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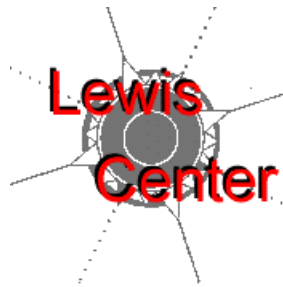
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The Social Process of Undocumented Border Crossing

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Abstract

In this paper we develop a theoretical model that views undocumented border-crossing as a well-defined social process influenced by the kind of human and social capital migrants bring with them to the border and constrained by the intensity and nature of U.S. enforcement efforts. We draw upon detailed histories of border-crossing from undocumented migrants originating in 34 Mexican communities to estimate equations corresponding to this model. We find that having a migrant parent greatly increases the odds of crossing the border with family or friends, and that people with ties to migrant parents and those who come from communities where U.S. migration is prevalent are more likely to cross with paid smugglers, or coyotes. As people accumulate migratory experience across U.S. trips, however, they grow progressively less likely to travel with others and more likely to cross alone, thus substituting migration-specific human capital for social capital. On initial undocumented trips, crossing with either a paid or unpaid guide (a coyote, friend, or relative) dramatically lowers the odds of arrest; but on subsequent trips the mode of crossing has no effect on the odds of apprehension, which are determined primarily by the migrant's own characteristics, particularly the knowledge and experience gained on earlier trips. U.S. enforcement efforts have little effect on the likelihood of arrest, except that INS involvement in drug enforcement sharply lowers the odds of apprehension.

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Introduction

Undocumented migration has become a bitter political issue in the United States. Three-quarters of Americans view it as a serious social problem (Harwood 1986; Espenshade and Calhoun 1993) and elected officials in key immigrant-receiving states have demanded tougher enforcement from federal authorities. In response to mounting public pressure, the Border Patrol launched a series of highly visible crackdowns on illegal immigration in El Paso in 1993 ("Operation Hold-the-Line") and San Diego in 1994 ("Operation Gatekeeper"), the two busiest border-crossing points (Bean et al. 1994; Graham 1996).

Despite attention focused on the Mexico-U.S. border as a line of defense against illegal entry, little is actually known about the social process of clandestine border-crossing. We do not understand very well how migrants make their way across well-guarded international borders despite the best efforts of authorities to stop them. Public officials and private citizens both seem to believe that more Border Patrol officers, thicker walls, deeper ditches, higher fences, and more sophisticated detection equipment will somehow staunch the flow (see Dunn 1996); but knowledge about what happens to migrants as they attempt to enter the U.S. illegally is limited, and neither officials nor citizens have a sound basis for judging whether police actions on the border are likely to stop people from entering.

In this article we develop a theory of clandestine border-crossing and use it to specify an analytic model that we estimate using data gathered from undocumented migrants in 34 Mexican communities and destination areas. Our theory views surreptitious border-crossing as a well-defined social process whereby migrants draw upon human and social capital to overcome barriers erected by U.S. immigration authorities and thus gain access to U.S. employment. Our results help to explain why the odds of apprehension have fallen since the early 1980s, despite the buildup of personnel and equipment along the border. We conclude that police actions will not be very effective in deterring undocumented Mexican migrants, owing to the wealth of personal and social resources at the disposal of those seeking to cross the border, the implicit practices of the U.S. Border Patrol, and the interplay between the two.

Prior Studies of Border-Crossing

A growing empirical literature has considered the process of undocumented border-crossing from three points of view. The first is organizational, evaluating the Immigration and Naturalization Service (INS) as a bureaucracy charged with a politically sensitive but nearly impossible task. A second set of studies examines border-crossing from the migrant's viewpoint using a range of qualitative approaches. A third category employs quantitative methods and data to measure the likelihood of apprehension and assess the effect of various personal characteristics, macro-level factors, and federal policies on it.

Organizational studies of border enforcement see immigration as a no-win issue for public officials, who consequently look for bureaucratic means to deflect the political heat (see Morris 1985; Calavita 1992; Hagan and Gonzalez Baker 1993; Heyman 1995; Dunn 1996). On one side of the issue are business interests who seek access to immigrant labor on favorable terms, often assisted by civil rights and ethnic advocacy groups. On the other side are unions, workers, and ordinary citizens who feel threatened by the influx of foreigners. Both interests are potentially powerful, and their

contradictory demands leave members of Congress and INS bureaucrats on the horns of a difficult political dilemma.

Through the mid-1960s, the Bracero Program provided officials at INS with a means of reconciling the contradictions. This temporary worker program provided agribusiness with a generous supply of Mexican workers, but gave the public the impression that Mexican immigration was under control, yielding strong public support for the agency (see Calavita 1992). With the end of the Bracero Program in 1964, however, the contradictions of immigration reemerged and bureaucrats once again began to feel the political heat. Officials began to search for a new means of managing the issue, and starting with Commissioner Leonard Chapman (1976), the agency adopted a two-pronged strategy of concentrating enforcement at highly visible points along the border while participating in selected high-profile causes to garner public support.

The concentration of resources at the border carries many political advantages. It sits well with the public, since the INS appears to be defending the United States against alien invaders. It allows the agency to claim cost-effectiveness, since border operations yield a large number of arrests at a low unit cost. In addition, border enforcement automatically justifies the need for additional funding, since rising arrests confirm the size of the illegal migration problem. Border enforcement also carries the advantage of not disturbing U.S. citizens, since repressive force is applied only to foreigners in a region that is largely outside of public view. Finally, border enforcement does not antagonize powerful U.S. business interests, since it does not really stop the entry of Mexican workers, most of whom simply try until they get in (Espenshade 1990; Heyman 1995; Donato, Durand, and Massey 1992).

In addition to border enforcement, a second prong of INS strategy has involved public relations: by taking on high profile, politically popular causes the agency has sought to cultivate public support and polish its image (Dunn 1996:82-83). Two recent examples are the war on drugs and the amnesty program authorized by the Immigration Reform and Control Act of 1986 (IRCA). The latter required the INS to administer a large-scale legalization program, and local District Commissioners seized the opportunity to carry out a well-publicized and largely successful campaign to overcome the agency's legendary reputation for inefficiency (see Hagan and Gonzalez Baker 1993). Similarly, when drug trafficking became a hot political issue in the late 1980s, the INS joined the "war on drugs" by diverting resources to drug interdiction (Dunn 1996:103-46), even though this action probably undermined the agency's ability to apprehend undocumented migrants (Heyman 1995).

What ultimately evolved was a new bureaucratic coping strategy for the INS along the border that Heyman (1995) calls the "voluntary departure complex." Other researchers have called it a "game of cat-and-mouse" (Chavez 1992; Koussoudji 1992) and a "revolving door" (Durand 1994). Graham (1996) succinctly defines the rules of the current border-enforcement game: mark your territory; hide your losses; return all captured pawns to the board; do not attempt to win (while not losing either); and cheat whenever possible. These studies essentially call attention to the tension between the agency's formal policy of policing the border to prevent illicit entry and its implicit policy of catching migrants and then quickly permitting them to try again.

Given the political constraints under which they operate, the career interests of Border Patrol officers are best served by making a large number of arrests and processing them rapidly. Likewise, the

interests of the migrants are to avoid arrest, but if arrested, to return to Mexico as soon as possible to try crossing again. The bureaucratic form that developed to institutionalize these interests is called the "voluntary departure order." Technically, each person arrested while entering the United States has the right to a hearing before an immigration judge, but neither the migrant nor the Border Patrol agent has an interest in pursuing this course of action. On the contrary, it is in their mutual self-interest that the migrant be deported to Mexico as soon as possible. Upon arrest, 97 percent of Mexican migrants sign a voluntary departure order waiving their right to a hearing and authorizing the Border Patrol to transport them back to Mexico without delay, usually within 24 hours.

