Working Paper

STATUS-SPECIFIC AGE PATTERNS OF MIGRATION: FAMILY STATUS

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International Institute for Applied Systems Analysis
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PREFACE

Interest in human settlement systems and policies has been a central part of urban-related work at IIASA since its inception. From 1975 through 1978 this interest was manifested in the work of the *Migration and Settlement Task*, which was formally concluded in November 1978. Since then, attention has turned to dissemination of the Task's results and to the conclusion of its comparative study, which is carrying out a comparative quantitative assessment of recent migration patterns and spatial population dynamics in all of IIASA's 17 NMO countries.

This paper is part of the Task's dissemination effort and is the fourth of several to consider age patterns of migration exhibited in the data bank assembled for the comparative study. It focuses on family dependency relationships to account for particular regularities in age profiles. By distinguishing between the migration age profiles of heads of families and those of their dependents, the paper introduces the perspective of status-specificity into the analysis of migration rate schedules.

Reports summarizing previous work on migration and settlement at IIASA are listed at the back of this paper. They should be consulted for further details regarding the data base that underlies this study. A technical appendix listing the parameters and variables of over 600 model migration schedules is available on request.

Andrei Rogers
Chairman
Human Settlements
and Services Area

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ABSTRACT

It is widely recognized that many internal migrations are undertaken by individuals whose moves are dependent on those of others. For example, children migrate with their parents and wives with their husbands. This paper suggests a matrix formulation of family migration that permits the introduction of such family dependencies into the population projection process.

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The formal demography of migration and redistribution views interregional population transfers as a collection of *independent* individual movements. Yet it is widely recognized that many internal migrations are attributable to individuals whose moves are *dependent* on those of others, e.g., children migrating with their parents, wives with their husbands, grandparents with their children. Because the formal demography of the family is still in its infancy, this is perhaps understandable. Nonetheless, it seems evident that future developments in the analysis and projection of multiregional population systems will need to introduce, however imperfectly, the perspective of family demography into the population projection process. This paper draws on the notion of a household composition matrix (Akkerman, 1980) to suggest a matrix formulation that may prove to be useful as an initial step in that direction, at least with respect to modeling migration patterns.

Following general U.N. practice (U.N., 1973), we shall use the term "family" to designate a group of individuals that are related by blood, adoption, or marriage, that live in the same dwelling, and that engage in "joint" decisionmaking with respect to consumption and production (Kuznets, 1978). For convenience, we shall also include in this definition single individuals and assume that for each family one can identify a "head".

Dependency Relationships

The average size of family has fallen in every modernized industrial nation as a result of fertility and mortality declines.

> The fall in fertility has decreased the number of very large units; the fall in mortality has increased the proportion of small units by increasing the length of time couples survive after their children are grown.
>
> (Kobrin 1976:127)

Inasmuch as many, if not most, migrants are dependents traveling with the family head, the importance of introducing the family as the basic unit in decompositions of migration schedules by cause and status is self-evident.

Figure 1 illustrates the age composition, by sex, of the family population, $C(x)$, and family migrants, $N(x)$, contained in a one-percent sample of the 1970 Mexican Census of Population.* The age composition of the population exhibits the usual age profile of relatively young populations experiencing high rates of natural increase. The age profile of the migrants reflects the disproportionately large share of infants and children in the total.

To analyze the impacts of high dependency levels, we begin by expressing the age profiles in Figure 1 as weighted sums of the age compositions of family heads and of their dependents.

Let $K_H(x)$ and $K_D(x)$ denote, respectively, the number of family heads and dependents at age x in the population, and let $O_H(x)$ and $O_D(x)$ denote the corresponding variables for migrants. Summing these over all ages x gives the totals $K_H(\cdot)$, $K_D(\cdot)$, $O_H(\cdot)$, and $O_D(\cdot)$, respectively; adding heads and dependents gives

*The smooth line in each profile describes a cubic spline interpolation of the raw data (described by the jagged line). We shall focus only on such cubic spline fits in the rest of this paper.

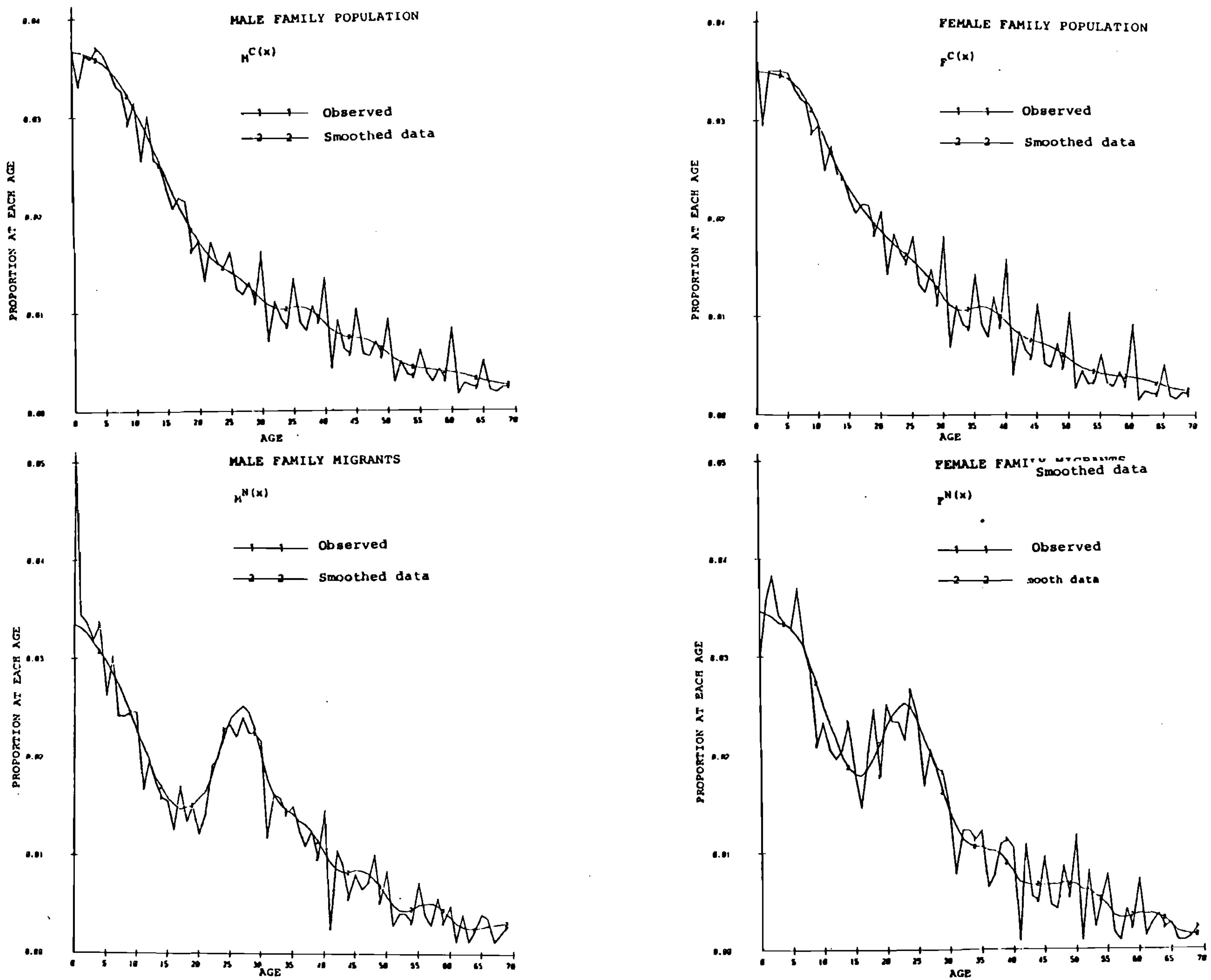


Figure 1 Age-specific family population, C(x), and family migration, N(x), distributions, by sex: Mexico, 1970.

$$K(\cdot) = K_H(\cdot) + K_D(\cdot)$$

$$O(\cdot) = O_H(\cdot) + O_D(\cdot)$$

By definition

$$C(x) = \frac{K(x)}{K(\cdot)} = \frac{K_H(x)}{K(\cdot)} + \frac{K_D(x)}{K(\cdot)}$$

$$= \frac{K_H(\cdot)}{K(\cdot)} \frac{K_H(x)}{K_H(\cdot)} + \frac{K_D(\cdot)}{K(\cdot)} \frac{K_D(x)}{K_D(\cdot)}$$

$$= k_H C_H(x) + k_D C_D(x) \qquad (1)$$

Analogously

$$N(x) = o_H N_H(x) + o_D N_D(x) \qquad (2)$$

Table 1 sets out the values taken on by the four fundamental ratios in the Mexican census data. We shall refer to k_H and o_H as head/population and head/migrant ratios, respectively, and to k_D and o_D as dependent/population and dependent/migrant ratios, respectively. Figure 2 presents the associated four age profiles: $C_H(x)$, $C_D(x)$, $N_H(x)$, and $N_D(x)$. These underlie the curves in Figure 1, which may be viewed as having been generated by weighted combinations of the profiles in Figure 2, the weights being the ratios set out in Table 1.

