEN			
	B	S.E.	Exp(B)		B	S.E.	Exp(B)		B	S.E.	Exp(B)	
Age	-0.467	0.021	0.617	***	-0.414	0.018	0.661	***	-0.483	0.021	0.617	***
Age Squared	0.003	0.000	1.003	***	0.003	0.000	1.003	***	0.003	0.000	1.003	***
Intercept	16.363	0.695		***	14.008	0.608		***	17.483	0.695		***

*** Significance <= 0.01

-2 Log Likelihood	133,982.76				70,373.18				63,092.09	
Model Chi-Square	6,561.16				2,073.55				4,679.30	
Significance	0.000				0.000				.000	
N	137,264				74,437				62,827	

Source: 1996 Census Public-Use Microdata File

FIGURE 14. PREDICTED PROBABILITIES, LIVING WITH A CHILD, BY AGE DIVORCED, WIDOWED AND SEPARATED, 55+, NON-MARITIME OR TERRITORIES
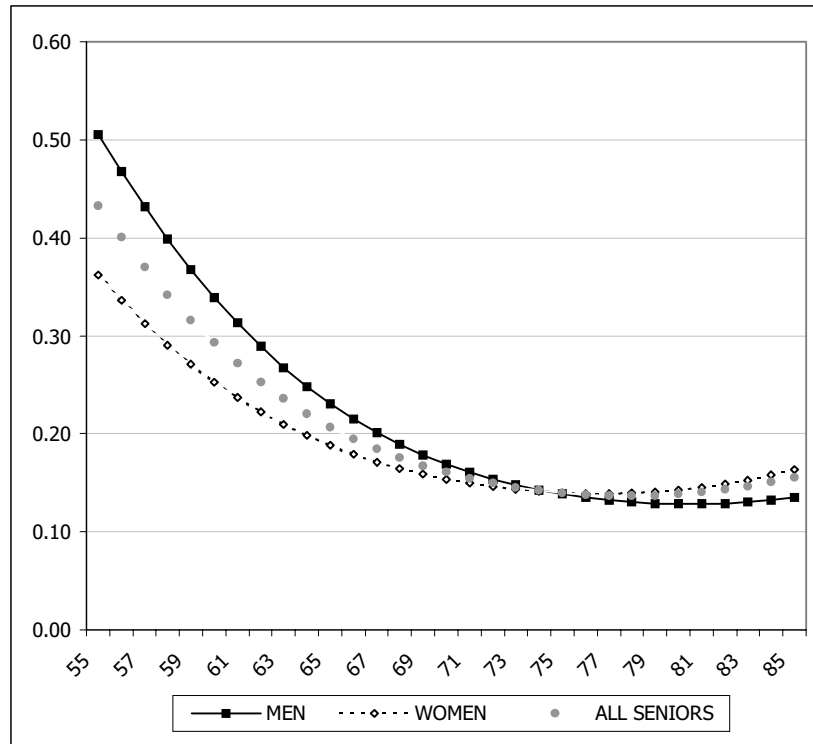
Source: 1996 Census Public-Use Microdata File

Geography and income play varying roles in the likelihood of living with children (Table 10). Urban seniors younger than 70 are significantly more likely to live with children compared to those living in non-CMA areas, particularly in Toronto. This effect weakens considerably for seniors seventy or older, with no significant difference in the odds of living with children for those living in Vancouver compared to non-CMA-dwelling seniors.

The effects of income are substantially different between Canadian men and women. For women, income has little effect on the odds of living with children. Among men, however, the role of income is not only significant but varies in its role according to age. The odds of living with a child are associated with slightly higher incomes among men younger than 70, which then decline over time. After 70, the trend reverses, with lower incomes among older men associated with greater odds of living with a child. This may, again, relate back to the strong possibility that 55 to 69 year olds – at least in the earlier years – are more likely to be living in their 'original' core families. Younger married males have considerably higher

personal income than males in other living arrangements[10]. One of the characteristics of this cohort is that the reverse is true for married females, who have substantially lower incomes than other women in other marital states. Later in life, financial pressures may in part lead to men living with their children, a pressure which does not appear to operate to the same degree among women.

