Rates of geographical mobility vary greatly, and fairly predictably, across the life course. Our analysis of special county-to-county migration tabulations of Census 2000 data discloses that, when flows are disaggregated by age, radically different patterns of net population redistribution are taking place upward and downward within the national urban hierarchy. The movements at the late-career, empty-nester, and retirement stage are the most “demographically effective” or unidirectional. The elderly fleeing large metropolitan areas have been congregating in micropolitan and rural counties with special climatic and other natural amenities. The opposite net flow is found for younger adults, who have been flocking into megametropolitan conurbations. At the midcareer stage, the net movement is from larger to medium metropolitan areas. We detail the age articulation of county-to-county migration flows with novel graphical portrayals and statistical measures. We give some thoughts on the relationship between intergenerational dependency and migration trends, and we speculate about whether the current patterns of age-articulated movement up and down the urban hierarchy will continue as the baby boom retires and the echo cohorts come of age. **Key Words:** aging, life course, migration, United States, urban hierarchy.

地理流动性的速率差别很大并且在其整个生命过程中难以预测。我们对2000年人口普查数据中县到县的迁移进行了研究，研究发现当地理流动的流量以年龄分类时，正在发生的向上和向下的净人口再分配在全国范围内的城市等级上有着根本不同的模式。这种再分配的运动在职业后期生涯，空巢，退休阶段是最“人口统计上有效”或单向的。年长的人逃离大都市地区并在具备特殊的气候和其他自然设施的小都市和农村县聚集。与此相反的净流量是蜂拥到超级大都市的年轻人。在职业的中期阶段，净迁移是从大到中等的大都市区。利用新型的图形描绘和统计措施，我们详细阐明了县到县移民流动中年龄的影响作用。我们对世代之间的依赖性和移民趋势的关系提出了一些想法，我们也猜测了目前年龄导向的向上和向下的城市等级的运动模式是否因为婴儿潮世代的退休和回声潮时代的来临将继续下去。关键词：老龄化，生命历程，移民，美国，城市等级。

Con notable predictabilidad, en el curso de la vida las tasas de movilidad geográfica varían mucho. Nuestro análisis de las tabulaciones de migración del Censo del 2000, condado a condado, revela que cuando los flujos son desagregados por edad, aparecen patrones netos de redistribución de la población radicalmente diferentes de arriba a abajo en la jerarquía urbana nacional. Los movimientos que ocurren en las etapas de carrera avanzada, hogar sin hijos y jubilación son los más “efectivos demográficamente,” o unidireccionales. Los viejos que huyen de las áreas metropolitanas grandes se van congregando en condados micropolitanos y rurales dotados de condiciones climáticas especiales y otros atractivos naturales. El flujo opuesto lo generan adultos jóvenes, quienes propenden por una ubicación en las conurbaciones megametropolitanas. En la etapa de mediados de carrera el movimiento neto es desde las áreas metropolitanas mayores hacia las intermedias. Detallamos la articulación de la edad en los flujos migratorios de condado a condado mediante novedosos recursos gráficos y medidas estadísticas. También avanzamos algunas ideas sobre la relación entre dependencia intergeneracional y tendencias migratorias, y especulamos sobre la posibilidad de que continúen los actuales patrones de movimiento articulados por edad, arriba y abajo en la jerarquía urbana, mientras el “boom” de los bebés se retrae y llegan a su mayoría de edad las cohortes eco. **Palabras clave:** envejeciendo, curso de la vida, migración, Estados Unidos, jerarquía urbana.
Much of the recent internal redistribution of population in the United States results from migration taking place down the national urban hierarchy (Plane, Henrie, and Perry 2005). As people age through the life course, however, they move for very different reasons, and their destination choices reflect radically different considerations and preferences (Warnes 1992; Whisler et al. 2008). In this article we detail how the relative propensities to migrate up or down the urban hierarchy vary systematically with age.

In terms of where people characteristically move during each of the distinct stages of life, well-developed urban geographic and sociological theory exists at the intrurban scale. A seminal concept was the urbanization construct of social area analysis (Shevky and Williams 1949; Bell 1953; Shevky and Bell 1955), which became the stage-of-life-cycle or family-status dimension examined in a long stream of urban ecology studies. Underlying and giving rise to the stage-of-life-cycle patterning of North American metropolitan areas is a characteristic outward–inward–outward–inward rhythm of central-city-to-suburb and suburb-to-central-city urban movement reflective of the changing housing and other locational considerations of households as their members age (Rossi 1955; McCarthy 1976; Clark and Onaka 1983; Varady 1989).

American children in recent decades are mostly being raised in suburban homes. When they become young adults, they gravitate to multifamily rental housing, which is typically more centrally located. The “call of the suburbs” is heard, however, when they themselves desire to purchase a home with greater space to raise the next generation of children. At the empty-nester stage, however, the child-centered focus of suburban living is no longer so attractive, and, once again, smaller, more accessibly located, in-city housing options are explored.