Two important observations regarding the headship and dependency characteristics of male and female populations and migrants are suggested by Table 1. First, it is apparent that the ratios differ markedly according to sex: females exhibit lower headship ratios and larger dependency ratios. The male values for k_H and o_H are, respectively, 5.5 and 4.7 times larger than the corresponding ratios for females, whereas for males k_D and o_D are, respectively,

Table 1 Head and dependency ratios for family population and family migrants, by sex: Mexico, 1970.

		Males	Females	Males/Females
Population	k_H	0.325	0.059	5.508
	k_D	0.675	0.941	0.717
	Total	1.000	1.000	
Migrants	o_H	0.471	0.100	4.710
	o_D	0.529	0.900	0.588
	Total	1.000	1.000	
Migrants/Population	o_H/k_H	1.449	1.695	
	o_D/k_D	0.784	0.956	

only 0.72 and 0.59 times the level of those for females. Second, the relative prevalence of heads among migrants is greater than among the population as a whole. For each sex, the headship ratio of the former is about 50 percent higher than the headship ratio of the latter.

Additional observations are motivated by the age profiles presented in Figure 2, which illustrate the observed (cubic-spline-interpolated) population and migrant age compositions for heads and for dependents, disaggregated by sex. Although the male

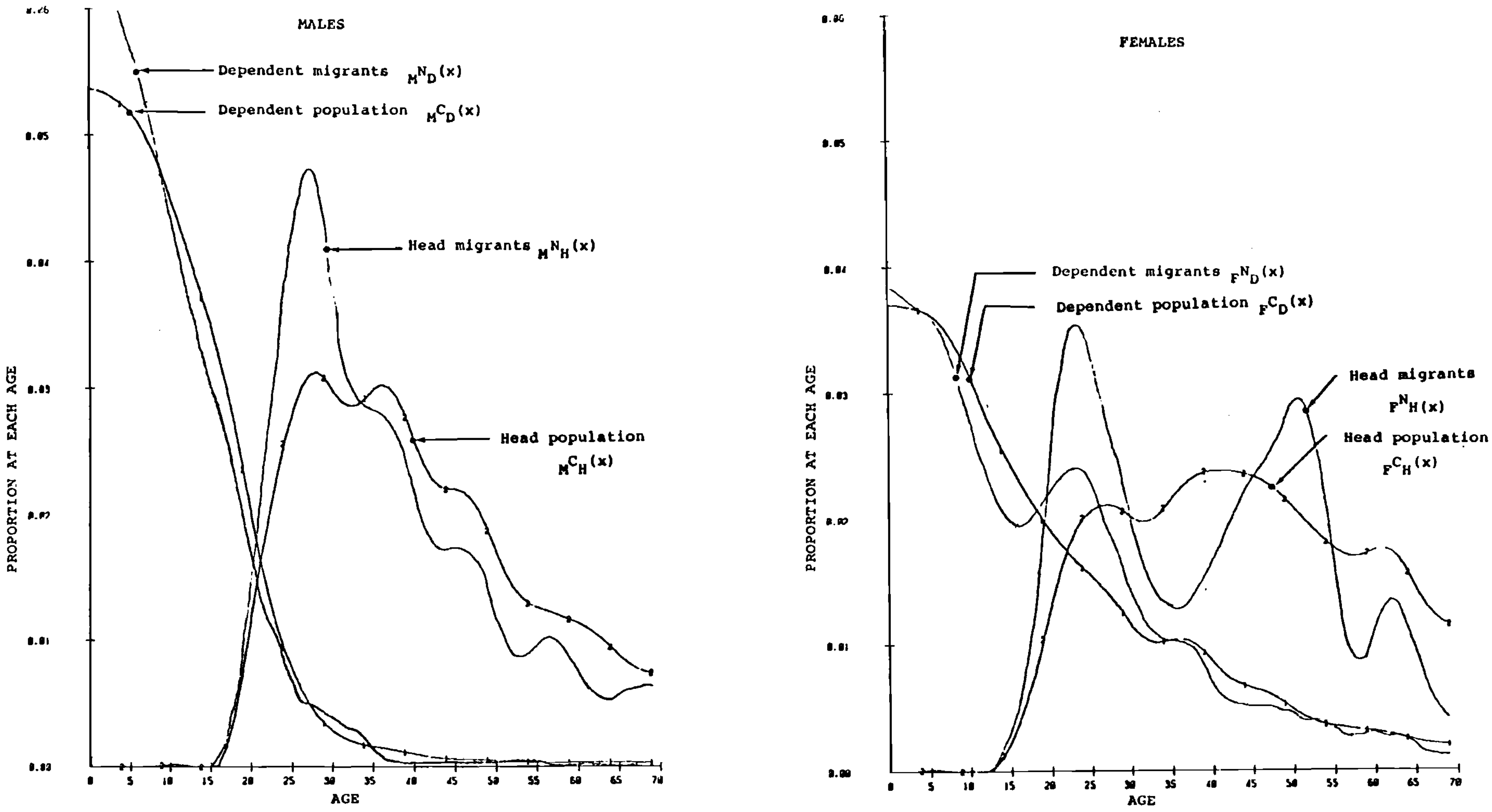


Figure 2 Age-specific population and migration compositions of heads and dependents, by sex: Mexico, 1970.

age profiles for both population and migrants look rather similar*, those for females show systematic differences. For example, dependent female migrants exhibit a small peak near age 20, whereas the corresponding dependent population does not. The importance of marriage as a reason for migrating may account for this difference. And the age profile of head female migrants appears to be bimodal whereas that of heads in the population in general does not. This possibly is a reflection of the fact that most migrating female heads are either young singles or middle-aged widows and divorcees. Finally, the male age profiles of dependents are steeper than those of females. This is probably a consequence of the earlier age at which male youths leave the family home in developing societies such as Mexico.

A Matrix Formulation

The above analysis suggests that more disaggregated age profiles might help to identify the impacts of family dependency on the shapes of age-specific migration schedules. For example, it appears that differences between the age compositions of the population at large and of the population of migrants may be a consequence of differences in the ratios of the number of dependents per head at each age. A matrix formulation of family composition relationships may be used to illuminate the interaction of the several principal components.

Let ${}^{y}K_D(x)$ denote the number of dependent individuals at age x, whose head is of age y, and let $K_H(y)$ denote the number of such heads. Dividing each of the former by the latter defines the dependency coefficient a_{xy}. Introducing a left superscript of k or o to distinguish between population and migrant-related coefficients,

*Except for the moderately heavier concentration of younger heads among migrants than in the population at large.

and expressing the set of such coefficients in the form of a matrix gives

$$\mathbf{A}_k = \begin{bmatrix} {}^k a_{11} & {}^k a_{12} & \cdots & {}^k a_{1n} \\ {}^k a_{21} & {}^k a_{22} & \cdots & {}^k a_{2n} \\ \vdots & \vdots & {}^k a_{xy} & \vdots \\ {}^k a_{n1} & {}^k a_{n2} & \cdots & {}^k a_{nn} \end{bmatrix}$$

where

$$ {}^k a_{xy} = \frac{{}^y K_D(x)}{K_H(y)} \qquad \text{for} \qquad y \geq y_{min} $$

$$ {}^k a_{xy} = 0 \qquad \text{otherwise} $$

and y_{min} is the earliest age at which an individual can become a family head.