TABLE 10. MODEL 2: PUMF LOGISTIC REGRESSION RESULTS:
DEPENDENT = WCHILD
MARRIED, DIVORCED, WIDOWED AND SEPARATED,
55+, NON-MARITIME OR TERRITORIES

| | WOMEN | | | | MEN | | | |
| | Less Than 70 | | | | Less Than 70 | | | |
	B	S.E.	Exp(B)		B	S.E.	Exp(B)	
Age	-0.567	0.089	0.567	***	-0.486	0.087	0.615	***
Age Squared	0.004	0.001	1.004	***	0.003	0.001	1.003	***
Income (10000's)	-0.028	0.016	0.973		0.051	0.009	1.052	***
Income Squared	0.001	0.002	1.001		-0.002	0.001	0.998	***
Other CMA	0.372	0.028	1.451	***	0.311	0.027	1.365	***
Toronto	0.667	0.037	1.948	***	0.539	0.036	1.714	***
Vancouver	0.219	0.052	1.245	***	0.183	0.050	1.201	***
				***				***
Chinese	0.618	0.070	1.855	***	0.823	0.071	2.278	***
Other Asian	0.283	0.066	1.327	***	0.350	0.066	1.419	***
No Official Lang.	0.322	0.058	1.380	***	0.170	0.071	1.186	***
Immigration								
Before 1961	0.248	0.037	1.282	***	0.471	0.034	1.602	***
1961-1970	0.655	0.042	1.925	***	0.704	0.040	2.021	***
1971-1980	0.470	0.057	1.600	***	0.652	0.055	1.919	***
1981-1990	0.475	0.070	1.608	***	0.467	0.075	1.594	***
1991-1996	0.483	0.078	1.622	***	0.390	0.086	1.478	***
Intercept	18.327	2.730		***	16.936	2.658		***

*** Significance <= 0.01

-2 Log Likelihood	44,512.70		45,942.48
Model Chi-Square	2,713.62		41,496.86
Significance	0.000		0.000
N	43.992		41,345

Source: 1996 Census Public-Use Microdata File

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[10] In the PUMF, married men between the ages of 55 and 64 have incomes that are, on average, 30% higher than separated males, 39% higher than divorced men, and 70% higher than never-married males.

	WOMEN				MEN			
	70 or Older				70 or Older			
	B	S.E.	Exp(B)		B	S.E.	Exp(B)	
Age	-0.641	0.130	0.527	***	-0.856	0.166	0.425	***
Age Squared	0.004	0.001	1.004	***	0.005	0.001	1.005	***
Income (10000's)	-0.053	0.035	0.949		-0.091	0.025	0.913	***
Income Squared	0.000	0.004	1.000		0.003	0.002	1.003	
Other CMA	0.153	0.042	1.165	***	0.195	0.052	1.215	***
Toronto	0.379	0.054	1.461	***	0.507	0.066	1.656	***
Vancouver	0.021	0.074	1.022		-0.022	0.095	0.978	
Chinese	0.422	0.102	1.524	***	0.549	0.133	1.731	***
Other Asian	0.751	0.099	2.128	***	0.623	0.124	1.865	***
No Official Lang.	0.991	0.071	2.688	***	0.292	0.101	1.339	***
Immigration								
Before 1961	-0.083	0.049	0.920		0.110	0.056	1.115	***
1961-1970	0.145	0.088	1.156		0.273	0.107	1.314	***
1971-1980	0.580	0.082	1.784	***	0.350	0.115	1.420	***
1981-1990	0.587	0.097	1.798	***	0.349	0.129	1.418	***
1991-1996	0.996	0.137	2.708	***	0.647	0.168	1.909	***
Intercept	22.779	5.030		***	31.691	6.364		***

*** Significance <= 0.01

-2 Log Likelihood	22,938.97		14,994.17
Model Chi-Square	1,260.03		469.68
Significance	0.000		0.000
N	30,445		21,482

Source: 1996 Census Public-Use Microdata File

After age, it is obvious that the strongest effects in these models belong to ethnicity and immigration. Compared to non-Asians (the reference category), older Chinese-Canadians are far more likely to live with a child. As expected, recent immigration and a lack of skills in either official language – which are highly correlated – are associated with living with a child, a tendency which increases between younger and older Canadians. Recent immigration, however, is not significant at the lower age range for both men and women. Potentially, the lower age category could include those who migrated as young as age 50; a number of recent immigrants in this group may not be family-class migrants, and thus it is difficult to tell whether or not they would have the same opportunity to live with children as older, late-in-life migrants.

The effects of ethnicity are not consistent across the board. Compared to non-Asians, the effect of being Chinese on living with a child declines, while remaining strong, between younger and older

individuals. Conversely, likelihood increases for other Asians. Among Chinese-Canadians, it is unlikely that this is a culturally-driven decline, which is more dramatic among older males than females. Quite possibly it is an echo, a distant remnant of earlier migrations of individuals rather than families; if so, then we might expect this shift to decline in future censuses as this group of people ages out of the population.