Our analysis of the special county-to-county migration tabulations of Census 2000 data (U.S. Census Bureau 2003) leads us to propose an analogous typology for the longer distance spatial patterns of intermetropolitan and interregional movement. Our variable of primary interest is population size: the size of the settlements that people leave and the size of those to which they move at various key transition stages of the life course.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Mobility</th>
<th>Intergenerationally tied moves?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infancy, childhood</td>
<td>High</td>
<td>Yes</td>
</tr>
<tr>
<td>Teenage, high school</td>
<td>Low</td>
<td>Yes</td>
</tr>
<tr>
<td>Parental-home-leaving; college, military service</td>
<td>High</td>
<td>Yes</td>
</tr>
<tr>
<td>Young, single adulthood</td>
<td>Very high</td>
<td>No</td>
</tr>
<tr>
<td>Family formation</td>
<td>Low</td>
<td>Yes</td>
</tr>
<tr>
<td>Midcareer, child-rearing</td>
<td>High</td>
<td>Yes</td>
</tr>
<tr>
<td>Empty-nesting</td>
<td>Increases</td>
<td>No</td>
</tr>
<tr>
<td>Retirement</td>
<td>Heightened</td>
<td>No</td>
</tr>
<tr>
<td>Golden age, geriatric</td>
<td>Return movement</td>
<td>Yes</td>
</tr>
</tbody>
</table>

To conceptualize the interconnectedness of aging with preferred migration destination-size choices, we begin by considering when in their lives people characteristically move. The “age schedule” of migration—which shows the average propensities of people to move at different ages—constitutes a strong empirical regularity (Rogers, Racquillet, and Castro 1978). The likelihood that an individual will change residences varies dramatically and in broadly predictable ways across the major stages of life.

As summarized in Table 1, in the United States, infants and elementary-school-age children are highly mobile, with their moves tied to those of their young-adult, “on-the-move” parents. Teenagers, by contrast, are much less frequently required to change place of residence. Not only is it considered undesirable to disrupt their high school experiences, but they typically live with less mobile, midcareer, middle-aged adults.

Peak movement rates occur in the young adult years. These are the years of departing the childhood home, moving to pursue higher education, joining the military, or taking the first truly gainful employment. Following one of these types of initial “adult” moves, those in their early twenties often undergo a rapid sequence of changes in residence. Many young adults complete or leave college, and others are being moved from base to base, deployed abroad, and ultimately discharged from the military. Young adults typically make one or more early-career job changes and alter their housing and household arrangements—switching partners, entering into first marriages, and perhaps filing for first divorces. Bramley, Champion,
and Fisher (2006) highlight, in the British context, the crucial importance of the linkages between migration and household formation. For our purposes, it is of key significance that the young adult years prior to household formation constitute the first of the two periods in the life course when movement tends not to be intergenerationally tied.

Following the stage of multiple moves characteristic of young adulthood, the lengthy next stage is typified by “cumulative inertia.” As adults pass through their thirties and forties, mobility progressively wanes while people settle into careers, conceive and rear children, buy houses, and pay mortgages. Ultimately, however, revived impetus for movement occurs when the transition into empty-nester status takes place. It has become rather common in the United States for those in their fifties and early sixties to contemplate later career job changes made in conjunction with later-in-life migration.

As pointed out in the seminal work on elderly movement by Litwak and Longino (1987), increases in life expectancy and the concomitant extended period of years during which people enjoy good health have meant that from a mobility standpoint the later years of life can be divided into distinctive developmental stages. Three phases of older age appear to be relevant. Active “young elderly” can now count on perhaps two decades during which they may zealously pursue their later-in-life passions. They might choose to continue working, on at least a part-time basis. This, like the early adult stage, is a phase in life when intergenerational ties no longer bind so strongly. At this time, when people are freed to move about the country, long-distance exploration and migration occur. When infirmities begin to set in, or when a spouse or partner dies, “older elderly” commonly move again. Later still, when health-care needs become even more critical, a third move might be made into assisted-care or nursing-home facilities.

The passage through successive stages of life results not only in predictable age-specific propensities to move but also shifting likelihoods of residing in larger or smaller settlements. Figure 1 shows the average population of origin and destination metropolitan areas, micropolitan areas, or nonmetropolitan counties for migrants from 1995 to 2000 broken down by age at time of movement. (For a description of how these federal government Core-Based Statistical Area units are delineated, see U.S. Census Bureau 2008.) Note that because our Census 2000 data are based on the long-form (sample survey) question about place of residence...
five years earlier, a respondent’s actual age at the time the migration move took place could have been as much as five years younger than that person’s age on the census date (1 April 2000). Thus, migrants enumerated as twenty-five to twenty-nine years old were anywhere from twenty to twenty-nine years old at the time they moved. Throughout the article, we employ overlapping ten-year age groups to most faithfully bracket age at time of movement.

Using age-aggregate annual data for the late 1990s, Plane, Henrie, and Perry (2005) showed that the overall direction of net domestic migration in the United States has been down the urban hierarchy. (See also some recent British evidence with respect to a “counter-urbanization cascade” in Champion 2005.) As depicted in Figure 1, the special tabulation data for 1995 to 2000 disclose that among the most noteworthy age spans for migration up and down the urban hierarchy are those periods in life when residential mobility is least likely to be intergenerationally tied: both the young adult and empty-nester stages. The ages for which average destination population is the smallest relative to average origin population (i.e., when movement down the urban hierarchy is strongest) are from fifty-five to sixty-four. This is the age span when empty-nesting has been completed and early retirement is taken.

