KIN AVAILABILITY AND THE LIVING ARRANGEMENTS OF OLDER UNMARRIED WOMEN: CANADA, 1985

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Résumé — Dans cette étude on a présenté un modèle des arrangements de vie des femmes célibataires plus âgées, en utilisant les données de l'equête démographique canadienne de 1985. Les arrangements de vie sont représentés par une variable multichotome en établissant la distinction entre celles qui vivent seul et celles qui vivent avec des enfants, avec fratrie et avec autres. Les déterminants hypothètiques des arrangements de vie comprennent le revenu, le statut d'invalidité, le tableau des parents disponibles et l'éducation. Les résultats d'une estimation logit du modèle confirment l'importance du revenu, de l'invalidité et de la disponibilité des parents; ce qui est intéressant en particulier est l'effect important du nombre des petits-enfants sur les tendances à vivre seul, avec enfants et avec fratrie.

Abstract — A model of the living arrangements of older unmarried women is presented, using data from a 1985 survey of the Canadian population. Living arrangements are represented by a multichotomous variable distinguishing those living

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alone, with children, with siblings and with others. The hypothesized determinants of living arrangements include income, disability status, the array of available kin and education. Results from a multinomial logit estimation of the model confirm the importance of income, disability and kin availability; particularly interesting is the significant effect of the number of grandchildren on the relative propensities to live alone, with children and with siblings.

Introduction

The populations of most industrialized nations have in recent years become increasingly elderly in composition. This aging process has been accompanied by a growing awareness of the scholarly and policy issues associated with the elderly. One of these issues is living arrangements, which are of particular importance since the presence or absence of others in the household is a key index of an older person's ease of access to personal care and social interaction.

When considering the circumstances of the elderly, a fundamental distinction can be made between those with and those without a spouse or partner. Those with a spouse are in most cases observed to live with the spouse (and, possibly, with others as well), while those without a spouse are at risk of living alone. Moreover, among the spouseless elderly, women predominate, due both to the general tendency of married women to be somewhat younger than their husbands, and to the widespread pattern of differential life expectancies, with women living longer than men on average. For these reasons, it is useful to focus our analysis of living arrangements on the population of older unmarried women.

Existing research on the living arrangements of older women includes time-series analyses based upon aggregate data, and cross-sectional studies based on individual data. The time-series analyses have documented a clear post-war trend toward smaller households and an accompanying tendency for elders to live alone in the United States (Kobrin, 1976a, 1976b), Canada (Harrison, 1977; Wargon, 1979; Burke, 1986) and Europe (Wall, 1984; Wolf, 1987). Researchers have explained this trend in terms of changed fertility patterns and rising income levels, among other factors (Michael *et al.*, 1980; Wister and Burch, 1983; Pampel, 1983).

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Cross-sectional studies of household composition have also examined the role of family patterns, health, income and other possible influences on living arrangements (see, for example, Chevan and Korson, 1972; Soldo and Lauriat, 1976; Tissue and McCoy, 1981; and Soldo *et al.*, 1984). Income and health (or disability) status are readily interpretable as indicators of constraints upon the set of potential living arrangements.

An additional constraint upon living-arrangement choices is that of kin availability: the number of living children, grandchildren, siblings, parents and possibly more distant relatives conditions the range of potential shared households in which a given older woman may live. Unfortunately, data on kin availability are only rarely available for use in studies of the living arrangements of the elderly.

Some studies have incorporated measures of past fertility — that is, number of children ever born — in an attempt to measure at least one aspect of kin availability; examples include Soldo (1981), Kobrin (1981), Wister and Burch (1983), Thomas and Wister (1984), and Christenson and Slesinger (1986). In these studies, the number of children ever born is generally found to be significantly and negatively related to the likelihood of living alone.

Less common are data which include measures of the *actual* availability of kin — not only living children, but other living relatives. Tabular results presented by Shanas and others have shown that the living arrangements of the elderly vary according to the number and sex of living children, as well as the existence of other kin (Shanas *et al.*, 1968; Shanas, 1978). More recently, several papers have presented multivariate models of the living arrangements of older women, taking account of actual kin-availability patterns as well as other hypothesized determinants of living arrangements (Wolf, 1984; Wolf and Soldo, 1988). The present paper uses a similar approach and extends the literature by examining the situation of older women in Canada.