All parties to the voluntary departure complex understand that, once repatriated, the migrant will simply try to cross the border again and that on the next attempt he or she will probably get in. This implicit understanding naturally produces a great deal of cynicism, but migrants and Border Patrol agents continue to play the game. The motivation for officers is the fun of the chase and the prospect of professional advancement as a reward for catching lots of "tonks" (INS parlance for undocumented migrants; according to Heyman [1995], the term comes from the sound that a flashlight is reported to make when it hits a migrant's head). For migrants, the motivation is the reward of possible employment and high earnings on the U.S. side of the border.

On a day-to-day basis, agents and migrants concentrate on playing the game according to mutually accepted rules. Border Patrol officers have fun chasing the migrants and meting out rewards and punishments to secure compliant behavior once they catch them, and migrants learn that they may use any means necessary to avoid capture (indeed, agents derive pleasure from a good chase), but once apprehended they must become cooperative to avoid being "tonked." After 55 years of continuous migration, the social encounter between Border Patrol officers and undocumented Mexican migrants is highly ritualized (Heyman 1995).

A second source of information on border-crossing comes from qualitative studies of clandestine entry. Since Bustamante's early work with Samora (1971), scholars and journalists have reported on border-crossing as participant observers (Halsell 1978; Waumbaugh, 1984; Conover 1987; Davis 1990). Others have compiled oral histories of undocumented migrants (Chavez 1992; Davis 1990; Hellman 1994; Durand 1996), and several migrants have published their own memoirs (de la Torre 1988; Pérez 1991). Siems (1992) has collected letters sent by undocumented migrants to their family members at home, and Durand and Massey (1995) have analyzed the content of votive paintings prepared by migrants and their families.

Three general conclusions emerge from these qualitative sources. The first is that for first-time migrants, the border looms as a threatening, dangerous, and hostile place. The histories, letters, testimonials, and paintings are replete with tales of suffering and victimization experienced while crossing the border: migrants get lost in the desert and nearly die of thirst; they almost drown while swimming the Rio Grande; they are robbed, beaten, or raped by criminals; they are hit by cars on highways; they are extorted by Mexican police; they are defrauded by unscrupulous border smugglers; they are forced to crawl, run, or jump through hazardous terrain; they are mistreated by Border Patrol agents or beat up by vigilantes; they are arrested, jailed, and summarily deported.

A second conclusion concerns the role played by friends and family in mitigating the hazards of the trip and assuaging the fears of new migrants. Friends and relatives with prior U.S. experience

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frequently accompany initiates across the border, showing them the preferred staging areas, routes, and techniques of clandestine entry. They also lead them to locations where smugglers offer their services and teach them how to pick an honest and competent person to guide them across the border; they show them how to bargain on the price and to extract guarantees for services rendered; and they teach them how to behave if and when they are apprehended, and what to expect upon arrest.

A third conclusion is that personal experience has a powerful effect in overcoming the barriers--real and psychological--to undocumented border-crossing. Although a person's first crossing may be intimidating and fraught with difficulties, once entry has been accomplished, the prospect of undertaking another trip does not seem so daunting; and on the third or fourth trip it may even seem routine. As experience accumulates, migrants acquire knowledge that makes subsequent crossings easier, cheaper, and less risky. They learn for themselves where the best entry points are, what the best times of the day are to stage an attempt, and what areas and people near the border to avoid. They learn the rules of the game and how to behave if caught. Over time, the prospect of arrest loses its sting.

The last source of information comes from quantitative studies of undocumented border-crossing. Espenshade (1990) has translated the scripted social interaction between migrants and Border Patrol officers into a "repeated trials model" that he applies to aggregate apprehension statistics compiled by the INS. He assumes that apprehension does not deter undocumented migrants from trying again; they simply make repeated attempts until they eventually get in. When he applied this probability model to INS apprehensions statistics, Espenshade found that the average likelihood of arrest on any attempted crossing between 1977 and 1988 was .32, a figure that is quite close to the .30 obtained by Crane et al. (1990), using a different analytical model, and is identical to that computed by Massey and Singer (1995) using entirely different data.

Koussoudji (1992) drew on microdata from Mexico's National Survey of Emigration to the Northern Border and the United States and found that access to a paid border-crossing guide increased the probability of illegal migration, and that using a paid guide increased the duration of the trip (as it required a longer period of U.S. labor to cover the costs). She found that coming from a community with a high prevalence of migration decreased trip duration, however, and that people apprehended in the past were more likely to be apprehended again in the future.

Based on a sample of migrants from seven Mexican communities, Donato, Durand, and Massey (1992) found that the use of a paid guide did not influence the probability of arrest. Indeed, the odds of using a guide were unrelated to any of the outcome measures they considered. In keeping with Espenshade's repeated trials model, however, they found that migrants reported a number of attempts equal to one more than the number of apprehensions. Although Donato and colleagues concluded that the risk of border apprehension was largely random, related more to luck than anything else, their analysis had several shortcomings: they dichotomized counts of apprehensions rather than applying Poisson regression to the counts themselves; they did not examine the effects of family background, network connections, or prior border-crossing experience; they did not control for macro-level factors that Espenshade and Acevedo (1995) have found to influence the probability of apprehension; and they relied on data from a relatively small sample of migrants.

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A Theoretical Model of Border-Crossing

In this analysis, we build upon prior studies by specifying a theoretical model of border crossing that incorporates individual, community, and national-level factors and estimate it using data and methods that overcome the limitations of earlier research. Figure 1 on page 6 summarizes our theoretical model of undocumented border crossing. The ultimate outcome of interest is the number of apprehensions a migrant experiences while trying to enter the United States without inspection (i.e., illegally). The number of apprehensions per trip corresponds to an underlying hazard or probability of arrest, which can be inferred from the count of arrests per trip.

The likelihood of capture is determined by the quantity and quality of human and social capital at a migrant's disposal, by the specific mode of border-crossing employed, and by the nature and intensity of U.S. enforcement efforts. Following Massey and Espinosa (1997), we make a fundamental distinction between general and migration-specific capital, a distinction that applies equally to human and social capital. Human capital consists of individual traits and characteristics that enhance performance with respect to some instrumental outcome (Becker 1975), in this case crossing the border successfully. General human capital includes performance-enhancing knowledge or experience that anyone might possess, whether or not they themselves have ever been to the United States (such as education or Mexican labor market experience). Social capital, according to Coleman (1988, 1990) and Bourdieu (1986), emanates from interpersonal ties that enable a person to achieve a desired goal (such as undocumented entry--see Espinosa and Massey 1997); and general social capital comes from ties that anyone might have, regardless of whether they themselves have ever been north of the border (see Massey and Espinosa 1997). Having a parent with U.S. migrant experience yields general social capital, since it is acquired by being born into the right family rather than through migration oneself.

On a first trip to the United States, only these general resources are available to prospective migrants to facilitate the process of undocumented border-crossing. They influence the number of apprehensions both directly and indirectly. Social capital directly influences apprehensions by providing first-time migrants with important information about border crossing that people without social ties to migrants lack (e.g., where to cross, what time of the day to leave, what to do if caught, etc.). It also affects the likelihood of apprehension indirectly by determining the mode of border crossing--whether the migrant crosses alone, with friends or family, or with a paid guide (commonly known as a coyote). Knowing an experienced migrant (i.e., possessing social capital) increases the odds that a friend or relative will be available to serve as a border-crossing guide, or at least provide a reference to a good, reliable coyote.

General human capital also acts both directly and indirectly to influence the number of apprehensions. People with age, education, and experience may better understand the importance of choosing a paid or unpaid guide to help them across the border, and these traits likewise might stand them in good stead during the crossing itself, yielding more intelligent and adaptive decisions about where and how to cross.

