CHAPTER 16

Migration, Human Development, and the Life Course

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INTRODUCTION

Every year and at every age humans move. They move from one house to another, from one school to another, from one job to another, from one state to another, and, in moves that rouse the notice of nation states, they move from one country to another. In moving, they are displaying the hallmarks of the human condition. Impelled by fundamental forces of survival and human development, keen to attain the ends for which they were made, they search for a better country, make plans for a new life, and move to undertake that new life.

All the processes associated with migration are rooted in time. They occur in particular historical eras and bear the imprints of those eras. They occur at different ages and bear the imprints of those ages. How difficult it was to migrate, how successful the migration, how permanent the move—all these depend jointly on the historical context and the migrant's age. Of course, many other factors shape the migration process, including, importantly, conditions and laws in both the origin and destination countries and including as well the migrant's enduring endowments and characteristics.

Migration always affects a person's future. Sometimes it affects a person's past as well, for the vision of immigration may shape a wide variety of decisions and behaviors, from a junior–high schooler's decision to learn another language to a marriageable young person's decision to date foreigners to a parent's decision to invest heavily in a particular child who may someday be the first pioneer into the new country.

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Migration is "planful" to use Clausen's (1991, p. 811) evocative word (see also Clausen [1993], Elder [1994, p. 6], and Elder, Johnson, & Crosnoe's chapter in this volume) and it links the migrant to a range of individuals in both origin and destination countries, linking not only individuals who know each other, as in the case of an immigrant and the employer or family member who sponsors the immigrant, but also individuals far removed from each other, such as the immigrant and the possibly many others in both origin and destination countries whose lives may improve or deteriorate as a result of the migration.

Migration thus exemplifies the four themes Elder (1994) highlights as emblematic of the life course perspective in social science: interplay between lives and historical time and place, linked lives, timing of lives, and human agency. It is no surprise that one of the classics in the study of the life course is also a classic in the study of migration—Thomas and Znaniecki's ([1918–1920] 1958) *The Polish Peasant in Europe and America*.

In this chapter, I provide an overview of migration analysis, highlighting aspects which embody elements central to the life course perspective and providing both theoretical and empirical illustration. The framework for migration analysis is general, as is the theoretical illustration, but many of the examples as well as the empirical illustration will pertain to immigration to the contemporary United States. The chapter is organized as follows. The overview of migration analysis is presented in the next section. Next, the third section examines migration from a life course perspective, in the spirit of Clausen (1991), Elder (1994), Mayer (1986), and Riley (1986). In the fourth section we assess data requirements for empirical migration analysis and provide a brief description of a new body of data designed to address migration questions, the New Immigrant Survey and its pilot, the New Immigrant Survey Pilot. To illustrate theoretical migration analysis, in the fifth section we report an analysis of the propensity to emigrate, based on two formal sociobehavioral theories, justice theory and status theory; this analysis shows both how two principal concepts from the life course perspective—cohort and context—operate to shape migration streams and also how sociobehavioral and social psychological theories can be used to illuminate demographic phenomena. To illustrate empirical migration analysis, in the sixth section we report a model of health changes pre- and post immigration and provide empirical estimates of the effects of culture and of exposure to the U.S. environment using data from the New Immigrant Survey Pilot. A brief note concludes the paper.

OVERVIEW OF MIGRATION ANALYSIS

Like all of sociological analysis, migration analysis consists of three kinds of activities—constructing theories, carrying out empirical work, and, even more basic, developing the framework that assembles the main elements which will be used in both theoretical and empirical analysis. Each of these three activities has distinctive goals and distinctive methods. Together they can be portrayed in the form of a triptych, as in Figure 16-1. As shown, the center panel of the triptych represents the framework for migration analysis. The left panel represents theoretical migration analysis and the right panel represents empirical migration analysis.

The framework collects the central questions of the field and the basic building-blocks for addressing them. The theoretical panel accommodates, via two subpanels, two kinds of theories: deductive theory, in which testable implications are deduced from postulates, and hierarchical theory, in which testable propositions are constructed by linking terms in the postulates with other terms. The empirical panel provides, via three subpanels, for three kinds of empirical work: testing the implications of deductive theories, testing the propositions

Theoretical Migration Analysis	Framework	Empirical Migration Analysis
Deductive Postulates Predictions	Questions Actors Quantities	Measure/ estimate terms/relations
--------------------	Functions	--------------------
Hierarchical Postulates Propositions	Distributions Matrices Contexts	Test deduced predictions -------------------- Test propositions

FIGURE 16-1. Migration analysis.

Theoretical Migration Analysis	Framework	Empirical Migration Analysis
Deductive Postulates Predictions	Questions Actors Quantities	Measure/ estimate terms/relations
--------------------	Functions	--------------------
Hierarchical Postulates Propositions	Distributions Matrices Contexts	Test deduced predictions -------------------- Test propositions

FIGURE 16-2. Links between the panels in the triptych of migration analysis.

constructed in hierarchical theories, and basic measurement and estimation of quantities and relations in the framework.*

The framework and the theoretical panel are linked because the theories address questions posed in the framework and because some of the building-blocks in the framework become the assumptions of theories (and others later appear among the predictions of theories). The theoretical panel and the empirical panel are of course linked, as two of the empirical subpanels test the predictions and propositions of theories. The empirical panel, however, is also linked directly to the framework, as an important undertaking is to measure the quantities identified in the framework and estimate the relations developed in the framework. To illustrate the interconnections among the three kinds of activities, we present the triptych of migration analysis in Figure 16-2, with arrows superimposed to link the panels.

*Comprehensive exposition of the tripartite structure of sociological analysis appears in Jasso (in press). The framework, which plays a central part in the tripartite structure, is rooted in Merton's ([1949, 1957] 1968) notion of "theoretical orientation," discussed by Elder, Johnson, and Crosnoe (this volume) and is in many ways similar to Berger and Zelditch's (1993) notion of "orienting strategy." The importance of the framework has recently been noted by Stryker (2001) and Wallerstein (2002). The theoretical analysis part of the tripartite structure is elaborated in Jasso (2001b).

Thus, the framework provides building-blocks which become the starting assumptions of theories and which also lead immediately to empirical work. The framework for migration analysis is sufficiently basic that we discuss some of its elements.

Elements from the Framework for Studying Migration: Four Central Questions

In the study of migration there are four central questions. These pertain to (1) migrants at entry, (2) the progress of migrants, (3) migrant children and the children of migrants, and (4) the impacts of migration. For example, questions about the characteristics of immigrants at entry and the forces of selectivity, such as whether there has been a decline in immigrant quality across cohorts (Barrett, 1996; Borjas, 1985; Cobb-Clark, 1993; Jasso, Rosenzweig, & Smith, 2000; Loaeza Tovar, Planck, Gómez Arnau, Martin, Lowell, & Meyers, 1997; Smith & Edmonston, 1997), exemplify the first central question. Similarly, questions about what happens to immigrants post immigration—discussed variously as assimilation, acculturation, adaptation, integration, incorporation, convergence, and so forth and encompassing broad domains from employment and earnings to health and fertility to language, religion, and identity—exemplify the second central question (Loaeza Tovar et al., 1997; Smith & Edmonston, 1997). All questions concerning immigrant children and the children of immigrants, including questions about their initial characteristics as well as their progress over time, obviously fall under the third central question (Committee on the Health and Safety Implications of Child Labor, Board on Children, Youth, and Families, National Research Council/Institute of Medicine, 1998; Hernandez & Charney, 1998; Portes & Rumbaut, 2001). Finally, questions about the impacts of immigration seek to assess impacts of various kinds on both individuals and societies at both origin and destination countries; examples include questions about remittances, the "brain drain," prices of consumer goods, and artistic excellence (Loaeza Tovar et al., 1997; Smith & Edmonston, 1997).

Of course, the four central questions are interrelated and many studies address more than one of them, for example studies comparing the skills of immigrants by their class of admission—the provision of U.S. immigration law which made them eligible for an immigrant visa—may both compare skills at entry and also compare skill trajectories over time (Duleep & Regets, 1996; Jasso & Rosenzweig, 1995; Jasso, Rosenzweig et al., 2000).*

Elements from the Framework for Studying Migration: Three Fundamental Actors

As even the foregoing abbreviated look at the four central questions suggests, there are three fundamental actors in the study of migration: the migrant, who is usually thought of as the chief protagonist; others at the place of origin; and others at the place of destination. All three kinds of actors make pertinent decisions, play parts in the migration processes, and

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*To illustrate, a recent study addressed the question of whether immigrants screened for skills do better than immigrants admitted as the spouses of U.S. citizens and concluded that, while there is a substantial skill differential at entry, the skill differential narrows over time, with employment immigrants experiencing occupational downgrading and marital immigrants experiencing occupational upgrading—possibly the result of the screening process itself: While employers may screen for the short term, Americans marrying a foreigner may screen for the long term (Jasso & Rosenzweig, 1995).

experience migration impacts. Moreover, migration involves special relations between different kinds of actors. For example, consider the relation between migrant and others at origin—others may force or, alternatively, make possible the migration; and the migrant may, in turn, provide financial assistance and information, leading to the diffusion of ideas and practices from the migrant's destination. Similarly, consider the relation between a migrant and the others at the destination—migration may originate with or be made possible by the actions of others at the destination, who act as sponsors of desired workers or spouses; and more distant others at the destination may experience a variety of gains and losses as workers, consumers, owners of capital, taxpayers, artists, and biological beings with healthiness to develop and protect.

Elements from the Framework for Studying Migration: Quantities, Relations, and Models

Migration analysis encompasses the totality of immigrant and societal characteristics, and, thus, the quantities of interest span broad topical domains, including not only migration-centered phenomena—like emigration and naturalization—but also phenomena from the larger sociobehavioral world—like language acquisition, identity formation, skill prices and skill transferability, religion, and so on. In addition, the quantities of interest span varying levels of generality, from the characteristics of individual immigrants to the social, economic, and political characteristics of both origin and destination countries, including, importantly, their laws on exit and entry.

Reasoning about the central questions leads quickly to specification of relations between basic quantities and, thus, to basic overarching models that embed several relations.

For example, the first central question focuses on the selection of immigrants and their characteristics at entry—how a given individual becomes a migrant, moving from origin to destination. Understanding the selection of immigrants requires understanding the decision to migrate, in the context of social, economic, and political conditions in both origin and destination countries, including laws governing exit and entry. Models that have been advanced suggest that the underlying behavioral principle may be, as the Romans put it, "ubi bene, ibi patria"—where one is well-off, there is one's country. The prospective migrant compares his or her expected well-being in the two locales. Both the decision to migrate and the strategy for achieving migration are shaped by both the migrant's own characteristics and conditions in the origin and destination areas, together with the migrant's information about them. The basic models quickly become complicated when the migrant is modeled with a family; for example, not all family members may gain from migration, and, alternatively, an adult migrant's decision may be based on the expected well-being of his or her children.

Similarly, reasoning about the second central question not only suggests the continuing operation of both the migrant's characteristics and conditions in the origin and destination countries but also introduces a dynamic element. An important new conceptual tool is the trajectory; for example, the skill trajectory, earnings trajectory, health trajectory, language trajectory, religion trajectory, and so on.*

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*Our notion of "trajectory" encompasses both sequences of states, as characterized by Elder, Johnson, and Crosnoe (this volume) and continuous increases or decreases in quantitative characteristics. For example, the religion trajectory may be a sequence of realizations of the categorical variable "religious preference," while the health trajectory may be a curve describing increases and decreases in the quantitative variable "healthiness."

Elements from the Framework for Studying Migration:
The Importance of U.S. Immigration Law

More persons would like to immigrate to the United States than current or foreseeable law permits*. Consider four indicators of the scarcity of a legal immigrant visa.

1. In January 1997, the most recent year for which the State Department released figures of the number of approved visa applicants waiting for numerically limited visas, the number on the waiting list was 3,622,897 (U.S. Department of State, *Visa Bulletin* VII, Number 73A, April 1997).