Results of Canadian Studies

Recent Canadian research on the living arrangements of older women begins with descriptive studies by Harrison (1977) and by Wargon (1979). Both used 1971 census data to document the sharp post-war rise in the proportion living in one-person households and to show that the changes were due to more than shifts in age, sex and marital status composition. Interpreting the trend, Wargon mentioned a growing desire for privacy and noted that women age 65 and over in 1971 belonged to birth cohorts characterized by relatively late marriage, relatively high rates of non-marriage and relatively low fertility.

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She thus introduced the notion of kin availability as an explanatory factor, but neither she nor Harrison undertook multivariate analyses in these early studies.

In a later report, Harrison (1981) used cross-tabular analysis of 1971 census data to demonstrate a positive relationship between living alone and income, a negative relationship with fertility (children ever born), and an interaction with fertility and income — fertility was associated with living alone for women with lower incomes, but not for those with higher incomes.

Wister and Burch (1983) carried out a multiple regression analysis of the 1971 Canadian census public-use sample and found a positive relationship of living alone with income and education, and a negative relationship with age and fertility. They also found a significant interaction of income and fertility. In assessing the results, they commented on the absence of information on health or physical disabilities, suggesting that variation in these might account for the age "effect" in their model.

A recent study by Kyriazis and Stelcner (1986) contains an analysis of widowed, separated or divorced females 50 years and older, based on data from Statistics Canada's 1979 Survey of Consumer Finances. Living arrangements are measured in terms of whether the older woman lives alone or with others. Independent variables include estimated years of education, total income, and dummy variables for occupation, mother tongue, city size, region and age group. Contrary to most previous research and to the authors' expectations, the results show no significant relationship between living alone and income. Also somewhat surprisingly, the coefficients indicate an increasing log-odds of living alone for successive age groups, rather than decreasing log-odds as would be expected in the absence of any control for health or disability. More in accord with expectations, living alone is associated with higher education, with residence in a region other than Quebec or the Atlantic region, with English rather than French mother tongue, and with "other" mother tongue rather than English. The authors' interpretation of the latter finding is that persons of other mother tongue may contain a higher proportion of foreign born, with a smaller kin network in which to find opportunities for coresidence. A few of the dummy variables for occupation show significant coefficients, but with a "somewhat erratic" pattern; the authors conclude, however, that women in managerial occupations appear to have a higher probability of living alone.

Kyriazis and Stelcner emphasize the absence, from their dataset, of measures of fertility (as a proxy for living children), of health status, or of attitudinal variables — all of which they believe might have significant effects on the probability of living alone, net of those variables which they were able

to include. The analysis to be presented below takes advantage of the presence, in the 1985 General Social Survey, of direct measures of the number of children (as well as other living kin) and of health and disability status.

Conceptual Framework and Hypotheses

Living arrangements of older persons can be thought of as reflecting the outcome of a process of constrained choice or decisionmaking. In many contexts, including highly developed Western regions such as North America, it is assumed that this choice is made in terms of an underlying preference for individual privacy and automony in daily living, and thus for living with one's spouse only or alone, when this is feasible.

Feasibility can be thought of in terms of constraints or limits to choice, including income, housing costs, functional capacity for separate living and the availability of alternative living arrangements. The latter includes institutionalization, living in some form of group quarters or the sharing of a private household with one or more other persons, usually but not necessarily relatives. With respect to co-residence with others, the older person is constrained first by the sheer existence of such others (for example, whether she has any living children, siblings or close friends) and, second, by the willingness or ability of those others to share their residence.

As applied to unmarried older women — the subsample at issue in this paper — this general framework requires elaboration or qualification on a number of points.

