Destination-Language Proficiency in Cross-National Perspective: A Study of Immigrant Groups in Nine Western Countries[1]

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Immigrants' destination-language proficiency has been typically studied from a microperspective in a single country. In this article, the authors examine the role of macrofactors in a cross-national perspective. They argue that three groups of macrolevel factors are important: the country immigrants settle in ("destination" effect), the sending nation ("origin" effect), and the combination between origin and destination ("setting" or "community" effect). The authors propose a design that simultaneously observes multiple origin groups in multiple destinations. They present substantive hypotheses about language proficiency and use them to develop a series of macrolevel indicators. The authors collected and standardized 19 existing immigrant surveys for nine Western countries. Using multilevel techniques, their analyses show that origins, destinations, and settings play a significant role in immigrants' language proficiency.

INTRODUCTION

Because of the growing proportion of immigrants in many Western societies, there has been increasing concern for the degree to which immigrants acquire the language that is spoken in the destination country. The reasons for this concern are clear: language skills are a form of human capital that positively affect immigrant earnings and labor market op-

portunities (Kossoudji 1988), and language fluency of immigrants is associated with better interethnic relations in a society (Espenshade and Calhoun 1993; Gordon 1964).

Immigrants' second-language proficiency has been studied from a micro- and a macroperspective. Effects of individual characteristics on language proficiency, such as age of migration, duration of residence, and educational level, have been widely documented (Carliner 2000; Espenshade and Fu 1997; Espinosa and Massey 1997; Solé 1990; Stevens 1999). Persons migrating at a young age, who have been resident in the destination country for a considerable amount of time, and persons with a higher education generally have better language proficiency. Systematic differences in second-language fluency have also been observed by marital status, gender, and migration motive (Chiswick and Miller 1996; Stevens 1986). These microlevel effects are substantial and have been observed in different countries (Chiswick and Miller 1995).

From a macroperspective, it has been suggested that language proficiency differs among immigrant groups, even after individual characteristics of immigrants are taken into account. Studies of language proficiency among immigrants in the United States, for example, found that Mexicans have lower English proficiency than other groups (Carliner 2000; Veltman 1983; Portes and Rumbaut 2001). Similarly, Dustmann (1994, 1997) observed that after controlling for individual characteristics, Spaniards and Turks in Germany have lower proficiency rates than Yugoslavs. Group differences in destination-language proficiency have also been observed in Australia (Chiswick and Miller 1996; Evans 1986), Canada (Lieberson 1970), France (Tribalat 1995), Israel (Beenstock 1996), the Netherlands (Tesser, Van Dugteren, and Van Praag 1998), Norway (Hayfron 2001), and the United Kingdom (Modood et al. 1997).

In this study, we extend the macrolevel perspective on destination-language fluency and argue that three groups of contextual factors should be considered. First of all, we examine the role of receiving countries. The study of immigrants' language proficiency has been a single-country phenomenon, and little is known about the role of host societies (Portes 1999). We study immigrants' language proficiency cross-nationally and examine the role of political regimes and anti-immigrant sentiments. We call these factors "destination" effects.

Furthermore, group differences found in previous research could indicate two different macrolevel effects. One possibility is that differences between groups found in a certain country refer to characteristics of their home country, and that similar differences between these groups are also observed in other destination countries. An example of such an effect is the role of economic conditions in the sending country. Those factors we

refer to as "origin" effects, and they reflect the general impact of the country the immigrants come from.

Another possibility is that group differences are destination specific and hence do not "travel" across nations. It could be that a group shows higher language skills than other groups in one destination, but relatively few language skills in another country. In such cases, language proficiency may depend on properties of the specific combination of an origin and destination category, such as the size of an immigrant group relative to the destination population. These and other characteristics reflect the specific experience of a group in a destination country, and we refer to these as "setting" or "community" effects.

To examine these three groups of macrolevel effects, we develop and apply a "double" comparative design, in which we compare a set of origin groups in several destination countries simultaneously. This design provides the opportunity to disentangle the impact of the country of destination, the country of origin, and the combination thereof (i.e., setting) on immigrants' language proficiency. This implies that origin effects reflect the impact of the country immigrants come from, irrespective of their country of destination. Similarly, destination effects are effects of the host society that pertain to all immigrants, their origins notwithstanding. Setting effects, finally, refer exclusively to the combination of origins and destinations.

The double comparative design also provides a more representative view of origin effects and setting effects than the designs that have been used in previous research. After all, earlier research relied on a single destination country only, and conclusions about origin effects and setting effects are therefore not generalizable to other destination countries. Similarly, the double comparative design yields a representative view of destination effects, for it examines differences across destinations for multiple groups.

Although applications of the double comparative design have not yet been done, some studies have moved in this direction. Evans (1986), for example, compared her findings on second-language proficiency among origin groups in Australia to published findings from other studies in Germany and the United States and thereby explored the issue of generalizability. A step closer to the double comparative design was taken by Chiswick and Miller (1995), who conducted separate analyses of census data on language fluency in Australia, Canada, Israel, and the United States. Although they compared the results of these analyses, they did not develop macrolevel hypotheses, nor did they incorporate origin, destination, and setting variables in the model to test such hypotheses.

We collected and standardized 19 surveys conducted in nine Western countries during the 1980s and 1990s in which immigrants' destination-

language proficiency was assessed. A well-known problem with cross-national research lies in the comparability of surveys that are done in different countries, under different circumstances, and with different designs. One solution has been to develop multination surveys in which procedures and measures are made comparable beforehand. Although this solution is attractive, it is of little use for us because such surveys do not exist in the area of language proficiency. An alternative solution, applied here, is to include measures of survey differences in the analyses, which is a way to control for incomparability in a statistical fashion (Treiman and Ganzeboom 1990). Another solution we use in this article is to make alternative categorizations of central variables and to assess how sensitive the regression results are to such changes.

With the cross-national data set, we analyze more than 186,000 immigrants from 182 origin groups, in nine destinations: Australia, Belgium, Denmark, Germany, Great Britain, Italy, the Netherlands, Norway, and the United States. Some origin groups, such as the Chinese, Indians, Moroccans, Pakistani, and Turks can be found in multiple destination countries, whereas other origin groups are observed in a single destination. Although we do not observe all origin groups in each destination country, we have information on 360 combinations of origin by destination, and this allows us to assess origin, destination, and setting effects simultaneously. Our design also covers Western immigrant groups, such as persons from Germany and France. From a theoretical point of view, such groups have the same importance as non-Western groups, but they have typically not been included in the literature on ethnic minorities in Europe.

In this contribution, we apply the double comparative design to provide a descriptive and theoretical account of the impact of the country of origin, the country of destination, and the immigrant setting on immigrants' language proficiency. We first assess how much immigrants' language proficiency varies between origins, destinations, and settings. Subsequently, we develop and test a series of hypotheses to explain these groups of contextual effects. Taking relevant individual characteristics into account, we apply cross-classified multilevel techniques to test macrolevel hypotheses. By including individual-level factors, composition effects are taken into account as well, which implies that the effects of our macrolevel indicators can be interpreted as contextual effects.

THEORY AND HYPOTHESES

Both sociologists and economists have studied immigrants' language proficiency (Chiswick and Miller 1995; Espenshade and Fu 1997). Sociologists have mainly focused on the impact of immigrants' exposure to the lan-

guage and social opportunities for language learning (Stevens 1992, 1999). Economists, on the other hand, have noted the importance of immigrants' self-selection and the difficulty of learning a language. Both disciplines have paid attention to the role of economic incentives in learning a new language. In a recent contribution to the literature on immigrants' language proficiency, Chiswick and Miller (2001) summarize the various theoretical notions with three general concepts: "exposure," "efficiency," and "incentives." Below, we first review how these concepts were used in previous research to explain individual-level determinants of immigrants' language proficiency. Subsequently, we use these ideas to formulate contextual hypotheses that pertain to the role of origins, destinations, and settings.

First of all, immigrants' proficiency in the destination language is considered a function of the amount of exposure to that language. Immigrants learn a new language through opportunities to hear, study, and use the language (Stevens 1999). Such opportunities typically depend on the language skills and usage of the people with whom immigrants interact, such as the partner, colleagues, neighbors, and friends.

Next to the amount of exposure, language proficiency is an outcome of immigrants' efficiency in learning a new language. Efficiency is defined as the degree to which immigrants improve their language proficiency given a certain amount of exposure. It is assumed that difficulties in learning a new language are greater for people who are less favorably selected in terms of observed and unobserved human capital, as well as for people who have to learn a language that is linguistically distant from their mother tongue (Chiswick and Miller 2001).

Economic incentives also determine the language proficiency of immigrants. Language skills are a form of human capital that may improve one's economic position, as illustrated by the strong effect of language fluency on earnings (Chiswick and Miller 1995; Espinosa and Massey 1997; Kossoudji 1988). As with all forms of human capital, language skills are embodied in a person, and immigrants are assumed to invest deliberately in learning the second language after arrival, depending on the expected costs of language investments and the benefits in terms of employment chances and earnings.

The notions of exposure, efficiency, and incentives have been used with considerable success to explain a number of individual-level effects on immigrants' language proficiency. In line with the ideas on exposure, it is found that the longer immigrants stay in the country of destination— and hence the more exposed they are to the official language—the better they speak that language (Jasso and Rosenzweig 1990). In a similar way, researchers have studied immigrants' language proficiency as an outcome of language exposure in the family, including the impact of the language

of the partner (Espenshade and Fu 1997; Stevens 1985). The notion of efficiency is often used to explain why people who migrated at a younger age speak the language better. Young people are more capable of learning a new language than older people (Stevens 1999). The concept of investments, finally, has often been used as an explanation for the positive relationship between school attainment and language proficiency. Immigrants with little education can find employment in ethnic enclaves and would therefore have few incentives to invest in language learning (Carliner 2000).