Geography plays a prominent role in living with a child, as it does for living alone. Once ethnicity, age, income and immigration characteristics are controlled, the propensity to live with a child is significantly greater in Toronto compared to non-CMA areas in Canada. In relation to these same non-CMA areas, the effect of Vancouver residence is not significantly different from non-CMA areas. Within the four categories of geography used here, Toronto is an anomaly; 25% of seniors sixty-five or older live with a child, compared to 17% for Canada as a whole. Additionally, some aspects of ethnicity are not controlled by the broad categories used here. We can gain some insight into additional uncontrolled ethnicity effects through a set of regressions using only Canadian-born seniors[11], with time since immigration the only other variable removed from the model (Table 11). The parameters are consistently similar in direction to the models including the entire sample; the difference lies in the strength of the coefficients, particularly in regional variables. The difference between the full model and the one restricted by Canadian birth is the rough effect of uncontrolled-for variation in ethnicity and immigration. Chinese and Other Asian ethnicity drop in and out of significance, their standard errors inflated because of small sample sizes. These results suggest that the tendency to live with children among older Chinese and Other Asian Canadians is not entirely attributable to immigration, although the significance of this finding is age-dependent.

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[11] The selection variable in PUMF is CITIZENP, where 1 = 'Canadian by Birth'. This category included non-immigrant Chinese and Other Asians.

TABLE 11. PUMF LOGISTIC REGRESSION RESULTS, CANADIAN-BORN SENIORS ONLY, DEPENDENT = WCHILD

Less Than 70

	WOMEN					MEN			
	B	S.E.	Exp(B)			B	S.E.	Exp(B)	
Age	-0.520	0.111	0.595	**	Age	-0.673	0.109	0.510	**
Age Squared	0.004	0.001	1.004	**	Age Squared	0.005	0.001	1.005	**
Income (10000's)	-0.052	0.019	0.949	**	Income (10000's)	0.056	0.011	1.058	**
Income Squared	0.005	0.003	1.005		Income Squared	-0.002	0.001	0.998	**
City									
Other CMA	0.286	0.032	1.331	**	Other CMA	0.169	0.031	1.185	**
Toronto	0.617	0.052	1.852	**	Toronto	0.517	0.051	1.677	**
Vancouver	0.128	0.074	1.136		Vancouver	0.012	0.073	1.012	
Ethnicity									
Chinese	0.407	0.361	1.502		Chinese	0.640	0.348	1.896	
Other Asian	0.818	0.226	2.265	**	Other Asian	0.950	0.211	2.585	**
Intercept	16.808	3.416			Intercept	22.558	3.319		

	WOMEN		MEN	
-2 Log Likelihood	29,223.66		29,885.11	
Model Chi-Square	754.74		1,449.47	
Significance	0.000		0.000	
N	31,074		28,520	

70 or Older

	WOMEN					MEN			
	B	S.E.	Exp(B)			B	S.E.	Exp(B)	
Age	-0.753	0.164	0.471	**	Age	-0.909	0.214	0.403	**
Age Squared	0.005	0.001	1.005	**	Age Squared	0.006	0.001	1.006	**
Income (1000's)	-0.130	0.044	0.878	**	Income (1000's)	-0.074	0.032	0.929	*
Income Squared	0.006	0.005	1.007		Income Squared	0.002	0.002	1.002	
City									
Other CMA	0.116	0.048	1.123		Other CMA	0.061	0.061	1.063	
Toronto	0.338	0.075	1.403	**	Toronto	0.377	0.098	1.458	**
Vancouver	-0.144	0.106	0.866		Vancouver	-0.138	0.135	0.872	
Ethnicity									
Chinese	1.591	0.366	4.907	**	Chinese	0.858	0.463	2.359	*
Other Asian	0.169	0.383	1.185		Other Asian	0.242	0.385	1.274	
Intercept	27.393	6.332		**	Intercept	33.720	8.220		

	WOMEN		MEN	
-2 Log Likelihood	14,943.82		9,431.59	
Model Chi-Square	85.56		61.99	
Significance	0.000		0.000	
N	21,580		14,732	

** Significance <= 0.01 * Significance <= 0.05

Source: 1996 Census Public-Use Microdata File

4.2.3 General Social Survey, Cycle 11

The models using the PUMF data give us a good overall sense of factors associated with living arrangements, but there are important dimensions missing. Earlier we saw that health status and social support are intertwined with age, gender and living arrangements; in this section, we explore those relationships using models built from GSS11 data. These models are not directly comparable to PUMF because of important differences in the samples and the way that variables and concepts are defined between the two surveys. However, they do allow us to examine the effects of health status on the general relationships already seen in the PUMF data.