1. The initial entry of an older woman into the status "living alone" is typically not a matter of choice. For widows, who constitute the vast majority (84 per cent) of the subsample, living alone usually is initiated by the death of a husband. The choice then becomes whether to remain alone rather than to seek actively some other living arrangement. Thus, a realistic view of the process would leave room for elements of passivity and inertia.

2. Decisions regarding living arrangements may be made solely or mainly by the older woman herself, or they may involve participation by others, especially close kin. A woman's adult children, for example, represent alternative households in which she may have some claim to co-residence. However, the children may also actively intervene in a decision process leading to institutionalization or to living alone and may facilitate implementation of such a decision. It is not clear *a priori* which effect would predominate.

3. The assumption regarding a uniform preference for living alone is probably not true at the individual level, but it is difficult to modify this assumption in a way that allows for effective empirical tests. It seems likely that almost everyone would, in fact, place a high value on privacy and autonomy, but for some this may not rank as their highest value; some may place companionship and family relationships higher. In addition, many would prefer a living arrangement which achieves privacy and independence without residence in a totally separate household, for example, in an "in-law" apartment. An apparent preference for totally separate living may partly reflect housing constraints such as zoning restrictions imposed on "single-family" dwellings.

Practically speaking, direct measures of residential preferences are possible, but of limited value in a cross-sectional survey — arrangements may determine stated preferences rather than vice-versa — and in any case, such measures are lacking in the dataset to be used in this analysis.

Consideration of the above conceptual framework and our review of the literature suggest the following hypotheses regarding the determinants of living arrangements of older unmarried women:

1. *Income* will be positively associated with the probability of living alone compared to other living arrangements.
2. Severe or multiple *limitations on physical activity* will be negatively associated with living alone; such limitations will increase the probability of living with adult children, siblings, other relatives or non-relatives.
3. The *number of living children* an older woman has will be negatively associated with living alone, with siblings or with others, and positively associated with living with a son or daughter.
4. The *number of living siblings* will be positively associated with the probability of living with a sibling and negatively associated with the probability of adopting any other living arrangement.
5. With controls for income and for fertility (that is, number of living children), a woman's *education* may be interpreted as a proxy measure for modernity, independence and preferences for privacy; education is thus expected to be positively associated with living alone and negatively associated with the other types of arrangements.
6. With several other variables — notably extent of limits to the respondent's physical activity — controlled for, no association is expected between *age* and living arrangement.
7. The presence of grandchildren indicates "crowding" in the households of an older woman's children (Masnick and Pitkin, 1983; Burch, 1985);

we expect that household crowding would reduce both the respondent's desire for and her children's willingness to provide co-residence in their households. Thus, *number of grandchildren* is expected to be negatively associated with living with children and positively associated with living alone. The "crowding" hypothesis suggests no specific predictions regarding living with siblings or with others since the average number of grandchildren is not relevant to crowding in the households of siblings or of other relatives or non-relatives.

Despite earlier findings of effects on living arrangements of specific subcultural factors such as region, ethnicity or language (Thomas and Wister, 1984; Kyriazis and Stelcner, 1986), these have not been included in the present analysis in order to make the present study more comparable with other national-level studies of the effects of noncultural factors such as available kin and health/physical limitations on the living arrangements of older women (Wolf, 1988: Hungary; Wolf, 1984: U.S.A.; Wolf and Soldo, 1988: U.S.A,; Wils and Wolf, 1989: The Netherlands).

Data

Data for this study came from the 1985 General Social Survey, the first in a projected series of annual national sample surveys conducted by Statistics Canada. Each survey in the series focuses on one or two topics, while collecting basic socioeconomic data on the respondents. In the 1985 round, the focal topics were health and social support, with special attention to the elderly (Statistics Canada, 1987).

The sample was chosen from households contained in the monthly labour force survey and was designed to represent all Canadians 15 years of age and older, with the exception of persons living in institutions and residents of the Yukon and Northwest Territories. Persons aged 15 and 64 were interviewed by telephone; those aged 65 and over were interviewed personally in order to increase the sample size beyond what could be economically achieved using telephone techniques (Statistics Canada, 1987:17-18, 229-31). In both cases, all respondents reported on themselves; there was no proxy reporting.