The intensity and nature of the U.S. enforcement effort is external to the individual and largely outside of personal control. It constitutes the last factor affecting the likelihood of apprehension. It exerts the same exogenous effect whether a person is a new migrant attempting a first crossing, or an experienced migrant attempting the latest in a series of undocumented border-crossings.

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Experienced migrants, however, have access to new forms of human and social capital that are not available on the first trip. These migration-specific forms of human and social capital are acquired through migration itself, but like general forms of capital they operate both directly and indirectly to influence the odds of apprehension.

In the course of traveling north and crossing the border, a migrant acquires valuable knowledge and experience that is useful in avoiding apprehension, information that can be applied on later trips. In addition, over the course of several trips migrants acquire new social ties that lower the risks they experience. The availability of migration-specific human and social capital thus changes the social process of border crossing, yielding a fundamental conceptual distinction between first and later trips. On initial crossings, migrants are dependent on guides to provide them with the experience and knowledge they lack, but on later trips they can apply their own migration-specific human and social capital to increase their odds of success, making them less dependent on guides, either paid or unpaid. In other words, we see a progressive substitution of migration-specific human capital for social capital and the use of crossing guides. In Figure 1, effects on later trips are indicated by dashed lines to distinguish them clearly from effects on first trips.

An Operational Model of Border-Crossing

We operationalize our conceptual model using data gathered by the Mexican Migration Project (MMP), a binational project directed by Jorge Durand and Douglas S. Massey based at the University of Guadalajara and the University of Pennsylvania. All data files and documentation from the MMP are publicly available on the internet (see http://lexis.pop.upenn.edu/mexmig). The data come from simple random samples of households interviewed in selected Mexican communities and their U.S. destination areas during successive years from 1987 through 1995. Information about these samples is summarized in Table 1.

Sampling frames for the Mexican samples were constructed by carrying out a house-to-house census of each community. Usually an entire town or city was canvassed, but in large urban areas this was unfeasible and specific working-class neighborhoods were demarcated and sampled instead. Interviewing generally occurred in December and January, when most international migrants are back in Mexico for the holidays. These sampling procedures yielded a total of 6,341 households residing in 34 communities. Refusals were usually not a problem: although the rate reached as high as 15 percent in one community, in most cases the refusal rate was 6 percent or less and the average was just 6.2 percent. In two small rural communities we encountered no outright refusals. Higher refusal rates generally reflected a generalized distrust of outsiders, reflecting local political conditions rather than suspicions about the study per se.

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The Mexican data were supplemented with non-random samples of out-migrants located in the United States during the summer subsequent to each winter's survey. From the community samples, we determined where in the United States migrants went and sent interviewers to those areas to survey out-migrants who had settled abroad. Snowball sampling methods (Goodman 1961) were used to compile the sample of out-migrants. In most communities, 20 out-migrant households were interviewed, but in some cases fewer households were questioned. In several instances, U.S. data were still being entered at the time of our study and not yet available for analysis, yielding a total of 485 U.S. households.

Although the snowball samples are not strictly representative of the U.S. out-migrant communities, we developed a set of weights to reflect the relative contribution of U.S. households in the total binational community. The weights, which are applied to each case, are the inverse of the sampling fraction employed at each site (Sudman 1983).

Table 1. Mexican communities sampled for study of savings and remittances of migrant to the United States.

Sample			Mexican Sample		U.S. Sample	
State and Urban Rank	Rounded 1990 Population	Refusal Rate	Sample Size	Sampling Fraction	Sample Size	Sampling Fraction
Colima						
City	24,500	.087	200	.102	20	.028
Guanajuato						.000
Metro area	868,000	.119	200	.232	0	.999
Metro area	363,000	.057	200	.100	20	.121
City	52,000	.034	200	.256	20	.023
City	33,000	.072	200	.072	15	.217
City	24,000	.127	200	.113	15	.047
City	21,000	.047	200	.053	20	.816
Town	17,000	.057	200	.073	20	.999
Rancho	1,500	.085	150	.605	20	.999
Rancho	1,000	.029	100	.699	10	
Guerrero						.004
Metro area	101,000	.089	100	.005	10	
Jalisco						.052
City	74,000	.074	201	.119	20	.038
City	31,000	.044	200	.113	20	.642
Town	5,000	.115	200	.250	20	.127
Town	3,5000	.038	200	.392	20	.260
Rancho	3,000	.010	200	.375	15	.425
Rancho	1,000	.029	100	.467	7	
Michoacán						.098
Metro area	493,000	.083	200	.056	20	.065
Metro area	217,000	.083	200	.184	13	.009
City	32,000	.037	200	.029	20	.248
Town	7,000	.057	200	.139	20	.035
Rancho	6,500	.050	200	.143	20	.999
Rancho	2,000	.152	150	.335	20	
Nayarit						.012
City	20,000	.045	200	.045	20	.014

Town	11,000	.010	200	.074	20	
San Luis Potosí						.000
Metro area	526,000	.048	200	.232	0	.000
City	42,000	.052	200	.278	0	.090
City	23,000	.024	200	.580	20	.000
Rancho	1,000	.000	200	.302	0	.000
Rancho	1,000	.000	102	.999	0	
Zacatecas						
Metro area	100,000	.142	239	.127	10	.147
Town	7,500	.127	365	.213	20	.017
Rancho	2,000	.063	149	.512	10	.164
Rancho	1,000	.025	187	.803	0	.000
Average	91,632	.062	187	.267	17	.274

In Mexico, sampling fractions were computed as the number of households in the sample divided by the number of eligible households on the sampling frame. In the United States, sampling fractions were estimated by dividing sample households by the <u>estimated</u> number of households in the out-migrant community.

We derived an estimate of the size of each community's out-migrant population by using data on the current location of offspring of the household head who were no longer household members. Our survey gathered information about <u>all</u> children of the household head, whether or not they were presently members of the sample household. Non-member children were generally offspring who had grown up and moved out to form their own households. As relatives of sample members, they constitute a multiplicity sample of the binational community (see Somoza 1981; Hill 1981; Kalton and Anderson 1986). Following Massey and Parrado (1994), we determined the number of non-member children who were living in the United States and Mexico at the time of the survey and formed the ratio between them to indicate the relative size of the U.S. community. We then applied this ratio to the Mexican community sampling frame to estimate the total size of the out-migrant community.

The Mexican community samples represent conditions in the core migrant-sending region at the time of the survey, whereas the U.S. surveys depict conditions in the corresponding out-migrant communities at roughly the same time. When pooled and weighted, they offer a comprehensive portrait of 34 binational communities created through recurrent processes of international migration and settlement. In choosing our Mexican study sites, we sought to include a range of community population sizes, ethnic compositions, and economic bases; communities were not chosen to locate U.S. migrants per se. Although our sample is not strictly representative of states in western Mexico, it provides a broad cross-section of households and communities in the region.

Respondents were interviewed using ethnosurvey methods (Massey et al. 1987). From each household head we gathered a complete life history that included a detailed inventory of all border-crossings. For each undocumented trip to the United States, migrants told us the year of the crossing and the number of times they were apprehended by the INS while trying to enter. Our fieldwork confirms Espenshade's (1990) repeated trials model: undocumented migrants reported crossing repeatedly until they got in. The counts of

apprehensions reported by undocumented migrants on first and subsequent trips to the United States constitute the ultimate outcomes of interest in this analysis.

Our operationalization of theoretical constructs is summarized in Table 2. We selected all male household heads who made at least one undocumented trip during the period from 1967 to 1994 (the number of female heads was too small to sustain meaningful analysis). The data were arranged to predict mode of crossing and number of apprehensions in year t+1 from individual characteristics defined in year t and enforcement efforts and controls defined in year t+1. We estimated the model separately for first and later U.S. trips.

Table 2. Definitions of variables used in analysis of undocumented border crossing.

