Directions in Migration Research

Peter V. Schaeffer[1]

Abstract

Large and sudden migrations occurred at many stages in human history, but the combination of increased longevity, declining fertility rates, and aging of populations have no counterpart. Although much longer in the making – modern urbanization began in the late 18th century in England – the degree of global urbanization, which passed the 50 percent mark only around 2010, is also without historical precedent and has not yet run its course. Because of these changes, today migration is a major driver of demographic change in developed as well as in developing economies. The most dramatic new migrations are responses to changes in economic, social, political, and environmental conditions and are continuously evolving and often rapidly changing. In this chapter, we argue that this type of migration should be a research priority for the next half century.

1. Introduction

Migration is a major driver of demographic change. As birth rates declined, migration, domestic and international, became the major force for demographic change in advanced industrialized countries. The importance of immigration is particularly apparent, for example, in Germany where, in 2014, there were 868,373 deaths versus 714,927 live births (net change: –153,446) (Federal Statistical Office of Germany, 2015a). In the same year, net migration added 550,483, mostly younger, residents whose fertility then also contributed to the number of births. However, while in 1995, births to immigrant parents accounted for over 13 percent of all births, by 2010 that number had dropped to approximately 5 percent (Federal Statistical Office of Germany, 2012). This development demonstrates that, unless immigration accelerates over time, it can slow but not permanently halt the decline of an aging population (e.g., Federal Statistical Office of Germany, 2015b).

In the developing world, falling birth rates and large internal rural-to-urban migrations are changing the population distribution and shaping the demographic structures in urban and rural regions, respectively. While urbanization in the United States, Western Europe, and Japan is no longer a major contributor to demographic and economic change, it is not yet finished and, on a world scale, has only recently reached fifty percent of the world's population. In addition to domestic migration, international migration has also changed. Today, more countries are experiencing large outflows or inflows and some countries are immigration destinations, while simultaneously sending many if its citizens to other

[1] Professor, Division of Resource Management; Faculty Research Associate, Regional Research Institute, West Virginia University, Morgantown, WV 26508-6108; peter.schaeffer@mail.wvu.edu

countries. Although debates about brain drain are not new, international competition for highly skilled workers.is a relatively new phenomenon that has given rise to renewed research on the brain drain. The H-1B visa program in the United States (Schaeffer and Kahsai, 2009), which dates to 1990 (though there were a few small earlier programs), is a policy aimed at highly skilled immigrants. Several other countries, for example Australia, Canada, and Germany, have similar programs.

The immense political changes that occurred during the 20th century are less regularly citied as a factor fueling migrations on a global scale, but a comparison of a map of the world in 1900 and today shows how dramatically things have changed. In 1900, European powers and the ascendant United States controlled large areas in Asia and Africa, but by the end of the century almost all European and U.S. colonies had gained their independence and Europe had lost its former global political and economic leadership to the United States. In addition, China was reemerging as a major power and other Asian nations had also become important economic players. In the aftermath of the end of European colonialism, the world has experienced internal conflicts, wars over disputed territories between former colonies, as well as the splitting up of colonial entities, most famously that of India, and Pakistan. In Europe, the fall of communism and disappearance of the Iron Curtain eventually saw the peaceful breakup of Czechoslovakia into the Czech Republic and Slovakia, which became effective on January 1, 1993. The former Socialist Federal Republic of Yugoslavia broke up into Croatia, Slovenia, Serbia (which is now further subdivided along ethnic lines into the Autonomous Province of Kosovo and the Autonomous Province of Vojvodina), Bosnia and Herzegovina, and the Former Yugoslav Republic of Macedonia. This sometimes violent breakup generated a large refugee stream, a type of migration that has been almost completely ignored in regional science to date, in spite of the large number of refugees world-wide. The conflict over the use of the name Macedonia between Greece and the Former Yugoslav Republic of Macedonia, though it has not been violent, serves as an illustration of the great potential for conflict within and between countries in the aftermath of large political shifts. In Africa, Eritrea seceded from Ethiopia after a war that began in 1961 and ended in 1991 and South Sudan seceded from the Republic of Sudan in 2011. The conflict over the 2014 annexation of the Crimean Peninsula by Russia is only one of the currently latest, but not the final such event in our rapidly changing world. As we extend regional science research to countries that deal with border disputes or internal conflicts, more attention needs to be paid to the political context of population movements.

Therefore, because of the importance of migration, in this chapter we discuss anticipated directions in migration research in regional science over the next several decades. We are not interested in small-

scale migrations; they usually pose few serious challenges. Instead, this chapter focusses on large migration movements, which, because of their size, often disrupt and change the inherited order of things.