Although these notions have mainly been applied to individual effects, they can also be used to understand contextual effects. The notion of exposure is, perhaps, the most obvious example. Because a language is learned and used in interaction with other persons, it is an inherently social phenomenon, and exposure to the language will therefore depend on macrolevel characteristics. The notions of efficiency and incentives, however, have contextual implications as well. The difficulties of learning a second language can be group specific, depending, for instance, on the "linguistic distance" between the mother tongue of the group and the official language of the receiving nation. Similarly, the economic incentives of investing in a second language can be uniformly higher or lower for persons in the same social context. Below, we use the notions of exposure, efficiency, and incentives to systematically develop contextual hypotheses about the effects of origins, destinations, and settings on immigrants' language proficiency. The contextual characteristics we consider are substantively important. While some have been suggested before in the literature (e.g., group size, geographic distance), we also introduce a number of new factors (e.g., religious origin, globalization, anti-immigrant attitudes).

Hypotheses on Destination Effects

Receiving nations can affect immigrants' exposure to the destination language and the incentives of acquiring that language. One such destination factor is the role of political parties in the government. Although the influence of political parties has not been examined before in research on immigrants' language proficiency, we suggest that this could be an important factor. This idea is informed by the literature on social inequality, where it has been found that the election of left-wing parties in the government (in contrast to liberal, conservative, and Christian-Democratic parties) decreases the social inequality in a country (Hewitt 1977; Lenski 1966; Smits, Ultee, and Lammers 1998). In this article, we adopt the distinction between left-wing and other parties, and we explore its meaning in the field of language. One idea is that when left-wing parties make

up a sizable part of the government, the political climate is more tolerant toward immigrants. This, in turn, would lead to fewer incentives among immigrants to learn the destination language. Another, related, idea is that left-wing parties are in favor of a more linguistic-pluralism model of integration, while parties at the center or to the right of the political spectrum are more inclined to laissez-faire or assimilation language policies. In a linguistic-pluralism model of integration, immigrants and their children are offered opportunities to speak and learn their mother tongue (Vermeulen 2000). These opportunities include, for example, the usage and instruction of the mother tongue at school and translation of official documents into minority languages. In view of both arguments, the election of left-wing parties could (unintentionally) reduce immigrants' exposure to the second language and the incentives of acquiring that language. Hence, we expect that immigrants in countries with a stronger presence of left-wing parties in the government have a lesser command of the destination language.

Language learning not only depends on how the government of the receiving society approaches the immigrant population, it also depends on how the members of the receiving society treat immigrants. An important factor in this respect is anti-immigrant prejudice. Attitudes of native citizens toward immigrants might affect immigrants' exposure to the official language. If natives have strong anti-immigrant sentiments, it is more difficult for immigrants from all origins to interact with members of the receiving society. Previous research found that prejudice toward immigrants differs considerably among Western countries, due to such country-specific factors as the percentage of immigrants, immigration flows, and (change of) unemployment levels (Coenders 2001; Fetzer 2000; Scheepers, Gijsberts, and Coenders 2002). Thus, we predict that anti-immigrant attitudes in destination countries negatively affect immigrants' destination-language proficiency. Note that anti-immigrant sentiments may also be the result of lower linguistic assimilation. It is difficult to rule out this causal feedback conclusively, but we use measures of anti-immigrant prejudice at an earlier point in time than immigrants' language proficiency.

Hypotheses on Origin Effects

We propose a number of characteristics of the origin country that can play a role in immigrants' proficiency in the destination language. First of all, we study the extent to which an immigrant's origin country participated in the economic globalization of the world. The greater integration in the organization of production, distribution, and consumption of commodities in the world economy inevitably resulted in more exposure

to foreign goods and media, and also in a growing emphasis on foreign-language learning at schools in countries throughout the world (Massey et al. 1993). This emphasis on foreign-language learning primarily includes learning the world language (English), but also other languages that are spoken in many countries (e.g., French, Spanish), or languages that are important for conducting (trade) relations with other countries. The level of globalization, however, is unequally distributed among countries. While some countries have highly open economies (e.g., Singapore), other countries have remained very closed (e.g., China). We expect that the more open the economy of an immigrant's origin country, the more exposure to the destination language before migration, and the better the language skills of that immigrant.

Religious characteristics of the origin country may also be relevant for the process of language acquisition, although this factor has not been studied before in relation to immigrants' language proficiency. One reason to believe that religion plays a role is that the frequency of daily interactions between natives and immigrants depends on social distance—that is, the willingness to be associated with other groups (Bogardus 1959). Research in Canada and the United States showed that natives' social distance toward ethnic groups partly overlaps with a distinction in religion, ranking Islamic, Buddhist, and other non-Christian groups at the top of the social distance scale (Owen, Eisner, and McFaul 1981; Pineo 1977). Because all host societies we examine are predominantly Christian, it can be argued that immigrants from predominantly non-Christian societies are less likely to develop close personal ties with members of the host society than immigrants from Christian societies. Because infrequent interaction with natives makes it more difficult to learn the language, we expect that immigrants from a predominantly non-Christian origin country are less proficient in the destination language than immigrants from Christian origins.

The social and political conditions under which immigrants migrate can also be important, primarily because they determine the efficiency with which immigrants learn a new language. Some emigration flows are predominantly grounded on economic decisions, mostly followed by chain migration and family reunions (Castles and Miller 2003). Other groups, typically referred to as "refugees," leave their country mainly because of war, discrimination, oppression, or other violations of political rights and civil liberties. For two reasons, the efficiency with which refugees will learn the destination language is lower than it is for the group of mainly economic immigrants. One reason is that refugees are less well prepared and therefore less well selected for the labor market than economic migrants, which includes having a lesser ability to learn the language of the destination country (Chiswick and Miller 2001). Moreover, refugees have

more often experienced traumatic events and have more stress than economic migrants (Marsella et al. 1994), which will hamper their efficiency in language learning. For both reasons, we expect that the stronger the suppression in the country of origin, the lower the language proficiency of immigrants.

The fourth characteristic of the country of origin we consider is the level of modernization. Several authors have argued that economic incentives to invest in the destination language depend on the likelihood of return migration (Chiswick and Miller 2001; Espenshade and Fu 1997). In this reasoning, it is assumed that longer expected duration in the receiving country makes it more beneficial for immigrants to invest in second-language learning. One measure of long-term commitments to living in the destination country is the degree of modernization in the country of origin (Espenshade and Fu 1997). If economic opportunities in the origin country are less favorable, it is argued, all emigrants from that country have a uniformly greater expected reward of learning the language in the destination country. The shadow of a shared future might then be longer, and economic incentives to invest in learning the language will correspondingly be higher. In view of this argument, one would expect that immigrants from more developed nations have lower language skills than immigrants from less advanced economies.

Hypotheses on Setting Effects

The third group of contextual effects stems from settings (or communities)—that is, the combination of origin with destination. One characteristic of the setting that may account for immigrants' language proficiency is a premigration relationship with the host society. Several Western countries had colonies for extended periods of time. In most colonies, the native citizens were assimilated to the culture of the mother country, and an integral part of this learning process was acquiring the language of the mother country. Even after decolonization, these languages sometimes have the status of an official language (i.e., a language used in schools and formal settings), or even of a primary or dominant language (i.e., a language also widely used in informal contexts—at home, on the street). Immigrants for whom the dominant language in the origin country resembles that of the country they settle in naturally speak the destination language perfectly before arrival. Because these groups are uninteresting to examine, they are excluded from our study. Nevertheless, important differences in premigration exposure remain. Our hypothesis is that groups for which the language of the country of destination was official (but not dominant) in the home country have a higher level of language proficiency than groups for which this was not the case.

A second and related setting effect is suggested by the notion of "linguistic distance," the resemblance between the languages spoken in the origin and destination countries (Finegan 1999; Grimes 2000). An important assumption in the literature is that if the linguistic distance between two languages is small, the efficiency in learning the other language is higher (Beenstock, Chiswick, and Repetto 2001; Carliner 2000; Chiswick and Miller 2001; Espenshade and Fu 1997). When it is less difficult for immigrants to learn the destination language, exposure to that language will yield higher levels of improvement. In all the destination countries we examine, the official languages belong to two branches of the Indo-European language family: the Romance branch (e.g., French, Italian, Spanish) or the Germanic branch (e.g., English, Dutch, German). Linguistic distance is generally assumed highest when languages belong to different families (e.g., Afro-Asiatic vis-à-vis Indo-European or Uralic vis-à-vis Indo-European). When two languages belong to the Indo-European language family, they are considered more distant when they belong to different branches of that family (e.g., French vis-à-vis English is more distant than French vis-à-vis Italian). We therefore expect that second-language proficiency is highest when the origin and destination languages belong to the same language branch of the same family, lower when they belong to different branches of the same family, and lowest when they belong to different families.

Another frequently examined setting characteristic is the size of the immigrant group relative to the total population. For two reasons, group size may be important for language learning. First and foremost, the larger the immigrant group, the more likely day-to-day interactions will happen within the group, and the less likely day-to-day interactions will happen with the receiving group (Blau 1977). Immigrants from larger groups are therefore less exposed to the destination language and will be less likely to learn the second language (Clyne 1991; Dustmann 1994; Evans 1986; Lopez 1996; Stevens 1992; Veltman 1983). A second mechanism has to do with incentives. Language learning might be less attractive if immigrants find themselves in an ethnic enclave that provides labor market opportunities for which destination-language skills are not required (Evans 1989; Portes and Bach 1985). A precondition to the formation of such ethnic enclaves or economies is the presence of a sizable group of country fellows. Thus, in addition to the argument that group size decreases the exposure to the destination language, we argue that group size also lowers the economic incentives of learning the destination language. On these grounds, we expect that the relative size of an immigrant group in a particular destination negatively affects the destination-language fluency of the members of that group in that destination.

