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Migration and Industrialization in Germany, 1815-1977

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The rapid expansion of historical demography as a discipline has meant a growing number of studies of past migration (excellent examples are Tugault, 1973; Chatelain, 1976; Piore, 1979), although migration still receives considerably less attention than does fertility or mortality. The study of industrializing cities during the nineteenth century has focused interest on those patterns of migration that caused rapid urban population growth (Anderson, 1971; Anderson, 1980; Crew, 1979; Thernstrom, 1970). Most of these recent studies of internal migration are based on localized information over relatively short periods of time. They provide us with demographic data of unprecedented precision, but the local nature of such studies accentuates their dependence on currently accepted generalizations as guides in the search for and interpretation of evidence.

Difficulties can arise if misdirected theory impedes the proper evaluation of research. This problem has already plagued the field of internal migration. The notion that preindustrial agricultural populations were geographically immobile has long been impervious to contrary empirical findings. In the last few years, increasing evidence of widespread mobility before industrialization has come to light (Clark, 1972; Gaunt, 1977; Wrightson,

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1977). Theoretical generalizations that wholeheartedly incorporate these data have yet to materialize, so that synthetic works in history and sociology continue to repeat outmoded theories, or struggle uncomfortably with recalcitrant evidence.[1] Disregard for the vital role played by migration in preindustrial communities may significantly bias the study of other demographic variables; until we know much more about migration, we cannot even estimate how well family reconstitution from parish registers can represent larger populations (Akerman, 1977). Because of incompleteness of data caused by mobility, the most mobile and poorest segments of preindustrial populations may be underrepresented in local reconstitutions (Knodel, 1978: 509).

It is incorrect, however, to assume that we can simply jettison the idea that preindustrial mobility was uncommon without calling into question other assumptions about migration before and after industrialization. Beliefs about stable "traditional" societies are embedded in a larger framework of hypotheses that continues to guide migration research. A comprehensive set of assumptions posits a causal link between migration and industrialization within the broader theory of modernization. The following summary of current views on migration and industrialization specifies these assumptions.[2] The process of industrialization caused a great leap in geographical mobility. The timing of this increase can be dated by the speed of the industrialization process itself; thus, in Germany, internal migration became important after 1850, when industrial growth became extremely rapid. The maturation of an urban-industrial culture, accompanied and sometimes fostered by a revolution in the means and ease of transport, has further encouraged human mobility in the last hundred years. Most of this migration has been rural-to-urban, following the locus of economic activity as it migrated from farm to factory. Urbanization itself was a spur to further migration, since urban-bred people were more likely than peasants to move. The transition to modern society, embodied in the concept of modernization, involved a psychological acceptance of individual utility, which could be increased by carefully calculated geographic movement. Mobility in all its forms,

geographic and social, expresses much of what is meant by modernity (Lerner, 1958: 47-48). The United Nations' official demographic journal (United Nations Department of Economic and Social Affairs, 1973: 171) summarized this viewpoint: "The spatial mobility of population within countries has greatly increased in modern times." These long-term trends in migration were set in a theoretical framework resembling the demographic transition inWilbur Zelinsky's famous article (1971). He foresaw a continued increase in mobility as urban-to-urban replaced rural-to-urban migration in the wider process of modernization.

This narrative of migration history fits comfortably with other accepted ideas. Modernization theorists view mid-twentieth-century Western society as the result of progressive change, providing a wider freedom of choice, including the newly expanded potential to migrate. The rationality of migrants, trying to augment their utility through movement to regions with more advanced economics, is assumed in many studies of migration.[3] Nineteenth-century industrial growth, so often used as the watershed between two fundamentally different forms of society, is assumed to be the causal factor behind the mobile society. The strength of assumptions about migration is due to this congruence with more basic beliefs about our society and its past.

This summary interpretation of migration in history has recently come under attack from various quarters. Charles Tilly (1978: 61-63) suggests that migration may have changed its nature but not its volume in the last two centuries. Data from French local studies indicate a weaker link between urban growth and industrialization (Lequin, 1977). Most important, the belief that migration has been increasing in modern times has been shown to be incorrect for certain types of migration in several countries (Chatelain, 1976; Friedlander and Roshier, 1966: 268; Schwarz, 1969: 82). My purpose is to demonstrate that the entire structure of assumptions outlined above is incompatible with historical evidence, at least for substantial sections of continental Europe. The evidence on migration in Germany during the last two centuries collected here shows that the changes in the total volume of migration and the role of cities within the structure of German

migration do not conform to the predictions of the modernization model. The causal relationship between migration, industrialization, and urbanization must be reformulated and expanded to include changes in the structure of agrarian life. After reviewing a broad spectrum of migration data, I shall propose an alternative model.[4]

TRENDS IN GERMAN MOBILITY, 1821-1977

Reliable migration data for the period before 1850 are extremely rare. For most nations, the development of modern census enumerations or demographic registration systems is a prerequisite for historical migration analysis.[5] The crucial period of the early growth of industry and the transition to the fully industrial stage remains a field for speculation. I have, however, found some interesting and possibly unique statistics on migration for a sizable region in northwest Germany. Ambitious German bureaucrats began to collect migration statistics for the district *(Regierungsbezirk)* of Duesseldorf when Prussia annexed the lower Rhineland in 1814.[6] All migrants, even very temporary ones, who took up official residence in a community were required to register with the local authorities. Each community recorded and tabulated the number of yearly in- and outmigrations from 1821 through 1865. The region included nearly one million people living in about 200 separate communities. For no comparable European region do we have such early and complete migration data, although there are gaps in the preserved reports. These data provide our best insight into the structure of migration in industrializing Germany in the first half of the nineteenth century. For the purposes of this essay, the trends in total mobility are of central interest.