As in the previous set of models, a number of assumptions and restrictions were placed on the data. The first is that the gender split used previously is maintained. Because of sample size restrictions, and to concentrate more on post-nuclear living arrangements, the age range of the GSS11 models is 65 and older, with the age reference category shifting from 55-59 to 65-69[12]. Similar to PUMF, negative incomes are excluded from these models. An important difference is that the lowest income category in GSS11 embraces seniors whose incomes are zero or less, eliminating the zero-income individuals included in the PUMF. In the urban / rural variable, a separate category holds all responses from Prince Edward Island, since there are no CMAs in the province. To make this variable less ambiguous, the dataset excludes responses from that province. Under these restrictions, the total number of cases available for analysis is 1,431 for the ALONE models and 2,852 for WCHILD[13] [14].

The health-related models are only partially explanatory and need to be seen more as heuristic and largely descriptive devices, which is certainly of value. It is entirely reasonable to suggest that health status is implicated in the living arrangements of seniors, but in this instance the data do not allow us to interpret whether health status influences where and with whom seniors live. Instead, the GSS11 models reflect the

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[12] In the GSS11, age is categorized, not continuous as it is in PUMF.
[13] Because the GSS11 allows multiple records per respondent, only the first record of each respondent is included in the dataset.
[14] Because of the much smaller sample of the GSS11, significance is noted at $p < 0.10$, $p < 0.05$ and $p < 0.01$.

general health status of seniors within certain arrangements relative to others, controlling for demographic and economic factors.

Again, one of the central messages is that the experiences of men and women are far from identical (Table 12). This must be tempered by the much smaller sample size of the GSS11 dataset compared to the PUMF data. In this sample, the odds of living alone decrease as men age, although age is relatively unimportant among women. Urban / rural differences, while apparent when cross-tabulated, become insignificant for either men or women in the models.

TABLE 12. LOGISTIC REGRESSION RESULTS, MARRIED, DIVORCED, SEPARATED OR WIDOWED, DEPENDENT = ALONE (GSS11), WITH HEALTH STATUS

	MEN				WOMEN			
	B	S.E.	Exp(B)		B	S.E.	Exp(B)	
AGE				**				
70-74	-1.234	0.488	0.291	***	0.025	0.201	1.026	
75-79	-0.831	0.571	0.436		0.318	0.208	1.375	
80+	-1.368	0.509	0.255	***	0.147	0.215	1.158	
INCOME								***
10,000-19,999	0.081	0.534	1.085		0.556	0.185	1.744	***
20,000-39,999	0.828	0.573	2.288		0.804	0.240	2.234	***
40,000 +	0.280	0.624	1.323		0.116	0.347	1.123	
Urban / Rural	-0.447	0.370	0.640		-0.268	0.195	0.765	
Asian	-2.184	1.067	0.113	**	-3.134	0.723	0.044	***
Has Children					-1.675	0.438	0.187	***
Health Status	2.112	0.817	8.265	***	1.237	0.355	3.447	***
Intercept	7.359	12.759			1.157	0.535		**
	-2 Log Likelihood		270.134		-2 Log Likelihood		11,88.393	
		Model χ2	40.597			Model χ2	101.513	
		df	10			df	10	
		sig	0.000			sig	0.000	
		n	314			n	1,117	

*** Significance <= 0.01, ** Significance <= 0.05, * Significance <= 0.10

Source: 1996 Census Public-Use Microdata File

Income plays an interesting, and highly divergent role, in the odds of living alone. Although the results vary in significance, the general message is one of higher incomes associated with an increasing likelihood of living alone. Still-living children substantially reduce the odds of living alone, but only for women.

Importantly, once we control for income and other factors, Asian place of birth is significantly associated with a strongly reduced probabilities of living alone.

With increasing age, we again see a downward trend to the odds of living with a child (Table 13). Income plays a significant role in living with a child, although the effects are opposite for men compared to women. For women, the relationship is strongly negative; lower incomes are associated with living with a child. This relationship is reversed and weaker for men, who have greater odds of living with a child when incomes are above $15,000. This may be a function, in part, of the cut-point chosen to dichotomize income, reflecting the higher average incomes of Canadian males in this cohort. Asian-Canadian seniors, as expected, are far more likely to live with a child. In general, some of the relationships seen previously are reiterated here. The effects of age are certainly less dramatic than they are in PUMF, but the basic relationships hold.