The focus of the present analysis is on non-married (that is, never-married, widowed and divorced) women aged 65 and over. The sample contains 1,133 such women. The vast majority of these women are widows (approximately 84 per cent); roughly 10 per cent reported themselves as single or never-married, and another six per cent as divorced or separated. The variables of interest for the present analysis are described in the following five categories:

reported they had not graduated from secondary school; the modal yea
elementary and secondary education completed was eight. For the present
ysis, education was categorized as follows: elementary graduate or less;
secondary education, but not a graduate; secondary school graduate; some
secondary education.

Limits on Physical Activity

Several specific questions were asked about the respondent's ability to
form a variety of common personal or household tasks. The wording of a ty
question in this series is: "Do you have any trouble walking up and do
flight of stairs? If yes, are you completely unable to do this?" Similar
tions were asked with respect to walking three city blocks without res-
carrying a twelve-pound bag of groceries about 30 feet, standing for long
ods of time, bending down to pick up an object from the floor, cutting
own toenails, using one's fingers to grasp or handle, reaching above one's
seeing well enough (with glasses) to read ordinary newsprint, and hear
normal conversation.

Two measures of physical disability are used in the present analysis
total number of activities which the respondent reported as difficult bu
completely impossible, and the total which they reported themselves as
pletely unable to perform. A high score on either would seem to sugges
the respondent would be ill-suited for particular living arrangements,
cially living alone.

Though limited by available data, the measurement of number of l
children, siblings and grandchildren is straightforward. The data do not sp
the marital status or fertility of children, so we cannot associate specific g
children with specific children. Therefore grandchildren are represented
an average, the number of grandchildren per living child. Since the pu
of this variable is to measure a possible influence on the propensity t
with a child, women with no living children are treated as though they
zero grandchildren. The average values for independent variables are s
in Table 2.

Methods

Our multivariate analysis of living arrangements uses an approach vi
ly identical to that found in Wolf (1984). The purpose of the model is t
plain the distribution of older unmarried women across the several categ

TABLE 2. AVERAGE VALUES OF VARIABLES USED
IN MULTINOMIAL LOGIT ANALYSIS

Variable	Sample mean
Number of children	2.45
Number of siblings	2.90
Grandchildren per child	1.56
Number of activities "difficult"	2.12
Number of activities "unable"	0.84
Nonwage income ($1000s)	5.94
Nonwage income not measured*	0.28
Age = 80+*	0.27
Education 8–11 years*	0.46
Second education*	0.12
Postsecondary education*	0.19

*Dummy variables

of the dependent variable, living arrangements. The distribution of living arrangements is postulated to depend upon several explanatory factors, including the availability of kin. Of particular importance is the fact that certain categories of the dependent variable — for example, living with one or more children — can be observed only if a certain type of kin — in the example, children — actually exists. The technique used is a straightforward adaptation of the multinomial logit technique (Amemiya, 1985). The multinomial logit approach allows us to model the probability that a sample individual will be observed in each of the possible categories of the multi-categorical dependent variable.

Specifically, let the four categories of the living arrangements variable, discussed previously, be represented by the indices a (alone), o (with others), c (with children) and s (with siblings). Recall that none of our sample is observed to live in the additional, logically possible category "with children and siblings." Note that the first two categories, living alone or with "others," are

categories which do not depend upon the existence of any type of kin. Further, for the ith sample individual, let $C_i = 1$ if i has any living children, while $C_i = 0$ otherwise; similarly, let $S_i = 1$ if i has living siblings. Finally, let X_i represent the array of explanatory variables associated with i.