2. In March 2003, though there were no backlogs in any of the employment preference categories, the shortest waiting period in the family preference categories was 3.7 years (for adult unmarried sons and daughters of U.S. citizens from all countries except Mexico and the Philippines) and the longest waiting period was 21 years (for siblings of U.S. citizens from the Philippines).[†]

3. More than 8 million applications are received every year for the 50,000 immigrant visas awarded by lottery to natives of countries which have been underrepresented in recent U.S. immigration.[‡]

4. Several million foreign-born persons are in the United States illegally, the most recent official estimate being 7 million as of January 2000, with an estimated net annual increase of 350,000 per year.[¶]

In the face of high demand for immigrant visas, the United States allocates visas by means of a system that includes family reunification and employment criteria, as well as humanitarian and diversity concerns. In brief, the system of visa allocation in the period since 1921 may be characterized by three features. First, the United States restricts the number of immigrants (restricting since 1921 the number from the Eastern Hemisphere and since 1968 the number from the Western Hemisphere). Second, immediate relatives of adult U.S. citizens—defined as spouses, minor children, and parents—are exempt from numerical restriction.** Third,

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*Following standard practice, we use the term "immigrant" synonymously with "legal immigrant" and "legal permanent resident alien." Legal immigrants have the right to reside permanently in the United States, to engage in most occupations, to sponsor the immigration of certain relatives, and, after completing a residency requirement, to become citizens of the United States. Besides legal immigrants, there is a large set of legal nonimmigrants who have temporary residence visas; legal temporary visas provide for legal residence for a temporary period and for a specific purpose. Examples of nonimmigrants include foreign students, tourists, and a variety of workers, including representatives of foreign news media, computer specialists, athletes, and entertainers. Additionally, there are individuals in the United States illegally who qualify for neither legal permanent residence nor legal temporary residence or who have violated the terms of a legal temporary visa. Both legal temporary residents and illegal migrants may be desirous of attaining legal permanent residence.

[†]Information is drawn from the *Visa Bulletin*, issued monthly by the U.S. State Department and available at http://travel.state.gov/visa_bulletin.html.

[‡]For example, in the DV-2002 program, for which the application period ran from 2 October 2000 to 1 November 2000, 13 million applications were received, of which 10 million were qualified entries (*Visa Bulletin*, Vol. VIII, Number 32, June 2001). Not surprisingly, in the DV-2003 program, which ran during October 2001, the number of entries dropped to 8.7 million, of which 6.2 million were qualified entries (http://travel.state.gov/DV-2003/results.html).

[¶]Estimates are drawn from the report issued in January 2003, available on the INS website (www.ins.usdoj.gov).

**A few other classes of individuals are also exempt from numerical restriction, some as a permanent feature of U.S. law (e.g., American Indians born in Canada and children born abroad to alien residents), others under temporary provisions (e.g., the special 3-year program in effect in 1992–1994 for spouses of aliens legalized under the Immigration Reform and Control Act of 1986). Additionally, special legislation has permitted refugees previously admitted with temporary documents to adjust to permanent resident status outside the numerical limitations.

numerically limited visas are allocated via two sets of preference categories, one for family-sponsored immigrants and the other for employment-based immigrants. Over the years, the United States has altered both the definition of immediate relatives of U.S. citizens (e.g. in 1952 extending to U.S. citizen women the right, already held by men, to sponsor the immigration of an alien spouse outside the numerical limitations) and the system for granting numerically limited visas (e.g., establishing a structure of preference categories in 1965 but not placing the Western Hemisphere under that structure until 1977 and subsequently revising the preference categories in the Immigration Act of 1990). Under current law, the number of visas available annually in the family preference categories is at least 226,000, but may be larger (though never larger than 480,000) depending on the previous year's volume of numerically unrestricted immigration; in the employment-based categories, the annual number of visas available is at least 140,000, but may be larger if there are unused family preference visas.*

Additionally, U.S. immigration law provides legal permanent resident visas on humanitarian and diversity grounds. On humanitarian grounds, persons admitted to the United States with refugee visas or given asylee status (both refugee and asylee visas are nonimmigrant temporary visas) may adjust to legal permanent residence after residing in the United States for 1 year. There is no ceiling on refugee adjustments to permanent residence and the number has ranged in recent years from a low of 39,495 in FY 1999 to 118,528 in FY 1996; in contrast, asylee adjustments are constrained to 10,000 per year. On diversity grounds, the United States grants 50,000 visas annually to nationals of countries from which the number of numerically limited immigrants is less than 50,000 in the preceding 5 years. Eligibility requirements include a high school degree or equivalent; or 2 years' work experience (within the preceding 5 years) in an occupation requiring 2 years of training; or experience; and selection is by lottery.[†]

Among family-based and employment-based immigrants, a key actor in the migration process is the visa sponsor (also known as the "petitioner")—the individual (or firm in the case of some employment-based immigrants) who, as relative or employer of the prospective immigrant, establishes the latter's eligibility for an immigrant visa.[‡] The visa sponsor initiates the paperwork. For all family-sponsored immigrants and for a subset of employment immigrants, the visa sponsor must also become the main support sponsor, assuming responsibility for the immigrant's support should the immigrant require assistance, and signing an affidavit of support contract.[¶] Note that the sponsorship feature of visa allocation engenders a wide range of behavioral possibilities.

To illustrate the behavioral implications of U.S. law, consider the interplay between marriage and migration. U.S. law grants U.S. citizens the right to marry almost anyone they choose and to reside in the United States with the chosen mate. As noted, immigrant spouses of U.S. citizens are granted visas outside the numerical limitations. Such immigrants constitute

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*For a succinct description of U.S. visa allocation law, see the INS and State Department websites, in particular, the INS *Statistical Yearbook* and the State Department *Visa Bulletin*. For elaboration from a social science perspective, see Jasso, Rosenzweig et al. (2000).

[†]The number of persons admitted as refugees is set annually by the U.S. President in consultation with Congress; the ceiling has fluctuated in the range of 75,000 to 100,000. The diversity lottery program was begun in FY 1987 on a trial basis and made a part of U.S. immigration law under provisions of the Immigration Act of 1990. For further information on refugees, asylees, and diversity immigrants, see the INS and State Department websites.

[‡]A small number of family-sponsored and employment-based immigrants may self-petition. These include, in the case of family visas, spouses and children of deceased or abusive U.S. citizens and legal permanent residents and, in the case of employment visas, investors and individuals of great renown. For elaboration, see the requisite forms, forms I-130, I-140, I-360, and I-526, available on the INS website.

[¶]Additional "joint" sponsors may be brought in if the visa sponsor cannot fulfill the support requirement alone. For details, see the I-864 affidavit of support package of forms on the INS website.

approximately one third of all adult non-refugee legal immigrants admitted each year. Against this backdrop, there is a vigorous interplay of behavioral processes, namely a job market and a marriage market: the "smoke-gets-in-your-eyes" phenomenon, where the smoke is U.S. citizenship and U.S. citizens may appear more attractive as potential mates than they, perhaps, actually are. Accordingly, many new questions arise. How strong are the marriages between U.S. citizens and the immigrants they sponsor? What is the schooling disparity among spouses in these couples? How much scope do these marriages provide for the continuing human development of the two spouses? What kind of childrearing environment do these couples provide? How do schooling attainment and schooling disparity change over time?

As would be expected, qualifying for an immigrant visa is an overriding concern for prospective immigrants to the United States and visa allocation law is a critical component of the environment faced by prospective immigrants. U.S. immigration law selects immigrants and thereby shapes the characteristics of immigrant cohorts. This shaping is especially visible in two ways: (1) by comparing immigrants admitted in different years and (2) by comparing immigrants who entered in different classes of admission. Put differently, cohort and context exert a large influence on the characteristics of immigrants at entry and this influence continues over time, visible in the progress of immigrants, in their children, and in their impacts on both origin and destination countries.*

MIGRATION ANALYSIS FROM A
LIFE COURSE PERSPECTIVE

The four themes in the life course perspective identified by Elder (1994)—interplay between lives and historical time and place, linked lives, timing of lives, and human agency—can be cross-classified with the four questions of migration analysis, providing a mutually enriching view.† Table 16-1 reports the cross-classification.

Consider, for example, the first question of migration analysis about the characteristics of immigrants at admission. Immigrant characteristics are importantly shaped by the social, economic, political, and legal context in both the origin and destination countries. Both origin country laws on emigration and U.S. immigration law shape each cohort. These are the factors examined by life course researchers under the rubric of "lives and historical time and place."

Immigrant cohorts are also characterized and shaped by the timing at which immigration occurs—the "timing of lives" element in the life course perspective—visible, among other things, in the immigrant's age and the time previously spent in the United States. Here, too, U.S. immigration law plays a part, as it notices age in the visa allocation process. For example, children of U.S. citizens must be under 21 (and unmarried) into order to qualify for numerically unlimited visas. Similarly, diversity visas require a certain level of education or occupational experience. In addition, legalization programs for illegal immigrants—such as the statutory program for individuals who have resided in the United States since 1972 and the special amnesty programs under the Immigration Reform and Control Act of 1986—notice time in the United States.

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*The date of admission to permanent residence is an important milestone in an immigrant's biography. The new immigrant, who may be arriving from abroad at a U.S. port of entry (a "new arrival") or may be adjusting to permanent residence from a legal temporary visa in the United States (an "adjustment of status"), acquires a set of privileges, including that of sponsoring the immigration of certain kin. The passport is stamped to indicate admission to legal permanent residence, the "green card"—the paper evidence of legal permanent residence—is ordered, and the clock starts on the residency requirement for naturalization.

†The four themes constitute four of the five principles proposed by Elder, Johnson, and Crosnoe (this volume) as central to the life course framework. The missing principle is the foundational principle that human development is a lifelong process. Its effects are visible in every cell of Table 16-1.

Migration, Human Development, and the Life Course

TABLE 16-1. Interplay between the Four Questions of Migration Analysis and the Four Themes of the Lifecourse Perspective

Four questions of migration analysis	Four themes of the life course perspective			
	Lives and historical time/place	Timing of lives	Linked lives	Human agency
Migrants at entry	Cohort and context. Laws on emigration in origin country. Laws on immigration in United States	U.S. immigration laws notice age and duration in the United States	U.S. immigration laws notice kin and work relationships	Strategies and decisions for achieving immigration
Progress of migrants	U.S. laws on naturalization. Other U.S. laws affect naturalization. Origin country laws affect naturalization	U.S. naturalization laws notice age and duration in the United States	U.S. naturalization laws notice kin and work relationships. Kin and work relationships also affect naturalization behavior	Decisions to acquire English and/or other skills, to remain in the United States, and to naturalize
Migrant children and children of migrants	U.S. laws on child immigration and adoption and on derivative citizenship	U.S. immigration and naturalization laws notice children's age and duration in the United States	U.S. immigration and naturalization laws notice kin and work relationships	Children may be "tied movers" or alternatively may be "engines of migration"
Impacts of migration	Impacts on origin and destination countries differ by historical period and by population characteristics	Impacts differ by age structure of emigrant and immigrant populations	Migrant's leaving affects those left behind. Migrant's arriving affects natives of destination country	At both origin and destination, decisions are made and laws passed to affect future migration

Note: The four themes in the life course perspective are based on Elder (1994) and Elder, Johnson, and Crosnoe (this volume).

The life course perspective element "linked lives" has special resonance in migration analysis, for, as noted above, most immigrants (excepting refugees, diversity immigrants, and a small set of other groups) require a sponsor—a family member or employer who establishes the immigrant's eligibility for a visa. In the study of migration, the immigrant's life is inextricably linked to the life of the sponsor. Moreover, under the provisions of the Immigrant Reform and Responsibility Act of 1996, the sponsor assumes a contractual obligation for the support of the immigrant.