The early adult stages of life are the ones in which the largest proportions of migrants move upward rather than downward within the national urban hierarchy. For the fifteen- to twenty-four-year-old age group, destination areas are larger, on average, than origin areas. We suspect that a large portion of the fifteen- to twenty-four-year-olds moving up the hierarchy are people leaving home in the later portion of this age range because high-school-age children fifteen to eighteen years of age (whose moves are likely still tied to those of their parents) have extremely low probabilities of migrating. For the group from twenty to twenty-nine years old, the average destination population is only somewhat larger than the average origin. There are large and opposing tides of movement among this group, with many moving into the largest metropolitan areas at the same time that many others are leaving.

At the stages of life when movement is more likely to involve ties to family, migrants’ decisions also involve considerations of the settlement sizes most desirable for the tied generation. Thus, during the years of family formation, the net direction of movement is away from the largest metro areas—where people may have moved as young, footloose singles—to medium-sized metro areas where it is more affordable and easier to raise children. Also, notice the steep rise in the average destination size for age groups sixty-five to seventy-four through seventy-five to eighty-four. At advanced ages there is substantial return movement up the settlement hierarchy to places in the medium size classes, perhaps those same metropolitan areas where golden-agers’ adult children may have settled to rear the next generation.

A CBSA Population Size Hierarchy

To explore in detail the variation in directions and propensities of people to move between different settlement size classes, we tabulated the age-disaggregated Census 2000 county-to-county migration flows according to the recently adopted system of Core-Based Statistical Areas (CBSAs). As promulgated by the U.S. Office of Management and Budget (OMB) in 2003, this is the federal government’s latest classification of counties into functionally based urban-centered statistical areas. As explained in greater detail in Frey et al. (2004), it supplants the set of older metropolitan definitions in place at the time Census 2000 data were tabulated and issued.

Similar to earlier criteria, urbanized area (densely settled) cores with a population of 50,000 or more are required to qualify a county (or a set of contiguous counties linked together by significant commuting interchange) for metropolitan statistical area status. A significant new feature is the designation of micropolitan statistical areas. A micropolitan area consists of a county (or, in a few cases, groups of contiguous counties) that includes a densely settled urban cluster core (or cores) with populations of at least 10,000 but less than 50,000. The growth and development trends of micropolitan areas as distinct from other nonmetropolitan counties have generated considerable recent attention (Vias, Mulligan, and Molin 2002; Mulligan and Vias 2006). Each of the counties not qualifying for inclusion in
either a metropolitan or a micropolitan statistical area is treated in our study as a separate, non-CBSA unit.

In addition to the distinctions between metropolitan, micropolitan, and non-CBSA units, we further classified metropolitan statistical areas into five population size categories. Unlike under previous OMB rules, no official size classification is now specified for metropolitan areas. Our size classes—A, AA, AAA, major, and mega—have the size ranges listed in Table 2. These are the same definitions we employed in previous work (Plane, Henrie, and Perry 2005) and were derived from research carried out under contract in the Population Distribution Branch at the U.S. Census Bureau. In the case of multicounty metropolitan or micropolitan areas, we aggregated the county-to-county migration flows for the constituent counties; thus, intra-CBSA migrants (i.e., people moving between counties within the same CBSA) were excluded from our analysis. Figure 2 is a map showing the seven-level CBSA hierarchy.

### Table 2  The seven-level Core-Based Statistical Area (CBSA) population size hierarchy

<table>
<thead>
<tr>
<th>Level</th>
<th>Population size range</th>
<th>Number of units</th>
<th>Total (2000) population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mega metropolitan</td>
<td>4,000,000 or more</td>
<td>12</td>
<td>82,370,412</td>
</tr>
<tr>
<td>Major metropolitan</td>
<td>1,000,000 to 3,999,999</td>
<td>37</td>
<td>66,853,655</td>
</tr>
<tr>
<td>AAA metropolitan</td>
<td>500,000 to 999,999</td>
<td>39</td>
<td>26,992,438</td>
</tr>
<tr>
<td>AA metropolitan</td>
<td>250,000 to 499,999</td>
<td>79</td>
<td>28,521,721</td>
</tr>
<tr>
<td>A metropolitan</td>
<td>50,000 to 249,999</td>
<td>195</td>
<td>27,841,714</td>
</tr>
<tr>
<td>Micropolitan</td>
<td>Urban cluster of 10,000 to 49,999</td>
<td>560</td>
<td>28,955,051</td>
</tr>
<tr>
<td>Non-CBSA county</td>
<td>No urban cluster ≥ 10,000</td>
<td>1,378</td>
<td>19,886,915</td>
</tr>
</tbody>
</table>

Figure 2  Hierarchy of Core-Based Statistical Areas (CBSAs) used in the study. Non-CBSA counties are shown in white.
Net Flows Up and Down the CBSA Hierarchy

We cross-tabulated county-to-county flows of migrants in each of the seventeen age groups by the population-size levels of origin and destination CBSAs. We then calculated the net exchange of migrants between each pair of levels of the hierarchy. For each age group, there are twenty-one such net exchanges.

We next graphed the age-differing patterns of upward and downward movements in the CBSA hierarchy using diagrams with the appearance of multitiered wedding cakes (or stacks of champagne glasses). Arrowheads indicate directionality, and the widths of the shafts represent relative magnitudes of net movement.