The district of Duesseldorf was and remains one of the most highly industrialized and urbanized regions of Germany. In the early nineteenth century it included three separate economic regions: a purely agricultural area near the Dutch border, a mixed agricultural and cottage-industrial region on the left bank of the

Table 1 Migration Rates by Community Type, Regierungsbezirk Duesseldorf, 1821

Community Type	Inmigration Rate	Outmigration Rate	Number of Communities	Average Population	Total Population
Factory Industrial	.027	.037	23	7513	172790
Agricultural	.027	.033	72	1888	135940
Cottage Industrial	.012	.016	9	2937	26433
Mixed	.025	.032	56	3149	176369
Total	.026	.033	160	3197	511532

SOURCES: Calculated from migration and population data in Hauptstaatsarchiv Duesseldorf, Regierung Duesseldorf, 414; community typing based on data in Hahn and Zorn, 1973.
NOTE: Only communities with complete migration data are included; the total population of the district was 614358.

Rhine, and an urban-industrial agglomeration centered on the cities of Duesseldorf, Elberfeld, Barmen, and Solingen on the right bank. Between 1816 and 1830, communities in the district had average in- and outmigration rates of about 3% per year.[7] The data in Table 1 indicate the effects of varied local economies on migration within the district. Migration rates were nearly identical for advanced industrial communities, mainly the larger cities, and for agricultural villages. Only the cottage-industrial communities, producing mainly textiles, deviated significantly from the district average, with very low rates. The Napoleonic wars and the new customs boundaries set by the Treaty of Vienna severely dislocated the Rhineland's economy; the district rate of 3% was therefore probably a low point, but the absence of data for the previous period makes this hypothesis speculative. The economic problems account for the net outmigration experienced by all types of communities in the district, which was reversed by the mid-1820s (Kermann, 1972: 166).

These 1821 data certainly represent a low point of mobility for the region when compared with the rest of the nineteenth century. Migration rates around Duesseldorf increased remarkably between the 1820s and the 1860s. Figure 1 plots the in- and outmigration rates for the district during this period. After the end of the long economic slump, migration rates increased from

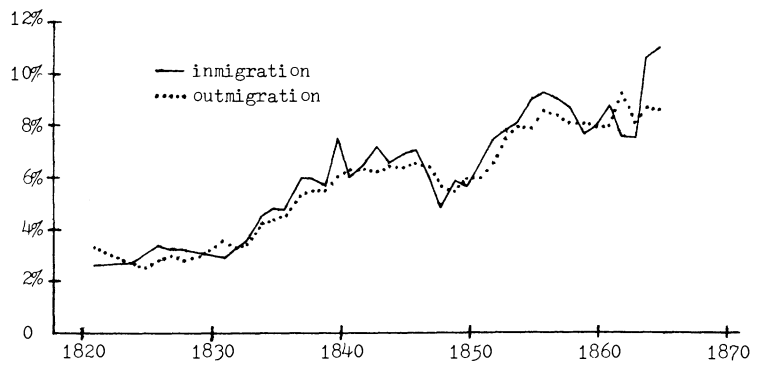

Figure 1 In- and Outmigration Rates in Duesseldorf District, 1821-1865
SOURCE: Hauptstaatsarchiv Duesseldorf, Regierung Duesseldorf, 414-420.
NOTE: No data are available for 1822-1823; rates for 1862-1865 are based on incomplete data.

1830 to 1846, reaching 7% yearly; all types of communities experienced higher mobility. Then the broad economic crisis that provoked the 1848 revolutions in Europe reversed this trend, pushing migration in the district to below 5% yearly. Migration rates had barely recovered from the depression of the late 1840s when the worldwide crisis of 1857 caused them to plunge again. In the mid-1860s, migration rates were once again rising, reaching 10% yearly for the entire district by 1865. The ebb and flow of migration, both regional and local, seasonal and permanent, in conjunction with more general economic developments, has been noted for more mature industrial economies in the twentieth century (Jerome, 1926; Heberle and Meyer, 1937: 94-102). These data show that migration was extremely sensitive to economic cycles well before industrial capacity was fully developed. What is important here is the general rise in migration rates after 1830, interrupted by temporary declines.