A directly analogous dependency matrix $\mathbf{A}_o$ may be defined for the migrant population.

Given the matrix $\mathbf{A}_k$ and the number of family heads in the population, at each of several ages and expressed as the vector $\{\mathbf{K}_H\}$, say, we can obtain the corresponding vector of the dependent population

$$\{\mathbf{K}_D\} = \mathbf{A}_k \{\mathbf{K}_H\} \qquad (3)$$

Since this vector of dependent population together with the associated vector of family heads defines the total population at each age, we have that

$$\{\underset{\sim}{K}\} = [\underset{\sim}{I} + \underset{\sim}{A}_k] \{\underset{\sim}{K}_H\} \tag{4}$$

The elements of the dependency (population) matrix $\underset{\sim}{A}_k$ can be decomposed into *level* and *composition* components:

$$k_{a_{xy}} = \frac{{}^{y}K_D(x)}{K_H(y)} = \frac{{}^{y}K_D(\cdot)}{K_H(y)} \frac{{}^{y}K_D(x)}{{}^{y}K_D(\cdot)} = {}^{k}u_{yy} \, {}^{k}d_{xy} \quad , \quad \text{say,} \tag{5}$$

where ${}^{y}K_D(\cdot)$ denotes the total number of dependents whose heads are of age y. Thus the first of the two terms in the product set out in equation 5 refers to level and the second to composition. Collecting the level coefficients to define a diagonal matrix $\underset{\sim}{U}_k$ and expressing the composition coefficients in the form of a matrix $\underset{\sim}{D}_k$, gives the matrix version of equation 5

$$\underset{\sim}{A}_k = \underset{\sim}{D}_k \underset{\sim}{U}_k$$

Inserting this decomposition into equation 4 gives

$$\{\underset{\sim}{K}\} = [\underset{\sim}{I} + \underset{\sim}{D}_k \underset{\sim}{U}_k]\{\underset{\sim}{K}_H\} \tag{6}$$

and introducing a disaggregation by sex, we obtain

$$\begin{bmatrix} \{_M\underset{\sim}{K}\} \\ \{_F\underset{\sim}{K}\} \end{bmatrix} = \begin{bmatrix} \underset{\sim}{I} + {}_{MM}\underset{\sim}{D}_k \, {}_{MM}\underset{\sim}{U}_k & {}_{MF}\underset{\sim}{D}_k \, {}_{MF}\underset{\sim}{U}_k \\ {}_{FM}\underset{\sim}{D}_k \, {}_{FM}\underset{\sim}{U}_k & \underset{\sim}{I} + {}_{FF}\underset{\sim}{D}_k \, {}_{FF}\underset{\sim}{U}_k \end{bmatrix} \begin{bmatrix} \{_M\underset{\sim}{K}_H\} \\ \{_F\underset{\sim}{K}_H\} \end{bmatrix} \tag{7}$$

where the two bottom-left subscripts indicate the sex of the dependent and the head, respectively. In this way we may calculate, for example, the vector of male dependents in the population as

$$\{{}_{M}\underset{\sim}{K}_{D}\} = {}_{MM}\underset{\sim}{D}_{k}\ {}_{MM}\underset{\sim}{U}_{k}\ \{{}_{M}\underset{\sim}{K}_{H}\} + {}_{MF}\underset{\sim}{D}_{k}\ {}_{MF}\underset{\sim}{U}_{k}\ \{{}_{F}\underset{\sim}{K}_{H}\} \tag{8}$$

and that of the male population as

$$\{{}_{M}\underset{\sim}{K}\} = \{{}_{M}\underset{\sim}{K}_{H}\} + \{{}_{M}\underset{\sim}{K}_{D}\} \quad . \tag{9}$$

The derivation of an analogous set of equations for migrants is straightforward and gives

$$\{\underset{\sim}{O}\} = [\underset{\sim}{I} + \underset{\sim}{D}_{o}\ \underset{\sim}{U}_{o}]\ \{\underset{\sim}{O}_{H}\} \tag{10}$$

and

$$\begin{bmatrix} \{{}_{M}\underset{\sim}{O}\} \\ \{{}_{F}\underset{\sim}{O}\} \end{bmatrix} = \begin{bmatrix} \underset{\sim}{I} + {}_{MM}\underset{\sim}{D}_{o}\ {}_{MM}\underset{\sim}{U}_{o} & {}_{MF}\underset{\sim}{D}_{o}\ {}_{MF}\underset{\sim}{U}_{o} \\ {}_{FM}\underset{\sim}{D}_{o}\ {}_{FM}\underset{\sim}{U}_{o} & \underset{\sim}{I} + {}_{FF}\underset{\sim}{D}_{o}\ {}_{FF}\underset{\sim}{U}_{o} \end{bmatrix} \begin{bmatrix} \{{}_{M}\underset{\sim}{O}_{H}\} \\ \{{}_{F}\underset{\sim}{O}_{H}\} \end{bmatrix} \tag{11}$$

as the migrant analogs to equations 6 and 7, respectively.

Let $\underset{\sim}{R}$ be a diagonal matrix of head migration rates

$$r_{yy} = \frac{O_{H}(y)}{K_{H}(y)}$$

then

$$\{\underset{\sim}{O}_{H}\} = \underset{\sim}{R}\{\underset{\sim}{K}_{H}\} \tag{12}$$

Solving for $\{\underset{\sim}{K}_H\}$ in equation 6 we obtain

$$\{\underset{\sim}{K}_H\} = \left[\underset{\sim}{I} + \underset{\sim}{D}_k \underset{\sim}{U}_k\right]^{-1} \{\underset{\sim}{K}\}$$

whence

$$\{\underset{\sim}{O}\} = \left[\underset{\sim}{I} + \underset{\sim}{D}_o \underset{\sim}{U}_o\right] \underset{\sim}{R} \left[\underset{\sim}{I} + \underset{\sim}{D}_k \underset{\sim}{U}_k\right]^{-1} \{\underset{\sim}{K}\} \quad . \tag{13}$$

Sensitivity Experiments

The above matrix formulation of head and dependency relationships in the population and among migrants identifies the contributions of three fundamental components to the migration proportion schedule, $N(x)$:

1. the composition coefficients, ${}^{o}d_{xy}$
2. the level coefficients, ${}^{o}u_{yy}$
3. the age distribution of head migrants, $O_H(x)$

Their interaction is defined by equation 9, which establishes, for example, that the vector of age-specific male migrants may be expressed as the sum of: the vector of male head migrants, the vector of male dependent migrants traveling with male head migrants, and the vector of male dependent migrants moving with female head migrants:

$$\{{}_M\underset{\sim}{O}\} = \{{}_M\underset{\sim}{O}_H\} + {}_{MM}\underset{\sim}{D}_o\, {}_{MM}\underset{\sim}{U}_o \{{}_M\underset{\sim}{O}_H\} + {}_{MF}\underset{\sim}{D}_o\, {}_{MF}\underset{\sim}{U}_o \{{}_F\underset{\sim}{O}_H\} \tag{14}$$

or

$$\{{}_M\underset{\sim}{O}\} = \{{}_M\underset{\sim}{O}_H\} + \{{}_M\underset{\sim}{O}_D\} \tag{15}$$

Equations 8 and 9 express the corresponding relationships in the population at large.

Figures 3 and 4 illustrate the matrices of composition coefficients for our Mexican data. Figure 3 refers to the migrant-related matrices ${}_{MM}\tilde{D}_o$, ${}_{MF}\tilde{D}_o$, ${}_{FM}\tilde{D}_o$, and ${}_{FF}\tilde{D}_o$. Figure 4 presents the corresponding population-related matrices ${}_{MM}\tilde{D}_k$, ${}_{MF}\tilde{D}_k$, ${}_{FM}\tilde{D}_k$, and ${}_{FF}\tilde{D}_k$. (Recall that the area under each curve is equal to unity.)