Variable	Definition
Final Outcome	
Number of Apprehensions	Number of times apprehended
Mode of Crossing	
Alone	Crossed by himself (reference)
With Family or Friends	Crossed with Relatives or Friends
With Coyote	Crossed with Paid Border Smuggler
Demographic Background	
Married	Married at time of trip
Farm Origin	Usual occupation in agriculture
General Human Capital	
Age	Age at time of trip
Education	Education in year of trip
Mexican Labor Experience	Hundreds of months of Mexican labor market experience at time of trip
General Social Capital	
Parent U.S. Migrant	Parent had been to U.S. by year of trip
Siblings U.S. Migrant	Sibling had been to U.S. by year of trip
Prevalence of Migration	Proportion of community aged 15+ with U.S. experience at time of trip
Migration-Specific Human Capital	
U.S. Experience	Hundreds of months of U.S. experience at time of trip
Prior U.S. Trips	No. of U.S. trips taken prior to current trip
Prior Apprehensions	Average number of arrests on prior trips
Migration-Specific Social Capital	
Spouse a U.S. Migrant	Spouse had been to U.S. by year of trip
Child U.S. Migrant	Child had been to U.S. by year of trip
U.S. Enforcement Efforts	
Linewatch Hours	Millions of hours INS devoted to patrolling border in year of trip
Drug Deportations	Thousands of Deportations by INS for Narcotics Violations in year of trip
Control Variables	
Place of Crossing	Tijuana (reference), Mexicali, Juarez, Nogales, Piedras Negras, Laredo, Reynosa, Matamoros, Unknown/Other
Cohort Size	Millions of illegal entries in year of trip
Coyote Cost	Average cost of a coyote in hundreds of pesos

From the MMP, we are able to identify three modes of border-crossing: alone (the reference category), with family or friends, and with a paid coyote. If a migrant reported crossing with a coyote, he was coded into that category even if friends or relatives were also present. Our indicators of general human capital include age (a proxy for maturity, judgement, and wisdom), education (years of schooling completed), and months of Mexican labor market experience (expressed in hundreds). General social capital is indicated by whether or not the respondent's parent had prior experience in the United States, whether or not a sibling had ever been to the United States, and the overall prevalence of U.S. migration in the community (the proportion of community members aged 15+ who have ever been to the United States). As general human and social capital rise, we expect migrants to be more likely to cross with relatives or friends and with a coyote, and less likely to cross by themselves. We also hypothesize that increasing human and social capital will lower the odds of apprehension, as will using a guide, either paid or unpaid.

On later U.S. trips, we measure migration-specific human capital using three indicators: the number of months of prior U.S. experience (expressed in hundreds), the number of prior U.S. trips, and the number of apprehensions a respondent experienced while trying to enter the United States illegally on earlier trips. Migration-specific social capital is indicated by whether or not the migrant's spouse was a U.S. migrant, and whether or not any of the migrant's children had begun migrating by the year of the trip. Although spouses and children may, in theory, begin migrating independently of male household heads, in practice their participation tends to follow the migration of the head and occur as a result of his involvement in foreign wage labor. In keeping with Massey and Espinosa (1997), we classified these social ties as migration-specific, occurring as an outgrowth of the process of migration itself.

In general, we expect people progressively to substitute migration-specific human capital for the use of paid guides. As experience grows and the number of trips rises, the odds of crossing with a guide (relative/friend or coyote) should diminish, and as these indicators of migration-specific capital increase, the mode of crossing should likewise have less of an effect on the likelihood of arrest (i.e., the number of apprehensions).

Hypotheses about the effect of prior arrests are drawn from the ethnographic literature on border-crossing. Arrest is clearly a learning experience for undocumented migrants, but judging from prior field investigations what is learned is not what the public and elected officials would like to think. Above all, migrants learn one thing about arrest: it carries few consequences. If one goes quietly and does not resist, one will be taken to a holding area, processed with a voluntary departure order, driven quickly back to the border, and quietly deported. In most cases, migrants lose a few hours of their time, and at worst a day.

Once they have been arrested, therefore, undocumented migrants come to understand that little of consequence will likely happen to them if they are apprehended. Over a series of arrests, they learn how to behave to minimize the risks of injury and mistreatment upon apprehension, and how to limit the time they are held in custody by the INS. As a result, the prospect of arrest is far more daunting before the fact than afterward; and the more arrests a migrant experiences, the more likely he is to view the apprehension process as routine.

Through repeated arrests and deportations, in other words, undocumented migrants are socialized into the norms of the voluntary departure complex. The more someone has been arrested, the more likely he is to attempt a crossing alone rather than with family and friends or with a paid coyote. Why pay coyote fees that begin at $300 to reduce the probability of apprehension if there are no consequences that follow from arrest? A few hours in detention simply do not equal the opportunity costs incurred. Even if apprehension were to delay a migrant's arrival at work by one day, at an hourly rate of $6 per hour, the opportunity costs are just $48 for an eight-hour workday. At this rate, an undocumented migrant would have to be arrested and deported more than six times before a $300 coyote bill would become cost-effective.

As apprehensions accumulate, moreover, the process of arrest and deportation necessarily becomes scripted. Rather than making undocumented migrants more careful and wary on future trips, apprehensions in fact work in the opposite direction: since arrest carries few practical consequences, migrants become less, rather than more, careful about crossing the border. Not only do they become less likely to invest in a coyote, they become less likely to make costly changes in their own behavior, such as crossing in remote sectors, selecting more difficult and hazardous terrain, or traveling at night. Since little happens upon apprehension, why undergo inconvenience or incur unnecessary risks? It is more cost-effective to choose an easy crossing site and a convenient time and then simply try one's luck. Although the likelihood of apprehension may be higher, the odds of getting across are still good, and even if one is unlucky, this strategy poses fewer risks than would be incurred by crossing more hazardous terrain in darkness. Thus, being caught changes a migrant's behavior in ways that make them more, rather than less, likely to get caught (less careful, more nonchalant), so that the number of prior arrests is expected to have a positive, rather than a negative, effect on the odds of apprehension.

In addition to human and social capital, we also examine the effect of U.S. enforcement efforts on the apprehensions process. The intensity of enforcement is measured by the number of person hours that INS officers devote to patrolling the border (linewatch hours, in INS parlance). We also measure the nature of that effort by assessing the degree to which the INS is engaged in drug interdiction, which competes with immigration enforcement for limited agency resources (Dunn 1996). We measure the degree of INS involvement in drug enforcement by recording the number of INS arrests for narcotics violations in the year of the migrant's trip (Immigration and Naturalization Service 1995).

In addition to these substantive variables, we also include several control variables. We use dummy variables to indicate the principal border-crossing points, using Tijuana as the reference category. We control for the size of the migrant cohort (the estimated number of undocumented entries during the year in question--from Massey and Singer [1995]) to hold constant the number of people attempting to cross each year, as given fixed enforcement resources more attempts should yield a lower likelihood of apprehension. In the models predicting the mode of crossing, we also include the average cost of a coyote (denominated in pesos) during the year in question, which we computed directly from MMP data. Finally, we control for the respondent's demographic background using dummy variables for marital status and rural origin.

Means and standard deviations for all variables are shown in Table 3. As one moves from first to later trips, migrants experience fewer average apprehensions, and they display a greater tendency to cross alone rather than with family and friends or a coyote. Nonetheless, the vast majority of respondents report crossing with someone. Only 8 percent crossed by themselves on the first trip and 15 percent did so on later trips. Three-quarters of all migrants paid a coyote to guide them on their first trip, a fraction that fell to two-thirds on later trips. About the same percentage of respondents crossed with family or friends on first and later trips.