For these visual portrayals, we standardized the net exchanges of migrants in each age group between the seven hierarchy levels in two different ways. First, we standardized the volumes of net movement between pairs of levels using the sum of all twenty-one net interlevel exchanges. On graphs based on this measure, the width of each arrow represents the proportionate share of the total amount of age-specific net population exchange taking place between pairs of areas classified at different hierarchical levels of the U.S. settlement system. Thus, in principle, the widths of all arrows sum to 100 percent. However, to use clearly visible line widths and to avoid giving a misimpression of directionality in cases where net migration was negligible, we omitted all arrows for which the difference between upward and downward movers represents less than half of 1 percent of total interlevel net exchange.

Note that the relative proportion of net migration taking place between specific hierarchy levels is potentially influenced by the relative share of the national population accounted for by each level. This is because the absolute volumes of net exchange have the possibility of being larger between more populous levels than between those that include a smaller fraction of the national population. As can be seen in Table 2, the mega and major categories account for significantly larger shares of the total population than do each of the five smaller categories.

Second, we calculated demographic effectiveness values (also called demographic efficiencies) of each net exchange. Unlike the percentage relative proportions measure, demographic effectiveness is purely a function of the directionality of movement:

$$E_{ij} = \frac{100(N_{ija} / T_{ija})}{100(M_{ija} - M_{jia})/(M_{ija} + M_{jia})}$$

Here $N_{ija}$ is the net exchange of age-group $a$ migrants between a lower level of the CBSA hierarchy, $i$, and a higher level, $j$, found as the difference between the gross upward flow of such migrants, $M_{ija}$, and their gross downward flow, $M_{jia}$. $T_{ija}$ is the total exchange of age-group $a$ migrants, found as the sum of the gross upward and downward flows. The upper limit of demographic effectiveness, 100 percent, would result if all migrants were moving either up or down the hierarchy with no one going in the opposite direction. A value of 0 percent would be obtained if a precisely equal number of migrants were moving upward as were moving downward. We omitted as indeterminately upward or downward any arrow that represents demographic effectiveness of less than 0.5 percent.

Figure 3 presents an example of the first of our two perspectives on net movement up and down the CBSA hierarchy: the relative proportions measure, in this case calculated for migrants fifteen to twenty-four years of age. The majority of the movement in this age range is related to leaving the parental home, including large numbers of persons in their late teens going off to college or entering military service. Many of these moves go upward within the hierarchy, with young people deserting childhood hometowns in rural and micropolitan counties and flocking to metropolitan areas. There are eleven significant (greater than 0.5 percent) upward and seven significant downward net exchanges for this age group. Although the majority of arrows point upward, all except one of the net migration exchanges for the top settlement class—the mega metros—point downward. Note the wide arrows representing net movement from mega metros to major metros and from mega metros to A metros. The smallest, single-A metropolitan category (population range 50,000–249,999) includes many college towns and communities with military bases and prisons. Much recruitment for the all-volunteer armed forces has
focused on youth in the large cities; a preponderance of crimes are committed by youths and young adults, and there is a well-known, strong direct relationship between crime rates and size of metropolitan area (see, e.g., Short 1984, 88, Table 5.2).

Figure 4 was constructed based on our second perspective on upward and downward movement. These graphs show the percentage demographic effectiveness of each of the various net exchanges. Panel A is for the same age group, fifteen- to twenty-four-year-olds, whose volumes of net exchange were illustrated in Figure 3. Note that their upward net exchanges from non-CBSA counties—although small in absolute magnitude (in part because of the already depleted rural population base)—are clearly the most unidirectional: Substantial proportions of those in this age group move out of rural counties, whereas extremely few in this age group move in. The most demographically effective parental-home-leaving flows out of rural counties are those into the smallest, A-level metro areas.

Figure 4B illustrates that upward movement becomes even more the norm during the ages of twenty to twenty-nine. Many young adults are now remaining single and deferring child-bearing. This stage of life from the late teens through the twenties has recently been termed emerging adulthood (Arnett 2004). For “twenty-something” emerging adults, all the net exchange arrows, except one, point up the hierarchy. The most effective exchanges are those for movement into the mega (more than 4 million) and major (1 to 4 million) metropolitan areas. Especially pronounced are the flows upward from the A-level metro areas, which include high proportions of college and military leavers. These exchanges represent, in part, a reversal of the younger (fifteen- to twenty-four-year-old age group) flows of the college-bound and military enlistees. Not all college leavers and military discharges return to the areas they earlier left, however. Of late, the young, the single, and the college educated have been increasingly flocking into the nation’s largest cities from all settlement size classes (Franklin 2003). Those who moved out of rural counties at the time of leaving their parents’ homes to go first to small, A-level metros are engaging in onward step migration: successive moves progressing up the tiers of the urban hierarchy.

Once in the biggest cities, emerging-adult sojourns may be of short duration. Demographically, the nation’s global cities now play
The Patterns and Repercussions of Age-Articulated Migration

Figure 4  Demographic effectiveness percentages for age-specific net migration exchanges between Core-Based Statistical Area hierarchy levels for persons: (A) fifteen to twenty-four years of age at time of migration; (B) twenty to twenty-nine years of age; (C) twenty-five to thirty-four years of age; (D) forty to forty-nine years of age; (E) fifty-five to sixty-four years of age; and (F) eighty years of age and older. Source: Calculated by authors from special county-to-county migration tabulations, U.S. Census Bureau (2003).

pivotal roles (Richardson et al. 2006). They are not only the main entry points of international immigration, they are also the incubators for a very large portion of the nation’s natural increase. However, as shown in Figure 4C, by ages twenty-five- to thirty-four, when family formation and housing costs become more significant in the locus of residential choice factors, five of the six net exchanges for the mega metropolitan areas point in the direction of the smaller settlement size classes. The exception is for flows into the mega category from the smallest (A-level) metropolitan areas; small metros continue to send more migrants in the age range of twenty-five to thirty-four up to the biggest urban centers. Note, however, that these streams are far less unidirectional than those for twenty- to twenty-nine-year-olds. In fact, the demographic effectiveness of all the net exchanges for the twenty-five- to thirty-four age group is low relative to other stages of the life course.