Finally, migration is quintessentially about human agency—individuals moving in search of a better life—thus giving new meaning to the "human agency" element of the life course perspective. At admission to legal permanent residence, human agency is visible in the strategies and decisions by which immigration was achieved.

As shown in Table 16-1, the other three central questions in the study of migration also have a natural correspondence with the four elements of the life course perspective. Note, in particular, how U.S. immigration law appears in many of the cells. Note also that in migration analysis many of the life course factors shaping behavior are laws, not merely customs. For example, the age-related stipulations in U.S. immigration law have the force of law; they are not "merely" social norms.

A close look at Table 16-1 suggests that each cell encompasses important questions for further research. The following are a few examples.

1. Naturalization and linked lives.   The cell combining the linked lives theme with the question on the progress of migrants covers, inter alia, phenomena associated with naturalization. Besides the statutory effects of kin and work relationships on the decision and timing of naturalization—for example, immigrants admitted as the spouses of U.S. citizens have reduced residency requirements, and the residency requirement may be waived altogether for persons who have served honorably with the U.S. military—there are behavioral effects. Immigrants who gained permanent residence as spouses of U.S. citizens may decide not to naturalize in order to construct a diversified citizenship portfolio for the family (Jasso & Rosenzweig, 1990). There is also anecdotal evidence that immigrants who do not wish to sponsor the immigration of their kin decide not to naturalize.

2. Remittances and linked lives.   The cell combining the linked lives theme with the question on the impacts of migration covers, inter alia, phenomena associated with impacts on the origin country, such as impacts of remittances. It has become an icon of Mexico–U.S. migration that entire villages in Mexico are sustained by remittances from villagers working in the United States. Estimates for 1995 provided by Loaeza Tovar et al. (1997) put the total remittances at between $2.5 and $3.9 billion.

3. Human agency and migrant children.   The cell combining the human agency theme with the question on migrant children covers, inter alia, phenomena associated with children as "engines of migration." An important question concerns the magnitudes of the effects of aspirations for self and aspirations for one's children in an adult's decision to migrate. If, for example, migration is selective by offspring's gender, then children are operating as engines of migration (Jasso, 1997).

The foregoing examples show the vastness and richness of the research that can be undertaken under the Table 16-1 umbrella. Indeed, Table 16-1 provides the blueprint for a set of inquiries that could be presented at a conference and assembled as a book.*

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*There would be sixteen studies each prototypical of one of the sixteen cells. The envisioned book would contain sixteen chapters plus introductory and concluding chapters. Of course, one quickly imagines a series of such books, each one devoted to a particular topic and organized by the cross-classification of the central questions in the study of that topic and Elder's (1994) four themes of the life course perspective.

DATA FOR MIGRATION ANALYSIS

The empirical study of migration presents formidable data challenges. To appreciate these, consider the following aspects of migration.

1. There may be important differences across entering cohorts of new legal immigrants—reflecting both changes in the United States and its immigration laws and also changes in countries around the world (including natural disasters and political upheavals).
2. Assimilation occurs over time.
3. Immigrants leave, and entering cohorts are thinned over time by non-random emigration.
4. Both migration and assimilation behaviors are shaped by individual and family characteristics and are responsive to conditions in both countries, including the legal environment faced by the migrant.

Table 16-1 underscores these features of migration and points naturally to the necessary data. For example, it shows vividly that addressing the first central question of migration—concerning immigrants at entry—requires information on cohort and context, age and duration, kin and employment relationships, and behavioral strategies, decisions, and outcomes. Together, these features dictate the data requirements.

In brief, the data should consist of probability samples drawn periodically from entering cohorts of immigrants of identifiable legal status—of identifiable legal status so that the context and the environment they face may be correctly characterized; of entering cohorts so that they can be examined before the non-random emigration begins; of multiple cohorts because conditions change in both origin and destination countries. The design should be longitudinal (not only to study assimilation but also to distinguish between effects associated with year of immigration and effects associated with length of time in the United States). Information should be obtained both from the sampled individual and from or about all other persons in the household and the (extended) family, including persons living abroad and new members added over time. Finally, the information collected should cover premigration experience and include complete retrospective and prospective histories of schooling, work, migration (including legal status), sponsorship, and health, and of linguistic, marital, and reproductive behaviors.

In principle, the earlier in the migration process the migrants enter the study the better. For example, one can envision a sampling design in which a random sample is drawn from among all first-time entrants to the United States. Such a set would include not only legal immigrants but also a variety of temporary "nonimmigrants" (students, diplomats, temporary workers, etc.). Following them over time, one would observe the process by which some among them decide to seek permanent residence in the United States, as well as the process by which some among them become illegal (by overstaying a temporary visa or by violating the terms of their visa, say, by accepting unauthorized employment). Unfortunately, the requisite sampling frame for such a study does not yet exist.*

The United States does maintain excellent records on all persons newly admitted to legal permanent residence. In its annual reports, the *Annual Report of the Immigration and Naturalization Service* (published in the years 1943–1978) and the *Statistical Yearbook of the Immigration and Naturalization Service* (published since 1979), the U.S. Immigration and

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*However, complete enumeration of new holders of visas in certain nonimmigrant classes, such as those for students and temporary workers, may soon become possible, paving the way for feasible sampling designs.

Naturalization Service (INS) publishes tabulations describing the basic characteristics of each annual cohort of immigrants; the volumes for recent years are posted on the INS website.

We may distinguish between three levels of specificity in the data for studying legal immigrants.

Data with Level 1 Specificity

At level 1, data consist of published tabulations based on new immigrant cohorts. For example, the INS *Statistical Yearbooks* make it possible to track the total volume of immigration from year to year, as well as the volume by origin country and by class of admission. To illustrate, information posted on the INS website indicates that the total number of persons admitted to legal permanent residence in FY 2000 was 849,807; that of these, 48% were new arrivals and 52% were adjusting from a nonimmigrant visa; that 55% were female; and that the most popular state of intended residence was California, attracting almost 26%, followed by New York, attracting 12%.

Data with Level 2 Specificity

Suppose, however, that interest centers on more detailed information, such as the sex ratio among immigrants admitted as spouses of U.S. citizens. In such a case, it is necessary to go beyond published tabulations and obtain the complete microdata sets from the annual immigrant cohorts. These, which exemplify what we may call level 2 specificity, are available for sale by the National Technical Information Service (U.S. Department of Justice, 2001), suitably devoid of personal identifiers. With the public use microdata, many new kinds of analyses become possible, for example, analysis of the sex ratio of immigrants by country, class of admission, and age group and of intended residence by origin country and class of admission.

Data with Level 3 Specificity

The public use immigrant cohort data sets, however welcome they are for providing information on a complete set of each year's new legal immigrants, leave much to be desired. They have no information on schooling or on earnings; the information is organized by individuals and, thus, it is not possible to reconstitute family groupings; and so forth. The solution is obvious: use INS administrative records as a sampling frame, draw a random sample, and carry out interviews, not only soon after admission to legal permanent residence but also, in a panel design, periodically for many years. We may think of such data as exhibiting level 3 specificity—like level 1 data, level 3 data cover legal immigrants newly admitted to permanent residence; like level 2 data, level 3 data are microdata with observations on individuals; and, now, at level 3, the records-based data are augmented by information collected in personal interviews.

Many panels and workshops assembled in both the public and private sectors, for example, panels of the National Academy of Sciences, the National Institutes of Health, the Rockefeller Foundation, have contributed to the evolving vision of the required data. With

contributions from many scholars, a new plan was formulated for collecting immigrant data that would enable research that substantially advances understanding of the social and economic characteristics of immigrants and the effects of immigration in the United States. This new plan—the New Immigrant Survey (NIS)—has a prospective–retrospective design in which large probability samples are drawn from new cohorts of legal permanent resident aliens, using the administrative records of the INS. Sampled immigrants will be interviewed immediately after admission to permanent resident status and re-interviewed periodically thereafter. Information will be collected on the sampled immigrants' spouses and family and household members, including their children, both the immigrant children they brought with them and the U.S. citizen children born to them in the United States.*

Because such a design had never been tried before, a pilot—the NIS-P—was carried out, with support from National Institutes of Health, the National Science Foundation, and the INS. The pilot survey both confirmed the soundness of the design, highlighted the importance of contacting sampled immigrants immediately after admission to permanent residence, and provided new information on immigrants never before available (e.g., on the schooling of new legal immigrants, on assortative mating in schooling, on religion).[†]

Remark on Illegal Migrants

As already noted, the magnitude of illegal migration is far from trivial. The INS estimates that, as of January 2000, there were approximately 7 million foreign-born persons in the United States illegally, with an estimated net annual increase of 350,000 per year (INS website). There is no sampling frame for illegal migrants and, thus, it is not possible to draw a representative sample for study. The NIS and the NIS-P, however, provide information on migration history, including illegal spells. Thus, the NIS-P indicates, among other things, that among the FY 1996 legal immigrants, approximately 25% had been in the United States illegally at some previous time. Immigrants with illegal experience differed from immigrants with no illegal experience along many dimensions—for example, they had on average 2 years less schooling than immigrants with no illegal experience (11 years vs. 13 years); they were more likely to have gained permanent residence as the spouse of a US citizen or permanent resident and less likely as a parent or employment-based immigrant; and, for equal time in the United States, they traveled less out of the country (Jasso, Massey, Rosenzweig, & Smith, 2000c). Additionally, sampled immigrants may have family members or co-residents who are illegal and information about them will also be obtained. Thus, it would appear that the NIS can shed some light on the illegal experience—albeit limited light, given that illegals who become legal or who are related to or reside with legal immigrants are not randomly drawn from among all illegals.

*The sample to be drawn consists of 10,000 adult immigrants (drawn from among both "principal" immigrants—those who qualify for an immigrant visa under U.S. law—and immigrants who obtained their visas as accompanying spouses of principal immigrants) and 1,000 children who are principal immigrants (and therefore would not be covered in the households of sampled adult immigrants). Information will be obtained about both the sampled immigrant and members of the immigrant's family and household. For further description of the New Immigrant Survey, see the NIS website (www.pop.upenn.edu/nis). When the baseline round of the NIS is completed (the baseline round will be in the field from mid-2003 to early 2004) and the data compiled, the data will be posted to the website in the form of public use microdata sets.

[†]Comprehensive exposition of the design of the NIS-P, together with information obtained in the pilot, may be found in the initial papers from the project (Jasso, Massey, Rosenzweig, & Smith (2000a, 2000b, 2000c, 2003) and on the NIS website.

Remark on Comparison Samples

The NIS design focuses on immigrants. There are two natural comparison groups, natives in the United States and non-migrants in the origin countries (corresponding to the fundamental actors identified in the framework for migration analysis—others in the origin country and others in the destination country). To achieve comparability with these groups, the NIS adopted the principle of having all the questionnaire modules except those focusing specifically on the migration experience be identical to the questionnaire modules used in the major surveys in the United States and abroad. For example, question sequences on schooling, labor force participation and occupation, earnings and wealth, marital and fertility histories, health and religion, are identical to corresponding sequences in U.S. surveys such as the Panel Study of Income Dynamics, the National Longitudinal Surveys of Labor Market Experience, the U.S. Census, the Health and Retirement Study, and the General Social Surveys, and in surveys abroad, such as the International Social Survey Programme (covering 33 countries) and the International Social Justice Project (covering 13 countries). Additionally, the NIS design calls for obtaining information about the sampled immigrant's family members abroad, so that migration selectivity can be assessed both with respect to the origin country and with respect to the immediate family.

THEORETICAL ILLUSTRATION: JUSTICE, STATUS, AND THE PROPENSITY TO EMIGRATE

The cross-classification of the four central questions of migration analysis and the four themes of the life course perspective (Table 16-1) highlights the impact of cohort and context for producing the characteristics of immigrants at entry. In this section we examine theoretically the part played by aspects of the origin country context. The work reported in this section is drawn from a larger project, the objective of which is to derive implications for migration phenomena from two theories of basic sociobehavioral processes—justice theory and status theory. Derivation of predictions from justice theory for migration was initiated in Jasso (1996). The current project extends that work by deriving predictions from status theory and by building a new joint model in which both justice and status are operating (Jasso, 2002b).