General human capital is roughly constant across trips, as one would expect, but general social capital displays a tendency to increase from first to later trips. The percentage with a migrant parent goes from 34 percent to 38 percent; the share with a migrant sibling goes from 45 percent to 60 percent; and the prevalence of migration in the respondent's community goes from 27 percent to 33 percent. None of these differences are statistically significant, however. The big differences between first and later trips, by definition, occur with respect to indicators of migration-specific human capital. On later trips, the average migrants had accumulated 55 months of U.S. experience across 4.27 prior trips, and had been apprehended an average of 0.54 times. In addition, 13 percent of respondents reported having a migrant spouse and 14 percent reported having a child who had been to the United States.

The distribution of crossing sites remains fairly constant over time, with no significant differences between first and later trips. Around 60 percent of the crossings occurred in Tijuana, by far the most popular crossing point, and another 5 percent occurred just east of there in Mexicali. The most traversed point on the Texas-Mexico border is Laredo (12 percent), followed by Piedras Negras (5 percent), Matamoros (4 percent), Juarez (2 percent), and Reynosa (2 percent). Another 3 percent crossed at Nogales (Arizona) and 7 percent were coded as other or unknown.

Table 3. Means and standard deviations for variables used in study of border crossing: undocumented male household heads from 39 Mexican communities.

Variable	All Trips Mean	S.D.	First Trips Mean	S.D.	Last Trips Mean	S.D.
Final Outcome						
Number of Apprehensions	0.46	1.13	0.56	1.31	0.43	1.04
Mode of Crossing						
Alone	0.12	0.33	0.08	0.27	0.15	0.35
With Family or Friends	0.18	0.38	0.17	0.38	0.18	0.38
With Coyote	0.70	0.46	0.75	0.43	0.67	0.47
Demographic Background						
Married	0.73	0.44	0.58	0.49	0.80	0.40
Farm Origin	0.42	0.49	0.34	0.47	0.46	0.50
General Human Capital						
Age	30.63	10.18	28.59	9.94	31.57	10.15
Education	4.28	3.31	4.60	3.47	4.13	3.22
Mexican Labor Experience	1.10	1.03	1.08	1.07	1.10	1.01
General Social Capital						
Parent U.S. Migrant	0.37	0.48	0.34	0.47	0.38	0.49
Siblings U.S. Migrant	0.59	0.49	0.45	0.50	0.66	0.47
Prevalence of Migration	0.31	0.14	0.27	0.14	0.33	0.14
Migration-Specific Human Capital						
U.S. Experience	0.41	0.47	0.00	0.00	0.55	0.50
Prior U.S. Trips	2.93	4.10	0.00	0.00	4.27	4.33
Prior Apprehensions	0.37	0.78	0.00	0.00	0.54	0.89
Migration-Specific Social Capital						
Spouse a U.S. Migrant	0.11	0.31	0.00	0.00	0.13	0.34
Child U.S. Migrant	0.11	0.31	0.00	0.00	0.14	0.35
U.S. Enforcement Efforts						
Linewatch Hours	1.83	0.45	1.74	0.47	1.87	0.44
Drug Deportations	1.91	3.99	1.77	3.94	1.97	0.02
Control Variables						
Place of Crossing						
Tijuana	0.59	0.49	0.61	0.49	0.58	0.49
Mexicali	0.05	0.23	0.05	0.22	0.06	0.23
Juarez	0.02	0.15	0.03	0.16	0.02	0.15
Nogales	0.03	0.18	0.03	0.17	0.03	0.18
Piedras Negras	0.05	0.22	0.06	0.23	0.05	0.22
Laredo	0.12	0.32	0.09	0.29	0.13	0.33
Reynosa	0.02	0.14	0.02	0.16	0.02	0.14
Matamoros	0.04	0.19	0.04	0.20	0.04	0.19
Unknown/Other	0.07	0.26	0.07	0.25	0.07	0.26
Cohort Size	2.00	1.33	1.76	1.33	2.11	1.31
Coyote Cost	1.53	2.91	1.36	2.87	1.61	2.92
Number of Cases	4,967		1,540		3,405	

The Mode of Border Crossing

We estimated a multinomial logit model to predict the mode of undocumented border crossing, and the results are presented in Table 4. This model originally was estimated separately for first and later trips, but we found few significant differences between the two sets of equations (aside from the obvious entry of migration-specific variables on later trips), so we pooled the data to estimate a single model, thereby conserving degrees of freedom and space (separate estimates for first and later trips can be sent upon request). The left-hand columns of Table 4 show effects of independent variables on the odds of crossing with family and friends, and the right-hand columns show the effects of the same variables on the odds of crossing with a coyote, both are compared to a reference category of crossing alone.

Undocumented migrants are especially likely to cross the border with family or friends when they have a parent with U.S. experience (indeed, the coefficient is seven times its standard error). In this case they are clearly being guided by someone older and more experienced than they are, typically their father. Migrants are also likely to cross with a relative or friend when they have children who have begun migrating, an effect that is only relevant on later trips and probably involves the respondent serving as the guide rather than the guided.

Interestingly, migrant siblings <u>reduce</u> the odds of crossing with relatives or friends, possibly because brothers or sisters provide access to information that enable a solo crossing. In this case, the social capital derived from ties to siblings would take the form of information rather than direct personal assistance on the border. Ethnographic reports emanating from the field also suggest that siblings tend to leave for the U.S. at different times, possibly as part of a family risk diversification strategy. Given two siblings with equal endowments of human and social capital, the odds that one of them will get into the United States is greater if they cross separately rather than together. If the apprehension probability is .33 per attempt, two siblings crossing together both experience the same odds of successful entry--about two in three. If they travel separately, however, the chances that one of them will get in are nearly .90 percent
(1-.33*.33'.891).

As hypothesized, the accumulation of migration-specific human capital tends to reduce the odds of crossing with an unpaid guide. As months of U.S. experience accumulate across successive trips, the odds of crossing with a relative or friend steadily diminish. Migration-specific human capital does not, however, directly substitute for social capital in selecting a guide. In the model for later trips, the effect of having a migrant parent actually <u>increases</u> when migration-specific variables are added in (results sent on request). Thus, migration-specific human capital acts in addition to social capital to determine the mode of border crossing.

Table 4. Multinomial logit regression predicting the mode of undocumented border crossing: male household heads from 39 Mexican communities.

Variable	Mode of Border-Crossing (Reference'Alone)			
	With Family & Friends		With Coyote	
	B	SE	B	SE
Demographic Background				
Married	0.214	0.148	0.035	0.124
Farm Origin	0.021	0.112	0.168*	0.099
General Human Capital				
Age	-0.011*	0.007	-0.018**	0.006
Education	-0.003	0.021	-0.025	0.018
Mexican Labor Experience	-0.042	0.067	0.037	0.057
General Social Capital				
Parent U.S. Migrant	0.757**	0.126	0.529**	0.108
Siblings U.S. Migrant	-0.260**	0.120	-0.257**	0.102
Prevalence of Migration	0.666	0.465	2.537**	0.386
Migration-Specific Human Capital				
U.S. Experience	-0.351*	0.192	-0.152	0.152
Prior U.S. Trips	-0.082**	0.021	-0.078**	0.017
Prior Apprehensions	0.018	0.063	-0.163**	0.057
Migration-Specific Social Capital				
Spouse a U.S. Migrant	-0.070	0.182	-0.311**	0.152
Child U.S. Migrant	0.468**	0.204	0.223	0.167
U.S. Enforcement Efforts				
Linewatch Hours	-0.098	0.258	0.860**	0.219
Drug Deporations	-0.042	0.042	0.053	0.034
Control Variables				
Place of Crossing				
Tijuana	---	---	---	---
Mexicali	0.324	0.250	-0.129	0.208
Juarez	-0.359	0.365	-0.805**	0.284
Nogales	-1.097**	0.283	-1.661**	0.199
Piedras Negras	0.620**	0.191	-1.420**	0.190
Laredo	0.619**	0.165	-0.686**	0.146
Reynosa	1.504**	0.390	0.168	0.375
Matamoros	0.760**	0.294	-0.035	0.261
Unknown/Other	0.775**	0.227	-0.114	0.200
Cohort Size	0.047	0.095	-0.106	0.079
Coyote Cost	0.028	0.052	-0.107**	0.043
Constant	0.510	0.426	0.854**	0.363
Chi Squared	704.580**			
Log Likelihood	-3,543.424**			
Pseudo R Squared	0.090**			
Number of Cases	4,775			

* p<.10
** p<.05

The only other individual-level variable to influence the odds of crossing with family or friends is an indicator of general human capital: age. As migrants grow older, they become less likely to cross with family or friends. To the extent that age brings improved judgment, maturity, and wisdom, it represents a form of general human capital that reduces the need for an unpaid guide. The remaining significant effects pertain to exogenous or control factors.