A final characteristic of settings we consider in this study is the geo-

graphic distance between origin and destination countries. Economists have argued that geographic distance between origin and destination increases the costs of migration, which, in turn, affects immigrants' self-selection (Borjas 1987; Chiswick 1999). Those who migrated over longer distance will be more favorably self-selected, which implies higher cognitive skills in general, including the ability to learn a new language. In addition, it is argued in the literature that immigrants who have traveled over greater distances are less likely to return in view of the higher costs of migration (Chiswick and Miller 2001). The higher cost of return migration would increase the economic incentives to invest in learning the host language. Thus, for reasons of both efficiency and incentives, one would expect that greater geographic distance between origin and destination countries is associated with better second-language fluency.

DATA AND METHODS

Data

As part of a larger research project, we collected and standardized existing surveys containing individual-level information on immigrants' language proficiency. The surveys were combined into one cross-national data set: the International File of Immigration Surveys (IFIS; van Tubergen 2004). To obtain data that were both high quality and comparable across countries, the surveys included in the metafile had to fulfill four criteria. First, surveys had to be translated in the mother tongue of immigrants and/or bilingual interviewers had to be used in the field. Second, surveys had to contain a sufficiently large number of immigrants to provide detailed analyses, and the survey sample should (approximately) be nationally representative. Third, surveys had to have been conducted face-to-face using standard questionnaires with fixed response categories. Fourth, surveys had to contain cross-national comparable independent and dependent variables.

We were able to find 19 surveys that met these criteria for a total of nine Western countries: two classic immigrant societies (Australia and the United States) and seven new immigrant societies (Belgium, Denmark, Germany, Great Britain, Italy, the Netherlands, and Norway).[2] Table 1

[2] We also considered the 1991 and 1995 census of Canada. Because the Canadian census question on language proficiency is ambiguous, we did not include Canada in our final analyses. Chiswick and Miller (1995), e.g., equate those who speak French or English well enough to conduct a conversation with those who speak the language "not well," "well," or "very well." On the other hand, Antecol, Cobb-Clark, and Trejo (2003), Chiswick and Miller (1992), and Duleep and Regets (1992) classify those able to conduct a conversation as those who speak the language "well" or "very well." In

TABLE 1
OVERVIEW OF SURVEYS INCLUDED IN THE INTERNATIONAL FILE OF IMMIGRATION
SURVEYS

Country/Year	N	Groups	Survey Design	Reference
Australia:				
1981	47,494	34	Census	AUS81
1988	2,246	69	Immigrant survey	AUS88
Belgium:				
1993	1,237	2	Immigrant survey	BEL93
1996	2,386	3	Immigrant survey	BEL96
Denmark:				
1988	805	3	Immigrant survey	DEN88
1999	664	3	Immigrant survey	DEN99
Germany:				
1988	1,773	5	Immigrant survey	GER88
1991	1,692	5	Immigrant survey	GER91
1994	1,661	5	Immigrant survey	GER94
1999	1,551	5	Immigrant survey	GER99
Great Britain:				
1994	3,624	13	Immigrant survey	GB94
Italy:				
1994	2,910	69	Immigrant survey	ITA94
1998	1,894	7	Immigrant survey	ITA98
Netherlands:				
1991	2,178	3	Immigrant survey	NET91
1994	2,028	3	Immigrant survey	NET94
Norway:				
1983	791	5	Immigrant survey	NOR83
1996	2,389	8	Immigrant survey	NOR96
United States:				
1980	42,202	164	Census	USA80
1990	66,566	163	Census	USA90

presents an overview of the surveys included in the metafile, and the supplementary bibliography gives the detailed references. The surveys were conducted in the 1980s and 1990s. Two sorts of surveys were included: census data and specific immigrant surveys. The public-use files of the census data in the traditional immigrant countries contain surveys of large numbers of immigrants on which to perform meaningful analyses, and they have detailed information on immigration history and second-language proficiency. In classic immigrant countries, the census has therefore been a reliable source for researchers analyzing immigrants' language fluency (Carliner 2000; Stevens 1999). Because European census data do

our preliminary analysis, we tried both classifications, but the logit estimates deviated too much from comparative analysis, excluding Canada. Note also that the survey conducted in Great Britain covers England and Wales but not Scotland.

not contain information on language proficiency, we relied on specific immigrant surveys for European countries. These surveys have a sufficient number of immigrants to perform detailed analyses and provide extensive information on immigration and integration issues, including length of stay and language fluency. It is generally acknowledged that these surveys are especially suitable for studying immigrants' language fluency (Chiswick and Miller 1996). A limitation is that they are often limited to three or four main groups and sometimes exclude (well-integrated) smaller groups.[3]

To make the analyses more balanced, we reduced the number of observations in the census data. Because census data contain more respondents than the immigrant surveys, the number of observations in the classic immigrant countries is much higher than it is in the European countries. For that reason we took a random sample of the larger immigrant groups in the census of Australia and the United States. Those groups, such as the Mexicans in the United States, were set at a maximum of 2,000 respondents per survey. Although the number of origin groups and respondents is still higher in traditional immigrant countries than in European countries, we think this imbalance is justified when taking into account the multilevel design and the size of the native and immigrant populations.

Our analyses refer to immigrants, defined as those born outside the country of residence. We selected the population above the age of 18 and included both men and women. We divided Belgium into a French-speaking part, a Dutch-speaking part, and a region where both languages are official and dominant. Our analysis therefore includes 11 destinations.

Measurement of Destination-Language Proficiency

The dependent variable is destination-language fluency—that is, the extent to which respondents are able to speak the destination language. We constructed a variable containing four categories and classified all surveys according to the same metric:

    1. not at all (5.7%);

[3] The surveys collected for Germany only sampled immigrants with a foreign nationality. Because naturalization could be associated with language proficiency, this could bias our analyses. However, the surveys we use were conducted in the period 1988–99, and the German citizenship regime had been very restrictive until 2000 (Joppke 1999; Tucci 2004), resulting in very few naturalizations of immigrants. The naturalization rates of the immigrant groups in Germany examined in this study were below 3% in 1998 (FGCFI 2000). In addition, we include variables in our models that are associated with the acquisition of citizenship, such as length of stay in the host country and education.

2. not well (19.9%);
3. well (26.1%);
4. very well (48.2%).

Table 2 shows how we classified the answering categories. Because the surveys were mostly done independently, there are several potential survey differences that may bias our estimates. We discuss three important differences: in questioning, in coding, and in reporting.

The first and most obvious cause of measurement error could be associated with the wording and number of the response categories. Although the surveys were done independently, the labeling of the answering options is in fact quite similar across surveys (see table 2). The lowest category appears to be quite similar in the different countries (e.g., none, can't speak it, not at all, very bad). The highest category is also comparable (fluently, English only, very well, perfect). Note that the sometimes-added category "English only" is unproblematic. More doubts may arise about the middle categories. In some countries, a distinction is made between two middle categories; in other countries, there are three middle categories. Moreover, the wording of the lower-middle category varies among surveys. We tried to solve this problem using additional logit models where the four-point scale is replaced by a two-point variable that combines categories 1, 2, and 3:

1. not at all, not well, well (51.8%);
2. very well (48.2%).

An additional advantage of this variable is that the distribution becomes more homogeneous (48% fluent and 52% less well). We assess to what extent the regression results change when using the two-point scale instead of the four-point scale.

A second potential source of bias is associated with the wording of the questions rather than with the wording of the answers. The surveys conducted in Australia, Belgium, and the United States use a two-step procedure to measure language proficiency. In Australia and the United States, respondents are asked if they speak a language other than English at home, and only those who answer yes are asked to report their English-speaking abilities. In Belgium, people are asked which languages they speak, and only then do they report on their language proficiency. Because direct or indirect questioning can affect the assessment of language proficiency, we include a dummy variable in our analysis representing this difference. Note that earlier research did not find support for this suggestion (Espenshade and Fu 1997).