The Duesseldorf region, for which the evidence is so detailed, did not have exceptional migration rates. By the late 1850s many Prussian districts were collecting similar migration statistics; those districts for which sufficient data are available are listed in Table 2. The Duesseldorf district occupied a position well within the wide range of variation in local migration rates. While German cities on the average had higher migration rates, agricul-

Table 2 Migration Rates in Prussian *Kreise* (Counties), 1859-1865

Kreis	Province	Inmigration Rate	Outmigration Rate	Dates
Agricultural[a]				
Düren	Rhineland	.016	.012	1859-61
Samter	Posen	.021	.022	1859-61
Erkelenz	Rhineland	.028	.025	1859-61
Euskirchen	Rhineland	.029	.024	1859-64
Wolmirstedt	Saxony	.045	.038	1861-64
Bonn	Rhineland	.053	.054	1859-64
RB Düsseldorf[b]	Rhineland	.057	.063	1861
Oschersleben	Saxony	.070	.063	1861
Münster	Westphalia	.076	.076	1862
Liegnitz	Silesia	.096	--	1859-62
Urban				
Berlin	Brandenburg	.055	.049	1859-61
Quedlinburg	Saxony	.055	.057	1859-61
Aachen	Rhineland	.066	.054	1859-61
Münster	Westphalia	.080	.080	1860-65
RB Düsseldorf[c]	Rhineland	.088	.082	1859-61
Köln	Rhineland	.095	.071	1859-61
Magdeburg	Saxony	.185	--	1859-61

SOURCES: Jahrbuch fuer die amtliche Statistik, 1867: 288-345; Hauptstaatsarchiv Duesseldorf, Regierung Duesseldorf, 414-420; Preussische Statistik, 1864: 256-270, and 1867: 144-170; Die Bevoelkerungs-Aufnahme vom 1875 in der Stadt Berlin, 1878: 17.

a. More than 40% of population employed in agriculture in 1861.

b. Includes all agricultural *Kreise* in RB Duesseldorf except Kreis Geldern, for which no data are available.

c. All cities over 10,000 in RB Duesseldorf for which data are available; includes 8 out of total of 18.

tural districts might also have rather high mobility. By the time that industrial growth began rapidly to transform the national economy after 1850, migration rates had already been climbing for several decades.

These excellent data were apparently no longer tabulated after the reorganization and expansion of Prussia in 1866. Until the 1920s no similar data source is available. Yet we can still follow

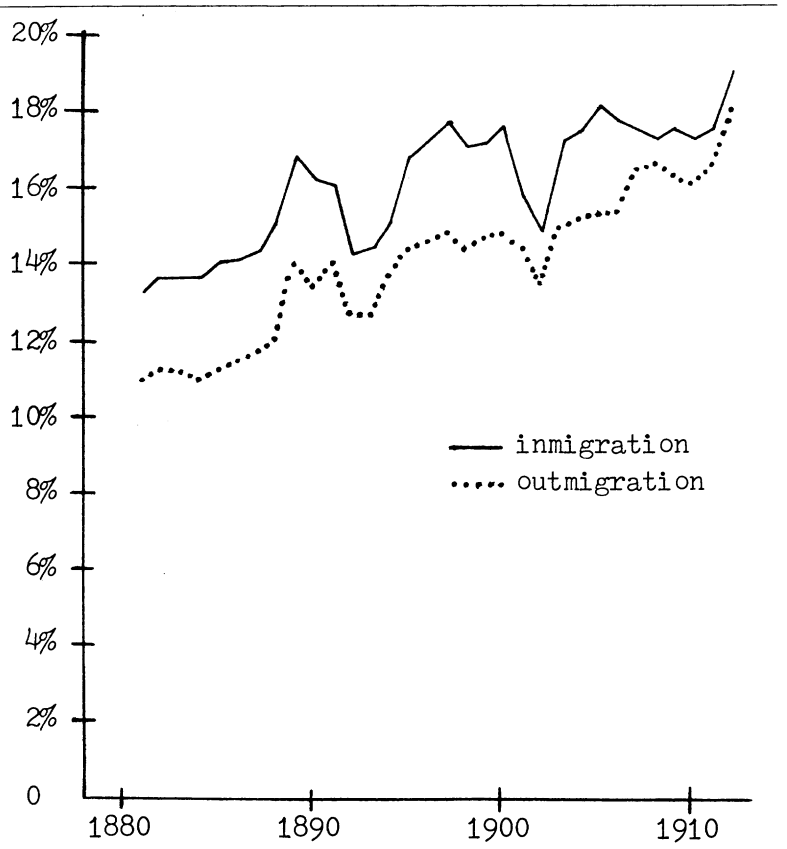

Figure 2 In- and Outmigration Rates in Cities over 50,000, 1881-1912
SOURCE: Statistiches Jahrbuch deutscher Staedte, 1890-1914.
NOTE: Due to increasing completeness of data and rapid urban growth, the number of cities included grows from 15 to 80. This has little effect on the average rates.

the path of national migration rates by using the data collected by municipal statistical bureaus after 1881, published in the yearly *Statistisches Jahrbuch deutscher Staedte*.[8] The data for German cities over 50,000 population charted in Figure 2 show that migration continued to increase for the rest of the nineteenth century, peaking in the first decade of the twentieth. The periodic dips in in- and outmigration rates were again caused by general economic crises in 1892 and 1900-1902. In the last years of the

German Empire, yearly migration rates in large cities were over 18%. Furthermore, a large proportion of the urban population changed its residence within the city each year; the average intracity migration rate for large German cities in the 1890s fluctuated between 34% and 40% yearly (calculated from data in Statistisches Jahrbuch deutscher Staedte, 1890-1914).