Each age profile in Figures 3 and 4 describes a row of the particular $\tilde{D}$ matrix. It apportions the total number of dependents to different ages or age groups. These dependents are generated by multiplying the number of heads at each age by the appropriate dependency level coefficient in the $\tilde{U}$ matrix. The diagonal elements of the latter matrix in the Mexican data are illustrated in Figure 5, which presents the diagonal elements of the matrices ${}_{MM}\tilde{U}_o$, ${}_{MM}\tilde{U}_k$, ${}_{MF}\tilde{U}_o$, ${}_{MF}\tilde{U}_k$, ${}_{FM}\tilde{U}_o$, ${}_{FM}\tilde{U}_k$, ${}_{FF}\tilde{U}_o$, ${}_{FF}\tilde{U}_k$.

Finally, the age compositions of the various $\{\tilde{O}\}$ and $\{\tilde{K}\}$ vectors have already appeared in the form of $\{\tilde{N}\}$ and $\{\tilde{C}\}$ vectors, in Figures 1 and 2.

With one exception, the age profiles of the composition coefficients set out in Figures 3 and 4, exhibit patterns that are broadly similar: starting with an approximately negative exponential curve for the youngest age group of heads, the profiles assume bell-shaped curves that move along the horizontal axis for all subsequent age groups. The one exception is the behavior of the age profile of female dependents traveling with male heads. Here the curve is bimodal, with the two peaks representing the ages of daughters and wives, respectively. As with the other profiles, however, older heads are associated with older dependency profiles: the curves move to the right on the age axis for the older age groups of heads.

In general, the migrant-related age profiles illustrated in Figure 3 do not differ significantly from the corresponding population-related profiles set out in Figure 4. The minor differences appear to be more a consequence of small sample sizes than of fundamental differences in patterns of behavior. Since data on family composition are generally more readily available

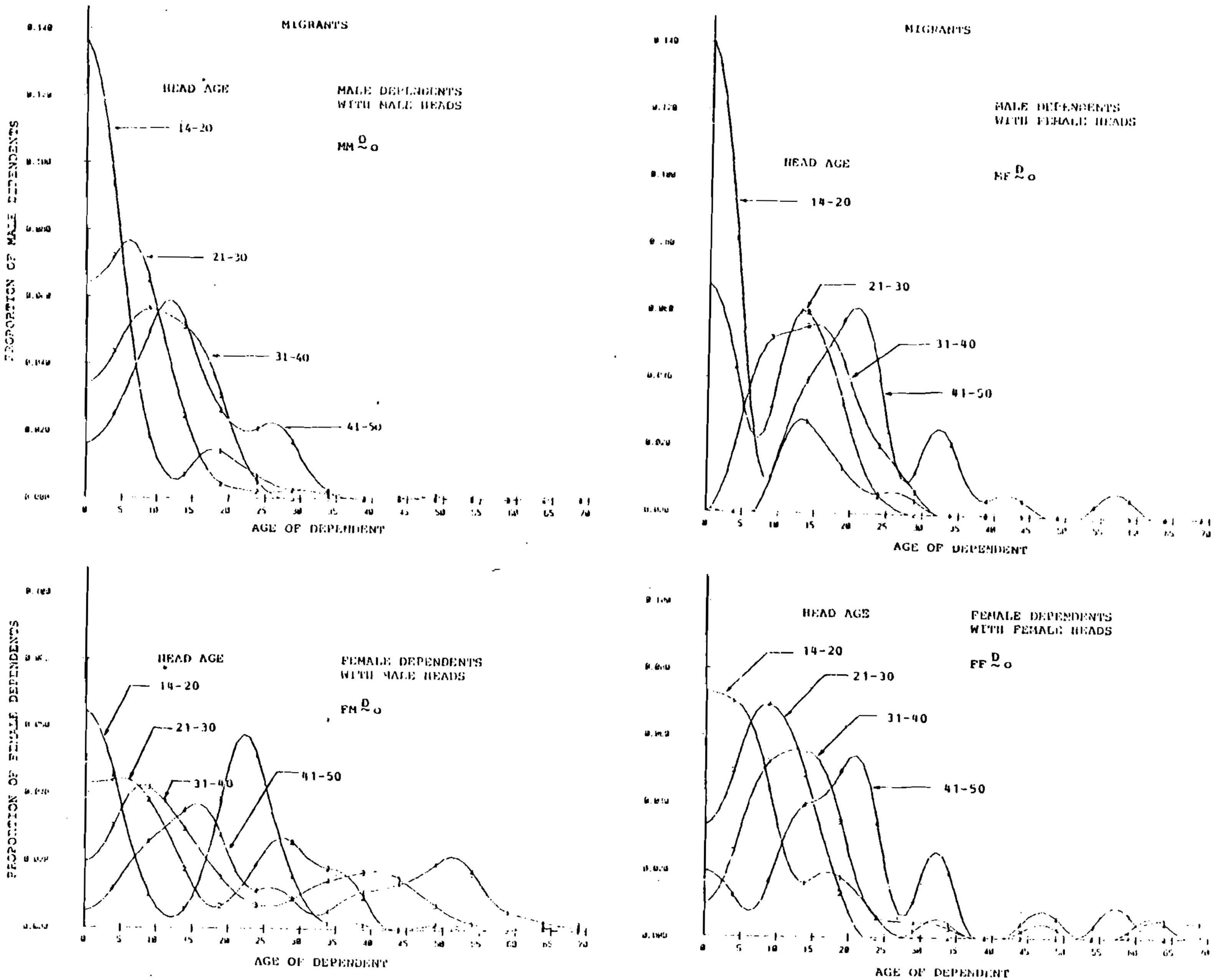


Figure 3 Age-specific migration distribution of male and female dependents by age and sex of head: Mexico, 1970.

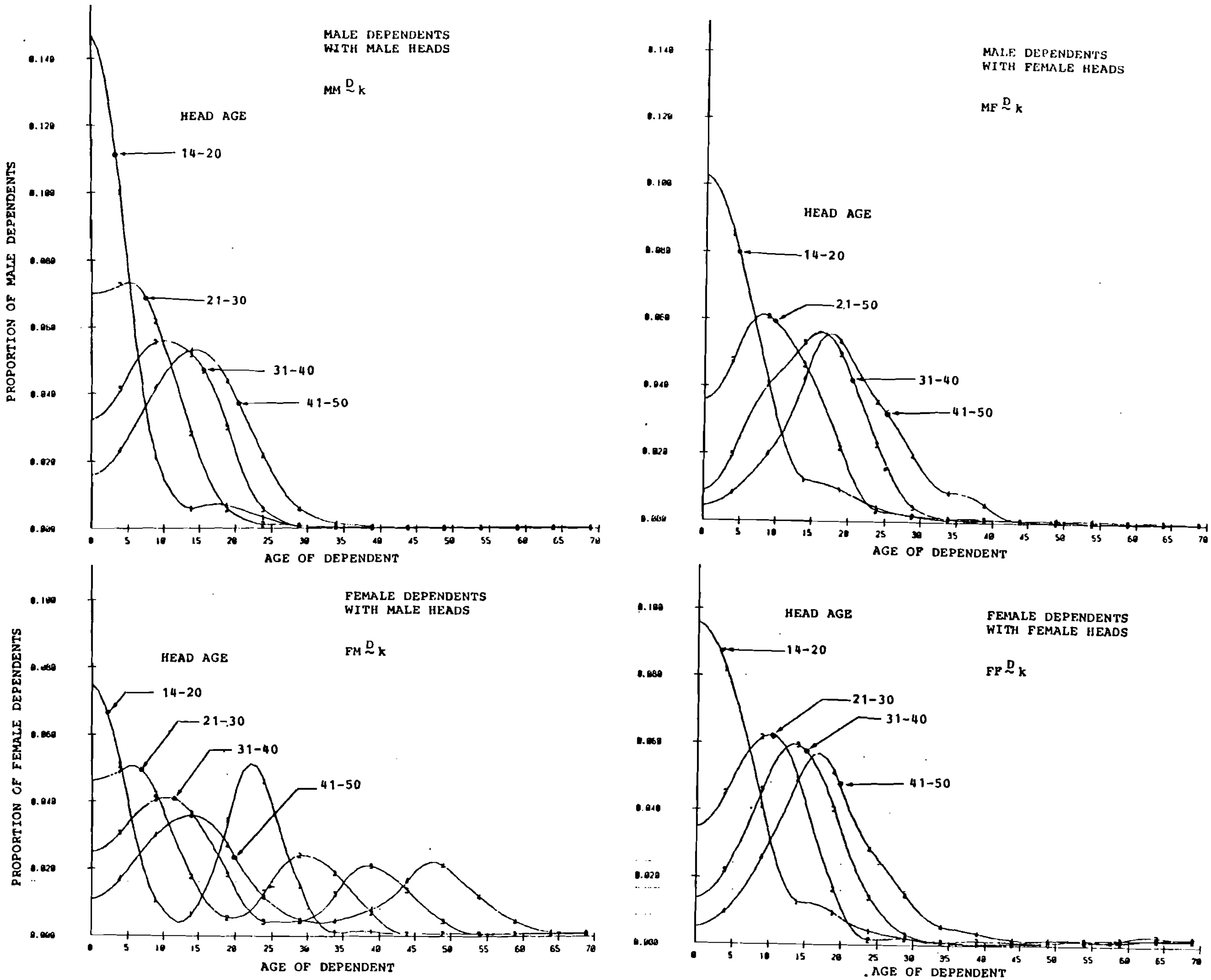


Figure 4 Age-specific population distribution of male and female dependents by age and sex of head: Mexico, 1970.