The importance of the movements of twenty-five- to thirty-four-year-olds should not be underestimated, however. Despite the moderate demographic effectiveness of these migration streams, at this early career and family formation stage there are very large volumes of migrants moving in both directions between the two largest metropolitan categories. As Figure 5 discloses, the relative proportion of the net movement—from the ten mega metros to the next tier of major metros—is substantial indeed. An earlier study of age-aggregated migration (Plane, Henrie, and Perry 2005) found that 36 percent of the 1999 net exchange between all the levels of our CBSA hierarchy was accounted for by the streams of net movement downward from mega to major metros. The rate of such movement peaks during the
post–emerging-adult years when longer term careers and family formation become paramount factors driving locational decision-making. We suspect that the costs and equity considerations of home ownership play a critical role (Clark and Withers 1999; Withers and Clark 2006; Bitter and Plane 2007).

The age span between twenty-five and thirty-four is the one in which net movement out of mega metropolitan areas begins in earnest. As shown in Figure 4D, by the time people are in their forties, most all the net movement within the CBSA hierarchy is downward—and more strongly unidirectional. Downward net exchanges with significant demographic effectiveness include all six of those out of mega metros and four of the five possible downward net streams out of major metros. Furthermore, all four of the net exchanges of the AAA metros with lower-tier size classes point in the direction of the smaller settlements.

Figure 4E vividly portrays the extreme demographic effectiveness of the downward movements of the empty-nester and early retiree age group (fifty-five to sixty-four). Conventional wisdom might suggest that the traditional retirement age of sixty-five should be the peak age for the population gains of amenity-favored micropolitan and rural counties, but much of the influx actually occurs at a substantially earlier age.

Our perspective is that the trigger for reevaluation of where to live is empty-nesting, perhaps even more so than pending retirement. Like the other non-intergenerationally tied stage of life at the beginning of the working years, the waning years of labor force participation are a time to strike out and explore new and different living and job environments. The size preferences of healthy and footloose young elderly are totally opposite to those at the earlier young adult footloose stage. For many, a transition takes place in terms of the amount of time that it becomes feasible to spend at a second or vacation home. After children have left home, no longer are the compasses that direct seasonal movements affected by the magnets that once held school calendars to refrigerators in metro suburban homes.

The final panel of Figure 4 shows the net direction of movement of the “golden-aged”: the open-ended, eighty-years-and-over age group, the most elderly one for which we have data. There are basically two sets of arrows here:
upward ones from the bottom of the size hierarchy and downward ones from the top. This age group moves, on balance, toward the middle tier of the metropolitan spectrum. Note that the most demographically effective net exchanges, both upward from rural, non-CBSA counties and downward from the mega metros—are into the A-level and, especially, AA-level metros. The AA size category consists of areas with populations of at least 250,000 but less than half a million. These are places sizable enough to have hospitals with a range of geriatric specialty care.

Note, too, that medium-sized metropolitan areas are among the most favored locations for people at the midcareer, child-rearing stage, and thus perhaps where many golden-agers’ adult children can be found. Because male spouses typically pass away first, a significant fraction of movement at this stage of life is by single or widowed women. Women may leave the retirement community or what was once the family “vacation” home—which might be in a remote rural or micropolitan location—to move to the same city where one of her adult children has settled.

A comparison of all six panels of Figure 4 suggests just how strongly stage of life affects the settlement size predilections of migrants. Academic research that attempts to model age-aggregate migration—the norm among regional econometric modelers (Greenwood 1975, 1985; Plane and Bitter 1997; Plane 2000)—seems to us to miss the reality that radically different factors shape migration decisions at different ages. Such decisions are situated within a variety of milieux reflective of the changing circumstances attendant to aging. The transitions between various stage-of-life contexts—especially those when people become intergenerationally tied or untied—are powerful generators of the massive tides of subpopulations flowing up and down the national urban hierarchy.

**Age-Specific Migration Destination Odds**

To more directly illustrate how preferences shift across the life course, and how people situated at one level of our CBSA hierarchy differentially choose to migrate to areas in other size classes, we propose the following measure:

\[ O_{a|j} = \frac{P_{a|j}}{P_{a|i}} \]

Here \( O_{a|j} \) represents the odds of a member of age group \( a \) living in an area at level \( i \) selecting a destination at level \( j \). These odds are found as the ratio of two probabilities: the probability of a migrating member of age group \( a \) originating in an area at hierarchy level \( i \) selecting a destination at level \( j \), divided by the probability of a migrating resident of any age originating at level \( i \) choosing a destination at level \( j \).