This continued increase in mobility and the accompanying urbanization in Germany have been seen as evidence that industrialization is a basic cause for growing migration (Koellmann, 1974: 35-46). What must be startling to those who equate modernity and mobility is the fact that migration rates in Germany have steadily dropped since the early twentieth century, despite continued industrial growth. Current levels of migration are comparable to rates in Duesseldorf in the 1840s. This has long been known, though infrequently noted (Heberle and Meyer, 1937: 88; Schwarz, 1969: 82), but the precise course of this decline has not previously been traced.

World War I severely reduced mobility throughout Germany, and the decline continued thereafter. There are only scattered data for the war years, but by 1919 Prussia began a short-lived effort to collect national migration data. In- and outmigration rates in Prussia dropped from 17% in 1920 to below 12% in 1922 and 1923 (Statistisches Jahrbuch fuer den Freistaat Preussen, 1923: 22-27; 1924: 10-13). Publication of city registration data resumed in 1924, revealing a fall in urban in- and outmigration from 18% in 1912 to about 9% in 1924-1926. Figure 3 contrasts urban migration rates to, from, and within cities, before and after the war. Local movement and intercommunity migration had both been reduced significantly. The dip due to the depression after 1929 seems rather small in relation to the overall decline. Migration in all of Prussia was again measured in 1937-1938, this time by the National Socialist government; in- and outmigration rates were about 9% yearly, very close to the urban values in Figure 3. Since 1950, national migration rates in West Germany have been remarkably steady, hovering around 7.5% annually before a further drop to 5.5% in the 1970s (Statistisches Jahrbuch fuer die BRD, 1951-1979). This stability since 1950 markedly contrasts with migration's rise and fall in the preceding 125 years.

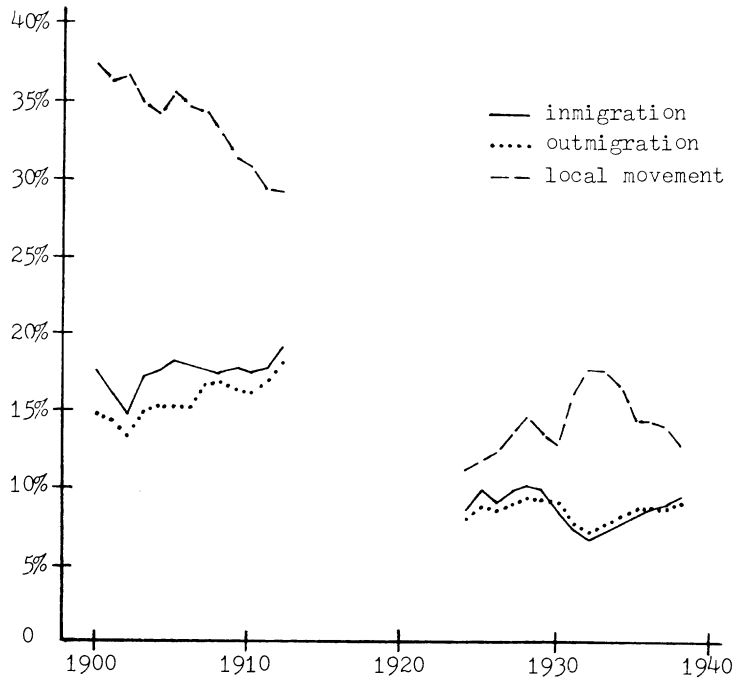

Figure 3 Inmigration, Outmigration, and Local Movement Rates in Cities over 50,000, 1900-1938

SOURCES: Statistisches Jahrbuch deutscher Staedte (later Gemeinden), 1901-1914, 1928-1939; Buechner, 1936: 10.

NOTE: No migration data are available for 1913-1923; there are no local movement data for 1913-1923, 1925.