Using the notation just defined, the multinomial logit specification represents the probabilities that i will be observed in each of the possible living-arrangement categories with equations of the form

$$pr \text{ (living arrangement = c) } = \frac{C_i e^{B_c X_i}}{e^{B_a X_i} + e^{B_o X_i} + C_i e^{B_c X_i} + S_i e^{B_s X_i}} \qquad (1)$$

and so on, for each of the other living-arrangement categories. Note that for someone without living children (that is, for whom $C_i + 0$), the probability of living with children automatically becomes zero. The denominator in equation (1) is defined in such a way that the probabilities of the different types of living arrangements will sum to one. The unknown parameters of this model are the vectors B_a, B_o, B_c, and B_s. However, the restriction $B_a = 0$ is used to identify the rest of the parameters, and thus the category "living alone" becomes the baseline or reference category. The remaining parameters are estimated by standard maximum-likelihood techniques.

Interpretation of the estimated parameters is complicated by the nonlinear relationship between explanatory variables and the probabilities of each of the categories of the dependent variable. An individual parameter — that is, an element of one of the B-vectors — indicates the quantitative relationship between its associated variable and the *relative* probabilities of the corresponding category (either living with others, with siblings or with children) and the reference category (living alone). For example, the odds of living with children (given that they are available) relative to living alone, are $exp(B_c X)/exp(B_a X)$; thus the log of these odds equals $(B_c - B_a)X$ or simply $B_c X$ since $B_a = 0$. If some element of B_c equals zero, then we conclude that the corresponding variable does not affect the relative probabilities of living with children and living alone. If *all* the elements of B_c were zero, then our model implies that the probabilities of living with children or alone are equal (that is, the odds are 1:1). More informative than the parameters themselves

are the absolute probabilities of the categories of the dependent variable, given specified values for the array X; these are calculated by substituting the specified X and the estimated parameters into equation (1).

Results

Tables 3 through 5 present the results of our multinomial logit analysis of living arrangements. Table 3 gives the logistic coefficients and associated t-values (significance levels, using a two-tailed criterion, are also indicated). These show the log-odds of living in the given category relative to living alone — the omitted category. Tables 4 and 5 show calculated probabilities of living in each of the various living arrangements for specific combinations of values of the independent variables. As noted above, the information in Tables 4 and 5 may be more informative than the logistic coefficients. They are especially helpful in identifying situations where a coefficient is significant but nonetheless the variable in question has only a small effect on the probabilities.

The results for income, physical limitations and age are all as predicted. Women with higher incomes and fewer severe incapacitating conditions are more apt to live alone rather than in any of the other three arrangements. Age, net of physical limitations, appears to have no systematic effect. A possible exception to this statement is the significantly greater likelihood of living with others rather than alone. It may be that even if she has no specific health or physical problems, as a woman gets older she may be more inclined to seek a co-resident for general companionship and/or domestic help.

The results for education are somewhat erratic and provide only partial support for the "taste" hypothesis outlined above. Women with at least some post-secondary education appear to be more apt to live with others than to live alone. It is possible that they have more modern attitudes toward non-traditional living arrangements (that is, co-residence with other than nuclear-family kin). It also is possible that because of their post-secondary education they may have had more experience with non-nuclear family living arrangements. Finally, those with post-secondary education may be concentrated among the single or never-married, who in general tend to have somewhat different living patterns that the formerly married (further analysis of the role of marital status is desirable but hampered by the small numbers of single and of divorced women in our subsample). The other significant education effect is that any education above the lowest level (less than completion of elementary school) tends to lower the probability of living with children versus living alone.

TABLE 3. ESTIMATED PARAMETERS OF MULTINOMIAL LOGIT MODEL OF LIVING ARRANGEMENTS

Variable	Effects on living with:		
	Others	Siblings	Children
Number of children	-0.065	-0.446	0.130
	(1.28)	(3.35)***	(3.81)***
Number of siblings	0.126	0.065	0.007
	(3.70)***	(1.62)	(0.21)
Grandchildren per child	-0.096	-0.646	-0.280
	(1.36)	(3.38)***	(4.34)***
Number of activities "difficult"	0.032	-0.116	0.031
	(0.58)	(1.53)	(0.80)
Number of activities "unable"	0.218	0.134	0.157
	(3.93)***	(1.6)	(2.94)***
Nonwage income ($1000s)	-0.104	-0.084	-0.107
	(2.50)**	(1.76)*	(3.39)***
Nonwage income not measured	-0.509	-1.122	-1.417
	(1.27)	(2.23)**	(4.49)***
Age = 80+	0.481	-0.275	0.012
	(1.93)*	(0.76)	(0.06)
Education 8–11 years	-0.274	0.140	-0.411
	(1.13)	(0.44)	(2.21)**
Secondary education	-0.784	0.042	-0.467
	(1.84)*	(0.08)	(1.58)
Postsecondary education	0.609	-0.109	-0.306
	(2.23)**	(0.30)	(1.20)
Intercept	-1.513	-0.208	0.244