Preliminaries

THEORETICAL ANALYSIS.   It may be useful to discuss briefly the scientific tradition underlying this illustration. A good research portfolio will typically include both theoretical and empirical elements. A brief contrast between these two approaches will help set the stage for the theoretical work.

In empirical analysis, especially in inductive and exploratory empirical analysis, we begin by focusing on an outcome—a dependent variable—thinking about what produces it or generates, shapes it or influences it. These latter factors are the inputs, and much of empirical analysis is concerned with discovering the inputs and assessing their effects on the outcome. Symbolically, when we do empirical work we are obsessed with a Y and we seek to learn the identity of the Xs which produce it and, later, the effects of each X on Y.

In theoretical analysis we do something quite different. Rather than starting with an outcome, we start with an input—which may itself resemble an *X*-affects-*Y* relation—and focus on this input, investing it with the character of an assumption and asking what may be its effects or implications, that is, what outcomes it generates. The goal is to discover the outcomes it produces and, later, its effect on each outcome. The input's importance depends on the variety of outcomes it generates and the part it plays in generating them.

Often the assumption is an idea about human nature and it defies direct test. Thus, in order to assess its validity, we derive its implications and it is the implications that we test. This strategy, invented by Newton and often referred to as the hypothetico-deductive model, makes it possible to learn about human nature by learning about the implications of our assumptions.*

JUSTICE AND STATUS.   Justice theory and status theory are obvious candidates for the effort to derive predictions because of two features. First, they describe the operation of aspects of human behavior which seem to be basic and universal. Though justice and status may turn out not to be fundamental forces, but rather the outcomes of the working out of truly fundamental forces shaping human behavior—that is, though they may turn out to be processes of the middle range, to use Merton's ([1949, 1957] 1968) evocative language—nonetheless they are sufficiently basic that their reach extends through broad areas of behavior. Second, there has been sufficient progress in understanding the operation of both justice and status that well-axiomatized, mathematical theories are available. The assumptions of both justice theory and status theory have been made explicit and, thus, the task of deriving implications from them is made possible. Moreover, in both cases the assumptions have been given precise mathematical statement, and, thus, derivation of predictions is both simpler and richer, given the large set of mathematical tools available to carry out derivation.

Justice theory and status theory share another feature which makes them potentially rich sources of mechanisms influencing migration phenomena. They explicitly accommodate and distinguish between caring about cardinal things—like wealth—and caring about ordinal goods—like beauty, intelligence, bravery, athletic skill, and so on. Status theory, however, in its current axiomatization—the foundation of which is the status function proposed by Sørensen (1979), which incorporates Goode's (1978) convexity condition—notices only ranks, ignoring amounts of cardinal goods.

Of course, not all persons are covered by both theories. As is well known, some individuals are impervious to ideas of status—like St John of the Cross, who "saw only souls." Others seem untouched by justice concerns, never experiencing the all too familiar, "It's not fair."[†]

THREE WORLD-VIEWS.   Combining the ideas that individuals may care about justice or status and that as well they may care about material or non-material goods leads to a wide range of possible configurations, including three ideal-typical world-views—justice–materialistic, in which people care about justice and value material goods; justice–non-materialistic, in which people care about justice and value non-material goods; and status,

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*Note that both the theoretical and the empirical approaches illuminate causation. Note also that when empirical work tests a theoretical prediction, the two approaches coalesce in a special way—the test indicating not only the effect of an *X* on a *Y* but as well the robustness and scope of the theory predicting the effect of *X* on *Y*. See Jasso (2002a) for further elaboration.

[†]Like the tone deaf or color blind who do not notice tone or color, the justice oblivious seem devoid of a sense of justice and the status oblivious of a sense of status.

in which people care about status (and it is irrelevant whether they value material or non-material goods). We will use these ideal–typical world-views to characterize not only individuals but also entire societies.

In general, there are two ways to ascertain a person's or society's world-view. First, words signal the valued good and whether justice or status concerns dominate. Second, justice theory and status theory generate many predictions, and these can be used to construct comprehensive portraits. To illustrate, status words signal status concerns, and justice words signal justice concerns. An individual who talks much of "equity" is likely to have a justice world-view, and a person who makes much of who salutes whom and how deep a bow should be is likely to have a status world-view. Similarly, words signal goods valuation. Persons and societies which emphasize quantitative amounts of cardinal things (such as income and wealth) are likely to be materialistic in outlook, while persons preoccupied with beauty or with horse bloodlines are likely to favor ordinal things. As for reasoning from theoretical predictions, consider the following. A country which welcomes immigrants must be a justice–materialistic society; in a justice–non-materialistic society, individuals are always closer to the neighbor above in a valued-good hierarchy than to the neighbor below, but the opposite holds in a status society; a husband and wife can be truly equal only in a justice–materialistic society, not in a justice–non-materialistic society or a status society; and monastic institutions increase the public welfare in justice–non-materialistic societies, but in justice–materialistic societies only mendicant institutions do so.* Current research is consolidating these ideas into a protocol for efficient classification of individuals and societies according to their world-view.

A MULTIFACTOR WORLD.   Probably, all sociologists would agree that behavioral and social phenomena have a multifactor etiology. For example, in the realm of theory, Parsons (1968) noted that Durkheim was a multifactor theorist, and empirically, multivariate methods are the staple of empirical tools. But everyone also recognizes the difficulties involved in modeling jointly two or more disparate processes and in testing their implications. Theoretically, the challenge is to build theories about the operation of single basic processes and then integrate them into a larger whole. Empirically, the multifactor view poses special challenges, for the operation of two factors may lead to opposite effects. It may at first appear that one prediction is rejected, but in fact it may be that one of the two effects is stronger than the other. For example, suppose that justice theory predicts that Y is an increasing function of X and status theory predicts that Y is a decreasing function of X. The empirical finding that Y is an increasing function of X does not constitute, in a multifactor world, evidence that status processes are not operating, but rather is consistent with the operation of both processes such that the effect of justice processes is stronger than or "dominates" the effect of status processes.

In this new multifactor world, the basic processes, previously unconnected, are now not only connected but, more than that, their fates are inextricably linked. There is a new sense that progress in understanding the operation of a basic process requires progress in understanding the operation of all basic processes. This is because basic processes may differ in the strength and direction of their effects across diverse phenomena, and assessing the effects of one basic process thus requires assessing the effects of the others.

TWO BASIC MECHANISMS.   In the migration application, one of the functions from justice analysis and one of the functions from status analysis will play central parts. These are the

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*For references to the articles describing derivation of these predictions, see Jasso (2001a, 2001b).

justice evaluation function and the S1 status function. Both are mathematical functions, and both exhibit the who–what–whom form which may be especially fruitful in social science. Both are functions of an individual's personal quantitative characteristics, such as beauty, wealth, intelligence, athletic skill, and so on. Both functions were introduced over 20 years ago, and there is considerable knowledge about their properties and operation. Finally, both have been used as assumptions in theories, yielding a variety of testable implications for phenomena in disparate domains.

JUSTICE EVALUATION FUNCTION. The justice evaluation represents the judgment that a rewardee (which may be self or other) is justly or unjustly rewarded and, if unjustly rewarded, whether underrewarded or overrewarded and to what degree. The justice evaluation is represented by the full real-number line, with zero representing the point of perfect justice, negative numbers representing degrees of unjust underreward and positive numbers representing degrees of unjust overreward. The justice evaluation function, proposed in Jasso (1978), specifies the justice evaluation as a function of the logarithm of the ratio of the actual to the just reward:

$$J = \theta \ln\left(\frac{A}{C}\right), \tag{1}$$

where J denotes the justice evaluation, A denotes the actual reward, and C denotes the just reward. The reward may be cardinal, like wealth, or ordinal, like beauty. The form in Equation (1) also includes the signature constant, denoted θ, which captures both the observer's framing of the reward as a good or a bad and the observer's expressiveness.

STATUS FUNCTION. In the status framework, S1 status—hereafter simply status—represents the status that an individual accords to another or expects to receive from another. The status function, introduced by Sørensen (1979) and embodying properties held by Goode (1978) to be important in an individual-level status function, specifies status as the logarithm of the target's rank on a valued quantitative characteristic such as beauty, intelligence, or wealth:

$$S = \ln\left(\frac{1}{1-r}\right), \tag{2}$$

where S denotes status and r denotes the relative rank (between zero and one) on the valued quantitative characteristic. In this axiomatization, status is represented by positive numbers.*

EXAMPLES OF PREDICTIONS. The justice evaluation function and the status function have been used as assumptions in justice theories and status theories, respectively and have been shown to yield implications for a wide range of behavioral and social phenomena.

To illustrate, predictions of justice theory include (1) parents of two or more non-twin children will spend more of their toy budget at an annual gift-giving occasion rather than at the children's birthdays, (2) things change value as their owners move across social contexts, (3) in historical periods when wives predecease their husbands, mothers are mourned more than fathers, but in historical periods when husbands predecease their wives, fathers are mourned more than mothers, (4) conflict severity between the subgroups of a collectivity

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*Comprehensive exposition of properties of the justice evaluation function appears in Jasso (1999) and of the status function in Jasso (2001c). The two functions are systematically contrasted in Jasso (2002a).

increases the greater the overall income inequality, and (5) veterans of wars fought on foreign soil are more vulnerable to post-traumatic stress syndrome than veterans of wars fought on home soil (Jasso, 2001a, 2001b).

Similarly, predictions of status theory include (1) status inequality is lower if the valued goods are negatively correlated, (2) in a two-subgroup society, the least advantaged from both subgroups gain status from discrimination, and the most advantaged from both subgroups lose status from discrimination, leading to cross-subgroup coalitions, (3) the status gap between two subgroups increases with the relative size of the disadvantaged subgroup, (4) when two subgroups are fighting for and against discrimination, it is more difficult to prevent defections in the bottom subgroup than in the top subgroup, and (5) opponents of discrimination are outnumbered (Jasso, 2001c).

Procedures

MODELING THE PROPENSITY TO EMIGRATE.   In both justice theory and status theory, it has long been thought that the distributions of the justice evaluation and of the status score, respectively, can be used to characterize fundamental aspects of a group or society. For example, in justice theory it is said that society is "a meeting of justice sentiments" and status theory views social interaction as structured by the participants' status.

Accordingly, among individuals with a justice world-view, we model the propensity to emigrate as a function of the justice score and among individuals with a status world-view as a function of the status score. At the societal level, the proportion at risk of emigrating will be related to the distribution of justice evaluations in a justice society and, in a status society, to the distribution of status scores.

But what kind of a function is the propensity to emigrate? How does it vary with the justice evaluation or with the status score? An important idea, going back at least as far as Aristotle (Book IV of the *Politics*) and receiving renewed impetus from Blau (1964, pp. 296–297), is that the middle class is the backbone of society—the "solid core" in Blau's (1964) words—the lower and upper classes being less integrated into the whole. Extending this idea to the realm of migration, we reason that the middle class is more attached to a country than either the lower or the upper classes and, therefore, less at risk of emigration.

On the basis of classical reasonings, together with Blau's (1964) analyses and informed as well by Simmel's ([1896–1917] 1950) examination of the stranger, Jasso (1996) proposed to model the propensity to emigrate using a discontinuous function which assumes the value zero in the middle region and positive values in the lower and upper regions. Accordingly, we partition both the justice evaluation continuum and the status continuum into three regions, with cutpoints at -1 and $+1$. The set of persons with a justice evaluation or a status score between -1 and $+1$ are designated the mainstream. We assume that individuals in the mainstream constitute the backbone of society, the "solid core" in Blau's (1964) words, and will have zero propensity to emigrate. Individuals with a justice evaluation or a status score either below -1 or above $+1$ will be somewhat disaffected and prone to wander, to use Simmel's ([1896–1917] 1950) word, to other collectivities.