The age group probability is calculated as:

\[ P_{a|j} = \frac{M_{a|j}}{\sum_h M_{a|h}} \]

whereas the all-age probability is

\[ P_{a|i} = \frac{\sum_a M_{a|i}}{\sum_a \sum_h M_{a|h}} \]

Odds above 1.0 indicate greater relative attractiveness of settlements at hierarchy level \( j \) to persons in age group \( a \) than to all people who are living in areas classified at level \( i \). Odds below 1.0 indicate relative unattractiveness of level \( j \) destinations to those in age group \( a \).

Figure 6 provides a novel visual portrayal of two complete sets of destination odds across all age groups. The diagrams are graphically similar to the “heat maps” proposed by Kalogirou (2005) to focus attention on key migrant groups (in his case, to highlight temporal trends in gross and net migration rates for specific age and gender categories). Figure 6A displays age-specific destination odds for migrants who lived in 1995 in mega metropolitan areas; Figure 6B is for those who lived in 1995 in non-CBSA counties. The outlined box highlights the level of origin for all the migrants represented in the matrix, whereas the various rows correspond to the hierarchical levels of their destinations; that is, their areas of residence in 2000. For example, the bottom row of the Figure 6A matrix shows the age-specific relative odds of mega metropolitan area residents choosing to migrate to non-CBSA-county destinations. The top row contains the relative odds of migrating from one mega metro to a different mega metro.

In Figure 6, odds greater than 1.000 are shaded in red tones, whereas those less than
Figure 6  Age-specific 1995–2000 migration destination odds for migrants originating in (A) mega metropolitan areas; (B) non–Core-Based Statistical Area (CBSA) counties.

1.000 are shown in blue. The intensities of coloration indicate the magnitudes by which the odds diverge from the age-aggregate propensity to migrate to destinations of that population level. Note that because these are all relative odds, within any specific age group at least one of the probabilities must be below 1.000 and at least one above 1.000.

Among the most salient odds listed in Figure 6 are those representing the opposing proclivities of persons in the two major footloose stages of life. Note the high 1.354 value for twenty- to twenty-nine-year-olds in the top row of Figure 6A. This indicates that young adults in their twenties are substantially more likely than are people of all ages to move from one mega metro to another 4-million-plus urban conurbation. Equally, note the cluster of very high values for movement by the (possible empty-nesting) young elderly all the way down the CBSA hierarchy into micropolitan and non-CBSA counties. In fact, the 2.100 odds for those between fifty-five and sixty-four migrating from mega metros to non-CBSA counties are the highest that we calculated for any age group and for any pairing of origin and destination levels.

The high relative odds of young adults migrating between mega metros and the high odds of later stage adults fleeing the big cities for rural and small-town locales are offset by some very low odds for the opposite choices. Compared to migrants of any age, twenty- to twenty-nine-year-olds have only a 0.683 probability of moving all the way down the hierarchy; those fifty-five to sixty-four have only a 0.644
probability of migrating from one mega metro to another mega metro.

Another noteworthy aspect of the odds shown in Figure 6A are the high probabilities of fifteen- to twenty-four-year-olds moving down from mega metros to the smallest (A-level) metros. As previously mentioned, many American colleges and universities, as well as military bases and prisons, are located in such metropolitan areas. The bottom panel of Figure 6, for migrants originating in non-CBSA counties, also shows significant propensities for fifteen- to twenty-four-year-olds to move upward to A-level metropolitan areas. The 1.282 value in this cell is the highest of all the age-specific destination odds shown in this matrix. The second highest value is for twenty- to twenty-nine-year-olds moving all the way up the hierarchy to reside in mega metropolitan areas.

Space constraints prevent us from including the similarly constructed matrices of destination odds for migrants originating at the five other levels of the hierarchy. Table 3, however, reports the extreme odds for each age group, or the pairing of origin and destination level for which the highest and lowest odds are found. Boldface type highlights the odds for movements up the urban hierarchy; italics highlight those representing downward flows. Migration between areas at the same level of the hierarchy is shown in regular font.

Note that, with the exception of twenty- to twenty-nine-year-olds moving up from A-level to mega metropolitan areas, all the maximum odds (i.e., those indicating especially heightened movement probabilities for a particular age group) correspond to downward flows or flows at the same level of the hierarchy. There is a much more even split between upward and downward flows evidenced by the minimum odds for each age group. The three youngest age groups are least likely to migrate upward from A metros to mega metros. This would be counter to the strong direction of flow downward by their parents. By contrast, for those in the childhood-home-leaving and early working years, the least likely destination choices are for people originating in mega metros to move completely down the hierarchy. Especially low odds are found for the empty-nester and retiree age groups (fifty-five to sixty-four and sixty to sixty-nine) to move upward from major to mega metropolitan areas.

### Migration Patterns Later in Life

With the advance edge of the first cohorts of the baby-boom generation now entering

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Extreme destination-specific odds for each age group of migrants</th>
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<tr>
<td><strong>Age at move</strong></td>
<td><strong>Flows with lowest destination odds</strong></td>
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<tr>
<td></td>
<td>From</td>
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<tr>
<td>0–9</td>
<td>A</td>
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<tr>
<td>5–14</td>
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<tr>
<td>10–19</td>
<td>Mega</td>
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<td>15–24</td>
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<td>20–29</td>
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<td>40–49</td>
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<td>45–54</td>
<td>A</td>
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<td>70–79</td>
<td>Major</td>
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<tr>
<td>75–84</td>
<td>AA</td>
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<tr>
<td>80 and over</td>
<td>Micro</td>
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</table>

Notes: CBSA = Core-Based Statistical Area. Boldface font for the origin and destination levels indicates flows upward in the CBSA hierarchy; italics highlight downward flows; flows among areas at the same level are shown in regular font.
their sixties, much of the recent attention paid to elderly migration has focused on the movements of empty-nesters and early retirees (Nelson, Nicholson, and Stege 2004; Nelson 2005). The movement patterns of people of this age—members of the previous (sometimes termed greatest) generation—have fueled a renaissance of many small communities. The 1990s saw renewed vitality among settlements in the micropolitan and non-CBSA categories of our hierarchy.