A third survey characteristic that may bias cross-national analyses is the source of report. In most surveys, respondents themselves were asked

TABLE 2
MEASUREMENT OF DESTINATION-LANGUAGE PROFICIENCY

		CATEGORY			
REFERENCE	QUESTION	1	2	3	4
AUS81	Do you ever speak a language other than English at home now? If not, how well do you think you speak English?	Not at all	Not well	Well	Very well English only
AUS88	Is English first language spoken at home? If not, how well do you think you speak English?	Very poor	Poor fair	Good	Very good English only
BEL93	Which languages do you speak? Could you tell me how well you speak them?	None	Little Reasonable	Well	Very well
BEL96	Which languages do you speak? Could you tell me how well you speak them?	None	Little Reasonable	Well	Very well
DEN88	How do you assess respondent's proficiency in Danish?	Not at all	Poor Reasonable	Good	Perfect
DEN99	How do you assess respondent's proficiency in Danish?	Not at all	Poor Reasonable	Good	Perfect
GER88	Knowledge of German language? (speaking)	None	Little Sufficient	Well	Perfect
GER91	Knowledge of German language? (speaking)	None	Little Sufficient	Well	Perfect
GER94	Knowledge of German language? (speaking)	None	Little Sufficient	Well	Perfect
GER99	Knowledge of German language? (speaking)	None	Little Sufficient	Well	Perfect
GB94	Assess respondent's English ability.	Not at all	Slightly	Fairly well	Fluently
ITA94	How is your actual knowledge of Italian? (speaking)	None	Little	Well	Very well

ITA98	How is your actual knowledge of Italian? (speaking)	None	Little	Well	Very well
NET91	When you speak Dutch, do you have difficulties with that language?	Can't speak it	Always	Sometimes	Never
NET94	When you speak Dutch, do you have difficulties with that language?	Can't speak it	Always	Sometimes	Never
NOR83	How well do you speak Norwegian?	Not at all	Poor Moderate	Well	Very well
NOR96	How well do you speak Norwegian?	Very bad	Poor Moderate	Well	Very well
USA80	Do you speak a language other than English at home? If yes, how well does this person speak English?	Not at all	Not well	Well	Very well English only
USA90	Do you speak a language other than English at home? If yes, how well does this person speak English?	Not at all	Not well	Well	Very well English only

to report their proficiency in speaking the second language. By contrast, in surveys collected for Denmark, Germany, and Great Britain, destination-language proficiency was assessed by the interviewer.[4] To examine whether these survey differences might obscure true differences in language proficiency, we include a dummy in the analysis representing this difference. We also analyzed a Danish survey conducted in 1986 that included both respondent and interviewer reports. This survey allowed us to assess the implications of such differences directly. Our findings, presented in appendix table A1, show that there is a strong correlation between the two measures ($r = .71$). More important, when we code both variables on an interval scale ranging from one to three, we find virtually the same means: 2.13 for both respondent and interviewer assessment. A t-test for paired variables turns out to be not statistically significant ($t = -.08$). Hence, we can conclude from this particular case where measures can directly be compared, that levels of language proficiency do not differ between sources of report.

Measurement of Independent Variables

The data set contains independent variables at the destination, origin, setting, and individual level. We discuss all variables one by one below.

Presence of left-wing parties in the government.—We rated the presence of left-wing parties in the government as "1" when they form a single party, "0.5" when they join a coalition, and "0" when they are absent from the government. Because coalitions change over time, and policy measures need some time to become effective, we scored the presence of left-wing parties in the government in the 1980s. Information on the presence of left-wing parties in the government was obtained from Internet sources of the national governments and more general Internet sites for a number of countries (e.g., De Zárate 2003; Derksen 2003).

Anti-immigrant attitudes.—Data on prejudice toward immigrants were obtained from the first wave of the European Values Studies (Barker, Halman, and Vloet 1992) and World Values Studies (Inglehart et al. 2000), which took place in the period 1981–84. We used the question, Who do you not want to have as neighbors? and computed the proportions responding "immigrants" for each country.

Economic development.—We use Gross Domestic Product (GDP) per

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[4] Objective assessment of language skills would be desirable, but self-reported or interviewer-assessed language skills have become standard practice in studies on language skills. Little is known to what extent and in which direction bias in self-assessed measurements occurs. However, Carliner (2000) discusses this issue and concludes that self-report and test-based measures highly correlate.

capita in constant U.S. dollars in 1980 as a measure of the economic situation in the origin country (World Bank 2001).

Globalization.—We focus on trade globalization as a measure of the more general process of economic globalization. Trade globalization refers to the extent to which the long-distance and global exchange of commodities has increased (or decreased) relative to the exchange of commodities within national societies (Chase-Dunn, Kawano, and Brewer 2000). Following Chase-Dunn et al. (2000), we use the ratio of the value of national imports to GDP, in percentages, as an indicator of the level of trade globalization in the world-system. Information was obtained from the World Bank (2001).

Political suppression.—A rating of political and civil rights, based on information collected by Freedom House (Karatnycky and Piano 2002). Political rights vary from "1" (e.g., free and fair elections, power for opposition) to "7" (e.g., oppressive regime, civil war). Civil liberties vary from "1" (e.g., freedom of expression and religion, free economic activity) to "7" (e.g., no religious freedom, political terror, and no free association). We used the sum score for each country (2–14) for the 1980–90 period.

Religious origin.—Because the destination countries we examine are predominantly Christian, we include a dummy for origin countries that have a predominant non-Christian population and use predominantly Christian countries as a reference. Those countries with more than 50% Christian adherents in the 1960–80 period were assumed to be predominantly Christian. Information is obtained from Brierley (1997).

Relative group size.—We used this variable for the number of immigrants relative to the total population, expressed as a percentage. Information on this dimension is not widely available for earlier times and for smaller groups. However, using several sources (e.g., census of Australia and the United States; Eurostat 2000; OECD 1994, 1996, 1998, 1999*a*, 2000, 2001), we managed to estimate averages for all groups in the 1980–90 period.

Official language.—To construct this variable, we use information on official language (i.e., language used at school and in formal settings) and dominant language (i.e., language actively spoken by at least 40% of the population; Grimes 2000). When the destination language was the official and dominant language in the origin country, settings were excluded from analysis. This includes, for example, British immigrants in Australia, who are assumed to speak the destination language perfectly before migration. We constructed a dummy variable indicating that the destination language is the official (but not dominant) language in the origin country. Note that there are no origin countries in our analyses in which the destination language was dominant but not official.

Linguistic distance.—For those immigrant groups of which the desti-

nation language was not official in their country of origin (81%), we computed the linguistic distance between the origin and destination language. Using the well-known classification of language families (Finegan 1999; Grimes 2000), we constructed three dummy variables: same language family and same language branch (8%), same family but different branch (44%), and different family and different branch (29%). As the reference category, we used same language branch and those not exposed to the destination language prior to migration. Because a dummy for prior language exposure is included, deviations from the reference category reflect the role of linguistic distance only.

Geographic distance.—This variable is computed by the so-called "great circle distance method," taking the capital cities as reference points (Byers 2002). The distance, measured in kilometers, is computed for every origin by destination combination, and in case the capital city is ambiguous for a certain country (e.g., former Yugoslavia), we use the main city in that region as a reference.[5] While for some of the 360 groups we analyze this measure will overestimate their actual travel distance, and for other groups the distance will be underestimated, the overall result will indicate the general impact of travel distance. More important, it should be emphasized that distance is an indicator of travel costs, and that a substantial proportion of immigrants probably travel by plane. The price of airplane tickets generally does not vary much within destinations, so that it matters little that only the capital city is used as a reference point. Nevertheless, we will also estimate our models with modifications for two groups for which our measure clearly overestimates the travel distance (Cubans and Mexicans in the United States).

Survey characteristics.—We include two measures of surveys: (*a*) whether the second-language ability of the respondent was assessed by the interviewer or by the respondent, and (*b*) whether the question on language ability was direct or indirect (i.e., after an initial question about the languages the respondent speaks). These characteristics vary among surveys within destination countries.

Before proceeding, it is important to explore the correlations among the various macrolevel characteristics. We calculated bivariate Pearson's correlations at the setting level.[6] The results are presented in table 3. The

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[5] One kilometer is about .622 miles.

[6] Because some variables are of nominal level, Pearson's r is less adequate. However, using other measures of association, such as Cramer's V, we obtained similar results. For the dummy variables on language differences, we used multiple correlations. That is, we regressed each variable on the set of language dummy variables and calculated the multiple R. Note further that correlations among origin variables and destination variables are very similar when measured at the origin and destination level, respectively.

TABLE 3

Bivariate Correlations between Macrolevel Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13
Left-wing parties	1												
Prejudice	−.57	1											
National imports/GDP ...	−.13	−.02	1										
GDP origin	−.04	−.04	.06	1									
Political suppression	.05	−.10	−.11	−.46	1								
Non-Christian origin	−.02	.07	−.06	−.23	.51	1							
Relative group size	.10	.35	−.15	.09	−.15	−.03	1						
Official language	−.21	.14	.33	−.16	−.16	−.08	.07	1					
Language distance 1	.26	−.35	−.06	.22	−.14	−.24	−.04	−.24	1				
Language distance 2	−.03	.02	−.23	−.07	.02	−.18	.02	−.39	−.33	1			
Language distance 3	.00	.14	−.01	.04	.23	.47	.08	−.32	−.27	−.44	1		
Set of dummies*	.30	.37	.35	.25	.27	.49	.10	. . .	. . .	. . .	. . .	1	
Geographic distance	.02	−.10	.00	.12	.01	.01	−.01	.05	−.06	.00	.01	.23	1

Note.—Correlations computed at setting level ($N = 360$).

* Multiple correlation between the set of language dummies (9–11) and the respective other variable.

highest correlation is between the presence of left-wing parties in the government and anti-immigrant prejudice ($r = -.57$). Other moderately strong correlations are between non-Christian origin, on the one hand, and political suppression in the origin country ($r = .51$), the set of language variables ($r = .49$), and highest linguistic distance ($r = .47$) on the other. Furthermore, the correlation between GDP origin and political suppression in the origin country is $r = -.46$. Although some of the correlations at the macrolevel are substantial, they are not so high that there are concerns for multicollinearity.

In order to take compositional differences into account we include the following individual variables:

Age at migration.—Measured in years or estimated midpoints for surveys using categories. For the census data of Australia and the United States, the older immigrant cohorts had to be excluded from our analysis, because the exact date of their arrival is unknown.

Duration of residence.—This variable is well documented and is measured in years.

Schooling.—Schooling is a variable that records the total years of full-time education. In those surveys for which no direct measure of years of schooling was included, we relied on educational level. We then computed the average years needed to obtain that level using the International Standard Classification of Education, 1997 (ISCED-97; OECD 1999*b*).