U.S. enforcement efforts have no significant effect on the decision to cross with friends or relatives. There are substantial differences by place of crossing, however. In general, migrants crossing in the busiest sectors (Tijuana, Mexicali, and Juarez), where enforcement resources are most highly concentrated, display similar propensities to cross with relatives or friends. In contrast, migrants crossing at Nogales display a markedly lower tendency to cross with friends or family (they travel alone); whereas those crossing into Texas in the lower Rio Grande Valley are more likely to cross with family or friends.

The likelihood of crossing with a coyote is influenced even more strongly by a respondent's access to social capital. Prospective migrants having a parent with U.S. experience are much more likely to cross with a coyote compared to those without such a parent (the coefficient is five times its standard error). Likewise, those coming from a community where migratory experience is prevalent display a strong and highly significant propensity to rely on paid guides (the coefficient is nearly seven times its standard error).

As in the equation predicting the use of friends and relatives, having migrant siblings reduces the odds of using a coyote. Once again the social capital emanating from a sibling tie seems to provide information that enables a solo crossing. Migrant children have no significant effect on the odds of using a paid guide, but having a migrant spouse reduces the odds of crossing with a coyote. Spouses who wish to migrate tend to cross with family or friends. It appears that on later trips, experienced migrants guide their wives across the border personally, rather than entrust them to the care of a stranger, however reliable the coyote's reputation.

Once again the effect of migration-specific social capital confirms our expectations: as the number of trips increases, the odds of crossing with a coyote substantially decrease. As we argued, the more times one has crossed the border, the more knowledge and experience one gains to facilitate the next crossing, and the less likely one is to spend $300+ on a coyote. In addition, an indicator of general human capital (age) once again reduces the odds of crossing with a coyote. As migrants gain judgement and maturity, they are more likely to cross on their own rather than with a paid guide.

The coefficient for prior apprehensions is consistent with our hypothesis of progressive socialization into the voluntary departure complex through arrest. The more times a migrant has been arrested on prior trips, the less likely he is to hire a coyote to assist him in crossing on later trips. Rather than scaring migrants into purchasing the services of a paid guide, the experience of deportation seems to convince them that hiring a guide is not worthwhile, as few serious consequences follow from apprehension as long as one obeys the rules; and arrest provides the principal opportunity for migrants to learn these rules.

Unlike the selection of family/friends as a mode of crossing, the choice of hiring a coyote appears to be sensitive to U.S. enforcement efforts. The intensity of U.S. border enforcement operates both directly and indirectly to determine the odds of crossing with a coyote. Directly, the more linewatch hours the INS devotes to patrolling the border, the greater the odds that migrants will purchase the services of a paid professional to help them get across. Indirectly, however, to the extent that U.S. enforcement efforts increase the demand for coyotes and drive up their fees, higher coyote costs reduce the odds that migrants will hire them as guides. Like other consumers, undocumented migrants are price-sensitive.

Once again there are sharp differences along the border. The odds of using a coyote are virtually identical in Tijuana, Mexicali, Reynosa, and Matamoros; but the likelihood of using paid guides are significantly lower in Juarez, Nogales, Piedras Negras, and Laredo. Looking across the equations for family/friends and coyotes, we conclude that migrants crossing at Tijuana and Mexicali, the two California crossing points, share virtually identical crossing strategies, whereas in sectors along the lower Rio Grande Valley in Texas migrants tend to cross with family or friends. In Nogales, and to a lesser extent in Juarez, migrants attempt the crossing alone.

Holding constant these geographic differences, the choice of a border-crossing strategy appears to be predicted by four principal factors: general social capital, migration-specific human capital, migration-specific social capital, and U.S. enforcement efforts. Persons with migrant parents are unlikely to cross alone as they have access to reliable guides, either paid or unpaid; and those originating in communities with well-developed migrant networks (indicated by a high prevalence of migration) are particularly likely to cross with a coyote. Social capital emanating from migrant siblings yields information or risk reduction strategies that promote a solo crossing. On later trips, migrants serve as guides for children and spouses; but they tend toward solo crossings the older they get, the more U.S. experience they accumulate, and the more trips they take. Consistent with Heyman's (1995) notion of the voluntary departure complex, the greater the number of prior apprehensions, the less likely a migrant is to purchase the services of a coyote to undertake a crossing.

The Process of Apprehension

Table 5 presents two Poisson regression models estimated to predict the number of apprehensions as a function of the mode of crossing, human and social capital, and various controls. The model shown on the left side of the table represents the equation for first trips, whereas the one on the right is the equation for later trips. In the former equation, of course, migration-specific indicators of human and social capital do not enter, whereas in the latter they play a central role.

Table 5. Poisson regression predicting the number of apprehensions experienced by undocumented border crossing on first and later trips: male household heads from 39 Mexican communities.

	Outcome: Number of Apprehensions			
	First Trip		Later Trips	
Variable	B	S.E.	B	S.E.
Mode of Crossing				
Alone	---	---	---	---
With Family and Friends	-0.386**	0.132	0.068	0.096
With Coyote	-0.420**	0.105	-0.008	0.081
Demographic Background				
Married	-0.053	0.084	0.056	0.070
Farm Origin	0.075	0.074	-0.025	0.056
General Human Capital				
Age	-0.002	0.004	-0.009*	0.003
Education	-0.016	0.013	-0.015	0.010
Mexican Labor Experience	0.001	0.041	-0.059*	0.034
General Social Capital				
Parent U.S. Migrant	0.079	0.075	-0.042	0.057
Siblings U.S. Migrant	-0.053	0.071	0.071	0.060
Prevalence of Migration	0.153	0.262	-0.343	0.222
Migration-Specific Human Capital				
U.S. Experience	---	---	-0.216**	0.099
Prior U.S. Trips	---	---	-0.004	0.011
Prior Apprehensions	---	---	0.204**	0.017
Migration-Specific Social Capital				
Spouse a U.S. Migrant	---	---	-0.133	0.098
Child U.S. Migrant	---	---	0.018	0.097
U.S. Enforcement Efforts				
Linewatch Hours	-0.012	0.148	0.098	0.115
Drug Deportations	-0.061**	0.021	-0.027**	0.012
Control Variables				
Place of Crossing				
Tijuana	---	---	---	---
Mexicali	-0.200	0.167	0.098	0.109
Juarez	0.127	0.184	-1.264**	0.410
Nogales	-0.839**	0.321	-0.416**	0.209
Piedras Negras	-0.268	0.172	-0.077	0.125
Laredo	-0.497**	0.152	-0.066	0.091
Reynosa	-0.083	0.209	0.188	0.144
Matamoros	-0.189	0.188	-0.677**	0.226
Unknown/Other	-0.248	0.159	-0.447**	0.126
Cohort Size	0.003	0.065	-0.022	0.043
Constant	-0.399	0.244	-0.846**	0.224
Chi Squared	990.039**		1950.064**	
Log Likelihood	1054.146**		1927.124**	
Pseudo R Squared	0.031		0.059	
Number of Cases	1,533		3,289	

* p<.10   ** p<.05

On first trips, none of the indicators of human and social capital is significant in determining the number of apprehensions experienced by new migrants, once mode of crossing is held constant. On an undocumented migrant's initial trip to the United States, social and human capital only affect the likelihood of apprehension indirectly, by influencing the mode of border crossing. Compared to persons crossing alone, first-time migrants crossing either with family and friends or coyotes experience significantly lower odds of being apprehended. Moreover, the probability of arrest is significantly lower in Nogales and Laredo, compared with Tijuana; but arrest probabilities at other crossing sites are statistically indistinguishable from those in Tijuana, at least for first trips.