Although movement patterns of empty-nesters and retirees are extremely noteworthy, significant numbers of people are experiencing life spans that extend well beyond age eighty. Perhaps even more significantly, there has been a remarkable lengthening of the range of years past the primary working ages when people can expect to enjoy good health and active lifestyles. Just as we know that a sequence of moves often characterizes the onset of adulthood, so, too, we can expect to find multiple moves being made by those in the later years of the life course.

The seminal work of Litwak and Longino (1987) on a developmental perspective on later-life migration has spawned a substantial body of research on how residential relocation is tied to the state of health of older migrants. The theory suggests a sequence of three stages of elderly movement. Much geographic research has focused on the younger elderly, who have been partaking of the opportunity to make relatively footloose migration decisions at their stage of life, when retirement income is at its highest and couples are both still living. According to the Litwak and Longino perspective, moderate levels of disability tend to be the motivating triggers for a second wave of moves later in life. These are typified by older migrants moving to be nearer (if not to move in with) their adult children. The third and final move late in life may be into an institutional setting, when health concerns become paramount.

One interesting finding emerging from our detailed study of migration into and out of micropolitan and non-CBSA counties from 1995 to 2000 is that their overall net migration rates and the overall demographic effectiveness of migration is affected by the proximity of such counties’ geographic centroids to the edges of the urbanized area cores of the higher CBSA size classes. Interestingly, proximity to the boundaries of the urbanized areas of the largest mega and major metro areas does not appear to matter. Being closer to AAA metro cores actually depresses migration into micropolitan and rural counties. What does seem to make a statistically significant difference in enhancing the rate of in-migration is proximity to AA-level urbanized areas (Plane, Henrie, and Jurjevich 2005, an unpublished conference paper, contains more details on these results).

Many Americans desire to “have it both ways”: to live in a small-town environment but to be situated within a couple hours’ drive of a moderately sized metropolitan area. AA metros (which have populations of 250,000 to 499,000) are large enough to offer air-travel access, higher order shopping goods, a range of cultural opportunities, and major hospitals. All these are attributes of concern to young elderly migrants. At the beginning of the post-child-rearing years, families may continue to shuttle back and forth to their vacation or retirement homes. For this, a regional airport within, say, a hundred-mile radius is a major plus. Later, they might make that former second house their principal residence; at this point the other attractions of the nearby medium metro become extremely salient. Eventually, as aging continues, a move into that metropolitan area might be effectuated.

The term retirement migration is frequently yet improperly used to describe all types of movement later in life. A move early in the empty-nester years does not necessarily mean that one or both spouses have exited the workforce. Different types of elderly migration streams have very different labor market and other economic implications for the destination communities (Glavac, Vias, and Mulligan 1998; Haas et al. 2006).

The other point we would emphasize is that the demographer’s traditional three-phases-of-life conceptualization of dependency—and the use of elderly and youth dependency ratios—is outdated for studying aging issues in highly developed countries. A four-phase model is perhaps preferable for understanding the residential decisions of both the young empty-nester elderly and the golden aged. A logical assumption regarding second later-in-life moves is that these should be influenced by the desire to be closer to adult children; thus, counterstreams of movement should be found back to the places retirees left after raising their
families (see, e.g., the consideration of person and place ties in Stoller and Longino 2001). As our research suggests, however, many adult children may themselves have moved after leaving the childhood home and moved perhaps several times up and down the urban hierarchy. The life courses and residential histories of parents and their adult children thus entwine in ever more complex ways (Warnes 1986). In terms of the geography of later-in-life migration it is important to ask two questions: (1) At what stage of life are adult children when their parents are ready to make a second elderly move? (2) What are the implications of parental locations for the younger generation’s residential choices? An ever-expanding literature has developed on the changing nature of proximity and interactions between the elderly and their adult children (Rogers 1992; Rogerson, Weng, and Lin 1993; Rogerson, Burr, and Lin 1997; van der Meer 2006).

Rogerson and Kim (2005) gave careful consideration to the concept of a putative “sandwich” generation. In particular, they focused on the contention that the baby-boom generation, because of their delayed childbearing, would have to simultaneously provide care both for their echo-generation children and their aging, greatest generation parents. In fact, however, by the time baby-boomers’ parents become willing to accept care offered by an adult child, that adult child’s own children will quite likely have left home. The adult child might even have already made a young-elderly move downward within the urban hierarchy. Rogerson and Kim also point out that longer life spans may greatly lengthen the time span during which elderly care is needed. Because smaller numbers of people now die early, care of aging parents will become of concern to adults who, for the most part, are themselves in the empty-nester stage of life. We believe this has significant implications for the geography of elderly migration.