The varied statistics on German migration described so far are combined in Figure 4 to display the long-term changes in German mobility. Only inmigration rates are plotted, since it is obvious from the previous figures that there was little difference between in- and outmigration rates on the regional or national level, a balance that will be discussed in the next section. Where possible, both urban and national (or regional) data are graphed to demonstrate that urban migration statistics are at least a reasonable proxy for estimating trends in overall mobility. Nevertheless, it must be stressed that only the post-1950 data actually reflect

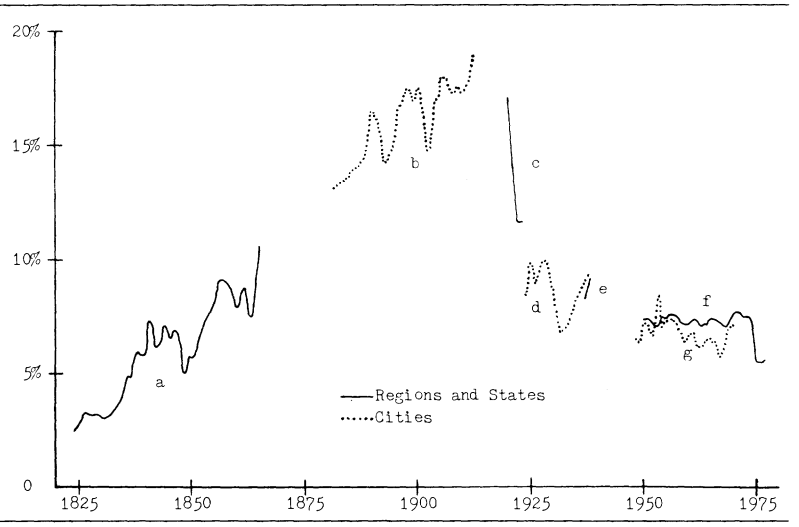

Figure 4 Inmigration Rates in Germany, 1824-1977

SOURCES: As noted in Figures 1-3, plus Statistisches Jahrbuch fuer den Freistaat Preussen, 1923: 22-27; 1924: 10-13; Statistisches Jahrbuch fuer das Deutsche Reich, 1940: 75; 1942: 98; Statistisches Jahrbuch fuer die Bundesrepublik Deutschland, 1951-1979.

a. Regierungsbezirk Duesseldorf, 1824-1865
b. Cities over 50,000, 1881-1912
c. Prussia, 1920-1923
d. Cities over 50,000, 1924-1938
e. Prussia, 1937-1938
f. West Germany, 1950-1977
g. Cities over 20,000, 1948-1970

national trends, and even in this case, only a part of "Germany" is represented by the data. Figure 4 should be considered as a set of estimates of the long-term pattern of German migration. These estimates show that the relationship between migration and industrialization is more complex than the predictions of any modernization model. Migration patterns do not conform to industrial growth or to increasing modernity.

Furthermore, the peaking of migration in the early twentieth century was not confined to Germany. Data for Zuerich follow an identical curve (Wolfensberger, 1952: 56). In Sweden the peak of the migration curve was flatter, extending from 1910 to 1930 (Thomas, 1941: Appendix D); in Holland, migration reached its

height in 1920 (United Nations, 1970: 52). Careful analysis of English census returns shows that intercounty migration has steadily declined since the 1870s (Friedlander and Roshier, 1966: 268). Note that these data, except for England, include all migrations, internal and international (though not intracommunity). Over time, the relative weights of these components could change, since specific regional economic, social, and political circumstances determine how such forms of migration add up to total mobility. For example, migration between the Swedish-speaking parish of Petalax in western Finland and the rest of Finland (internal migration) was higher about 1825 than at any time since. In the nineteenth century this local migration was replaced by international migration between Petalax and Sweden. When these two forms of migration are aggregated, however, the curve of total mobility peaks about 1890 and then continuously declines (Wester, 1977: 52-76).

The rise and fall of mobility were only one aspect of the broader transition to a fully industrialized capitalist economy. It remains for researchers to probe the similarities among nations experiencing such conditions. It is certainly incorrect to link migration and industrialization by a simple positive correlation. The first stage of protoindustrialization may have had varying effects on mobility; the next stage witnessed a strong increase; modern industrial regions in Europe have witnessed declines to historically rather low levels of mobility.

MIGRATION AND CITIES SINCE 1850

Since attention was first focused on migration in the late nineteenth century by academics and statisticians, a clear causal link has been postulated between migration and the city. Among pioneers in the field, Ravenstein (1885, 1889) and Weber (1899) described migration as movement toward cities, and this viewpoint continues to dominate the literature in the form of overwhelming numbers of studies of rural-to-urban migration. Migration and urbanization are sometimes considered twin

phenomena, perhaps even synonymous. Migration out of advanced urban industrial locations back to rural origins is explained as "failure" (Crew, 1979: 71-73) or not discussed at all (Anderson, 1971; Anderson, 1980). Some common beliefs about migration and cities are that most migrations involve cities at some point, that migration is most intense in cities, and that city people are more mobile than country people. For Germany, at least, none of these beliefs is correct; as in the case of long-term mobility trends, faulty theory has obscured contrary evidence.