Aside from place of crossing, the only other variable to affect the likelihood of capture on the first trip is the extent of INS involvement in drug interdiction. Linewatch hours themselves have no detectable effect on apprehensions; their effect is apparently neutralized by the adaptive strategies employed by migrants. The number of drug deportations, however, has a decidedly negative effect. Not surprisingly, shifting INS enforcement efforts from apprehending undocumented migrants to interdicting drug smugglers substantially lowers the probability of apprehension. The extent of agency involvement in the war on drugs is hardly trivial. According to Dunn (1996), by 1988, 2,800 Border Patrol agents (out of some 3,700) were cross-designated (i.e., deputized) to enforce Title 21 of the U.S. Code by the Drug Enforcement Agency and Title 19 of the U.S. Code by the Customs Service, and thus authorized to assist in the search for drugs and other illegal contraband.

The model for later trips reveals the hypothesized substitution effect of migration-specific human capital for other resources. Among experienced migrants, the mode of crossing has no discernible effect on the odds of capture, a finding that helps to explain the earlier negative results of Koussoudji (1992) and Donato, Durand, and Massey (1992), who found coyotes to have no effect on the odds of apprehension. Neither of these prior studies estimated separate models for first and later trips. Because the mode of crossing has no effect among experienced migrants, however, their pooling of first and later trips probably obscured the rather strong effect that the use of guides has on the odds of capture among new migrants.

On later trips, the principal determinants of apprehension revolve around various facets of human capital. As migrants age and their labor market experience grows, the odds of capture drop significantly. Likewise, each additional month of U.S. experience sharply lowers the odds of arrest and deportation. As migrants mature and gain life experience, and as they gain specific knowledge of the U.S. through migratory experience, they apply this specific human capital directly and substitute it for the use of paid and unpaid guides, which have no effect on the odds of apprehension once human capital is held constant.

As in the model for first trips, linewatch hours have no discernible effect on the likelihood of arrest, but as before, the involvement of the INS in drug interdiction significantly lowers the odds of capture, although the effect is weaker than on first trips. In addition, compared with Tijuana, the odds of arrest are significantly lower in Juarez, Nogales, and Matamoros for experienced migrants. In Nogales, the likelihood of apprehension appears to be notably lower for migrants regardless of whether they are new or experienced, making it by far the easiest crossing-point along the entire Mexico-U.S. border. Crossing at Juarez is also easier compared with Tijuana, but only for experienced migrants.

Conclusion: Understanding the Apprehension Process

The foregoing analyses allow us to construct a rather clear picture of the social process of undocumented border crossing. Persons with access to social capital by virtue of having a migrant parent are relatively likely to use either unpaid or paid border-crossing guides (family/friends or coyotes) to help them get across the border; and if they originate in communities where migration is prevalent, they are especially likely to employ the latter. If they have children who have begun migrating, our subjects were quite likely to serve as guides in helping them get across. Increasing INS enforcement efforts push migrants toward the use of coyotes, except to the extent that these efforts yield higher coyote fees, which decrease the odds of using a paid guide. For new migrants undertaking a first border crossing, the use of guides, either paid or unpaid, significantly lowers the odds of apprehension. Holding constant the price of paid guides, increasing border enforcement thus triggers the use of coyotes by first-time migrants, which lowers the odds of capture.

Undocumented migrants who have already been to the United States are relatively less likely to cross with friends, relatives, or coyotes. Even among those who cross with these people, the use of crossing guides has no significant effect on the odds of apprehension. Rather, the likelihood of arrest is determined mainly by a migrant's own human capital, both general and migration-specific. Migrants who are older and who have accumulated more labor force experience are less likely to be apprehended, as are those with greater U.S. experience.

One element of migration-specific human capital, however, <u>increases</u> the likelihood of arrest over time. As migrants experience apprehensions across earlier trips, they are progressively socialized into the voluntary departure complex. They learn that few consequences follow from getting caught, and that hiring a coyote is not worth the opportunity costs of arrest and deportation. Once apprehended, they also learn that it is not worthwhile to undergo a risky crossing (such as traveling at night, crossing in remote areas, moving over dangerous terrain) simply to lower the odds of capture. As a result, the more arrests a migrant has experienced, the less likely he is to use a coyote and, controlling for mode of crossing, the more likely he is to get caught.

Our analysis also sheds light on a puzzling phenomenon. Despite the apparent build-up of enforcement resources along the Mexico-U.S. border and the launching of highly publicized initiatives, such as operations Hold-the-Line and Gatekeeper, Massey and Singer (1995) found that the probability of apprehension <u>fell</u> in the late 1980s. Using more recent data from the MMP, we updated their calculations through the year 1994 and show the results in Figure 2 on page 24. As can be seen, the decline in apprehension probabilities continued through the early 1990s. As late as 1970-1975, they were in the range of .35-.40 per attempt, but by 1990-1994 they had reached just .15-.20 per attempt. Thus, a migrant contemplating a trip to the United States in the late 1970s had roughly a one in three chance of getting caught, but by the early 1990s the odds had dropped to less than one in five.

Our model suggests why this sharp decline occurred, despite highly publicized crackdowns, such as Gatekeeper and Hold-the-Line. Table 6 examines mean values of all variables that were significant in predicting apprehensions on either first or later trips. Mean values were computed for first and later trips in two separate periods: 1977-1984, when the average apprehension probability was .32,

and 1987-1994 when it stood at .20. The direction of each variable's effect on the likelihood of apprehension is shown in the first column. In 1987, the U.S. began a radically different approach to enforcement with the implementation of the Immigration Reform and Control Act, making that date a convenient dividing line (see Phillips and Massey, 1997).

At the bottom of the table we show the percentage of migrants taking first and later trips in both periods. Over time, the relative number of new migrants arriving at the border seems to have increased slightly, and the number of experienced migrants has correspondingly fallen. Thus the decline in apprehension probabilities did not occur because those attempting to enter the United States illegally have more experience. If anything, the number of experienced border-crossers has declined slightly, as new migrants have been drawn into the migrant flow by the deterioration of economic conditions in Mexico (see Massey and Espinosa 1997).

The mode of crossing selected by new and experienced migrants has also been relatively stable over time. Among first-time undocumented migrants, the percentage crossing alone rose slightly, while the proportion crossing with family or friends fell; but by itself this change served to increase rather than decrease the odds of apprehension, other things equal. Thus, a shift in the mode of border-crossing cannot explain the observed decline in apprehension probabilities (indeed, the percentage using coyotes is virtually identical in both periods).

There are also rather small shifts in the distribution of border crossing sites. The share crossing at Juarez, Matamoros, and Unknown/Other also increased very slightly, which would lower overall apprehension probabilities; but at the same time the share crossing in Laredo fell, which would raise them. Although the relative number of first-time migrants crossing at Nogales rose slightly, the proportion among experienced migrants fell by about the same amount, yielding offsetting effects. In general, these small shifts in the geographic distribution of border crossing do not seem likely to explain the rather sharp decline in apprehension probabilities, even though the proportion crossing at Tijuana grew somewhat between 1977-1984 and 1987-1994.