The important question, however, is what happens once health status is woven into these models. Controlling for other factors, it is apparent that the odds of living alone are significantly greater for both men and women with higher health status[15], although the results point to large differences between them. In general, men who have higher health status tend to live alone. This reflects two concurrent trends. On the one hand, women tend to remain in these living arrangements longer than men, with transitions taking place at a much later life stage. It is likely that the health status of these older women is reflected in their lower coefficient for health status. Secondly, lower health status is significantly, but weakly, related to living with a child for men, but not for women (Table 13). Faced with lower health status, men appear to be more likely to move in with children, while women are likely instead making transitions to more formal, institutional arrangements.

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[15] The size of the coefficients is a function of how DVHUI is defined. The odds reflect a one-unit change in the variable. In the case of DVHUI, the variable itself ranges from 0 to 1, and thus a one-unit increase would lead to extreme coefficients.

**TABLE 13. LOGISTIC REGRESSION RESULTS, MARRIED, DIVORCED, SEPARATED OR WIDOWED,
DEPENDENT = WCHILD (GSS11), WITH HEALTH STATUS**

	MEN					WOMEN			
	B	S.E.	Exp(B)			B	S.E.	Exp(B)	
AGE					*AGE*				
70-74	-0.646	0.232	0.524	***	70-74	-0.311	0.272	0.733	
75-79	-0.515	0.276	0.598	***	75-79	-0.948	0.376	0.387	**
80+	-0.253	0.377	0.777	*	80+	-1.381	0.497	0.251	***
Urban / Rural	0.191	0.175	1.210		Urban / Rural	0.601	0.258	1.825	**
Income Less					Income Less				
Than $15,000	0.274	0.152	1.316	*	Than $15,000	-1.134	0.369	0.322	***
Asian	0.753	0.376	2.123	**	Asian	-0.203	1.045	0.816	
Immigrant	2.693	0.569	14.780	***	Immigrant				
Health Status	-0.774	0.437	0.461	*	Health Status	0.130	0.714	1.138	
Intercept	-1.420	0.379		***	Intercept	-2.662	0.624		***

-2 Log Likelihood	1,273.48		-2 Log Likelihood	1,176.49	
Model χ^2	64.23		Model χ^2	69.908	
df	8		df	8	
sig	0.000		sig	0.000	
n	1,783		n	2,834	

*** Significance <= 0.01, ** Significance <= 0.05, * Significance <= 0.10

Source: 1996 Census Public-Use Microdata File

Interpretation is tempered somewhat by confidence in the strength of the models. Subtracting the –2LL for the models with and without the health variable, the fit of the ALONE models for males (χ^2 = 15.65, p < 0.000) and females (χ^2 = 15.28, p < 0.000) significantly improved. Health status for the WCHILD models only improved marginally for men (χ^2 = 2.99, p < 0.084) and women (χ^2 = 3.18, p < 0.075).

5 Discussion

One important message that we can draw from these results is that Canada's seniors are far from a homogenous group. Variations in income, geography, health status, social support, ethnicity and living arrangements – and their interactions – provide striking evidence that treating them as a uniform group is

misguided at best and fails to reflect their diversity. This heterogeneity among Canadian seniors is particularly important because population aging maps directly onto a wide variety of future policy considerations. Popular perceptions that most seniors are poor and live alone – or, conversely, that they are all well-off and live with a spouse – have political appeal but miss the mark by failing to reflect the texture of seniors' lives. Within that diversity, however, are some extremely interesting patterns, expressed here through the framework of living arrangements.

One of the themes woven into this paper has been the notion that seniors base their living arrangements in part on a desire for independence. In general, it appears that this is the case, although there are complementary – and sometimes mixed – messages associated with independence. Among divorced, separated and widowed seniors living in the community, living alone is associated with higher personal income for women, while income has mixed associations with living with children for men. In effect, this corroborates other findings on women's living arrangements (Wolf and Soldo 1988; Wilmoth 2001) and for the later historical periods in Kramarow's (1995) research on long-term trends in living arrangements. Canada's public policy is rapidly moving away from a commitment of collective responsibility for the elderly in favour of a reduced role for the state (Townson 1994). Shifts in public policy are moving consistently towards more family-centered care, possibly in reaction to a highly speculative fear of demographic change. If this is the case, an economic argument for living arrangements suggests that there is an element of choice. Older Canadians, given the opportunity, may simply prefer to live independently as long as possible, with income being a means to that end. Policies encouraging direct family care, at the expense of public responsibility for the elderly, may lose sight of the actual preferences of seniors and run counter to the reality of their living arrangements.