Let us examine the evidence about the role of cities in German migration. During the nineteenth century, migration in Germany was primarily a rural phenomenon, since most migration is represented exchange between rural areas. The periodic censuses found that the majority of Germans living outside their birthplaces resided in rural communities: In Bavaria in 1871 this proportion was 72%; in the Duchy of Oldenburg in 1880 it was 69% (Buecher, 1887: 4-5). The most extensive seasonal migrations in the nineteenth century were mass movements of peasants from one form of agricultural production to another. Since before 1700, thousands of land-poor peasants from northwestern Germany had migrated yearly into Holland to help with the hay harvest, the so-called *Hollandsgehen* (Tack, 1902). After 1850 this movement dwindled, replaced by an annual influx of eastern Germans into the sugar beet fields. Because sugar beets were concentrated in Saxony, this seasonal migration became known as the *Sachsengaengerei,* although it included much of northern Germany (Lezius, 1913). In the years just before World War I, more than 50% of the thousands of foreign seasonal workers who entered Germany from Russia, Italy, and Austria-Hungary came for agricultural labor (Nichtweiss, 1959: 142-143). Only in the twentieth century did the rural component of German migration become numerically less important than the urban. In the state of Prussia in 1919-1922, 48.9% of all migrations originated in rural communities; in 1937-1938 this proportion was still 41.9% (Statistisches Jahrbuch, 1924: 10; Statistisches Jahrbuch, 1942: 98). By this time, less than 30% of the Prussian population were considered rural (Statistik des Deutschen Reiches, 1941: 144).

These juxtapositions of absolute figures are less indicative than the measurement of relative intensities of rural and urban migration, since the proportions of urban and rural populations in Germany changed so rapidly. The question can be better formulated as an examination of the relationship between migration rate and size of community (the most convenient criterion for rural-urban division). The data from the district of Duesseldorf show that community size had little impact on migration intensity or rate. The data in Table 1 showed virtually equal migration rates for industrial cities and agricultural villages in 1821, although the cities were on average four times larger. In a more systematic analysis of the years 1848 through 1853, the correlation between population size and immigration rate for all of the 192 communities was only .24 (significant at .001). The absence of rural data between 1865 and 1920 provides no basis for comparison. The sources of regional and national migration data described in the previous section show that, since 1920, migration rates in German cities have consistently been lower than in the countryside. In 1920-1922 urban communities in Prussia had an average inmigration rate of 14%, as opposed to 15% in rural ones. In these years the overall rates in agricultural provinces such as Pomerania (17%) and Schleswig-Holstein (19%) were higher than in the industrial regions of Westphalia (15%) and the Rhineland (11%) (Statistisches Jahrbuch, 1923: 23). This inverse relationship between migration rate and urbanization persists today in the Federal Republic: The national annual migration rate in the 1960s was 7.5%, while all cities over 20,000 had a rate of 6.5%; the highly urbanized Duesseldorf district was below 6% (Statistisches Jahrbuch, 1961-1971).

In fact, there is no evidence that urban populations *themselves* were ever more mobile than rural ones. At least since the late nineteenth century, when census results became available for comparison, those born in urban areas have migrated less frequently than their rural counterparts. For all age groups in the 1900 German census, those born in large cities were less likely to be residing outside their place of birth than those born in the countryside. Within Prussia, the more industrialized provinces

showed more stable native populations. Just counting Germans born in communities of fewer than 100,000, over 60% of those from the four agricultural provinces of the East had left their birthplace, while only 41% in Westphalia and 38% in the Rhineland had moved.[9] Using this measure, rural people were more mobile than urbanites in Austria in 1890 and Sweden in 1930 (Rauchberg, 1893-1894: 194; Moore, 1938: 22).

This creates an apparent paradox. If the rural population is more migratory than the urban population, and if rural communities have experienced comparable or higher in- and outmigration rates than cities, how did urbanization occur? Certainly one of the important *results* of migration in the last hundred years has been rapid urbanization. But the interpretation of migration as urbanization mistakes the effects of a phenomenon for the phenomenon itself. The solution to this riddle is the overwhelming importance of temporary migration as a component of societal mobility. Although it is obvious that migration has always consisted of purely temporary and more-or-less permanent movements, the weights to be assigned to these two categories have not been properly studied (an excellent work is Piore, 1979). In recent studies of Third World mobility, increasing stress has been put on the volume of temporary or circulatory migration (Goldstein, 1978). The crucial migratory link between urban and rural communities in Germany, which is furthermore the explanation of the peaking of mobility around 1900, was the growth in temporary migration.

In Germany the overwhelming majority of migrations throughout the period of industrialization were temporary. The Prussian migrants described above in Table 2 declared their intentions upon migration: They changed their official domiciles if the move was "permanent," or indicated a desire to return by retaining their former residence as domicile. Records of these declarations for cities and agricultural districts throughout Prussia in 1859-1861 show that only about 20% of in- and outmigrants changed their domiciles; the vast majority were making a circulatory journey which brought them back to the place of origin (calculated from Jahrbuch fuer die amtliche Statistik, 1867: 288-330).