Our principal focus has been on stage of life and family ties as predictors of migration. Migration itself, however, has major repercussions for the nature of family ties. One of the implications of migrants seeking out very different settlement sizes at the various stages of life is that the spatial separation between generations may continue to increase. We have argued that the spatial separation of parents and their adult children should become of heightened concern as the baby boomers age. Increasingly, as life spans are extended, it is the location of those adult children at the empty-nester and early retirement stage of the life course, rather than during the midcareer and child-rearing years, that is of critical concern for caring for the oldest elderly.

**Discussion and Conclusions**

We have argued that the joint consideration of stage of life and settlement size provides a very powerful filter for understanding the patterns of domestic migration now extant up and down the urban hierarchy within the United States. We have focused on those critical points in the life course when ties to other generations of family bind or draw people back to places, as well as on those two stages when migrants are most likely to strike out on their own.

Aging of populations is one of the few things that social scientists can predict with a modicum of certainty. Major effects on population redistribution within the United States were generated when the baby boomers came of age and passed through their young adult peak mobility years (Plane and Rogerson 1991; Plane 1992, 1993; Pandit 1997, 2000). This demographic effect contributed strongly to the rise of the Sun Belt and the decline of the Frost Belt, as well as to the nonmetropolitan turnaround
or rural renaissance of the 1970s. Do pending shifts in age structure now portend similarly major impacts on regional fortunes?

Two new and significant demographic events have recently gotten underway: The baby boom—poised to retire—has been empty-nesting, and the almost equally large echo generation is coming of age. Over the next two decades, both groups will progress through the two age spans of non-intergenerationally tied migration: the footloose emerging adult and young elderly periods of life that play such major roles in explicating the current patterns of migration up and down the urban hierarchy.

Based on shifting age structure, one speculative conclusion might be that the trends revealed in our analyses are harbingers of what is still to come. We might expect to witness an intensification of these patterns: more emerging adults moving up the hierarchy and more young elderly moving down it. Although our focus in this article has been on regularities associated with the life course, are there also cohort effects? As baby boomers, baby busters, and the baby-boom and baby-bust echo generations age, will they follow in the footsteps of their immediately prior generations? At the various stages of life will future cohorts be drawn to the same-sized destinations that attracted their parents?

Although our focus has been on periods in life when intergenerational ties bind less strongly, we believe that place ties, as well as familial ties, remain significant. Our analysis has disclosed substantial circumstantial evidence that return migration characterizes various stages of the life course. After decades of relentless homogenization of American mass culture, and with the seemingly inexorable standardization of our landscapes of built form, are place ties perhaps now more generic than they once were? We mean this: Are people at certain stages of life likely to seek out environments akin to—albeit not the specific locales—experienced at earlier periods of their lives?

The research of Cuba and Hummon (1993) challenges the commonly accepted assumption that geographic mobility erodes people’s identity with place. Rather, they advance the view that migration at different stages of life is associated with different types of place affiliation: “Where younger migrants most often base their identity on affiliations of friendship, family and emotional self-attributes, older migrants do so in terms of dwelling and prior experience with place” (Cuba and Hummon 1993, 547). Later in life, the place ties of most significance to Americans might not be those that would impel them to return to their childhood hometown or even to the area where they raised their children. Rather, they might be ties that are nurtured as a result of vacation travel, maintaining a second home, or engaging in cyclical patterns of movement throughout the life course (see, e.g., McHugh, Hogan, and Happel 1995).

Our focus in this research has been on settlement size. To what extent are preferences for particular settlement sizes direct drivers of migration decision-making? It seems quite clear that in recent decades many later-in-life migrants have been choosing smaller town settings—but the places where they have been settling are often those more favorably endowed with natural amenities (such as milder climates) than the small communities that were their actual familial hometowns.

An interesting related question is whether settlement size preferences are purely a function of age or whether they have embedded within them generation-specific proclivities? To what extent is the recent micropolitan and rural growth a result of greatest generation empty-nesters and retirees seeking out attributes of community reflective of their own small-town roots?

By contrast to the empty-nester and retirement movers of the most recent several decades, the baby-boom, baby-bust, and baby-boom echo generations consist primarily of people reared in the suburbs of metropolitan areas. As we have shown, today’s young adults are now being drawn to have “coming of age” experiences in the largest mega metros. When these younger groups ultimately become empty-nesters and approach retirement age will they, like their forebears, strike off in hot pursuit of rural natural amenities? Or will they move oppositely, lured by the vibrant cultural opportunities found in revitalized big-city cores?

The patterns that our research highlights are, quite likely, not unique ones experienced only during the study period (1995–2000). Unfortunately, data do not exist to allow us to calculate age-specific interhierarchy flows and destination odds for previous eras (see,
however, Plane and Heins 2003). Over the past several decades life courses have been evolving that are somewhat different than those experienced by previous generations. Life expectancy and levels of elderly health have increased, female labor force participation has risen dramatically, fertility rates and average family size have fallen, postsecondary education has become much more widespread, and the average ages of household formation and child rearing have been pushed back until after an emerging-adult exploratory stage.

We can bet with some certainty that succeeding generations will continue to reach and transition through the two footloose stages of the life course that we have documented. They will still experience those other times in life when family and place ties bind more strongly. As future generations take passage across their life courses, though, how will ever-evolving economic and societal tides repattern the age-articulated streams of migrants currently washing up and down the urban hierarchy?

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