Sex.—We also included sex in our analysis, because origins, destinations, and settings might differ in sex ratio, and research has found gender differences in language fluency (Stevens 1986).

Table 4 presents descriptive information of the variables included in our analyses.

Analyses and Models

We employ linear- and logit-regression techniques to estimate destination-language fluency. Because the dependent variables in the analyses are of ordinal level, ordered-logit or multinomial-logit estimates are more suited. However, several authors remark that with destination-language fluency as a four-point dependent variable, the coefficients from ordered-logit and linear regression have the same sign, relative size, and statistical significance (Carliner 2000; Chiswick 1991). Also, linear and logit regression are somewhat easier to interpret and can be used more easily in a multilevel framework (see below).

Previous research on destination-language proficiency has estimated individual and contextual effects without taking into account the multilevel structure of the data. The impact of contextual variables on destination-language proficiency is then estimated using regression analysis at

TABLE 4
MEANS AND STANDARD DEVIATIONS OF VARIABLES

	Range	Mean	SD
Language proficiency:			
Four-point scale	1–4	3.17	.94
Two-point scale	0/1	.48	.50
Destination variables:			
Left-wing parties	0–6	2.55	2.22
Anti-immigrant prejudice	3.10–19.80	11.77	5.00
Origin variables:			
National imports/GDP (%)	6–224	45.52	26.90
Non-Christian origin	0/1	.45	.50
Political suppression	2–14	8.30	3.96
GDP per capita (in 1,000s USD)	.1–32.4	5.03	6.49
Setting variables:			
Official language	0/1	22	.41
Language distance:			
Same language branch	0/1	.17	.37
Indo-European, other branch	0/1	.35	.48
Non-Indo-European	0/1	.26	.44
Relative group size (%)	.00–2.48	.09	.24
Geographic distance (in 1,000s km)	.5–18.0	8.13	4.40
Individual variables:			
Male	0/1	.52	.50
Age at migration	0–88	25.08	12.94
Years since migration	0–77	13.26	9.34
Years of schooling	0–24	10.96	4.71

NOTE.—Statistics are computed at corresponding level.

the individual level. In this way, the error terms at the contextual level are neglected and the standard errors of the parameters are underestimated (Kreft and De Leeuw 1998; Raudenbush and Bryk 2002; Snijders and Bosker 1999). As a result, empirical support for contextual hypotheses can be unjustified.

Instead of employing simple regression analysis, we make use of multilevel models with random intercepts. These models allow us to assess the variance at different levels and to explain this variance by including individual and contextual variables. At the lowest level, destination-language proficiency is affected by individual characteristics, such as duration of residence and age at the time of migration. This can be designated as the individual or microlevel. Immigrants are then nested in both their country of origin and their country of destination. Because these macrolevel components affect language proficiency at the same level, the multilevel structure is nonhierarchical. Instead, immigrants are contained within a cross-classification of their country of origin and country of

destination, and the multilevel structure is therefore most appropriately treated with "cross-classified" models (Raudenbush and Bryk 2002; Snijders and Bosker 1999).

Using these models, we include a random main effect of country of origin, a random main effect of country of destination, and a random "immigrant effect" at the individual level (i.e., the deviation of immigrants' score from the setting mean). It is important to emphasize that we do not include a random interaction effect of settings (i.e., the origin by destination combination). The reason is that, as observed elsewhere as well (Raudenbush and Bryk 2002, p. 378), the sample sizes at the setting level are not sufficient to distinguish the variance attributable to the random interaction effect of settings from the within-setting variance. The variance of settings is therefore tapped by the variance of origins and the variance of destinations and is not independently assessed. However, setting effects are estimated at the appropriate origin-by-destination level. We make use of Markov Chain Monte Carlo (MCMC) techniques provided in the software program *Multilevel Modeling in Windows* (MLwiN) to estimate our models (Browne 2002). Note that we also estimate additional models in which destinations are measured per survey, resulting in a total of 22 destination-survey cases. These models enable us to assess the role of survey effects.

Important to emphasize is that we compare immigrants with respect to their language proficiency at the time of the survey. Although we control for the duration of stay in the destination, it should be recognized that the acquisition of a second language is a dynamic process. Immigrant groups enter their destination with a certain number of skills in the second language, they gradually learn the language, and they ultimately reach a certain level of proficiency. Differences between groups—or more precisely, between combinations of origin and destination—can then arise in three ways: groups may have different initial language levels, they may differ in the speed with which they learn the language, and they may differ in the level they ultimately have after a substantial number of years in the destination (i.e., reach different plateaus). If Indian immigrants in the United States, for example, on average have better second-language skills than Chinese immigrants, is this because they assimilated better or because they were already more proficient in English to begin with? With a cross-sectional design, it is impossible to separate these components very well. As a solution, some researchers have used a synthetic cohort approach, but this design is potentially biased without a separation of immigrant cohort effects and duration of stay effects (Borjas 1985; Carliner 2000). Although we include duration of stay in our models as well, we cannot separate duration effects from immigrant cohort effects because

the surveys we consider are generally not far apart in time. This makes a synthetic cohort design less feasible.

However, we followed an alternative approach to solve this problem. First, we excluded by design all groups in our data set that spoke the language fluently already upon arrival. These are groups for which the dominant language in their origin resembles that of their destination, such as Canadian or British immigrants in the United States. Second, for the remaining (nonfluent-speaking) groups, we developed hypotheses about the degree to which they were exposed to the destination language in the country of origin. More specifically, we developed two measures for prior language exposure (i.e., degree of globalization and similarity of official languages), and we include these in the multivariate models. By examining these prior exposure measures, we think we take into account the larger part of the contextual variation in initial language ability.[7] Hence, the (other) hypotheses we test refer to the speed of language acquisition and to the level that immigrants ultimately reach. Both of these will be reflected in the level of language proficiency at the time of the survey.

RESULTS

The analytical part of our discussion consists of three sections. First, we present descriptive information on language proficiency by origin, destination, and setting. We show which origin groups have relatively good or bad command of the destination language, in which host societies immigrants speak the language best or worst, and which specific combinations perform well. Second, we examine the amount of variation that exists at different levels. We decompose the total variation by individual, origin, and destination, and examine to what extent inclusion of theoretically informed variables reduces the unexplained variance. Third, we test our hypotheses using multilevel techniques.

Descriptive Analyses

For an initial assessment of the impact of the social context on immigrants' language proficiency, table 5 presents immigrants' observed mean language score on a four-point scale by origin, destination, and setting. Because it is not possible to present the findings on all 182 origin groups included in our data set (and the 360 observed combinations of origins

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[7] Studies measuring change in language ability in a prospective fashion are still in their infancy (Jasso et al. 2003) and do not consider more than one destination. In addition, there are no studies that do contain direct measures of prior ability at the contextual level; all studies use (at best) proxies for ability at arrival, and this is also our approach.

TABLE 5

Language Proficiency by Destination and Origin Country: Means for 12 Selected Origin Groups

| | | Belgium | | | | | | | | | | | All |
Origin	AUS	Dutch	French	Mixed	DEN	GB	GER	ITA	NET	NOR	USA	All	Adj.
China	2.77	. . .	. . .	. . .	. . .	2.40	. . .	2.77	. . .	. . .	2.64	2.68	2.35
Greece	2.81	. . .	. . .	. . .	. . .	. . .	2.69	. . .	. . .	. . .	3.17	2.96	2.39
India	3.91	. . .	. . .	. . .	. . .	2.94	. . .	2.75	. . .	. . .	3.63	3.58	3.53
Italy	3.06	. . .	. . .	. . .	. . .	. . .	2.75	. . .	. . .	. . .	3.15	3.02	2.46
Morocco	. . .	2.53	3.03	2.94	. . .	. . .	. . .	2.86	2.85	. . .	3.71	2.90	2.79
Pakistan	. . .	. . .	. . .	. . .	3.60	2.60	. . .	. . .	. . .	2.47	3.53	3.09	2.93
Philippines ...	3.71	. . .	. . .	. . .	. . .	. . .	. . .	2.94	. . .	. . .	3.61	3.64	2.94
Poland	3.13	. . .	. . .	. . .	. . .	. . .	. . .	2.88	. . .	. . .	3.15	3.10	2.49
Spain	3.00	. . .	. . .	. . .	. . .	. . .	2.74	. . .	. . .	. . .	3.02	2.92	2.53
Turkey	2.59	2.23	2.56	2.37	3.14	. . .	2.57	. . .	2.77	2.39	3.20	2.64	2.31
Yugoslavia ...	2.98	. . .	. . .	. . .	3.61	. . .	2.66	3.13	. . .	2.89	3.25	3.05	2.52
Vietnam	2.35	. . .	. . .	. . .	. . .	2.52	. . .	. . .	. . .	2.20	2.79	2.58	2.10
All	3.27	2.32	2.71	2.76	3.43	3.07	2.68	2.91	3.02	2.51	3.21	3.17	
All adj.	2.89	1.93	2.25	2.30	2.64	2.50	2.40	2.63	2.27	2.27	2.84		

Note.—Adjusted total computed with models including age at migration, duration, duration squared, schooling, and sex (male = 1). The scale ranges from 1 (not at all) to 4 (very well).

and destinations), we selected for our descriptive purposes 12 well-known immigrant groups that are observed in at least three destinations. The observed language scores are presented for settings and for origins and destinations (total).