For the later nineteenth century, the detailed urban migration statistics provide information on the average length of stay of temporary migrants. The most complete modern study of migration in a German city, James Jackson's work on Duisburg (an industrial city in the Duesseldorf region), compares the length of stay for samples of inmigrants in 1867-1868 and 1890. About 50% of these migrants left within one year of arrival in both samples (Jackson, 1980: 64). These findings accord well with the calculations made by many urban statistical bureaus near the end of the century, showing that over half of all urban inmigrants had departed within 2 years. By the end of 5 or 10 years, only a tiny minority of the original inmigrants remained (Most, 1908: 10*, 26*; Bleicher, 1893: 57-61; Langewiesche, 1977: 17). This urban transience around 1900 was characteristic of cities in Russia (Bater, 1980), Canada (Katz, 1975: 94-175), and America (Thernstrom, 1970).

The prevalence of temporary migration considerably reduces the usefulness of net population change as a measure of migration. The German community-level migration data, extending over two centuries, are quite useful in displaying the relationship between gross migration streams and net migration. The evidence is very clear on this point: Net migration has been miniscule in comparison with total mobility. Throughout this article I have discussed and displayed both in- and outmigration rates for communities in the Duesseldorf district (Figure 1), in large cities (Figures 2 and 3), and for Prussian provinces. In all cases the streams of in- and outmigration were virtually balanced; a large volume of movements in and out of a community or region was required for small amounts of net change. The figures show that in- and outmigration fluctuated together with economic crisis, although net inmigration to cities (Figure 3) or to the Duesseldorf district (Figure 1) in good times could become net outmigration during depressions (as in Table 1). Those migrants who moved permanently to cities or elsewhere were only a small and unrepresentative minority of all German migrants. It is important to view migration as a continuous societal process in order to understand the minor role played by net movement

within the migration system as a whole. Over the short term, individual places did lose or gain relatively large numbers of people; during lengthier periods, however, the preponderance of temporary migration meant that population redistribution was minimal in terms of the total scale of migratory volume. The detailed community statistics of the Duesseldorf district provide the best example: For 38 communities of widely varied sizes, migration can be followed from 1836 through 1860 (data are incomplete for the rest). In the majority of these places, less than 4% of all migrations over these 25 years resulted in population redistribution; in only 2 of 38 communities did more than 10% of migrations cause net change.

I do not minimize the effects that net migration had on urban or rural environments. Especially in the late nineteenth century, the force of migration as a redistributor of population was evident to all observers. Research into the growth of cities, the decline of agriculture, and the assimilation of diverse ethnic groups must take net migration into account. But research into migration itself, its patterns and causes, should be done in terms of gross migration streams, which are independent of net migration (Heberle and Meyer, 1937: 91). The emphasis of the migration literature on "permanent" migration is based on a faulty conceptualization of the migratory process.

CONCLUSION

The insufficiency of migration theory is frequently lamented. Perhaps the fundamental problem is inattention to important sources of empirical data on migration in the past. Models that explain migration in terms of regional economic differences, distance-population equations, or rational calculations of benefits by migrants do not take notice of the historical dimension in the most general sense, as they all assume that fundamental structural change in the causes of migration patterns does not occur. Even more complex formulations such as modernization

theory assume continued change in one direction (Pryor, 1979: 329-330).

One result is the inability to make the most general predictions of future trends in migration. A glance at recent literature provides a telling example: Everywhere surprise is expressed at the recent "turnaround" in migration behavior, as the rural-to-urban stream has "reversed itself" into an urban-rural one (Williams and Sofranko, 1979; Johnson and Purdy, 1980). The model of migration as urbanization is irrelevant in the face of the current trend away from the city. From a historical perspective, the reversal of net flow is merely a continuation of a long-term European trend: the growth of the urban-rural migrant flow in relation to the rural-urban flow. More precisely, the structure of migration characteristic of the period of early industrialization, in which net migration flowed from the smallest villages into the biggest cities, has gradually been changing to its opposite. This has already occurred in Germany and is currently happening in France (Schwarz, 1969: 103; Tugault, 1973: 119, 145-162). Over-emphasis on net urbanization as exemplifying migration has obscured the trends in gross migration rates, which could have led to predictions of the most recent developments, and has hidden the extent of temporary and circulatory migration, which might help to explain them.

The derivation of hypotheses about migration from broader but unproven ideas about social change is only partially to blame for the inaccuracy of the generalizations on migration outlined at the beginning of this essay. More attention must be paid to the history of economic development in the last two centuries, which created the context for demographic change. The intersection among maturing production processes in factories, evolving agricultural methods, rapid population growth, and the needs of the persistent family economies of the laboring classes provide a possible explanatory context for the changing migration trends outlined here.

Throughout the nineteenth century, changes in agriculture, such as the introduction of the threshing machine and the expansion of sugar beet cultivation, increased the seasonality of

agricultural labor. At the same time, rural population growth and changes in landholding patterns due to peasant emancipation increased the need for income supplements. These mutually dependent processes resulted in a rapid rise in seasonal migration, which often became extended in urban environments to longer, though still temporary, residence. The permanent residue of circulatory migration through the cities, small in comparison with the total flow, was nevertheless significant in the urbanization process.