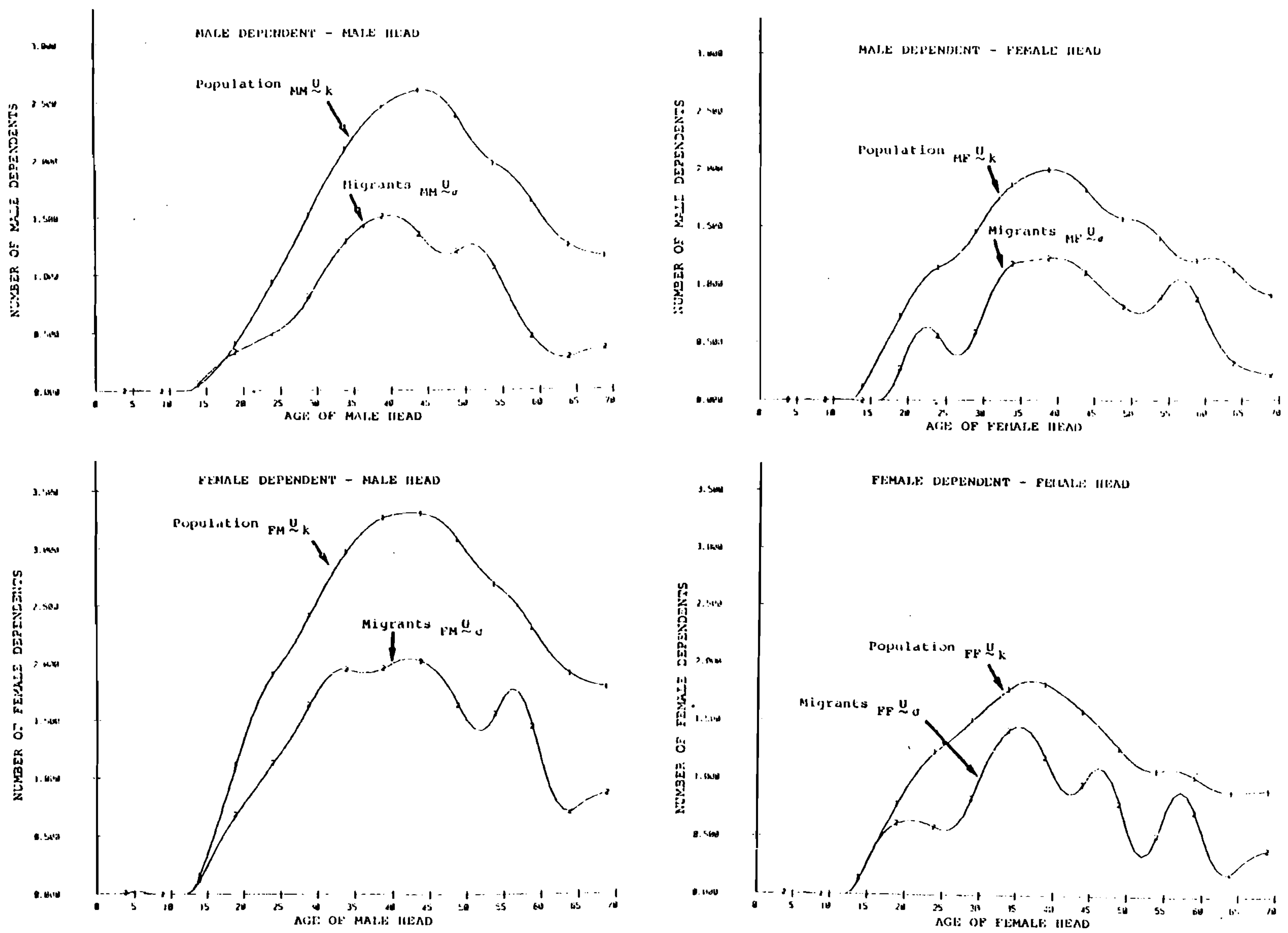


Figure 5 Dependency level profiles for population and migrants. Mexico, 1970.

for the population at large than for migrants, this similarity could have important implications.

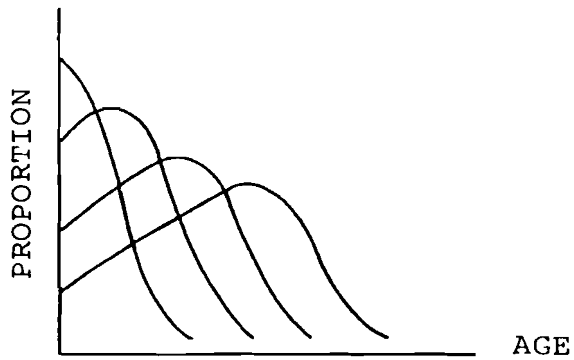
What may be true for age profiles is apparently not true of levels. Figure 5 shows that the number of dependents per head is lower at all ages for the population of migrants than for the population at large, that is, ${}^{o}u_{yy} < {}^{k}u_{yy}$. For both, however, the unimodal curve rises from the youngest headship age to a peak in the late thirties or early forties, with the peak for migrants possibly occurring at a slightly younger age. The highest levels are exhibited by female dependents traveling with male heads.

The minor variations and irregularities in the patterns exhibited in Figures 3, 4, and 5 obscure the broad underlying age profiles that are indicated by the data. These underlying age profiles, illustrated in Figure 6, are in a sense "model" profiles. They reflect visually some of the observations made in the above paragraphs.

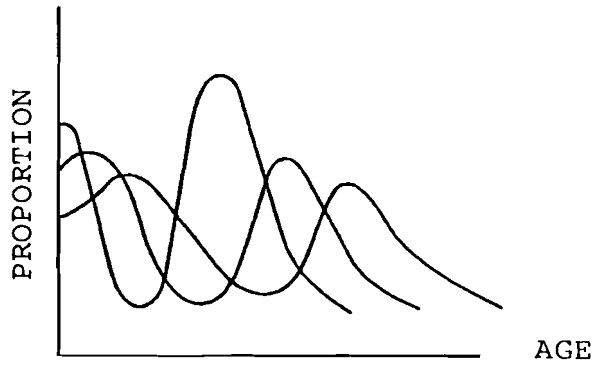
Expressing an age-specific vector of migrants as a function of the $\underset{\sim}{D}$ and $\underset{\sim}{U}$ matrices and the $\{\underset{\sim}{O}\}$ vector, as in equation 14, allows us to carry out a few sensitivity experiments to better understand their influence on the behavior of the associated migration proportion schedule $\{\underset{\sim}{N}\}$. Figures 7, 8, and 9 present the impacts on the latter of changes in each of the three former components.

Figure 7 shows the impact of substituting population-related dependency age compositions in place of their migrant-related counterparts. Specifically, the $\underset{\sim}{D}_o$ matrix is replaced by the corresponding $\underset{\sim}{D}_k$ matrix. The impact of this substitution is insignificant in the male proportion schedules and minor in the female profiles. In the latter the principal effect is a moderate increase in the relative share of the 0 - 4 year olds and a compensating decline among 20 - 24 year olds.