We have restricted the active propensity to emigrate to two regions of the justice evaluation or status distribution, but the task still remains of specifying the function in those two regions. As in Jasso (1996), here we model the propensity to emigrate using the principal branches of the inverse secant function, denoted arcsec(x). The principal branch specification of the inverse secant function has several appealing features as an approximation to the propensity to emigrate. First, it is undefined for arguments between -1 and $+1$; thus, it represents

well the notion that the mainstream does not have a propensity to emigrate. Second, its values in the lower region are higher than its values in the upper region, ranging between $\pi/2$ and π in the lower region and between zero and $\pi/2$ in the upper region; thus, the propensity to emigrate is greater among the poor than among the rich. Third, in each region the arcsecant function is an increasing function of the argument; thus, the propensity to emigrate is higher for the less poor than for the poorest and also higher for the richest than for the less rich.

ANALYZING THE PROPENSITY TO EMIGRATE. What proportion of the population has a propensity to emigrate? And how does the proportion at risk of emigrating vary with economic inequality? Justice theory and status theory provide a set of techniques—known as the macromodel strategy—that can be used to address these questions.* The macromodel strategy begins with the distribution of a theoretically based quantity in a collectivity, for example, the justice evaluation distribution or the status distribution. Interest centers on parameters of that distribution and on a variety of other features, such as substantively pertinent subdistribution structures. For example, in justice theory, two kinds of subdistribution structures are studied: (1) the truncated subdistribution structure associated with splitting the collectivity into subgroups defined by the values of the justice evaluation at the cutpoints (e.g., the underrewarded, the justly rewarded, and the overrewarded) and (2) the censored subdistribution structure associated with splitting the collectivity into subgroups defined by a qualitative characteristic such as race, ethnicity, religion, gender, and the like.[†]

Our strategy is to investigate the distributions of J and S and of arcsec(J) and arcsec(S) using mathematically specified distributions to model the distributions of the valued goods. Accordingly, the method has three steps. First, select the modeling distributions for the valued goods and, using change of variable techniques, obtain the distributions of S and of the goods component of J that arise from each of the valued good distributions.[‡] Second, using techniques from the study of probability distributions, find the proportion with a J or S less than -1 and the proportion with a J or S greater than $+1$. Third, in the special case of a justice–materialistic society, obtain the first partial derivatives of the proportions at risk of emigrating with respect to inequality in the distributions of the valued cardinal goods.

Results

Following the procedures described above, Jasso (1996) found that a justice society can have both a bottom and a top; that is, the propensity to emigrate may be non-zero at one or both of the extreme regions. A justice–non-materialistic society, however, has only a bottom region with a propensity to emigrate; this region contains approximately 18% of the population. In justice–materialistic societies, whether the propensity to emigrate is positive in only the

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[*]Currently there are four main techniques for deriving predictions from justice theory and status theory—the micromodel, macromodel, mesomodel, and matrixmodel strategies. For description of these techniques, see Jasso (2002a).

[†]Our use of the terms "censored" and "truncated" follows the usage in Moses (1968) and in Johnson and Kotz (1969, p. 27). In this usage, censoring refers to selection of the units by their ranks or percentage (or probability) points; truncation refers to selection of the units by values of the variate. For example, the group with incomes less than $20,000 forms a truncated subdistribution; the top 5% of the population forms a censored subdistribution.

[‡]Status and the justice evaluation about ordinal goods give rise to a particular distribution—the negative exponential in the justice–non-materialistic case and the positive exponential in the status case. In the justice–materialistic case, however, the justice evaluation distribution depends on the distributions of the actual reward and the just reward. Selection of modeling distributions for cardinal goods is attentive to several parameters, including the lower and upper bounds; the search for new modeling distributions utilizes standard sources such as Johnson and Kotz (1970a, 1970b) and Stuart and Ord (1987) and the little handbook by Evans, Hastings, and Peacock (2000). See Jasso (2002a) for further details.

Table 16-2. Who Migrates: Predicted Effects of Justice Theory and Status Theory, by Justice versus Status Society and Materialistic versus Non-materialistic Society

	Materialistic society	Non-materialistic society
Justice society	Persons with incomes <37% of the mean or >271% of the mean	Bottom 18%
Status society	Top 37%	Top 37%

Table 16-3. Predicted Effects of Overall Economic Inequality on Emigration, by Justice versus Status Society and Materialistic versus Non-materialistic Society

	Materialistic society	Non-materialistic society
Justice society	Increasing	None
Status society	None	None

bottom or only the top or in both bottom and top depends on the distributional shape of the valued cardinal good. In such societies, individuals with incomes less than 37% of the mean or higher than 271% of the mean will be at risk of emigrating. Similarly, the proportions in the bottom and top depend on the distributional shape of the valued cardinal good.

Jasso (1996) provides formulas and representative quantities for three distributional forms that can be used to model the distribution of cardinal goods, the lognormal, the Pareto, and the power function. In justice–materialistic societies, it is also possible to find the effect, on the proportion at risk of emigrating, of overall inequality in the distribution of the valued cardinal good. In the three distributional families analyzed, the total proportion at risk of emigrating, drawing from both the bottom and the top, is always an increasing function of inequality in the distribution of the valued cardinal good.

The macromodel strategy for deriving theoretical implications is now being used with status theory. Results obtained to date indicate that, in a status society which values a single good (whether cardinal or ordinal), the propensity to emigrate is positive only in a top region containing about 37% of the population. Moreover, because, as noted above, the status function, proposed by Sørensen (1979) and satisfying Goode's (1978) convexity condition, notices only ranks, the proportion at risk of emigrating from a status society is unrelated to inequality in the distribution of cardinal goods even if cardinal goods are valued.

Tables 16-2 and 16-3 summarize the results obtained to date.

As shown in Tables 16-2 and 16-3, these results thus suggest that emigration streams will look very different depending on whether the society is a justice–materialistic society, a justice–non-materialistic society, or a status society. Whether an origin country's emigration stream is dominated by individuals from the top or bottom of the society depends on whether its people value justice or status and whether they care about material or non-material goods.*

In this illustration, the first central question of migration analysis—What are the characteristics of immigrants at entry, and why?—is answered in part by important features of the

*Of course, a deeper analysis will also endogenize the processes by which justice or status concerns dominate and, similarly, cardinal or ordinal goods are valued. Jasso (1987) provides initial analyses of the problem of "choosing a good." As for caring for justice or status, Jasso (2002b) explores the possibility of a general set of rules, for example, stipulating that in conditions of poverty or hunger, justice concerns are always activated.

origin country context—exemplifying the first element in the life course perspective—including the distributional form of valued material goods. The link between the migration phenomenon of interest and the origin country context is provided by theories of two basic processes. The operation of justice processes and of status processes generates the link and makes salient the life course perspective. Thus, we are working in the top subpanel of the theoretical panel in the triptych of migration analysis (Figures 16-1 and 16-2), and that work lands us in the top left-hand corner of Table 16-1.

EMPIRICAL ILLUSTRATION:
MIGRATION, THE LIFE COURSE, AND HEALTH

Health is an important attribute which plays a part at all stages of the migration process and which, given that it unfolds over time, requires a life course perspective for its correct understanding. Looking at Table 16-1, it is evident that health permeates virtually every cell. In this section we address health aspects of the first two central questions of migration analysis—concerning immigrants at entry and the progress of immigrants. We develop a model of health and migration that incorporates health selectivity, stresses due to the process of applying for legal permanent residence, and the effects of U.S. exposure and we report preliminary estimates using data from the NIS-P.

Modeling Immigrant Health

Consider an adult residing in a foreign country and contemplating a permanent move to the United States. At the time of the migration decision—roughly when the first steps are taken to obtain legal permanent residence in the United States—he or she has a certain level of healthiness. The distribution of healthiness among all prospective immigrants to the United States around the world at this stage of the immigrant career is determined by selectivity forces, including U.S. immigration criteria. Of course, the intensity of self-selection on healthiness may vary; for example, refugees may be less self-selected on health than employment immigrants. The healthiness distribution may be a composite distribution, consisting of several distinct subdistributions corresponding to distinct migration flows.*

There follows a period of time during which the prospective migrant must wait for admission to legal permanent residence, carrying out whatever tasks are required in order to satisfy visa requirements (e.g., obtaining a medical examination, a police and military record, etc.).[†] This waiting period has two phases. The first phase, applicable only to prospective migrants who do not qualify for a numerically unlimited visa, involves waiting for the availability of a visa. Visa waiting times vary by both class of admission and origin country; for example, as discussed above, in March 2003, there was no delay for employment-based visas, but the delay for family-based visas ranged from 3.7 years in the family first category (unmarried sons and daughters of U.S. citizens) for natives of all countries except Mexico and the

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*Jasso, Massey, Rosenzweig, & Smith (2002) explore health selectivity among immigrants, focusing on immigrant skills and country conditions. As will be seen, the model presented here focuses on health changes after the initial selection, and the empirical work controls for the initial selection.

[†]See the State Department and INS websites for comprehensive description of procedures for obtaining legal permanent residence. For example, the INS website includes a section describing all the pathways to legal permanent residence (www.ins.usdoj.gov/graphics/services/residency/index.htm).

Philippines, for whom such visas had a waiting period of 10 and 13 years, respectively, to 21 years in the family fourth category (siblings of U.S. citizens) for persons from the Philippines.*

The second phase of the waiting period consists of application processing. Of course, for prospective migrants who qualify for a numerically unlimited visa, this phase is co-terminous with the entire waiting period. The length of this phase varies with a number of administrative factors, including the number of personnel assigned to immigrant visa processing and whether changes in immigration law make necessary the design of new forms and/or retraining of personnel.

In some situations, all or some of the waiting period is spent in the United States. For example, persons with legal temporary nonimmigrant visas—as foreign students, say, or H-1B specialty workers—may be applying for legal permanent residence under family or employment provisions of the law. Some persons do not qualify for a legal permanent visa, under any provision of the law. They may enter the United States with a legal temporary visa and then lapse into illegality. Or they may enter the United States illegally (i.e., "without inspection").

We conceptualize overall healthiness as having two components, a permanent component, denoted h^p, and a transitory one, denoted h^t.[†] We assume that migrants make their initial migration decision based on the permanent component of their healthiness. The process of applying for permanent residence is highly stressful, however, and the transitory component declines in response to the immigration process stresses. Similarly, living in the United States illegally is highly stressful, and the transitory component declines.[‡]

The decline in the transitory component of health can be characterized by its magnitude, by the length of time during which the decline occurs, and by the shape of the decline (e.g., its steepness). These aspects of the decline may vary by migration stream. For example, the stresses may be greater for immigrants requiring an affidavit of support (all family immigrants and a subset of employment immigrants) than for other immigrants, and, therefore, the magnitude of the decline may be greater for these immigrants; and the stresses may be greater for illegals.

Among applicants for legal immigrant visas, permanent residence is eventually obtained. At that point the immigration process stresses end, and we may conjecture that observed healthiness—more precisely, the transitory component of health—begins an upward trajectory. The incline, like the decline, may be characterized by its magnitude, by the length of the recovery period, and by its shape. And, as with the decline, aspects of the recovery period may also vary by immigrant stream. Except for normal aging, one might imagine that following the recovery period the immigrant returns to the original level of observed healthiness, so that the magnitude of the decline would equal the magnitude of the incline, unless, of course, the

stresses have been so severe or prolonged that the body's physiology is altered (Seeman, Singer, Rowe, Horwitz, & McEwen, 1997; Smith, 1999).*

This model raises several new empirical questions, including (1) whether the steepness of the decline and the steepness of the recovery are related, (2) whether the duration of the application process and the duration of the recovery period are related, and (3) whether, within the application and recovery periods, steepness and duration are related.