Shifts in human capital seem a little more promising as potential explanations for the decline in apprehension probabilities. Mexican labor force experience generally increased among undocumented migrants, going from 106 months to 132 months among first-time migrants and from 109 months to 124 months among experienced migrants. Likewise the age of new migrants rose from 26.6 years to 29.9 years, while the age of experienced migrants went from 31.7 years to 34.1 years. Both changes would tend to depress apprehension probabilities as Border Patrol agents face increasingly experienced and mature migrants. In addition, the average number of apprehensions reported by experienced migrants fell slightly, which would also tend to lower the likelihood of arrest by reducing exposure to the voluntary departure complex. Among human capital factors, only U.S. experience changed in a way that would increase the odds of apprehension, declining slightly from 54 months in 1977-1984 to 51 months in 1987-1994.

Table 6. Mean values of key determinants of mode of crossing and number of apprehensions in two periods.

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Variable	Direction of Effect	First Trips		Later Trips	
		1977-1984	1987-1994	1977-1984	1987-1994
Mode of Crossing					
Alone	0	0.058	0.089	0.138	0.134
Family/Friends	-	0.140	0.112	0.158	0.169
Coyote	-	0.801	0.792	0.700	0.697
Human Capital					
Age	-	26.611	29.893	31.712	34.059
Mexican Experience	-	1.067	1.317	1.093	1.236
U.S. Experience	-	0.000	0.000	0.538	0.507
Prior Apprehensions	+	0.000	0.000	0.564	0.490
U.S. Enforcement Effort					
Drug Deportations	-	0.448	9.884	0.514	9.234
Place of Crossing					
Tijuana	0	0.609	0.689	0.586	0.629
Juarez	-	0.019	0.034	0.018	0.025
Nogales	-	0.013	0.039	0.032	0.021
Laredo	-	0.118	0.043	0.130	0.102
Matamoros	-	0.050	0.053	0.040	0.076
Unknown/Other	-	0.061	0.072	0.094	0.043
Proportion of Migrants					
Taking First/Later Trips		0.276	0.287	0.724	0.713

These changes in the distribution of human capital are modest, however, compared with the shift in INS involvement in drug interdiction. During the period from 1977-1984, only 400-500 migrants were being arrested each year for narcotics violations, but by 1987-1994 the annual average had reached nearly 10,000, an increase of more than 20 times. Indeed, beginning in the mid-1980s, INS involvement in narcotics enforcement began to grow rapidly, going from 1,551 arrests for narcotics violations in 1985 to 27,559 in 1994 (U.S. Immigration and Naturalization Service, 1995). To the extent that drug enforcement is intensive in time, equipment, and resources, it detracts from the Border Patrol's ability to apprehend undocumented migrants (Dunn 1996) and lowers the probability of capture, precisely the effect detected in our apprehensions models and observed in the field by Heyman (1995).

Given the relatively strong negative effect of drug enforcement on the apprehensions process, and the very sharp increase in drug deportations between 1977-1984 and 1987-1994, the growing involvement of the INS in drug interdiction seems to be a strong candidate to explain the observed decline in apprehension probabilities over time. To test this hypothesis, we generated predicted probabilities of apprehension from the equation for later trips in Table 5 using different combinations of mean values of independent variables.

We began with the means computed for 1977-1984 and inserted them into the equation for later trips to generate a predicted apprehension probability of .317, which corresponds closely to the observed probability of .323 for that period. Then we inserted the means for 1987-1994 into the equation to derive a predicted probability of .242, which once again closely matches the observed probability of .244 for that period. In order to gage the effect of narcotics enforcement on the apprehension probability, we re-computed the predicted probability using the means for 1987-1994, except that

we substituted in the 1977-1984 mean for drug deportations, yielding a new predicted probability of .312. In other words, if the INS commitment to drug enforcement had remained at the rather low levels observed in 1977-1984, the apprehension probability in 1987-1994 would have been 28 percent higher than it actually was. If we substitute in the 1977-1984 human capital means along with 1977-1984 drug deportations, but keep all other variables at their 1987-1994 levels, the predicted probability rises very slightly to .319. Thus, virtually all of the decline in apprehension probabilities is explained by the shift of INS resources toward drug interdiction rather than from shifts in the characteristics or strategies of the migrants themselves.

In sum, the two-pronged strategy adopted by the INS after the demise of the Bracero Program appears to have reached a point of diminishing returns. The concentration of enforcement resources at the border does not prevent the entry (or re-entry) of undocumented migrants, as the quantity of social capital at the disposal of millions of Mexicans gives them access to border-crossing guides that facilitate entry and markedly lower the odds of capture on initial trips, while actual border-crossing experience facilitates the entry of migrants on later trips. Apprehension itself only serves to socialize migrants into the rules of the cat and mouse game. As a result, the population of undocumented Mexicans in the United States has continued to grow, reinforcing the public's impression that the border is out of control.

At the same time, INS efforts to build goodwill and garner political support by joining the popular war on drugs have not noticeably slowed the entry of controlled substances, but they have greatly facilitated the entry of undocumented migrants by shifting scarce enforcement resources away from catching undocumented migrants toward intercepting drug smugglers, causing a sharp drop in the probability of apprehension during the late 1980s and early 1990s. The political strategy adopted by Congress and the INS to manage the problem of undocumented migration thus appears to fail on every dimension: both drugs and undocumented migrants continue to enter the United States in large quantities and the public gets madder by the minute.

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Multinomial logit regression predicting the mode of undocumented border crossing on first and later trips: male household heads from 39 Mexican communities.

Mode of Border-Crossing (Reference'Alone)

Variable	With Family & Friends		With Coyote	
	First	Later	First	Later
Demographic Background				
Married	0.372	0.218	0.153	0.132
Farm Origin	-0.198	0.105	-0.019*	0.264**
General Human Capital				
Age	-0.018	-0.008	-0.028*	-0.018**
Education	-0.017	0.001	-0.031	-0.030
Mexican Labor Experience	-0.202	0.021	-0.054	0.076
General Social Capital				
Parent U.S. Migrant	0.549**	0.798**	0.349	0.557**
Siblings U.S. Migrant	-0.291	-0.194	-0.073	-0.240**
Prevalence of Migration	1.477	0.616	2.612**	2.920**
Migration-Specific Human Capital				
U.S. Experience	---	-0.195	---	0.089
Prior U.S. Trips	---	-0.094**	---	-0.079**
Prior Apprehensions	---	0.044	---	-0.083
Migration-Specific Social Capital				
Spouse a U.S. Migrant	---	-0.057	---	-0.447**
Child U.S. Migrant	---	0.497**	---	0.223
U.S. Enforcement Efforts				
Linewatch Hours	-0.404	0.031	0.746*	0.935**
Anti-Drug Actions	-0.075	-0.031	0.134	0.029
Control Variables				
Place of Crossing				
Tijuana	---	---	---	---
Mexicali	0.220	0.312	-0.395	-0.104
Juarez	-0.779	-0.098	-0.998**	-0.675**
Nogales	-0.401	-1.624	-1.656**	-1.726**
Piedras Negras	0.857**	0.498**	-1.543**	-1.292**
Laredo	0.393	0.660**	-0.870**	-0.629**
Reynosa	0.629	1.921**	-0.782	0.641
Matamoros	-0.851*	1.537**	-1.334**	0.745**
Unknown/Other	0.455	0.863**	-0.378	-0.002
Cohort Size	0.318	-0.033	0.089	-0.144
Coyote Cost	0.003	0.028	-0.258**	-0.077
Constant	1.242	0.055	1.458**	0.216
Number of Cases	1,503	3,272	1,503	3,272

* p<.10

** p<.0