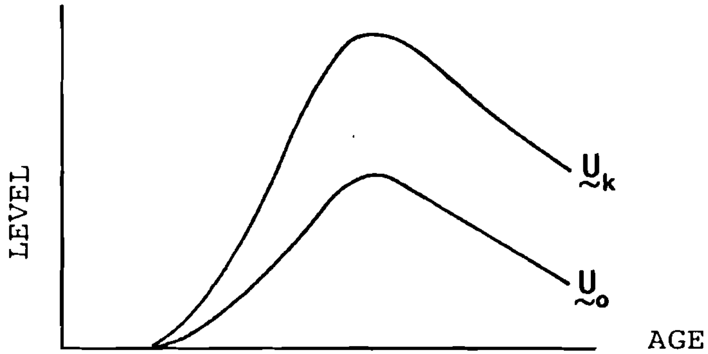
Although changes in dependency age compositions produce only minor impacts on the migration proportion schedule, changes in dependency levels have dramatic effects in the case of male



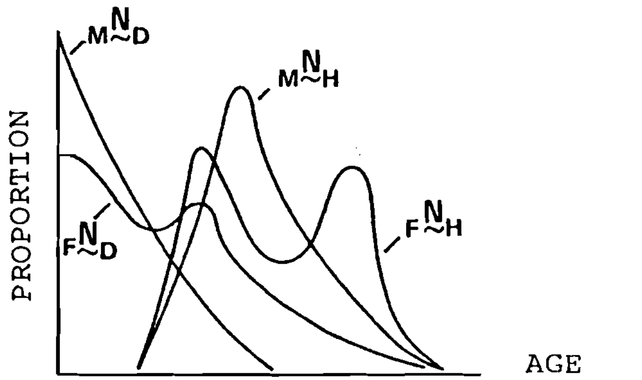
A. Common Age Compositions of Dependents Traveling with Heads of Different Ages: $\underset{\sim}{D}$



B. Age Composition of Female Dependents Traveling with Male Heads: ${}_{FM}\underset{\sim}{D}$



C. Dependency Levels by Age of Head



D. Migration Proportions: Heads and Dependents

Figure 6 Model age profiles of dependency compositions and levels of migration proportions of heads and dependents.

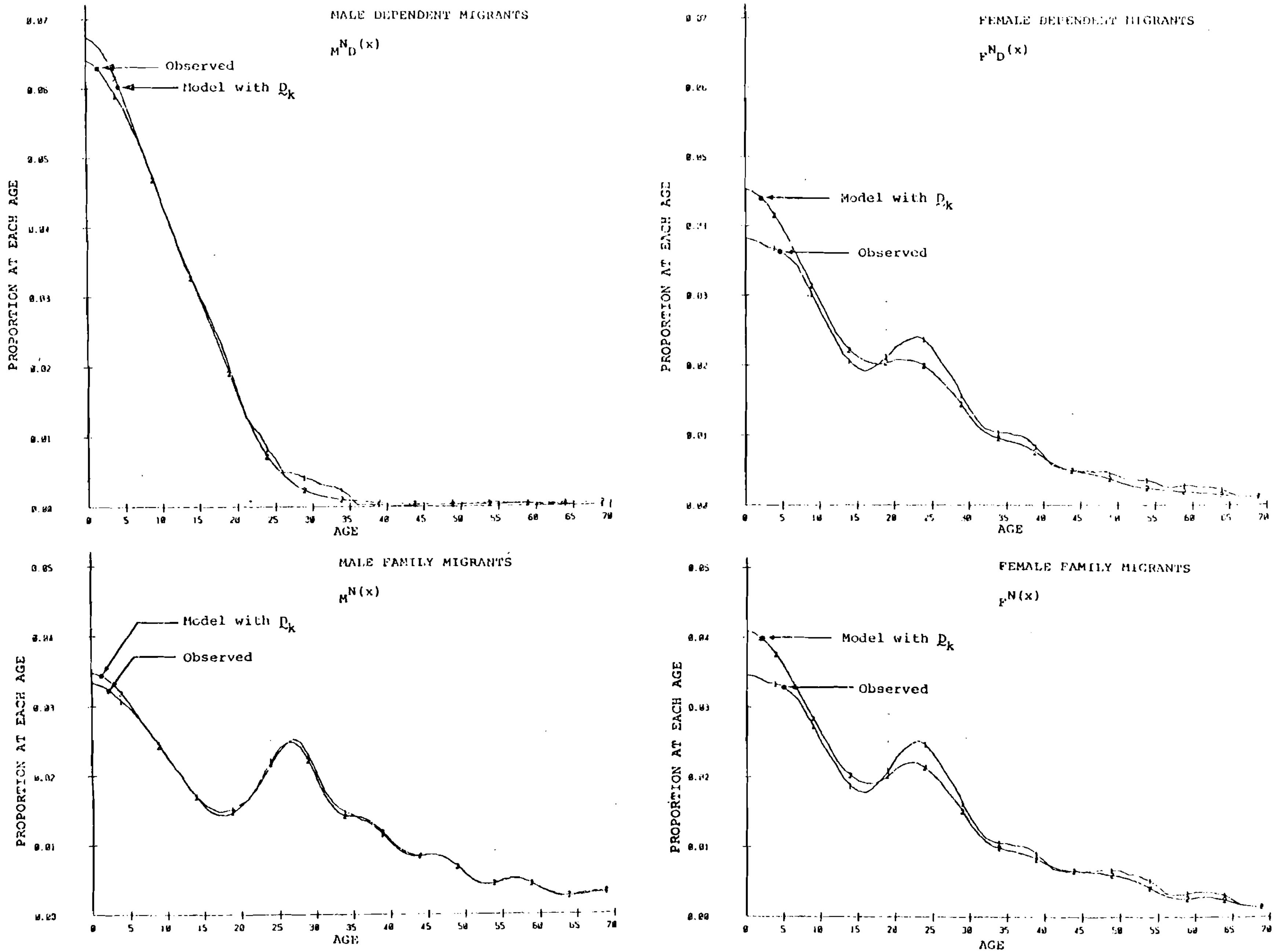


Figure 7 Observed and model (with $\underset{\sim}{D}_k$) age-specific migration distribution of dependents and family migrants by sex.