Such a description does not take into account the role of composition effects, nor does it estimate the role of each contextual factor independent of the other contextual factors. Table 5 therefore also presents the results of a multivariate cross-classified multilevel model with dummy variables for origins and destinations, in which we controlled for the individual-level variables age at migration, duration of residence, duration of residence squared, schooling, and sex. The 170 other origin groups were combined in one category in this model. The adjusted means present the predicted level of language ability for each destination country and for each origin country, with all individual factors centered around the mean and males as the reference category. Predictions for origin countries are evaluated holding constant destination. Similarly, predictions for destination countries are evaluated holding constant origin (set to the value of the "other" groups). The results suggest that origins, destinations, and settings all play an important role in the language skills of immigrants.

Consider, first, the results from the perspective of immigrants' origins. The average language score of all immigrants in our data set is 3.17, slightly more than speaking the language "well" (score 3). Of the 12 selected groups, immigrants from the Philippines (3.64) and India (3.58) have particularly good language skills, while those from China (2.68), Turkey (2.64), and especially Vietnam (2.58) have little proficiency of the destination language. The total adjusted estimates show that the differences between these origin groups remain after taking relevant individual characteristics into account. The difference between an average male immigrant from India, who has a language score of 3.53, and a comparable immigrant from Vietnam (2.10) is almost 1.5 points. This suggests that characteristics of the country of origin have a contextual effect, above and beyond the composition of individual traits.

Differences in immigrants' language skills are also pronounced between destination countries. Host societies in which few immigrants speak the language well are the Dutch-speaking part of Belgium (2.32) and Norway (2.51). Controlling for composition effects, these countries remain at the bottom of the receiving regions, accompanied by the French-speaking part of Belgium, which ranks second lowest. Immigrants in the United States (3.21), Australia (3.27), and Denmark (3.43) clearly have better proficiency of the destination language. The good performance of immigrants in Denmark is due to composition effects and should not be exaggerated, for it ranks only fourth best in the list of adjusted totals.

The top ranking of immigrants in the United States and Australia remains the same, however.

Along with differences between origins and destinations, table 5 also provides some information about the role of setting effects. Compare, for instance, the language skills of Pakistanis in Great Britain and the United States. In Britain, Pakistanis have an average language score of 2.60, which is below the average score of Pakistanis in all destinations (3.09) and also below the mean language score of all immigrants in Great Britain (3.07). By contrast, in the United States, the average language skills of Pakistanis (3.53) are far above their general score (3.09) and also above the average of immigrants in the United States (3.21). Apparently, then, the specific situation of Pakistanis in Great Britain and the United States determines their deviance from the general pattern expected by origin and destination effects.

Although these initial descriptive figures are interesting, they primarily serve as an illustration that the country of origin, the country of destination, and the combination of the two are important for immigrants' language proficiency. To assess and interpret such differences in a more systematic way, however, it is important to examine all 182 origin groups and all origin-by-destination combinations, and to take survey effects into account. We now turn to such an analysis.

Decomposition of Variance

How much does immigrants' language proficiency vary between individuals, origins, destinations, and settings? And to what extent do the micro- and macrovariables included in our analyses explain the variance at each level? To answer these questions, table 6 presents the variance at different levels with and without the inclusion of macrolevel variables. It should be remarked that no separate random variance component is included for settings.

To begin, we estimated an empty model, defined as a model with random intercepts only, without the inclusion of explanatory variables. Our analyses report a variation of 0.101 between destinations, 0.177 between origins, and 0.667 between individuals. The fraction of the total variance due to the macrolevel is $(0.101 + 0.177)/(0.101 + 0.177 + 0.667) = 0.294$. Hence, more than a quarter of the individual differences in second-language proficiency of immigrants can be attributed to origin and destination effects. This suggests that macrolevel factors play an important role in immigrants' language proficiency.

Decomposing the macrolevel variance into variance among origins and variance among destinations yields the following results. The fraction of the total variability that is due to differences among destinations is 0.107.

TABLE 6
DECOMPOSITION OF VARIANCE CROSS-CLASSIFIED MODELS

	Null Model	Individual Variables	Individual + Destination Variables	Individual + Origin Variables	Individual + Setting Variables	All Variables
Destination ...	.101	.090	.076	.092	.093	.073
	(.053)	(.048)	(.042)	(.051)	(.048)	(.042)
Origin	.177	.104	.104	.083	.065	.051
	(.021)	(.012)	(.012)	(.010)	(.008)	(.006)
Individual	.667	.476	.476	.476	.475	.475
	(.002)	(.002)	(.002)	(.002)	(.002)	(.002)
Total	.945	.670	.656	.651	.633	.599

NOTE.—Nos. in parentheses are SEs.

The fraction due to the origin level is 0.187. Hence, origin plays a more important role than destination, which is probably related to the larger number of origin than destination cases, which, in addition, are all Western. Nevertheless, both immigrants' country of origin and country of destination are associated with language skills.

To assess the role of composition effects, we examine to what extent individual variables can explain macrolevel variations.[8] When only individual variables are added, the explained variance for destinations is 11%, or (0.101 − 0.090)/0.101. For origins it is 41%. This indicates that differences between origins and destinations can partially be explained by differences in individual characteristics. More than half of the variance remains, however, suggesting that contextual effects are involved as well.

If the contextual approach advanced in this article is correct, the amount of variation of a certain component should diminish when context variables of that component are added to the model. This turns out to be the case. For example, the percentage reduction in error variance among destinations is ([0.090 − 0.076]/0.090) 16 when destination variables are added to the model with only individual variables. Similarly, the proportional reduction in variance is 20% among origins when origin variables are included. When setting variables are introduced in models with only individual variables, the total macrolevel variance is reduced by 19%.

Testing the Hypotheses

The results of the cross-classified multilevel analyses of immigrants' destination-language proficiency are presented in table 7 (linear regression)

[8] See, however, Kreft and De Leeuw (1998) and Snijders and Bosker (1999) for drawbacks of explained proportion of variance in multilevel models.

TABLE 7

CROSS-CLASSIFIED MULTILEVEL LINEAR REGRESSION ANALYSIS OF IMMIGRANTS' DESTINATION-LANGUAGE PROFICIENCY ON INDIVIDUAL AND CONTEXTUAL CHARACTERISTICS IN NINE WESTERN COUNTRIES, 1980–99

	COUNTRIES AS ORIGINS AND DESTINATIONS				COUNTRIES AS ORIGINS AND SURVEYS AS DESTINATIONS			
	Model 1		Model 2		Model 3		Model 4	
Constant	2.887	(.133)	3.090	(.145)	2.774	(.092)	3.074	(.170)
Destination effects:								
Left-wing parties	−.078**	(.017)	−.063**	(.015)	−.062**	(.021)	−.055**	(.013)
Prejudice	−.025	(.014)	−.047**	(.010)	−.020**	(.006)	−.035**	(.009)
Origin effects:								
National imports/GDP (%)	.003**	(.001)	.003**	(.001)	.003**	(.001)	.003**	(.001)
Non-Christian origin	.116*	(.048)	.106*	(.046)	.074	(.043)	.077*	(.039)
Political suppression	−.010	(.006)	−.013*	(.006)	−.011*	(.005)	−.011*	(.005)
GDP per capita (in 1,000s USD)	.006	(.004)	−.013	(.010)	−.012	(.009)	−.016*	(.008)
GDP per capita squared			.001	(.000)	.001	(.000)	.001*	(.000)
Setting effects:								
Official language	.247**	(.028)	.245**	(.027)	.211**	(.028)	.211**	(.030)
Language distance:								
Same language branch	.000		.000		.000		.000	
Indo-European, other branch	−.049*	(.020)	−.047*	(.019)	−.067**	(.019)	−.068**	(.020)
Non-Indo-European	−.158*	(.063)	−.134*	(.055)	−.016**	(.052)	−.168**	(.048)
Relative group size (%)	−.108**	(.008)	−.316**	(.021)	−.318**	(.022)	−.316**	(.022)
Relative group size squared			.098**	(.009)	.103**	(.009)	.102**	(.009)
Geographic distance (1,000s km)	−.004**	(.001)	.017**	(.005)	.024**	(.005)	.025**	(.005)
Geographic distance squared			−.001**	(.000)	−.001**	(.000)	−.001**	(.000)
Individual variables:								
Male	.043**	(.003)	.044**	(.003)	.043**	(.003)	.043**	(.003)

Age at migration	−.019**	(.000)	−.019**	(.000)	−.019**	(.000)	−.019**	(.000)
Years since migration	.042**	(.001)	.042**	(.001)	.042**	(.001)	.042**	(.001)
Years since migration squared	−.001**	(.000)	−.001**	(.000)	−.001**	(.000)	−.001**	(.000)
Years of schooling	.062**	(.000)	.062**	(.000)	.062**	(.000)	.062**	(.000)
Survey variables:								
Respondent assessment (vs. interviewer)							−.086	(.128)
Indirect questioning (vs. direct)							−.008	(.102)
N of observations:								
Destination	11		11		22		22	
Origin	182		182		182		182	
Setting	360		360		360		360	
Individual	186,091		186,091		186,091		186,091	

Note.—Nos. in parentheses are SEs.
* $P < .05$.
** $P < .01$.

and table 8 (logit regression). Model 1 includes all microlevel and macrolevel variables. Because earlier studies have found some curve-linear macrolevel effects (Espenshade and Fu 1997), model 2 adds quadratic specifications. In general, the linear and logit models yield similar results, but the logit estimates are more often statistically significant. Models 3 and 4 are estimated for sensitivity analyses and will be discussed below.