To systematically discuss different aspects of and issues in migration, in section 2 we first develop a classification system. Utilizing this classification system, section 3 identifies important issues that, we believe, will require more attention in the future than they have received in the past. Thus, they represent new directions in migration research in regional science. A summary and conclusion in section 4 completes this chapter.

2. Classifying Migrations

To organize our discussion of future directions in migration research, we propose a system for classifying different migrations. We find the first two criteria by considering individuals' reasons for migrating. If an individual is currently in an optimal location, subject to constraints and available information about alternative locations, then the only reason for moving to a different location is if (a) something related (internal) to the individual changes, or, (b) conditions external to the individual change. External changes can be economic, political, or environmental, or consist of new information about alternative locations.

Changes internal to a person lead to what we call natural migrations. Many of the reasons for natural migrations are tied to a person's life cycle, such as graduation from high school or college, marriage, job promotions, employment changes, and retirement. We further refine natural migrations by distinguishing between migrants who are constrained by labor market considerations and those who are not. We make this distinction because labor market participants usually face locational constraints related to the nature of their employment. However, not all labor market participants experience such constraints as new communication technologies have rendered some employment, and self-employment, more footloose.

In contrast to natural migrations, structural migrations are caused by a change or changes that are external to individuals, for example, the decline of a once dominant industry or the emergence of a vibrant new industry elsewhere. In addition to natural and structural migration, we distinguish between domestic and international migration because of the different rules and constraints that apply to them. Because we focus particular attention on structural migrations, we provide additional criteria for a finer separation between different structural migrations, but not for natural migrations. The remainder of this chapter will deal almost exclusively with the former.

The additional criteria for classifying structural migration movements are, first, how quickly they emerge (suddenly vs. gradually), second, the time span over which they occur (short versus long) and, third, whether they are voluntary or forced[2]. This scheme results in 16 different types of structural migrations (Table 1).

Some ambiguity is inherent in some of the criteria used in this classification scheme. For example, the difference between domestic and international migration is not clear-cut in the case of an EU citizen moving from one EU member country to another, since this migrant has a right to a work and residence permit in the destination country and is even eligible to run for local public office. This is not the way we have traditionally thought about "international migration." However, at this time this is still the exception rather than the norm.

The terms "gradual" and "sudden" are also ambiguous and need to be specified empirically to be useful, since there is a continuum from sudden to gradual without a clear dividing line between the two. In reality, it is also not always easy to make a clear distinction between involuntary (forced) and voluntary actions, as illustrated by the struggles to distinguish between "real" and "bogus" refugees (Schaeffer, 2010).

Table 1. General Migration Classification, without Causes

	NATURAL MIGRATION (internal to individual)	**STRUCTURAL MIGRATION (external to individual)**		
		Speed of Emergence	Duration of Movement	Voluntary vs. Involuntary
DOMESTIC MIGRATION	1. Faces Labor Market Constraint(s)	Gradual	Short	1. Voluntary
				2. Involuntary
			Long	3. Voluntary
				4. Involuntary
	2. No Labor Market Constraints	Sudden	Short	5. Voluntary
				6. Involuntary
			Long	7. Voluntary
				8. Involuntary
INTERNATIONAL MIGRATION	3. Faces Labor Market Constraint(s)	Gradual	Short	9. Voluntary
				10. Involuntary
			Long	11. Voluntary
				12. Involuntary
	4. No Labor Market Constraints	Sudden	Short	13. Voluntary
				14. Involuntary
			Long	15. Voluntary
				16. Involuntary

[2] As an aside, note that by definition all natural migrations are voluntary.

The typology in Table 1 can be further refined based on the cause of the external change that triggers structural migrations. The main causes we consider are economic, environmental, and political (persecution, civil unrest, civil war, or war between countries). The refinements are presented in Table 2 with natural migrations omitted to save space. Of course, it is possible that more than one cause is at work at the same time (e.g., Borger. 2008). Ignoring this possibility, Tables 1 and 2 distinguish between 52 different migration types based on their nature (internal-external), speed and duration, voluntary or involuntary, causes (economic, environmental, political), and domestic[3] or international. Note that in Table 2, structural migrants who move because of economic changes will usually be, or seek to become, labor market participants. While structural migrants who move only because of political or environmental changes may also wish to work, economic reasons did not trigger their decision to move.