These findings are strongly conditioned by gender and ethnicity. The differences between males and females are so striking, in fact, that the net result of this paper has been complementary – but distinct – analyses of living arrangements split along gender lines. This is not an inherent property of gender itself; it is the result of different cultural expectations and the after-effects of lower lifetime incomes, along with differences in mortality and health status. Thus, among older Canadian women we see a strong connection between low personal income and the odds of living with children. This is also a cohort issue. Many of the

women who were seniors in 1996 spent their working-age years in single-earner families, and the effects are reflected in their retirement incomes.

Despite this split by gender, surprisingly little attention has been paid to men's aging experiences and living arrangements, although Wilmoth (2001) does incorporate models similar to the ones in this paper for both genders. In some of the literature on living arrangements, gender differences tend to be implicitly recognized at the outset, and attention focussed on women for methodological or theoretical reasons (Boyd, 1991; Iacovou, 2000; Wolf and Soldo 1988). Although older men in general might be considered better placed than women, there are exceptions. Men living alone, for example, have strikingly less social support than other groups, and may represent a largely ignored aspect of aging – in more than one sense.

There are also cultural issues tied into the intersection between gender and living arrangements. Directly measured support in later life is not extensively explored here, but there is enough detail to suggest that divorced, widowed or separated males may make transitions based more on the need for non-financial dimensions of support than women. Those men that outlive their spouses may be more likely to turn to children for support than women in a similar position. This is most obvious in the GSS11 models, partially explaining the lack of an income effect in the PUMF data for men.

Just as germane are the relationships between income, ethnicity, and immigration in the determination of living arrangements. Not surprisingly, seniors who have recently arrived in Canada tend to live with family. Immigrant seniors who have lived longer in Canada, however, tend to have living arrangements that mirror those of other Canadian seniors more closely, and the association between living arrangements and income again arises. After controlling for income, immigration, and living arrangements, culture asserts itself: Chinese and Other Asian ethnicity remains a strong and significant factor in the choice of living arrangements, and in the notable case of living with a child appears to be the only significant factor involved. Culture appears to outweigh income, but its effects are mediated strongly by immigration and language skills and appear to decrease over time. Living alone for women is highly dependent on migration and language, suggesting that the perceived effect of ethnicity on living arrangements is in reality tightly interwoven with the process of migration.

5.1 Future Work on Living Arrangements

Although the data presented here are important in their own right, they are also heuristic and point the way to more research on living arrangements. There are at least two important aspects only briefly touched on in this paper which need more attention. The first of these is a closer look at the transitions that seniors make from a longitudinal rather than cross-sectional perspective, which would give a more detailed view of how the economic, demographic and health-related factors discussed here play out. Depending on the data sources used, this future work could incorporate a more geographic perspective, including moves prompted by life-changing events such as the death of a spouse, retirement, or substantial health declines.

The second aspect of living arrangements that could stand further scrutiny revolves around social support. There are clues that social support is highly variable among seniors; we only need to look again at how levels of support change with age, by gender, and by living arrangements. In this thesis only gross measures of social support were used, which affects the strength of interpretation. Social support needs to be better operationalized, with work still to be done on a more finely-tuned definition suited to the needs of seniors. Again, Rosenthal (2000) points the way towards an emphasis on support for personal care, but there are also likely a host of other measures that are also important. We might make the assumption that seniors who live alone face more isolation, but this assumption may not be wholly correct; there is likely a geography of social relationships among the elderly that is conditioned by living arrangements, requiring further study.

5.2 Implications for the Future

We have come full circle in this paper, back towards how the living arrangements of Canadian seniors in the present might affect our view of population aging. From the perspective of projecting living arrangements, it is tempting to simply carry over the current proportions of seniors living along, with children, or with a spouse. It may, however, not be totally correct to view living arrangements as static, considering the factors already discussed in this paper.

Given the effects of income on the propensity to live alone, we will likely continue to see similar if not even greater percentages of seniors living alone. The earning capacities of men and women have been

converging. If income plays a strong role in independence, which it does in this instance, it is unlikely that future cohorts will be any less independent than they are now.

Just as important are the characteristics of future aged cohorts, particularly along the lines of demography and health status. Living with children may not be dependent on the number of children, as long as there is at least one available. Lower rates of marriage, early marriage break-ups, and overall lower fertility will likely reduce the pool of future seniors who have children. In these instances, we can expect to see increases in the proportion living alone. These increases may be compounded by after-effects of divorce, with increasing numbers of people entering their seniors years without the built-in support of a partner. This may be offset to some degree by any changes in the mortality disparity between men and women, which would shift the balance to longer co-residence with a spouse among those still married. Health status changes, however, are more incremental than the more recent change in rates of marital dissolution.