Destination effects.—Starting with destination effects, our analyses support the idea that the political climate is linked to immigrants' language skills. Both linear and logit estimates in model 1 show that the more strongly left-wing parties are represented in the government in the 1980s, the less well immigrants speak the destination language. In model 2 of table 8 (logit estimates), the relationship becomes just below significance levels when quadratic specifications are added. All in all, however, our findings show a clear negative impact of the presence of left-wing parties in the government on immigrants' language skills. The United States plays an important role in this result, since this is considered a country with no left-wing parties in the government, and second-language proficiency there is relatively high. In linear and logit models without the United States (not presented), the effect is reduced and becomes insignificant.

We also find support for the idea that anti-immigrant attitudes play a role in second-language learning. In societies where attitudes toward immigrants are more negative, immigrants have poorer language skills than in destinations where attitudes are more positive toward immigrants. The effect is statistically significant in the logit models. The magnitude of the effect is $-.112$ in logit model 1, showing that for a one percentage point increase in negative attitudes of the native population, the expected odds of speaking the language very well declines by 11% for all immigrants (i.e., $1 - e^{-.112}$). Anti-immigrant sentiments vary from 3% to almost 20% of the population, which suggests that this is an important factor that accounts for differences between receiving countries. However, an alternative interpretation of our finding could be that anti-immigrant sentiments are the result of immigrants' having few language skills. We tried to deal with this issue by measuring anti-immigrant sentiments prior to measures of language proficiency, but we cannot rule out this possibility conclusively.

Origin effects.—With respect to the role of immigrants' country of origin, we included factors that relate to the level of globalization, as well as to the political, economic, and religious conditions in the sending country. The results of both the linear and logit models indicate that the degree of globalization in immigrants' origin country is important for their language proficiency. As predicted, people who migrated from countries with a higher level of economic globalization have better language skills. Logit model 1 shows that the effect of globalization is substantial. A one stan-

dard deviation increase in the globalization measure (i.e., 26.9, table 4) is associated with a 42% increase in language fluency, which is a substantial effect (i.e., $1 - e^{26.9 \times .013}$). This clearly confirms the notion that prior exposure to other languages is an important factor in the contextual differences in language fluency.

Another origin factor is religion. Because all destination countries are predominantly Christian, we used predominantly (non-)Christian origin as a contrast. We find no support for the idea that immigrants from non-Christian origin speak the destination language less well than those from mainly Christian societies. On the contrary, our cross-classified multilevel analyses show that immigrants from non-Christian origins have significantly better language skills. According to logit model 1, the odds that immigrants from non-Christian societies speak the language very well is 47% higher than the comparable odds for immigrants from Christian societies.

Political suppression in the origin country appears to have the expected negative impact on destination-language skills. The effect is significant in the logit models. People who move from countries with politically oppressive regimes have a lesser command of the language of the receiving society. This finding is in line with earlier research done by Chiswick and Miller (2001), who found that refugees in Canada are less likely than economic immigrants to speak the destination language well.

We further expected a negative effect of modernization in the country of origin on language proficiency. However, model 1 of the logit and linear estimates finds no significant effects of GDP per capita. Logit model 2 (table 8) shows that the main effect of GDP per capita is negative and the quadratic term is positive. Both effects are significant. The turning point of the effect in logit model 2 is located at about $11,500 GDP per capita (i.e., 1,000 × .0855/[2 × .0037]). Language fluency declines with GDP before that point and increases with GDP after that point. A graphical examination of these effects, however, shows that the initial declines are very small (not shown). The increases after the minimum point are more substantial in size, but there are relatively few cases in that part of the data (i.e., 13%). Hence, we conclude that the level of modernization in the origin country has no important general effect on language proficiency. Note that earlier research conducted in the United States found a positive association between the per capita GNP in the home country and immigrants' language proficiency (Espenshade and Fu 1997; Jasso and Rosenzweig 1990).

Setting effects.—We now turn to our discussion of setting effects. A first setting factor is whether the official language of the destination country resembles that of immigrants' origin. Both linear and logit analyses show that those originating from a country in which the destination language

TABLE 8

Cross-Classified Multilevel Logistic Regression Analysis of Immigrants' Destination-Language Proficiency on Individual and Contextual Characteristics in Nine Western Countries, 1980–99

	Countries as Origins and Destinations				Countries as Origins and Surveys as Destinations			
	Model 1		Model 2		Model 3		Model 4	
Constant	.166	(.177)	.239	(.001)	.865	(.172)	.569	(.121)
Destination effects:								
Left-wing parties	−.154**	(.032)	−.094	(.054)	−.207**	(.030)	−.203**	(.022)
Prejudice	−.112**	(.018)	−.106**	(.009)	−.101**	(.009)	−.095**	(.017)
Origin effects:								
National imports/GDP (%)	.013**	(.002)	.015**	(.003)	.013**	(.002)	.016**	(.002)
Non-Christian origin	.386**	(.119)	.407**	(.090)	.305	(.176)	.529**	(.164)
Political suppression	−.050**	(.009)	−.039**	(.011)	−.076**	(.007)	−.108**	(.011)
GDP per capita (in 1,000s USD)	−.009	(.016)	−.085**	(.020)	−.120**	(.035)	−.042**	(.010)
GDP per capita squared			.004**	(.001)	.005**	(.002)	.001*	(.001)
Setting effects:								
Official language	.616**	(.094)	.375**	(.114)	.297*	(.129)	.305**	(.093)
Language distance:								
Same branch	.000		.000		.000		.000	
Indo-European, other branch	−.190**	(.066)	−.359**	(.069)	−.373**	(.058)	−.370**	(.066)
Non-Indo-European	−.983**	(.141)	−1.216**	(.204)	−.850**	(.105)	−1.015**	(.017)
Relative group size (%)	−.297**	(.030)	−.925**	(.069)	−.943**	(.073)	−.953**	(.084)
Relative group size squared			.275**	(.028)	.288**	(.031)	.291**	(.035)
Geographic distance (1,000s km)	−.041**	(.002)	−.122**	(.014)	−.078**	(.011)	−.104**	(.011)
Geographic distance squared			.004**	(.001)	.002**	(.000)	.003**	(.000)
Individual variables:								
Male	.000	(.012)	.000	(.012)	.003	(.012)	.003	(.012)

Age at migration	−.054**	(.001)	−.054**	(.001)	−.054**	(.001)	−.054**	(.001)
Years since migration	.113**	(.003)	.114**	(.003)	.114**	(.002)	.114**	(.002)
Years since migration squared	−.002**	(.000)	−.002**	(.000)	−.002**	(.000)	−.002**	(.000)
Years of schooling	.162**	(.002)	.162**	(.002)	.162**	(.002)	.162**	(.002)
Survey variables:								
Respondent assessment (vs. interviewer)							−.071	(.132)
Indirect questioning (vs. direct)							.365**	(.071)
N of observations:								
Destination	11		11		22		22	
Origin	182		182		182		182	
Setting	360		360		360		360	
Individual	186,091		186,091		186,091		186,091	

NOTE.—Nos. in parentheses are SEs.
* $P < .05$.
** $P < .01$.

is official have better language skills than those born in a country in which the destination language is not official. Model 1 in table 7 shows that, measured on a four-point scale, the difference between these groups is .247. This difference supports the idea that these immigrants were exposed to the destination language prior to migration, and therefore had higher language skills upon arrival. This finding also concurs with research done by Chiswick and Miller (2001) in Canada, who found that immigrants from a former British, French, or American colony have better command of the destination language.

Linguistic distance also plays an important role in language proficiency. We predicted that, for immigrants whose destination language was not official in the origin country, linguistic distance diminishes language proficiency. As expected, tables 7 and 8 show that people who moved from countries having an official language which does not belong to the Indo-European family have the lowest destination-language skills. Those who moved from an Indo-European language speaking country, but not of the same Germanic or Romance branch as the destination country, rank second lowest. The best destination-language skills are observed among language combinations that are linguistically most similar: Indo-European languages within the same Germanic or Romance language group. The odds of speaking the language very well for these groups is 2.67 times as great as it is for immigrants from non-Indo-European language speaking countries. Earlier research on linguistic distance found confirmations for immigrants in Canada (Chiswick and Miller 2001) and Israel (Beenstock et al. 2001). Espenshade and Fu (1997), however, found that in the United States, immigrants from Arabic-speaking countries have better English skills than those from linguistically closer Spanish-speaking countries.

Another setting factor that may play a role in language proficiency is the relative size of the immigrant group. Both linear and logit analyses show that relative group size has the predicted negative impact on immigrants' language proficiency. Thus, the larger the immigrant group in a particular country, the poorer the language skills of that group. The effect is statistically significant in both the linear and the logit model. The magnitude of the effect is −.297 in the logit model, showing that for a one percentage point increase in relative group size (which is a considerable range for minority groups), the expected odds of speaking the language very well declines by 26%. We also find that a quadratic specification of the group size effect is statistically significant (model 2). Using a four-point scale, the turning point is located at 1.6%, which is at the high end of the scale (the mean relative group size is .09). Increases in relative size up to 1.6% are associated with a decline in language skills, but after that point, there is an increase in language skills associated with increases in size. Because there is only one group that is more than 1.6%

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of the population, this means that language skills decrease with group size, but that it declines faster at smaller sizes than at larger sizes.