Note: absolute values of t-statistics shown in parentheses

   * $.05 < p < = .10$
  ** $.01 < p < = .05$
 *** $p \leq .01$

TABLE 4. PREDICTED PROBABILITIES OF LIVING ARRANGEMENTS: EFFECTS OF SELECTED VARIABLES

| | Alone | Living arrangement | | |
		With others	With siblings	With children
1. Reference individual*	0.521	0.166	0.038	0.276
Effects of disability:				
2. Number of activities "unable" = 0	0.627	0.066	0.051	0.256
3. Number of activities "unable" = 3	0.505	0.103	0.062	0.330
4. Number of activities "unable" = 6	0.382	0.149	0.070	0.400
Effects of income:				
5. Income ($1000s) = 0	0.434	0.106	0.067	0.392
6. Income ($1000s) = 10	0.685	0.059	0.045	0.211
7. Income ($1000s) = 15	0.785	0.040	0.034	0.141
Effects of education:				
8. Less than 8 years	0.507	0.088	0.041	0.365
9. Secondary education	0.619	0.049	0.052	0.279
10. Postsecondary education	0.521	0.166	0.038	0.276

*The characteristics of the reference individual are: number of children = 2; number of siblings = 3; number of grandchildren per child = 1.56; number of activities "difficult" = 2; number of activities "unable" = 1; nonwage income = $5940; education = 8–11 years.

TABLE 5. PREDICTED PROBABILITIES OF LIVING ARRANGEMENTS: EFFECTS OF KIN-AVAILABILITY VARIABLES

	Number of living kin			Living arrangement			
	Siblings	Children	Grandchildren per child	Alone	With others	With siblings	With children
1.	0	0	0	0.868	0.133	0.0	0.0
2.	0	2	0	0.548	0.057	0.0	0.395
3.	0	2	2	0.667	0.058	0.0	0.275
4.	0	2	4	0.765	0.055	0.0	0.180
5.	2	2	0	0.475	0.064	0.114	0.348
6.	2	2	2	0.627	0.070	0.041	0.262
7.	2	2	4	0.741	0.068	0.013	0.177
8.	3	1	1.56	0.685	0.082	0.086	0.246
9.	3	2	1.56	0.588	0.077	0.055	0.280
10.	3	3	1.56	0.579	0.071	0.035	0.315
11.	3	4	1.56	0.564	0.065	0.022	0.349

The results provide strong support for the view that kin availability is a major constraint on living arrangements of older women. The number of children has no apparent effect on the probability of living with others versus living alone (a negative coefficient which is not significant at the 0.05 level). However, it has a strong positive effect on the probability of living with children rather than alone, and a strong negative effect on the probability of living with siblings rather than alone. The number of siblings has a significant effect on the probability of living with others versus living alone, but as seen in Table 5 the effect is quantitatively trivial. Also, the number of siblings has a strong effect on the probability of living with siblings versus alone, but no effect on the probability of living with a child. These results — along with the descriptive data in Table 1 — suggest that in the Canadian context, the nuclear family solidarity reflected in the appreciable proportions of older women living with sons or daughters does not extend to siblings.

In the multivariate model, having more siblings does not decrease the probability of living with a child, whereas having more children does decrease the probability of living with a sibling. In Table 1, it can be seen that among women with both children and siblings, the proportion living with a child is about 12 times higher than the proportion living with a sibling. Among those who have siblings but no children, the proportion living with some other relative or with a non-relative is almost as high as the proportion living with a sibling. This finding is in keeping with a recent classification of nations by type of family, which would assign Canada to categories not noted for the promotion of solidarity among siblings (Todd, 1985).