Additionally, there is another mechanism that must be incorporated into the model, and it involves the possibly deleterious effect of the U.S. environment. It has been conjectured that the combination of a possibly less healthy diet and environmental agents may induce a deterioration of the immigrant's health (Frisbie, Cho, & Hummer, 2001; Rumbaut & Weeks, 1996). Of course, an opposite conjecture is also plausible, given that (1) health-relevant conditions are more favorable in the United States than in many origin countries, (2) immigrants experience large gains in earnings, on average, after immigration,[†] and (3) immigrants, whose propensity to invest in themselves is visible in their migration behavior, are likely to invest in their health, taking advantage of their earnings gains and new opportunities in the United States.[‡]

Thus, the point at which inception of U.S. residence occurs—and thus exposure to the U.S. environment begins—marks the start of a possible new effect. The visible effect, if any, of U.S. exposure will differ depending on whether inception of U.S. residence occurs before admission to permanent residence or at admission to permanent residence, that is, during the decline associated with immigration process stresses or at its conclusion. If there is no U.S. exposure effect, both the immigration process decline and the postimmigration recovery are unaffected. However, when inception of U.S. residence occurs prior to admission to legal permanent residence, a positive effect of U.S. exposure would attenuate the immigration process decline, while a negative effect would exacerbate it. Moreover, a U.S. exposure effect would also alter the recovery incline, exaggerating it if positive, attenuating or even reversing it if negative.[¶]

There is a further complication. Adjusting to life in a new locale may pose new challenges and stresses, so that in the initial period of U.S. residence two distinct effects, of U.S. exposure and of adjustment to a new life, may be intertwined.

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*For some categories of immigrants, the trajectory would be somewhat different. For example, refugees gain permanent admission when they are admitted with a (nonimmigrant temporary) refugee visa; arguably, for refugees, the stressful part of the application process ends with arrival in the United States. Refugees may, but need not, adjust to legal permanent residence; they are eligible to do so after 1 year. Asylees also may, but need not, adjust to legal permanent residence, and they are eligible to do so after 1 year; however, in contrast to refugees, there is an annual ceiling of 10,000 on their adjustment. We may surmise that the ceiling generates stress, and, thus, for asylees the immigration process stress would continue until admission to permanent residence. Similarly, among immigrants admitted as spouses of U.S. citizens, those married less than 2 years acquire only conditional permanent residence, and the immigration process stresses may continue for 2 more years until the conditionality restriction is removed. Immigrants admitted under the employment creation provisions of immigration law (i.e., as investors) also face conditionality restrictions for 2 years.

†Among immigrants in the nationally representative NIS-P who were employed in the United States at the time of the baseline round and who had worked abroad within the past 10 years, earnings gains, denominated in dollars based on estimates of the country-specific purchasing power of the currencies from the Penn International Comparisons Project, described in Summers and Heston (1991), were substantial—on average, $10,306 for men (a 68% increase) and $6,146 for women (a 62% increase).

‡For elaboration of the relationship between income and health, see Smith (1999).

¶Among illegals, a positive effect of U.S. exposure would attenuate the decline, while a negative effect of U.S. exposure would exacerbate the decline.

Empirical Framework

Empirical assessment of the immigrant health model we have sketched is quite demanding, requiring health measures at several carefully chosen points in time: (1) at or just before the start of the application process, (2) at inception of U.S. residence, (3) at admission to legal permanent residence, (4) at several points between the start of the application process and admission to legal permanent residence, and (5) at several points after inception of U.S. residence and after admission to permanent residence.

Further, measuring health is no simple matter. Here, the measure used is the subjective assessment of overall health widely used in U.S. data collection. This measure asks "In general, would you say your health is?" and provides five response categories: excellent, very good, good, fair, and poor.* Previous research suggests that subjective assessment of overall health accords well with objective measures (Wallace & Herzog, 1995; Ware & Donald, 1978). Nonetheless, it is possible that measured healthiness includes a new component—the immigrant's style of reporting, a style which may be understated or overstated. Moreover, the style of reporting, too, may have both a permanent component and a transitory component.

Thus, overall health, subjectively measured, may contain four distinct components: the two health components introduced earlier plus two style of reporting components, a permanent component of the style of reporting, denoted s^p, and a transitory component of the style of reporting, denoted s^t. The challenge is to isolate the four components or at least some of the four and assess their determinants and correlates.

Our main interest is in the effects of immigration process stresses and of exposure to the U.S. environment. Both these elements operate on the transitory component of health. Assessing these effects thus requires controlling for the three remaining components, the permanent health component h^p and the two style components s^p and s^t.

Applying fixed-effects techniques to longitudinal data would control for the two permanent components, h^p and s^p, but the transitory component of style would still remain entwined with the transitory component of health. A possible solution would be to find variables which operate on only the transitory style component, thus controlling for it.

In this illustration, I draw on a recent study which uses data from the NIS-P to obtain estimates of the effects of U.S. exposure on health (Jasso, Massey, Rosenzweig, & Smith, 2002). As discussed earlier, the NIS-P interviewed a probability sample of new legal immigrants admitted to permanent residence in 1996. Interviews were conducted at baseline, at 6 months, and at 12 months, with a randomly selected half also interviewed at 3 months (to gauge the effects of periodicity on attrition). The subjective evaluation of own health was measured at the 6-month and 12-month rounds. At the 6-month round, the average time since admission to legal permanent residence was 13–14 months; the 12-month interviews took place on average 9 months later.[†]

Because our data cover only the period after admission to permanent residence, they cannot be used to assess the health decline associated with the immigration process stresses. Accordingly, we focus on the effects of U.S. exposure.

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*As noted, the subjective health assessment is a category scale. It thus constrains both the respondent and the analyst. In general, it is desirable to use a scale that maps as faithfully as possible the conceptual healthiness space in the respondent's head. The magnitude estimation techniques pioneered by Stevens (1975) would seem ideal, in particular, the technique called "number matching" in which the respondent uses the number system to describe the magnitude of interest. Number matching techniques are gaining currency in social research, for example, in factorial survey analysis.

[†]NIS-P data exemplify what we have called level 3 specificity.

We specify a fixed-effects model in which subjective health assessment is a function of the date of the interview; the coefficient of interview date thus represents the effect of U.S. exposure or, equivalently, the effect of the passage of time between the two interviews. Our goal is to obtain estimates of the effect of U.S. exposure on the transitory component of health. Because the health assessment still contains the transitory style component, we must find a way to control for it.

Respondents in the NIS-P were interviewed in English plus a total of 18 other languages. Among bilingual and bicultural persons, it is commonly thought that the same question can elicit different responses in different languages. For example, a person in excellent health may casually respond "excellent" to the health question in English, but in another language may understate health to avoid hubris or offending the interviewer. Thus, the language in which the interview was conducted may capture culture effects on the transitory component of the style of reporting. Accordingly, we include in the specification a term for whether the interview was conducted in English.*

To ensure that interview language does not operate as a proxy for English language skill, which could be associated with investments in health, given that an underlying investment propensity might generate both the propensity to invest in English language skill and the propensity to invest in health, we include in one of the specifications the full set of binary variables from two five-category measures of English language skill, a measure of understanding English and a measure of speaking English.[†]

The health assessment variable, as noted, is a five-category variable, coded with one indicating poor health and five indicating excellent health. There is no assurance, however, that respondents treat the five categories as a quantitative scale, and, thus, the scale may at best be ordinal. Accordingly, it would be useful to conduct all analyses twice, both in least-squares versions which treat the health variable as quantitative and in ordered-logit versions which treat it as ordinal. Thus, we set up a specification in which the dependent variable represents the change in healthiness—whether health improved, stayed the same, or deteriorated—and in which the explanatory variables include two binary variables for each of the language variables, one of these representing no change and the other representing, in the interview language variable, change from an interview language other than English to English, and, in the English skill variables, improvement in the English language skill. This specification simulates a fixed-effects specification.

Correct interpretation of the results hinges on the timing of the recovery from the immigration process stresses. The first observation point is at the 6-month round; respondents had on average been admitted to legal permanent residence 13–14 months earlier. If recovery from the immigration process stresses is complete by this date, then the time trend between the two rounds unambiguously indicates the effect of U.S. exposure. If, on the other hand, recovery is not complete, then this effect will reflect both the positive effect of recovery and the effect—in whatever direction—of U.S. exposure. Thus, a negative effect would indicate a negative U.S. exposure effect, the magnitude of which could range from the estimated effect, if recovery is complete, to a larger effect, if recovery is not complete and the estimated effect is the net of two opposing processes. A zero effect could indicate either that (1) the recovery is not complete and the

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*For example, in a recent *New York Times* article, Riding (2002) quotes the French actress Rachida Brakni, whose first language was Arabic and who subsequently learned French and, more recently, English, as saying, "In English I have no inhibitions. I feel very free. It's a very good sensation."

[†]The two questions ask "How well would you say you understand English?" and "How well would you say you speak English?" The five response categories range from "Not well at all" to "Very well." These English language skill questions were asked at all rounds of the NIS-P.

recovery effect and a negative U.S. exposure effect exactly offset each other or (2) the recovery is complete and there is no U.S. exposure effect. Finally, a positive effect could indicate either (1) that the recovery is not complete and (a) the recovery effect is equal to or larger than a negative U.S. exposure effect, or (b) there is no U.S. exposure effect, or (c) both the recovery and U.S. exposure effects are positive, or (2) the recovery is complete and the U.S. exposure effect is positive.

Results

Table 16-4 reports the average subjective health assessment of the new legal immigrants at both the 6-month and 12-month rounds, as well as at the 6-month round for those immigrants also interviewed at the 12-month round. The averages are reported for all immigrants and also for selected subsets based on visa category, prior illegal experience, sex, continent of birth, and religion. As shown, the average health assessment rose across the period. Of course, this could reflect changes in the transitory component of style of reporting as well as changes in the transitory component of health. The figures also indicate that, while most subsets registered an increase in the health assessment, in some subsets the assessment declined. For example, while both men and women registered an increase, immigrants in two visa categories—spouse of a sibling of U.S. citizen and spouse of a diversity principal—registered a decrease.

Immigrant health differs by visa category. In general, the healthiest immigrants, according to the subjective assessment, are spouses of U.S. citizens and employment-based immigrants (both principals and spouses). The least healthy immigrants are refugees and those admitted as parents of U.S. citizens. These patterns reflect immigrant selectivity forces; for example, within immigrants not related by blood to U.S. citizens or residents, spouses of U.S. citizens and employment-based immigrant principals are "screened" by employers and U.S. citizen spouses (and employment-based spouses are in turn "screened" by the screened principal).*

Interestingly, immigrants with prior illegal experience are healthier than immigrants without such experience. Moreover, those former illegals who eluded detection by the INS are healthier than the ones known to the INS. We may speculate that migrants willing to endure the hardships of illegality must be healthier and that the skill necessary to avoid detection is correlated with health.

Table 16-4 also provides an indication of selective attrition. On average, the health assessment at the 6-month round is higher among those who were also interviewed at the 12-month round. Though the difference is tiny, this result suggests that the less healthy—and/or those who reported themselves as less healthy at the 6-month round—did not participate in the 12-month round.

When we compare reported health at the two rounds for individuals, we find that 49% registered no change in their health, while 29% reported greater healthiness at the 12-month round and 22% reported themselves to be less healthy at the 12-month round. Of course, as discussed above, the measure confounds four separate components of health. For a sharper view of health changes, we turn to the multivariate, fixed-effects estimates.

Table 16-5 reports the estimates of the fixed-effects specifications in which the health assessment is treated as quantitative (1 = poor health and 5 = excellent health). For a more accurate implementation of the model, the sample is restricted to immigrants without conditionality restrictions on their admission to permanent residence—thus, newlywed spouses of U.S. citizens are excluded, as are two respondents with conditional investor visas; additionally,

*See Jasso et al. (2002) for further discussion of selectivity and its links to visa category.