Industrialization also fed both sides of the supply-and-demand equation for temporary labor. The collapse of rural cottage industry was a gradual process, taking the better part of the century, and increasing incentives for migration. "Modern" industrial labor remained tied to the seasons in the nineteenth century. Industrial branches dependent on agricultural products, such as sugar beets and flax, experienced fluctuations in employment. Construction has even in most recent times been a seasonal occupation. The expansion of the railroad system provided excellent opportunities for temporary work in rural regions. The urban market for unskilled labor was dominated by the system of casual labor, dependent on the existence of an underemployed rural labor force. Throughout northern and central Europe, seasonal migration in both agricultural and industrial employments peaked in the late nineteenth and early twentieth centuries (Haushofer, 1963: 135, 181-183; Devine, 1979; 344-351; Nelson, 1963: 17-36; Chatelain, 1976).

Only after 1900 did rationalized year-round production methods and the resulting need for a permanent labor force begin fundamentally to change the centuries-old seasonal work patterns of the majority of the population. As skill levels in most industries rose, so did the permanence of the work force. The expansion of white-collar employment was an important factor in anchoring workers. Not until the twentieth century did the rural population of northern Europe reach its peak and begin to decline (Deldycke et al., 1968: 83-120), removing some of the pressure of agricultural underemployment. At the most basic level, the ultimate causes of migration had been the poverty to which a large proportion of the

rural working population had been consigned; migration was an important strategy for rural and urban families searching for subsistence.

I have attempted in this essay to show that modernization concepts do not explain evidence about the changing volume of migration over the last two centuries. Migration in all of its forms, temporary and permanent, local and international, has experienced fundamental changes caused by the evolving structure of the agricultural and industrial economy. These changes caused the nineteenth-century rise and the twentieth-century decline in total European mobility; the transformation was manifested in seasonal as well as transatlantic migration, and often these two forms overlapped (Piore, 1979; 50-51, 150). Until the most recent times, migration volume has largely been a function of the rural economy; its various forms have been expressions of the need of underemployed peasants and workers to supplement their incomes. Historical demographers need to study more closely the complex relationships between the rural environment and migration volume in order to understand the changing distribution of migratory forms.

NOTES

1. Among many possible examples, Mack Walker's synthesis of German social and political history (1971) is rooted in the belief in small-town immobility. Recent histories of the family stress the geographical stability of continental society (Shorter, 1975: 47; Flandrin, 1979: 34-35, 47). Lawrence Stone's (1981: 62-63) review of the historiography of the family mentions migration only to minimize its extent, on the basis of one English and two American studies. In the most recent general work on preindustrial demography, Michael Flinn (1981: 65-75) discusses the extensive mobility but admits to his inability to relate it to other demographic questions.

2. This summary has been abstracted from a wide variety of secondary works, not all of which could be listed here. For Germany, this view is best represented in the writings of Wolfgang Koellmann (1974). Barbara Anderson (1980: 3-8) notes the prevalence of the modernization model, which she uses to formulate questions and explain results for Russian migration around 1900.

3. The human capital approach to migration was pioneered by Sjaastad (1962) and is widely used in the sociological literature today. For the prevalence of interpretations of interregional migration as motivated by regional economic differences, see the recent

bibliographies in Masser and Gould (1975) on Africa, in Roeder (1974) especially on Europe, and in Greenwood (1975) on the United States.

4. I stress at the outset that migration is defined here in the broadest sense as any residence change for nonrecreational purposes. All such movements that have been measured (by whatever authority) as migration are considered worthy of explanation.

5. England's exceptionally early censuses have been analyzed for migration trends in McQuillan (1980).

6. The data are contained in yearly reports entitled "Veraenderungen in der Bevoelkerung," located in the Hauptstaatsarchiv Duesseldorf (see references). Descriptions of the quality of these data, the methods of collection, and a full analysis are contained in Hochstadt (forthcoming).

7. The measure of mobility used throughout this article is the gross migration rate, calculated by dividing all recorded in- or outmigrations crossing the boundaries of individual communities by the total population of these communities. Rates are expressed here as percentages, signifying migrations per hundred population, or as decimals. These data do not depend on estimates drawn from census returns, but are direct measures based on government tabulations of all migrations. Such rates are the most accurate measure of a population's mobility because they include the seasonal and other circular forms of migration missed by the census. The migration rates used as evidence may refer to a community, a district, a group of cities, a state (Prussia), or a nation (West Germany). In each case, the basis of the rate is identical, all migrations crossing community boundaries. Included within these rates are international and internal migrations; excluded are moves *within* communities, which were measured separately in large cities, and are labeled "local movement."

8. Several large German cities published migration statistics before 1881; the series for Berlin reaches back to 1838 in Die Bevoelkerungs-Aufnahme vom 1875 (1878: 17).

9. There are obvious difficulties with such comparisons. Moving out of the community of birth means something quite different if the community has 200,000 people from what it does if the community has 200. In this connection, it is significant that in the examples given, more rural-born also moved out of their counties *(Kreise)* of birth than urban-born their cities of birth. Full data on the 1900 German census are in Statistik des Deutschen Reiches (1903), vols. 150-151, and Preussische Statistik (1902-1903), v. 177, Theil 2.

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