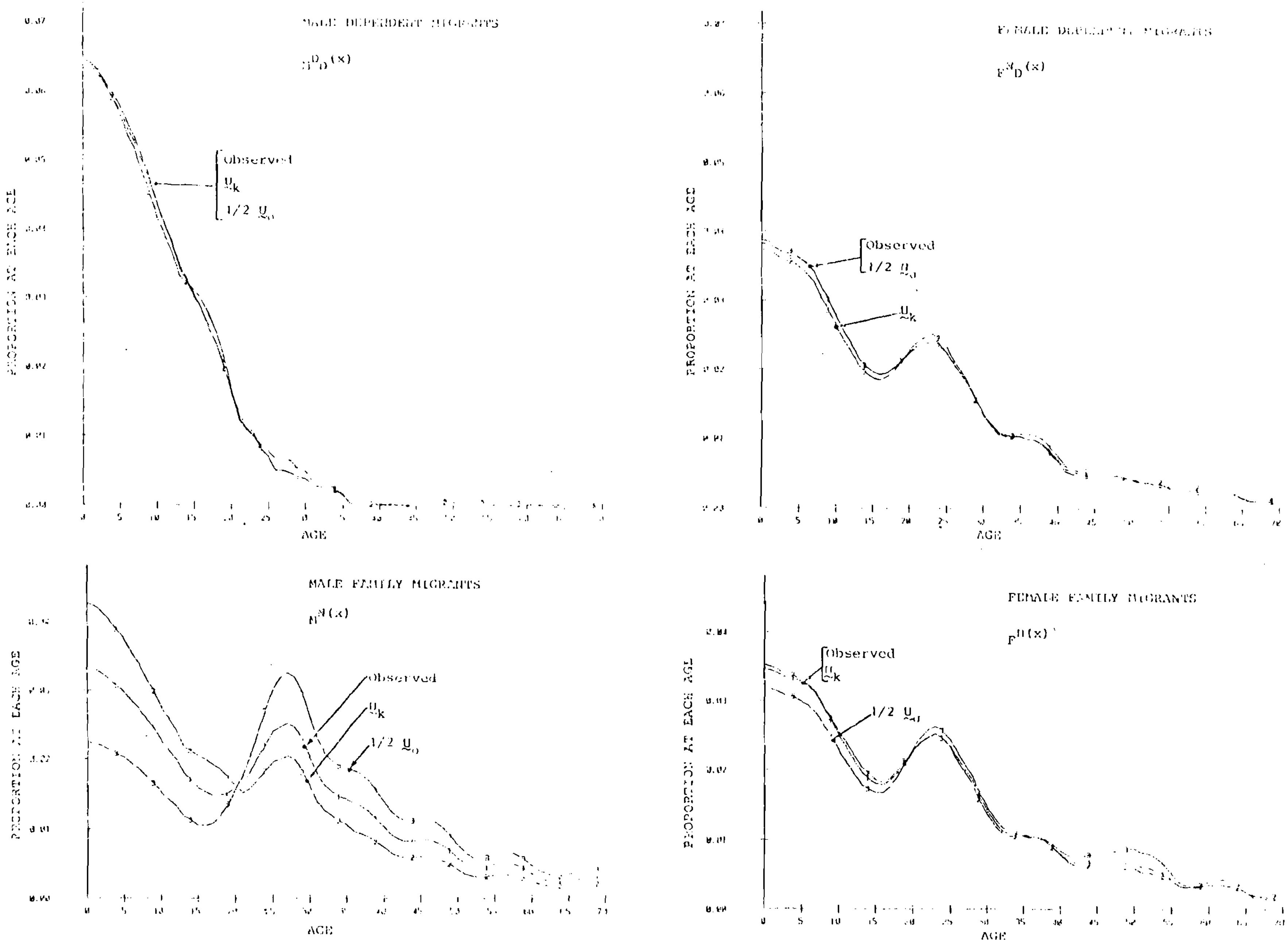


Figure 8 Observed and model (with $\underset{\sim}{U}_k$ of 1/2 $\underset{\sim}{U}_\sigma$) age-specific migration distributions of dependents and family migrants by sex.

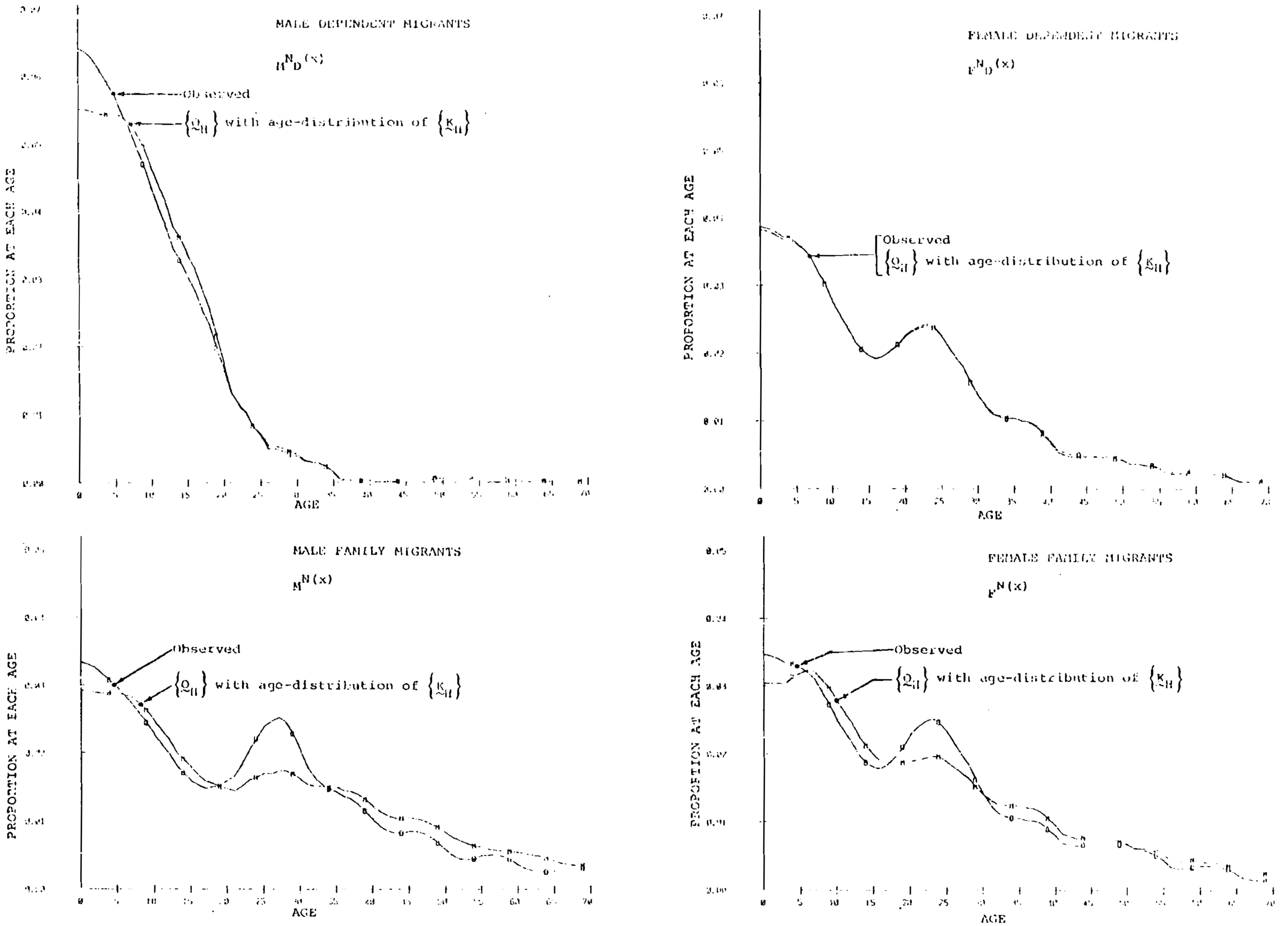


Figure 9 Observed and model (with age-distribution of $\{\underset{\sim}{K}_H\}$) age-specific migration distributions of dependents and family migrants by sex.

migrants.* Figure 8 shows that decreasing the level matrix $\tilde{U}$ by a half increases the labor-dominance of the male migration age profile, whereas increasing $\tilde{U}_o$ to the level of the population at large shapes the curve in the opposite direction. Apparently high dependency levels give the N(x) schedule a distinctive child-dependency shape and thereby sharply differentiate the migration proportion schedules of developing countries such as Mexico from those of developed nations.

For the final sensitivity experiment, we show in Figure 9 the effects of replacing the $\{\tilde{O}\}$ vectors by their $\{\tilde{K}\}$ vector counterparts. The impacts of this on the dependent migrant profiles are minimal; however, the same cannot be said for the aggregation of heads and dependents. There the principal impact is to increase the share of the pre-labor force age groups past the age of 5 years at the expense of infant and 20 - 30-year-old migrants. The N(x) schedule tends toward the shape of the C(x) age profile.

Conclusion

The aim of this paper has been to identify some of the effects of family dependency on sex-specific migration proportion schedules. Toward this end we have introduced a decomposition of migration flows into independent and dependent flows, with the latter expressed as a function of dependency age compositions and level, disaggregated by age and sex of family head. Sensitivity experiments carried out by varying the values taken on by the principal components of such a decomposition indicate that, at least for the Mexican data, the shape of the migration proportion schedule N(x) is mostly sensitive to changes in the dependency levels and in the age distribution of family heads.

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*Curiously, the same impact is not manifested by the female schedule. The reason for this is not readily apparent, although it seems likely that the bimodal shape of the dependency age profile distributes the impacts of changes in the $\tilde{U}$ matrix more uniformly across all ages.