TABLE 16-4. Average Subjective Health Assessment at 6-month and 12-month Rounds, by Personal and Visa Characteristics: FY 1996 Immigrants Aged 18+ Years

| Characteristic | 6-month round | | 12-month round |
	All	In 12-month round	
Sex			
Male	3.712	3.729	3.856
Female	3.598	3.606	3.671
Visa category			
Spouse of US citizen, > 2 years	3.864	3.871	3.935
Spouse of US citizen, < 2 years	4.112	4.102	4.181
Parent of US citizen	2.903	2.862	2.898
Sibling of US citizen, principal	3.538	3.538	3.538
Sibling of US citizen, spouse	3.75	3.684	3.632
Employment-based, principal	4.146	4.138	4.158
Employment-based, spouse	3.933	3.939	4.052
Refugee	2.778	2.793	3.073
Diversity, principal	3.6	3.536	3.536
Diversity, spouse	3.8	3.8	3.533
Spouse of permanent resident	3.2	3.203	3.541
Other	3.806	3.847	3.914
Illegal experience			
None	3.618	3.631	3.721
Eluded detection by INS	3.837	3.853	3.889
Known to INS	3.657	3.658	3.810
Continent of birth			
Africa	4.350	4.360	4.081
North America	3.683	3.678	3.808
South America	3.805	3.808	3.930
Asia	3.5	3.531	3.715
Europe	3.531	3.539	3.541
Oceania	4.75	4.75	4.5
Religious preference			
Catholic	3.676	3.676	3.775
Protestant	3.799	3.802	3.944
Muslim	3.971	3.971	3.867
Jewish	2.830	2.830	3.02
Buddhist	3.404	3.404	3.629
Hindu	4.186	4.186	3.833
Orthodox Christian	3.514	3.514	3.523
Other religion	3.268	3.268	3.493
No religion	3.409	3.409	3.578
All immigrants	3.747	3.755	3.842
Number of respondents	1028	969	973

Notes: Health assessment is a five-category rating with 1 = poor and 5 = excellent. Estimates are based on weighted data, to adjust for oversampling employment-based immigrants. Spouses of U.S. citizens are distinguished according to whether they have been married less than 2 years and, thus, have only conditional permanent residence.

TABLE 16-5. **Fixed-effects Estimates of Subjective Health Assessment: FY 1996 Immigrants Aged 25–59 Years**

	Specification	
Variable	(1)	(2)
Interviewed in English	0.243	0.249
	(2.00)	(2.07)
Time between interviews	0.0000822	0.0000348
(days)	(0.44)	(0.19)
Understands English		
Not very well	—	− 0.0442
		(0.23)
Average	—	0.269
		(1.21)
Fairly well	—	0.461
		(1.89)
Very well	—	0.655
		(2.51)
Speaks English		
Not very well	—	− 0.122
		(0.80)
Average	—	− 0.0883
		(0.49)
Fairly well	—	0.0657
		(0.31)
Very well	—	0.0725
		(0.31)
R-squared	0.820	0.828
Number of respondents	631	630

Notes: Analysis excludes immigrants with conditional permanent residence (mostly spouses of U.S. citizens who have been married less than 2 years). Absolute values of *t*-ratio appear in parentheses beneath coefficients. English language skill coefficients in the second specification are jointly significant at the 0.007 level (*F*-ratio with 8 and 610 degrees of freedom = 2.65).

the sample is restricted to immigrants in the 25–59 age range. Two specifications are reported, one with and one without the English-language skill variables. As discussed above, the interview language variable is included to capture cultural effects on the style of reporting, and the English language skill variables are included so that the culture effect is not contaminated by English language skill. As shown, the estimated effect of the time between interviews is positive but negligible in magnitude and not significant.

Assuming that the time coefficient captures the effects of U.S. exposure on the transitory component of health, the results suggest that if recovery from the immigration process stresses is complete by the time of the 6-month interview, then the effect of U.S. exposure is non-negative. If recovery is not yet complete, then a negative effect of U.S. exposure cannot be ruled out, as it could be offset or dominated by the positive recovery effect. Because by the first observation point, more than 1 year has passed since admission to permanent residence, we believe that these results indicate that the effect of U.S. exposure in the approximately 9 months between the two rounds is either zero or positive. Of course, the U.S. exposure effect in this initial period of residence may contain a negative effect of the initial adjustment to life in a new locale. If so, the effect of dietary and environmental aspects would be positive and offset by the negative adjustment effect.

This interpretation assumes that age is not a factor—in part because the period of time between interviews is small, in part because the analysis is confined to immigrants under age 60. Of course, if the time effect includes a negative aging effect, then the possibility of a negative U.S. exposure effect is even smaller.

Note that in the full NIS respondents will be followed indefinitely, so that at some point it will be possible to declare the recovery period as well as the initial adjustment period complete so that all subsequent time effects reflect the operation of only U.S. exposure—and age.

The effect of interview language is positive, as predicted, and unambiguously statistically significant. As discussed above, this effect is presumed to operate on the transitory component of the style of reporting. The fact that the coefficient remains almost exactly the same even when the English language variables are included increases our confidence that it is a pure culture effect, affecting style of reporting only and not healthiness.

Meanwhile, the English skill variables are jointly significant and the coefficients roughly consistent with a pattern in which, as widely conjectured, investments in health go hand in hand with investments in other forms of human capital.

Table 16-6 reports the results of the ordered-logit specifications in which all variables are expressed as changes over time. The U.S. exposure effect is negative but not significant, suggesting that the effect of U.S. exposure is negligible, although it may be positive and offset by a negative adjustment effect in the initial period of residence.

TABLE 16-6. Ordered Logit Estimates of whether Health Improved, Stayed the Same, or Deteriorated: FY 1996 Immigrants Aged 25–59 Years

	Specification	
Variable	(1)	(2)
Interview language		
No change	0.566	0.582
	(1.41)	(1.45)
Change from other language to English	0.876	0.947
	(1.71)	(1.83)
Time between interviews (days)	−0.00129	−0.00140
	(1.37)	(1.48)
Understands English		
No change	—	0.524
		(2.12)
Improvement	—	0.579
		(1.91)
Speaks English		
No change	—	0.291
		(1.21)
Improvement	—	0.350
		(1.18)
Cut 1	−0.968	−0.280
Cut 2	1.437	2.159
Number of respondents	625	625

Notes: Analysis excludes immigrants with conditional permanent residence (mostly spouses of U.S. citizens who have been married less than 2 years). Absolute values of z appear in parentheses beneath coefficients. English language skill coefficients in the second specification are jointly significant at the 0.0295 level (χ^2 with 4 degrees of freedom = 10.75).

The language variables behave in a similar way as in the specifications reported in Table 16-5. The interview language variables, though not significant, operate in the expected direction—using English as the interview language increases a positive health assessment. The English skill variables are jointly statistically significant and again suggest that investments in health are associated with investments in language skills.

Taken together, the results of both sets of analyses indicate that language use is implicated in the style of reporting healthiness, that improvements in English language skill are associated with improvements in observed healthiness, and that the effect of U.S. exposure per se is negligible. We cannot reject the hypothesis that the effect of U.S. exposure is zero.

The larger sample size of the full NIS will make possible many further analyses, such as estimation of fixed-effects models within subsets of the sample, defined by visa category, say, or sex. As discussed above, it is possible that the steepness of the recovery and the length of the recovery period may differ systematically by such characteristics as visa category or sex. Moreover, the effects of U.S. exposure may also differ systematically by visa or other characteristics. Additionally, information on migration history will enable pinpointing the date of inception of U.S. residence as well as controlling for previous time spent in the United States, so that the effects of U.S. exposure and adjustment to a new locale can be distinguished. Although the NIS samples immigrants just after admission to legal permanent residence, NIS data will enable preliminary assessment of the immigration process decline in healthiness in two ways: first, by asking for a self-report of healthiness at the time the immigration application process started and, second, because it may happen, fortuitously, that the spouses or household partners of some sampled immigrants, who themselves will also be interviewed, may be involved in the visa application process.

It is also useful to speculate about the conditions under which we would expect a negative time trend in the health of immigrants. In our model, the transitory component of health deteriorates during the visa application period and deteriorates among illegal migrants. If a sample includes persons who are not legal permanent residents, then it is eminently possible that their health is deteriorating over time. Attentiveness to visa status is thus important in understanding immigrant health.

In this illustration, the first two central questions in the study of migration are addressed empirically via a model of the immigrant health trajectory that begins with the initial decision to immigrate to the United States and continues through the visa application process, admission to legal permanent residence, and for over 1 year afterwards. We are working in the top subpanel of the empirical panel of the triptych of migration analysis (Figures 16-1 and 16-2), and that work spans the first two rows of Table 16-1, reflecting all four themes of the life course perspective.

CONCLUDING NOTE

In this chapter we provided an overview of migration analysis from the life course perspective, taking as our point of departure (1) the four central questions of migration analysis and (2) the four themes in the life course perspective identified by Elder (1994). Because migration unfolds over the life course, its analysis is naturally suited to the life course perspective. Migration analysis from the life course perspective provides a coherent framework for examining the parts played by cohort and context, age and duration, the myriad of interactions and relationships embodied and generated in the migration process, and the strategies and decisions of all the actors in the migration process.

We presented two illustrations of migration analysis from the life course perspective, a theoretical illustration and an empirical illustration.

In the theoretical illustration, we used justice and status theory, together with a proposition which goes back to the Greeks and which has recently been analyzed by Blau (1964), to derive predictions for the propensity to emigrate. This work distinguishes between three basic world-views—justice–materialistic, in which individuals and societies care about justice and value material goods, justice–non-materialistic, in which individuals and societies care about justice and value non-material goods, and status, in which individuals and societies care about status (and may care about either material or non-material goods). The predictions indicate that, while in justice–materialistic societies, emigration may be from the bottom or the top of social hierarchies, in justice–non-materialistic societies emigration is likely to be from the bottom and in status societies from the top. The precise configuration of emigration from the bottom and top in justice–materialistic societies depends on the shape of the income distribution and its overall inequality. Moreover, in justice–materialistic societies, the total proportion with a positive propensity to emigrate is an increasing function of the overall inequality in the income distribution.

In the empirical illustration, we developed a model of the immigrant health trajectory that distinguishes between (1) health at the initial selection into migration, (2) health deterioration during the (stressful) process of applying for immigration, (3) recovery and health improvement after admission to legal permanent residence, and (4) the possible effect (positive or negative) of exposure to the U.S. environment. We estimated the model using data from the NIS-P. Two sets of analyses yielded non-significant results of opposite sign and negligible magnitude for the effect of U.S. exposure. Thus, we cannot reject the hypothesis that U.S. exposure per se has no effect on observed health, although, concomitantly, investments in health made possible by higher income and health-enhancing opportunities in the United States may be producing improvements in health. Results also indicate a culture effect in the subjective evaluation of health, with immigrants interviewed in English providing more optimistic assessments, net of English language skill. Substantially sharper analyses will be possible with the data from the full NIS, the baseline round of which will go in the field in mid-2003.

Migration, like the life course perspective, is about human development. And human development is a lifelong concern. Migration analysis from the life course perspective may provide substantial positive synergies and illuminate human development in a new way.

REFERENCES

Barrett, A. (1996). Did the decline continue? Comparing the labor-market quality of United States immigrants from the late 1970s and late 1980s. *Journal of Population Economics, 9*, 57–63.

Berger, J., & Zelditch, M., Jr. (1993). Orienting strategies and theory growth. In J. Berger and M. Zelditch, Jr. (Eds.), *Theoretical research programs: Studies in the growth of theory* (pp. 3–19, references 453–454). Stanford, CA: Stanford University Press.

Blau, P. M. (1964). *Exchange and power in social life*. New York: Wiley & Sons.

Borjas, G. J. (1985). Assimilation, changes in cohort quality, and the earnings of immigrants. *Journal of Labor Economics, 3*, 463–489.

Clausen, J. S. (1991). Adolescent competence and the shaping of the life course. *American Journal of Sociology, 96*, 805–842.

Clausen, John A. (1993). American Lives: Looking Back at the Children of the Great Depression. Berkeley: University of California Press.