Immigration and ethnicity may also affect future living arrangements, although the assumption that this will necessarily result in more complex families is not entirely true. Since family-class migration is a relatively new phenomenon, the full effects will likely not be seen for some time, and will be subject to a complex mix of more – and less – complex family relationships. In the future, as younger and much larger cohorts of recent arrivals from Asia age into their senior years, their living arrangements will likely converge with those of native-born Canadian seniors. At the same time, continued family-class migration of older parents will likely result in substantial numbers of seniors living with their children. Additionally, family relationships in source countries are undergoing change, which may result in a lessened expectation that seniors will live with their children. Stereotypes of living arrangements are not an adequate replacement for on-going research on living arrangements at international scales.

Projections of future trends among Chinese-Canadian seniors are mediated by a number of related factors. Two elements are particularly important: normal aging within second-generation Chinese-Canadians as well as the far-less foreseeable influence of changing immigration policies. Levels of Family-class immigration – and immigration in general – shift according to perceived needs and political agendas regarding economic and population growth. Canada's immigration plan for 1995-2000 separated family class immigrants into two categories: "immediate family" (spouses, fiancé(e)s, and dependant children) and

parents and grandparents. In 1992, the Canadian government announced that the size of the latter group would be controlled to increase the proportion of immigrants through the economic class, although no explicit action was taken on this policy (Young 1999). If the policy environment shifts to a greater emphasis on economic migration, this policy may be resurrected.

Importantly, family-class immigration also involves the arrival of young people, whose aging experience will likely more closely parallel the rest of the Canadian population. In combination with second or third generation Chinese-Canadians, young immigrants likely represent the future of population aging. Part of this stems from simple demographic availability; very young immigrants and non-immigrant Chinese-Canadians already have parents in Canada, reducing the possibility of later-in-life family class immigration.

All of these factors suggest that the future will be as diverse as it is today. Within this diversity, living alone will continue to gather momentum for older seniors, and that is the living arrangement that requires the most support in terms of formal resources. High rates of living alone pose special challenges for the future, because living alone is itself a highly diverse arrangement. We have seen how it splits by gender, by income, and by health status; all of these suggest that we must be as prepared to assist those seniors who live alone out of factors beyond their control as those who crave independence.

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Appendix I. Living Arrangements of Canadian Seniors, 1996, By Gender

Female	55-59	60-64	65-69	70-74	75-79	80-84	85+	Total
				Five Year Age Groups				
No Children, Family	338184	342612	314208	257652	152928	77184	41004	*1523772*
Family, With Children	194328	125208	90504	71640	48384	30096	22428	*582588*
Multiple Families	22824	24624	18936	12888	7200	3888	2052	*92412*
Alone	93204	112716	144648	178560	168516	128124	83628	*909396*
Institutional	2784	2434	5536	11279	19777	26798	72088	*140696*
	651324	607594	573832	532019	396805	266090	221200	*3248864*
Male								
No Children, Family	312696	349092	342792	281700	187200	96048	43992	*1613520*
Family, With Children	239040	145584	87228	52668	27072	13932	9468	*574992*
Multiple Families	20196	21708	18504	16344	8064	4536	1908	*91260*
Alone	67572	63288	66348	57096	43632	30492	20628	*349056*
Institutional	2518	2218	5694	6699	7631	13503	16555	*38263*
	642022	581890	520566	414507	273599	158511	92551	*2667091*

Proportion of Age Category

Female	55-59	60-64	65-69	70-74	75-79	80-84	85+
No Children, Family	0.519	0.564	0.548	0.484	0.385	0.290	0.185
Family, With Children	0.298	0.206	0.158	0.135	0.122	0.113	0.101
Multiple Families	0.035	0.041	0.033	0.024	0.018	0.015	0.009
Alone	0.143	0.186	0.252	0.336	0.425	0.482	0.378
Institutional	0.004	0.004	0.010	0.021	0.050	0.101	0.326

Male	55-59	60-64	65-69	70-74	75-79	80-84	85+
No Children, Family	0.487	0.600	0.658	0.680	0.684	0.606	0.475
Family, With Children	0.372	0.250	0.168	0.127	0.099	0.088	0.102
Multiple Families	0.031	0.037	0.036	0.039	0.029	0.029	0.021
Alone	0.105	0.109	0.127	0.138	0.159	0.192	0.223
Institutional	0.004	0.004	0.011	0.016	0.028	0.085	0.179