The average number of grandchildren has a highly significant and large negative effect on the probability of living with a child or with a sibling; its effect on living with others versus alone is also negative, but not significant. The result with respect to living with a child is, as predicted, based on the household crowding hypothesis. The result with respect to living with siblings is unexpected since, as noted above, the respondent's average number of grandchildren is irrelevant to the size of her siblings' households. Two after-the-fact explanations may be suggested. The first is that older women with several grandchildren may be inclined to retain their own household rather than living with other persons of any category in order that they may freely entertain and provide for visits from their grandchildren (as well as the grandchildren's parents). Were they to live with one of their children or with a sibling, their freedom in this regard would be compromised. This explanation would also account for the negative (but non-significant) relationship with living with others. A second, related explanation is that an older woman may not wish to have any kind of preferential relationship with one or another set of her

grandchildren, but wishes to treat all equally. Living with one of her children would run the risk of such an asymmetric relationship, since she would be in daily contact with some of her grandchildren but not others. Living with a sibling might mean that her wish to entertain or receive visits from her grand- children would conflict with similar wishes on the part of her sibling to enter-tain the sibling's grandchildren. Whether a similar argument would pertain to co-residence with other relatives or with non-relatives would depend on the latter's household composition vis-à-vis children and grandchildren.

   To summarize our observations regarding the strong statistical results on average numbers of grandchildren, there is some support for the crowding hypothesis, but other explanations must also be invoked.

Discussion

   A multivariate analysis of recent survey data from Canada has confirmed earlier findings regarding the importance of income and of physical disabili-ties as determinants of the living arrangements of older unmarried women, that is, whether they live alone or with others. Taking advantage of relatively rare data on numbers of living kin, the analysis also has given strong support for the constraining effect of living kin. In particular, whether a woman lives alone, with a sibling or with one of her children is strongly dependent on her number of living children. A still more surprising effect relates to fertility (and hence number of living children) in the third generation. A respondent's average num-ber of grandchildren per child has large negative effects on the probability that she will live either with a child or with a sibling rather than live alone.

   The model has not included some other factors that may have some relevance, and so is not complete or definitive. The 1985 General Social Sur-vey was lacking in measures of respondents' attitudes towards or tastes for various living arrangements, as well as community-level variables relating to the availability, type and costs of housing. In addition, as noted above, fur-ther disaggregation by marital status or by subcultural factors such as region, language or national origins is hampered by small subsample sizes.

   Since much interest attaches to the relevance of a model such as this for projections of future household patterns, a few speculations about the future may be in order. Based on past studies, it has been common to speculate that a decline of fertility would tend, other things equal, to increase the proportion of older unmarried women living alone or as heads of households containing only non-relatives (Kobrin, 1976a; Burch and Matthews, 1987). The present finding regarding number of children supports this view, but the finding regard-

ing number of grandchildren suggests that the effect of low fertility could be equivocal: older unmarried women in the future will have fewer children with whom they might live, but those children's households will be less crowded with grandchildren. More refined speculations would have to take account of the timing of fertility change. They would also have to take account of possible changes in attitudes of future cohorts of older women. Traditionally, older unmarried women often lived with kin, especially their children. Recent decades have seen major departures from this tradition, notably the increase in the proportions living alone. Future cohorts — who will have experienced more cohabitation and other non-marital co-residence with non-kin and more divorce — may well bring to their later years new attitudes towards living arrangements, especially those involving non-relatives.

The findings point to the importance of including data on kin in future surveys. Ideally, such data would be even more specific as to categories of kin and would include information on the characteristics of the kin as well as of the respondent. The geographical location of sons and daughters, for example, may well be an important factor influencing whether an older woman would wish or be able to co-reside in one of their households. Clearly, information on the actual number of grandchildren for each child and whether they still live at home would also be of great interest. Finally, information on tastes and attitudes would be of interest, but its usefulness for causal inference will be greatly limited without a longitudinal or prospective survey design.

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