Cobb-Clark, D. A. (1993). Immigrant selectivity and wages: The evidence for women. *American Economic Review, 83*, 986–993.

Committee on the Health and Safety Implications of Child Labor, Board on Children, Youth, and Families, National Research Council/Institute of Medicine. (1998). *Protecting youth at work: Health, safety, and development of working children and adolescents in the United States*. Washington, DC: National Academies Press.

Duleep, H. O., & Regets, M. C. (1996). Admission criteria and immigrant earnings profiles. *International Migration Review, 30*, 571–590.

Elder, G. H., Jr. (1994). Time, human agency, and social change: Perspectives on the life course. *Social Psychology Quarterly, 57*, 4–15.

England, P., Kilbourne, B. S., & Farkas, G. (1988). Explaining occupational sex segregation and wages: Findings from a model with fixed effects. *American Sociological Review, 53*, 544–558.

Evans, M., Hastings, N., & Peacock, B. (2000). *Statistical Distributions* (3rd ed.). New York: Wiley & Sons.

Frisbie, W. P., Cho, Y., & Hummer, R. (2001). Immigration and the health of Asian and Pacific Islander adults in the United States. *American Journal of Epidemiology, 153*, 372–380.

Goode, W. J. (1978). *The celebration of heroes: Prestige as a control system*. Berkeley, CA: University of California Press.

Grossman, M. (1972). On the concept of health capital and the demand for health. *Journal of Political Economy, 80*, 223–255.

Hernandez, D. J., & Charney, E. (Eds.) (1998). *From generation to generation: The health and well-being of children in immigrant families*. (Report of the National Research Council and the Institute of Medicine). Washington, DC: National Academy Press.

Jasso, G. (1978). On the justice of earnings: A new specification of the justice evaluation function. *American Journal of Sociology, 83*, 1398–1419.

Jasso, G. (1985). Marital coital frequency and the passage of time: estimating the separate effects of spouses' ages and marital duration, birth and marriage cohorts, and period influences. *American Sociological Review, 50*, 224–241.

Jasso, G. (1987). Choosing a good: Models based on the theory of the distributive-justice force. *Advances in Group Processes: Theory and Research, 4*, 67–108.

Jasso, G. (1996). Deriving implications of comparison theory for demographic phenomena: A first step in the analysis of migration. *The Sociological Quarterly, 37*, 19–57.

Jasso, G. (1997). Migration and the dynamics of family phenomena. In A. Booth, A. C. Crouter, & N. Landale (Eds.), *Immigration and the family: Research and policy on U.S. immigrants* (pp. 63–77). Mahwah, NJ: Lawrence Erlbaum.

Jasso, G. (1999). How much injustice is there in the world? Two new justice indexes. *American Sociological Review, 64*, 133–168.

Jasso, G. (2001a). Comparison theory. In J. H. Turner (Ed.), *Handbook of sociological theory* (pp. 669–698). New York: Kluwer Academic/Plenum Press.

Jasso, G. (2001b). Formal theory. In J. H. Turner (Ed.), *Handbook of sociological theory* (pp. 37–68). New York: Kluwer Academic/Plenum Press.

Jasso, G. (2001c). Studying status: An integrated framework. *American Sociological Review, 66*, 96–124.

Jasso, G. (2002a). Seven secrets for doing theory. In J. Berger and M. Zelditch, Jr. (Eds.), *New directions in contemporary sociological theory* (pp. 328–354). Boulder, CO: Rowman and Littlefield Press.

Jasso, G. (2002b). *Justice, status, and migration*. Presented at the Quadrennial Meeting of the International Sociological Association, Brisbane, Australia.

Jasso, G. (in press). The tripartite structure of social science analysis. *Sociological Theory*.

Jasso, G., Massey, D. S., Rosenzweig, M. R., & Smith, J. P. (2000a). Assortative mating among married new legal immigrants to the United States: Evidence from the New Immigrant Survey Pilot. *International Migration Review, 34*, 443–459.

Jasso, G., Massey, D. S., Rosenzweig, M. R., & Smith, J. P. (2000b). Family, schooling, religiosity, and mobility among new legal immigrants to the United States: Evidence from the new immigrant survey pilot. In L. F. Tomasi and M. G. Powers (Eds.), *Immigration today: Pastoral and research challenges* (pp. 52–81). Staten Island, NY: Center for Migration Studies.

Jasso, G., Massey, D. S., Rosenzweig, M. R., & Smith, J. P. (2000c). The New Immigrant Survey Pilot (NIS-P): Overview and new findings about U.S. legal immigrants at admission. *Demography, 37*, 127–138.

Jasso, G., Massey, D. S., Rosenzweig, M. R., & Smith, J. P. (2003). Exploring the religious preference of recent immigrants to the United States: Evidence from the New Immigrant Survey Pilot. In Y. Haddad, J. I. Smith, and J. L. Esposito (Eds.), *Religion and Immigration*: *Christian, Jewish, and Muslim Experiences in the United States*. Oxford, UK: Oxford University Press.

Jasso, G., Massey, D. S., Rosenzweig, M. R., & Smith, J. P. (2002). *Immigrant health—selectivity and acculturation*. Paper prepared for the National Academy of Sciences Conference on Racial and Ethnic Disparities in Health, Washington, DC.

Jasso, G., & Rosenzweig, M. R. (1990). *The new chosen people: Immigrants in the United States* (a volume in *The population of the United States in the 1980s: A census monograph series*). New York: Russell Sage.

Jasso, G., & Rosenzweig, M. R. (1995). Do immigrants screened for skills do better than family-reunification immigrants? *International Migration Review, 29*, 85–111. (Reprinted in K. F. Zimmerman (Ed.), *The Economics of Migration* Elgar Press, 2002.)

Jasso, G., Rosenzweig, M. R., & Smith, J. P. (2000). The changing skill of new immigrants to the United States: Recent trends and their determinants. In G. J. Borjas (Ed.), *Issues in the Economics of Immigration* (pp. 185–225). Chicago, IL: University of Chicago Press.

Johnson, N. L., & Kotz, S. (1969). *Distributions in statistics: Discrete distributions*. New York: Wiley.

Johnson, N. L., & Kotz, S. (1970a). *Distributions in statistics: Continuous univariate distributions—1*. Boston, MA: Houghton Mifflin.

Johnson, N. L., & Kotz, S. (1970b). *Distributions in statistics: Continuous univariate distributions—2*. Boston, MA: Houghton Mifflin.

Kasl, S. V., & Berkman, L. (1983). Health consequences of the experience of migration. *Annual Review of Public Health, 4*, 69–90.

Kilbourne, B. S., England, P., & Beron, K. (1994). Effects of individual, occupational, and individual characteristics on earnings: Interaction of race and gender. *Social Forces, 72*, 1149–1176.

Loaeza Tovar, E. M., Planck, C., Gómez Arnau, R., Martin, S., Lowell, B. L., & Meyers, D. W. (Eds.) (with contributions by Bean, F. D., Corona, R., Tuirán, R., Woodrow-Lafield, K., Bustamante, J., Jasso, G., Taylor, J. E., Trigueros, P., Escobar Latapí, A., Martin, P., Donato, K., Lopez Castro, G., Tienda, M., Verduzco, G., Greenwood, M., Unger, K., Alba, F., Weintraub, S., Fernández de Castro, R., García, M., & Griego) (1997). *Report of the Binational Study of Migration between Mexico and the United States*. Washington, DC: U.S. Commission on Immigration Reform (English): (Mexico, DF: Mexican Ministry of Foreign Affairs) (Spanish).

Mayer, Karl-Ulrich. (1986). Structural Constraints on the Life Course. *Human Development 29*, 163–170.

Merton, R. K. [1949, 1957] (1968). *Social theory and social structure*. New York: Free Press.

Moses, L. E. (1968). Statistical analysis: Truncation and censorship. In D. L. Sills (Ed.), *International encyclopedia of the social sciences* (Vol. 15, pp. 196–201). New York: Macmillan.

Parsons, T. (1968). Émile Durkheim. In D. L. Sills (Ed.), *International Encyclopedia of the Social Sciences* (Vol. 4, pp. 311–320). New York: Macmillan.

Portes, A., & Rumbaut, R. G. (2001). *Legacies: The story of the immigrant second generation*. Berkeley, CA: University of California Press.

Riding, A. (2002). Unlikely star captivates the French. *New York Times*, April 4.

Riley, Matilda White. (1986). The Dynamisms of Life Stages – Roles, People, and Age. *Human Development 29*, 150–156.

Rumbaut, R. G., & Weeks, J. (1996). Unraveling a public health enigma; Why do immigrants experience superior prenatal health outcomes? *Research in the Sociology of Health Care, 13B*, 337–391.

Seeman, T. E., Singer, B. H., Rowe, J. W., Horwitz, R. I., & McEwen, B. S. (1997). Price of adaptation—allostatic load and its health consequences. *Archives of Internal Medicine, 157*, 2259–2268.

Simmel, G. [1896–1917] (1950). *The sociology of Georg Simmel* (K. H. Wolff, Trans., Edited, Introduction). New York: Free Press.

Smith, J. P. (1999). Healthy bodies and thick wallets: The dual relation between health and economic status. *Journal of Economic Perspectives, 13*, 145–166.

Smith, J. P., & Edmonston, B. (Eds.) (1997). *The new Americans: Economic, demographic, and fiscal effects of immigration* (Report of the National Research Council). Washington, DC: National Academy Press.

Sørensen, A. B. (1979). A model and a metric for the analysis of the intragenerational status attainment process. *American Journal of Sociology, 85*, 361–384.

Stevens, S. S. (1975). In G. Stevens (Ed.), *Psychophysics: an introduction to its perceptual, neural, and social prospects*. New York: Wiley.

Strauss, J., & Thomas, D. (1998). Health, nutrition, and economic development. *Journal of Economic Literature, 36*, 766–817.

Stryker, S. (2001). Traditional symbolic interactionism, role theory, and structural symbolic interactionism: The road to identity theory. In J. H. Turner (Ed.), *Handbook of sociological theory* (pp. 211–231). New York: Kluwer Academic/Plenum Press.

Stuart, A., & Ord, J. K. (1987). *Kendall's advanced theory of statistics. Volume 1: Distribution theory* (5th ed.). New York: Oxford University Press.

Summers, R., & Heston, A. (1991). The Penn World Table (mark 5): An expanded set of international comparisons, 1950–1988. *Quarterly Journal of Economics, 106*, 327–368.

Thomas, W. I., & Znaniecki, F. [1918–1920] (1958). *The Polish peasant in Europe and America* (2 Vols.). New York: Dover.

U.S. Department of Justice. (2001). *Immigrants admitted into the United States as legal permanent residents, fiscal year 1972 through fiscal year 1998*. Springfield, VA: National Technical Information Service.

U.S. Immigration and Naturalization Service. (1943–1978). *Annual Report of the Immigration and Naturalization Service*. Washington, DC: U.S. Government Printing Office.

——. (1979–). *Statistical Yearbook of the Immigration and Naturalization Service*. Washington, DC: U.S. Government Printing Office.

U.S. Immigration and Naturalization Service. (1992). *Immigration Reform and Control Act: Report on the legalized alien population*. Washington, DC: U.S. Government Printing Office.

Vega, W., & Amaro, H. (1994). Latino outlook: Good health, uncertain prognosis. *Annual Review of Public Health, 15*, 39–67.

Wallace, R. B., & Herzog, R. (1995). Overview of the health measures in the Health and Retirement Study. *The Journal of Human Resources, 30*, S84–S107.

Wallerstein, I. (2002). The itinerary of world-systems analysis; Or, how to resist becoming a theory. In J. Berger & M. Zelditch, Jr. (Eds.), *New directions in contemporary sociological theory*. Boulder, CO: Rowman and Littlefield Press.

Ware, J., Davies-Avery, A., & Donald, C. (1978). *General health perceptions*. Santa Monica, CA: RAND.