A final setting factor considered is the geographic distance between the country of origin and the country of destination. Model 1 of both linear and logit estimates shows that the relationship between distance and language proficiency is negative instead, which is inconsistent with our hypothesis.[9] Adding a quadratic term in model 2 yields significant results as well. In the linear regression model, the main effect is positive and the quadratic term is negative (table 7). Further graphical inspection, however, shows that the magnitude of the effect is negligible (the maximum predicted level is 3.16 while the minimum predicted level is 3.09). In the logit model, the main effect is negative and the quadratic term is positive (table 8). The extreme is located at about 16,000 kilometers, which is also the maximum of the scale. Hence, this model suggests that language ability generally declines with distance, although it declines faster at small distances than at large distances. The magnitude of the effect is more substantial here: immigrants coming from a place about 500 kilometers away have a 2.5 times greater chance of speaking the language fluently compared to immigrants who needed to travel 16,000 kilometers. Note that, using linear functions, earlier studies found a slightly positive relationship between geographic distance and immigrants' language skills in Canada (Chiswick and Miller 2001) and a negative relationship in the United States (Espenshade and Fu 1997; Jasso and Rosenzweig 1990).

Sensitivity analyses.—Because a cross-national analysis of different surveys raises questions about comparability, we performed sensitivity analyses. We estimated the linear and logit models 3 and 4 again, using surveys as destinations. This results in 22 destination-survey cases. Model 4 includes two survey characteristics that could bias cross-national analyses. The findings in table 7, using linear regression, do not suggest that the assessment of immigrants' language proficiency differs by source of report, nor do we find that direct versus indirect questioning affects the assessment of language skills. Logit analyses presented in table 8, however, suggest that direct versus indirect questioning affects the assessment of language skills. We find that surveys using indirect questioning yield higher language scores than surveys using direct questioning. More important, though, is that the macrolevel effects in tables 7 and 8 remain

[9] We reanalyzed our models with modifications for two groups for which our measure of the distance between the capital cities overestimates the actual travel distance (i.e., Cubans and Mexicans in the United States set to the value of 250 kilometers). This resulted in the same results at four digits (e.g., linear estimate, model 1, $b = -.00371$; SE $= .00068$). We therefore use distance between capital cities as a measure of geographic distance between origin and destination.

the same after controlling for these survey characteristics. This result suggests that our findings are quite robust.

CONCLUSIONS AND DISCUSSION

In this article, we contributed to earlier contextual approaches to immigrants' destination-language proficiency in three ways. First, we addressed a previously overlooked factor: the role receiving societies have in the language proficiency of their immigrants (what we called destination effects). Second, we disentangled the role of the immigrant group, a factor that previous research has found to be of importance, into two contextual parts: group differences that persist across nations (origin effects) and group differences that change between destinations (setting or community effects). Third, we developed and applied a double-comparative research design, in which multiple origin groups are studied in multiple destinations simultaneously. This design provides the opportunity to disentangle and test these three groups of contextual effects in a convincing way. We collected and standardized 19 existing surveys on immigrants in nine Western societies (and 11 language regions), yielding a total of about 180,000 immigrants belonging to 182 different origin groups, observed in 360 settings.

We applied cross-classified multilevel techniques and found, in accordance with the macrolevel perspective pursued here, that immigrants' language proficiency varies between origins, destinations, and settings. About a quarter of the total variability in language skills can be attributed to the country of origin and country of destination. Controlling for individual-level correlates of language proficiency, more than half of these macrolevel differences between macrounits remain. This result implies that, besides composition effects, contextual effects play an important role in the second-language proficiency of immigrants.

In order to understand these contextual effects, we relied on three theoretical ideas about immigrants' language proficiency that have been suggested in the literature. According to these ideas, immigrants' destination-language skills are a function of exposure to that language (both prior to and after migration), of the difficulties of learning a new language, and of the economic incentives to invest in learning a new language. We used these ideas to develop hypotheses on the role of contextual factors that pertain to origins, destinations, and settings. Including these theoretically informed macrolevel variables, we were able to explain a substantial part of the variation among origins, destinations, and settings. While most of the results concur with our hypotheses, we also needed to reject some

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influential hypotheses from the literature. In addition, some findings were unanticipated and ask for new explanations.

What explains the role of receiving nations? We find two important factors. First, in societies with a left-wing legacy, immigrants have poorer command of the destination language. Possibly, the political climate in these countries is more tolerant toward immigrants, resulting in fewer incentives to learn the host language. Another, though related, idea is that these societies more often adopt a linguistic-pluralism policy of integration, in which immigrants and their children are offered opportunities to speak and learn their mother tongue, and which (unintentionally) reduces immigrants' exposure to the second language. As a result, the linguistic-pluralism policy of integrating immigrants is associated with fewer destination-language skills compared to societies adopting a laissez-faire or assimilation language policy. Because we have not measured the political climate or integration policies directly, it is up to further research to examine how the relationship between political parties and immigrants' language proficiency should be interpreted.

We also found that a high degree of prejudice toward immigrants in the destination country negatively affects immigrants' language skills. This confirms the suggestion that anti-immigrant sentiments diminish the social interaction between natives and immigrants, which in turn decreases immigrants' exposure to the official language and hampers their process of language learning.

How are differences among origin groups to be interpreted? This study finds that, whatever their destination, immigrants from countries with more globalized economies speak the language better. This finding underscores our idea that immigrants from more economically globalized societies are more strongly exposed to the foreign language before immigrating, through such things as business relations, the media, or foreign-language learning at school. Furthermore, differences among origin groups are due to the social and political conditions at the time of migration. We find that those who moved from politically suppressed societies have a poorer command of the destination language. This finding concurs with the suggestion that political migrants are less efficient at learning a new language, due to their less favorable cognitive selection in general, and the higher amount of stress they experience than other immigrants.

Origin differences have less to do with the degree of modernization, although our study also shows that the effect of GDP is complex. In the logit models, we find that in most of the GDP range, differences in language proficiency are small. Effects are more substantial when looking at the small number of very wealthy origin countries: immigrants from these countries tend to have greater language ability than immigrants from other countries. We expected that the degree of modernization would

be inversely related to language proficiency, but this hypothesis needs to be rejected. One possible explanation for why the few wealthier origin groups do better is that immigrants from these countries received higher-quality schooling, which increased their efficiency in learning a new language.

We find no evidence for our hypothesis that non-Christian origin is associated with poorer language skills. We argued that immigrants from predominantly non-Christian countries would be more discriminated against, which in turn would reduce daily opportunities for learning the language. Our findings instead suggest that immigrants from non-Christian origins have better language skills. One explanation for this unanticipated finding is that the distance between the cultures of the home and host societies involves migration costs, hence selecting the more favorable immigrants from distant cultures. That explanation would concur with the efficiency approach to language learning and needs to be further researched. Another way to proceed would be to compare the language proficiency of different non-Christian groups. One possibility that needs to be researched is if Muslims speak the destination language less well than other groups, since the social distance between Muslims and natives is presumably greater than between natives and other non-Christian groups (e.g., Buddhists, Hindus).

Our third group of hypotheses referred to the combination of origin and destination. Several setting factors turned out to be important here. We find that immigrants who traveled to a destination with the same official language as their origin have better command of that language than groups without such resemblance. These groups were exposed to the destination language prior to migration, and their language proficiency upon arrival naturally surpassed that of other groups. Once in the country, immigrants' language proficiency is lower if the host language is more distant. This finding underscores the notion of efficiency because it is more difficult to learn languages that are linguistically distant from people's mother tongue. Furthermore, we find a negative relationship between the size of the immigrant group in the destination country and immigrants' language skills. This finding supports the exposure approach because opportunities to learn the new language from conversations with natives are more limited if the immigrant group is larger. The size effect may also point to the role of incentives because immigrants in larger groups can use their mother tongue in ethnic enclaves.

We found negative evidence for one hypothesis on the role of settings. Geographic distance has a negative rather than the expected positive effect, suggesting that immigrants whose origin country is close to the destination country have better command of the destination language. A large distance between origin and destination, it was argued, not only

positively selects the cognitive abilities of immigrants, but it also diminishes the likelihood of return migration, hence increasing economic incentives of learning the destination language. Perhaps this anomaly may be explained by migration and remigration patterns. When distances are small, groups can more easily travel between home and host locations. Because length of residence in the receiving nation is measured since the last entry, this would imply that geographically nearer groups have resided longer in the destination country than groups from larger distances. Hence, these groups have been more strongly exposed to the destination language than we were able to control for in our models.

We also examined the robustness of our findings. First of all, we used two different classifications of language proficiency. Our analyses, using a four-point scale and a two-point scale, generally yield similar results. Overall, the logit estimates show stronger effects than the linear estimates. Second, we analyzed additional models in which survey characteristics were taken into account. We found no difference between interviewer or respondent assessment of language skills. The logit analyses showed that indirect questioning yields somewhat higher scores of language skills than direct questioning. More important, however, the contextual effects we found remain the same after these survey characteristics are taken into account. All in all, the sensitivity analyses suggest that our findings are robust.

Finally, we need to emphasize that spoken language is just one aspect of general language proficiency. Although reading and writing proficiency have been examined before, it has been done with a single comparative design (Chiswick and Miller 1996; Dustmann 1994, 1997; Gonzalez 2000; Hayfron 2001). Subsequent research can use our multiple origin–multiple destination design to examine and explain contextual variations in writing and reading skills as well. More generally, the double comparative approach developed in this study can be applied to other dimensions of immigrant integration, such as intermarriage, segregation, and socioeconomic attainment.

APPENDIX

TABLE A1

Cross-Tabulation of Interviewer by Respondent Assessment of Destination-Language Proficiency among Immigrants in Denmark, 1986 ($N = 562$)

	INTERVIEWER ASSESSMENT			
RESPONDENT ASSESSMENT	Good	Reasonable	Poor/Not at All	Total
Good	78	29	3	110
Reasonable	45	176	48	269
Poor/not at all	2	33	148	183
Total	125	238	199	562

Source.—Danish National Institute of Social Research (1986)

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