Comparison of Proportions, Male / Female

Male / Female	55-59	60-64	65-69	70-74	75-79	80-84	85+
No Children, Family	0.938	1.064	1.203	1.403	1.775	2.089	2.564
Family, With Children	1.248	1.214	1.062	0.944	0.811	0.777	1.009
Multiple Families	0.898	0.921	1.077	1.628	1.624	1.958	2.222
Alone	0.735	0.586	0.506	0.410	0.376	0.400	0.590
Institutional	0.918	0.951	1.134	0.762	0.560	0.846	0.549

Source: Census of Canada 1996; National Population Health Survey, Institutional File, 1994-95
Note: In the 1994-95 NPHS, ages 55 to 64 constituted one category. To estimate institutional population in five-year age groups, the 55-64 total was weighted by the proportion of total population in each sub-category.

Appendix II: Proportion Within Each Age Range, by Ethnicity

	Five Year Age Groups					
Non-Asian	**55-59**	**60-64**	**65-69**	**70-74**	**75-79**	**80-85**
No Children, Family	0.52	0.61	0.62	0.60	0.54	0.43
Family, With Children	0.32	0.22	0.15	0.12	0.11	0.11
Multiple Families	0.02	0.03	0.02	0.02	0.02	0.02
Alone	0.13	0.15	0.20	0.26	0.34	0.44

Chinese	**55-59**	**60-64**	**65-69**	**70-74**	**75-79**	**80-85**
No Children, Family	0.20	0.23	0.25	0.27	0.24	0.26
Family, With Children	0.60	0.49	0.42	0.37	0.40	0.41
Multiple Families	0.16	0.23	0.28	0.27	0.22	0.12
Alone	0.05	0.05	0.05	0.09	0.14	0.21

Other Asian	**55-59**	**60-64**	**65-69**	**70-74**	**75-79**	**80-85**
No Children, Family	0.21	0.26	0.29	0.27	0.31	0.24
Family, With Children	0.52	0.38	0.34	0.35	0.37	0.42
Multiple Families	0.22	0.30	0.30	0.29	0.24	0.22
Alone	0.05	0.06	0.07	0.09	0.08	0.12

Appendix III: Comparison of Living Arrangement Age-Proportions by Ethnicity

	Five Year Age Groups					
NonAsian / Other Asian	**55-59**	**60-64**	**65-69**	**70-74**	**75-79**	**80-85**
No Children, Family	2.53	2.31	2.16	2.18	1.73	1.76
Family, With Children	0.62	0.57	0.46	0.35	0.29	0.27
Multiple Families	0.11	0.08	0.07	0.07	0.06	0.07
Alone	2.46	2.67	2.73	3.07	4.30	3.67
Chinese / Asian	**55-59**	**60-64**	**65-69**	**70-74**	**75-79**	**80-85**
No Children, Family	0.94	0.88	0.87	0.98	0.77	1.08
Family, With Children	1.15	1.30	1.25	1.04	1.09	0.99
Multiple Families	0.71	0.75	0.93	0.94	0.90	0.55
Alone	0.93	0.87	0.68	1.08	1.77	1.71
Chinese / Non-Asian	**55-59**	**60-64**	**65-69**	**70-74**	**75-79**	**80-85**
No Children, Family	0.37	0.38	0.40	0.45	0.45	0.61
Family, With Children	1.86	2.29	2.74	2.97	3.75	3.61
Multiple Families	6.64	9.01	13.41	13.85	14.07	7.95
Alone	0.38	0.33	0.25	0.35	0.41	0.47
Other Asian / Non-Asian	**55-59**	**60-64**	**65-69**	**70-74**	**75-79**	**80-85**
No Children, Family	0.40	0.43	0.46	0.46	0.58	0.57
Family, With Children	1.62	1.76	2.20	2.86	3.43	3.65
Multiple Families	9.32	12.00	14.43	14.73	15.60	14.56
Alone	0.41	0.37	0.37	0.33	0.23	0.27
Other Asian / Chinese	**55-59**	**60-64**	**65-69**	**70-74**	**75-79**	**80-85**
No Children, Family	1.06	1.13	1.16	1.02	1.29	0.93
Family, With Children	0.87	0.77	0.80	0.96	0.92	1.01
Multiple Families	1.40	1.33	1.08	1.06	1.11	1.83
Alone	1.08	1.15	1.46	0.92	0.57	0.58

Note: Unweighted cases are used for all tables relating to ethnicity.
In the 1996 PUMF, all cases have an identical weight of 36.

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