The results presented suggest several profitable directions for further research that could emerge from a closer integration of this work with the classical sociological literature on the demography of the family. For example, it was pointed out in Section 1 that the age-specific profiles of male dependents are steeper than those of females and that this may be a function of the age at which children leave the family home. A recent study by Chudacoff and Hareven (1978) of historical interdependencies between family members in 19th century America is particularly instructive in this connection. Figure 10 is taken from their recent report in which they note:

> The Ch curves represent proportions of particular age cohorts who were children of the head living at home, and the H/S curves represent proportions who were either heads of households or spouses of heads. The graph shows two significant patterns. First, the location of the 1880 Ch curves is consistently to the right of the 1860 Ch curves, suggesting that by 1880 it had become more difficult for young people to achieve independence. That is, increasing numbers of sons and daughters, particularly between the ages of 15 - 35, were remaining in their parents' households for a longer period of time. Some of the adult children may have been married and were living as secondary family units; others could have been unmarried young adults unprepared or unable to strike out on their own.
>
> Second, aging adults in 1880 were retaining the status of head of household, or wife of head, in somewhat larger proportions than old people in 1860 had, at least in the three cities. In Salem, Lawrence, and Lynn, the 1880 H/S curves are consistently higher than 1860 H/S curves for people in their fifties, sixties, and seventies. Moreover, for the ages 20 - 40, the 1880 curves are to the right of the 1860 curves, supporting the observation that it became more difficult for young adults to establish

their own households. The high incidences of headship among old people with delayed headship among younger adults suggest the existence of conditions that encouraged generational interdependence.

(Chudacoff and Hareven 1978:232,233)

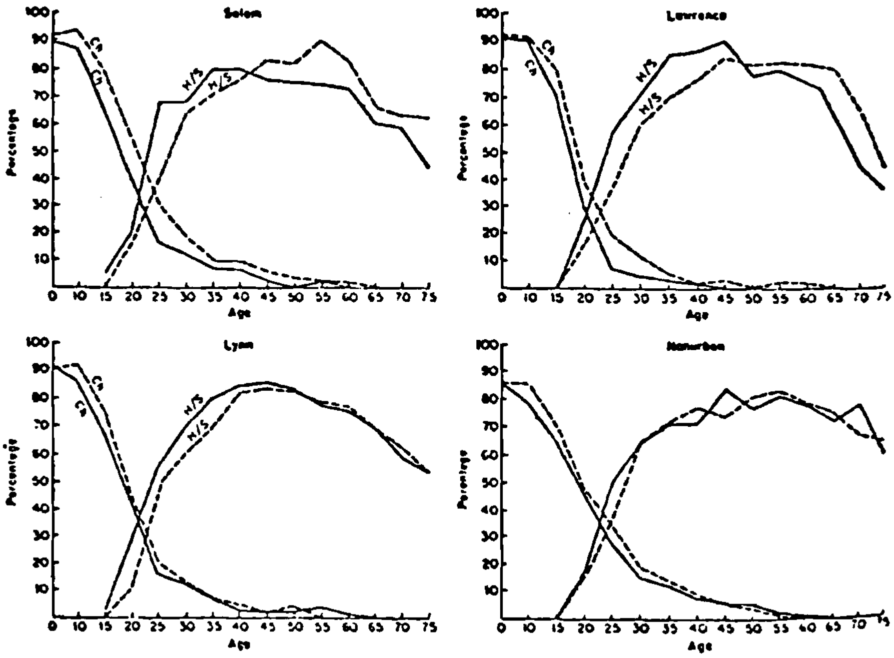


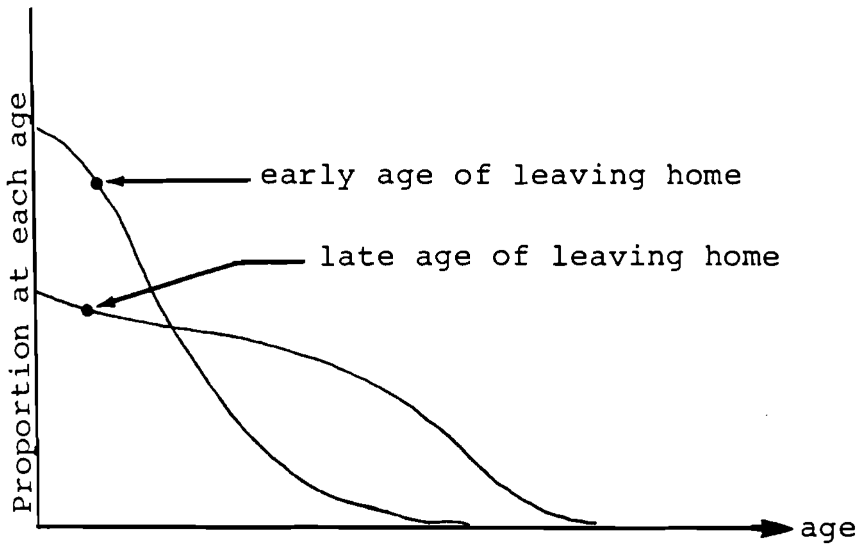
Figure 10 Proportion, by age, of total population who were children of head of household (Ch) or who were either the head of household or the spouse of the head (H/S). (SOURCE: Chudacoff and Hareven 1978: 232)

If the dependency compositions of migrants are related to early or late stages of leaving home, then Figure 11A suggests schematically how this influence may be manifested. And Figure 11B traces the same impacts on the migration proportion schedule N(x).

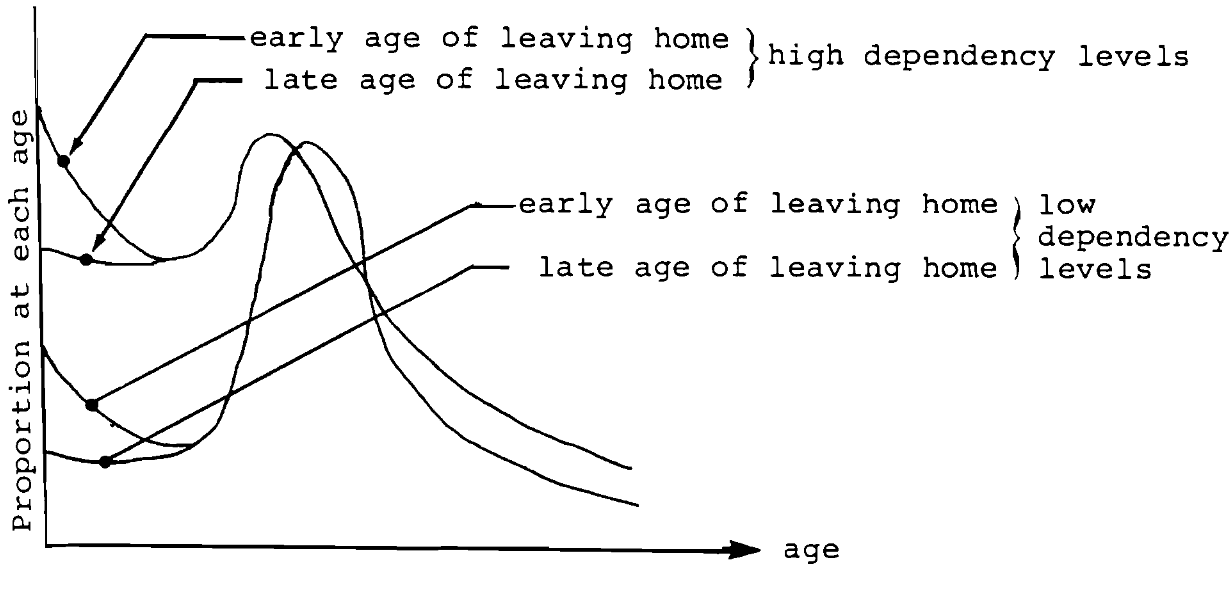
The event of leaving the home usually cannot be divorced from the reason or cause for migrating.

> For sons, the most common destination when leaving home for marriage was another suburb, or the same suburb. If the reason was independence, the son would most likely move to another suburb; if the reason was travel, he would most likely go overseas; if the reason was job or education, he probably would go elsewhere in the same state, or interstate. A similar pattern emerges for daughters, except that those leaving for a job would be more likely to move to another suburb or elsewhere in the same state, and those leaving for education were likely to move only as far as another suburb.
>
> (Young 1977:205)

Thus, the study of the age profiles of migrants, both heads and dependents, may usefully draw on the insights of family demography and the role of the family life cycle to explain variations in patterns exhibited by migration proportion schedules in societies at different stages of development.



A. Dependent migration proportion distributions



B. Family migration proportion distributions

Figure 11 Hypothetical dependent and family migration proportion distributions according to ages of leaving home and dependency levels.

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