Table 2: Structural Migration Classification, with Causes

		STRUCTURAL MIGRATION								
		Economic Causes			**Environmental Causes**			**Political Causes**		
		Speed of Emergence	**Duration**	**Voluntary vs. Forced**	**Speed of Emergence**	**Duration**	**Voluntary vs. Forced**	**Speed of Emergence**	**Duration**	**Voluntary vs. Forced**
Domestic		Gradual	Long	Involuntary	Gradual	Long	Involuntary	Gradual	Long	Involuntary
				Voluntary			Voluntary			Voluntary
			Short	Involuntary		Short	Involuntary		Short	Involuntary
				Voluntary			Voluntary			Voluntary
		Sudden	Long	Involuntary	Sudden	Long	Involuntary	Sudden	Long	Involuntary
				Voluntary			Voluntary			Voluntary
			Short	Involuntary		Short	Involuntary		Short	Involuntary
				Voluntary			Voluntary			Voluntary
International		Gradual	Long	Involuntary	Gradual	Long	Involuntary	Gradual	Long	Involuntary
				Voluntary			Voluntary			Voluntary
			Short	Involuntary		Short	Involuntary		Short	Involuntary
				Voluntary			Voluntary			Voluntary
		Sudden	Long	Involuntary	Sudden	Long	Involuntary	Sudden	Long	Involuntary
				Voluntary			Voluntary			Voluntary
			Short	Involuntary		Short	Involuntary		Short	Involuntary
				Voluntary			Voluntary			Voluntary

3. New Migrations, New Questions

3.1. Natural vs. Structural Migrations

There is in regional science and related disciplines a large body of theoretical and empirical research on natural migrations. Natural migrations are moves that occur regularly time after time and they usually change gradually over time, making adjustments easy. They are linked to important life-cycle events such

[3] Domestic migration is often referred to as internal migration, as well. Because we refer to the causes of natural migrations as being internal to the migrant, in this chapter we will always use domestic migration to avoid the possibility of confusion.

as graduation from high school or college, marriage, discharge from military service, retirement, and career-related mobility. Although most natural migrations occur within a country, because of increasing global economic integration, international natural migrations are on the rise. This is particularly obvious within the European Union, but is also occurring elsewhere.[4] The theoretical foundation for these migrations is well-established and includes the contributions of Sjaastad (1962) on migration as human capital investment, Mincer (1978) on family migration, and Schaeffer (1985) on repeat migration linked to changes in marketable human capital. Natural migrations are compatible with dynamic equilibrium because they are part of the system and not a response to external shocks.

In contrast to natural migrations, structural migrations are responses to significant social, technological, economic, political, or environmental changes. Some changes are sudden and unexpected. This is particularly true of environmental shocks. Examples include the 2004 earthquake in the Indian Ocean that triggered a massive tsunami that hit coastal communities in several Asian nations and resulted in the loss of more than 200,000 lives. Hurricane Katrina in 2005 devastated New Orleans so that tens of thousands of individuals had to be relocated to other parts of the United States, and the city was permanently changed physically and socially. A strong earthquake in 2011 caused a tsunami that destroyed coastal towns on the northeastern shores of Japan's Honshū Island, cost almost 16,000 lives, and triggered a nuclear disaster at Fukushima. In the aftermath, a large region around the nuclear plant had to be evacuated for years to come. But the most famous modern man-made environmental disaster probably is the 1986 meltdown at the Chernobyl nuclear power plant in the Ukraine. This accident contaminated a large area and about 900 km^2 (about 350 square miles) had to be declared an "exclusion zone." As in Fukushima, tens of thousands of inhabitants had to be relocated. Most recently, in May 2016, close to 100,000 residents in Alberta, Canada, had to be evacuated from a large wildfire, and Davenport and Robertson (2016) published an article in the New York Times "Resettling the first American 'climate refugees'." This last example is of an event that has been developing over a long time and did, therefore, not come as a surprise. The other event occurred suddenly and with little or no warning. The examples demonstrate the potential of structural migrations to disrupt social, political, and economic conditions, both in the migrants' region of origin as well as destination region.

At the present, the geographic focus of most regional science research is on member countries of the Organisation for Economic Co-operation and Development (OECD), that is, the world's economically most

[4] International natural migrations are not a new phenomenon, but their magnitude has increased. The tradition of the journeyman who travels from employment to employment for some time after completion of the apprenticeship has its roots in the Middle Ages and survived into the 20th century among German carpenters.

successful countries. This reflects the membership of the largest regional science organizations[5], which were first established in North America and Europe. This geographical focus will likely become broader, as has already happened with the formation of the Regional Science Association of the Americas, the growing number of national regional science organizations in Latin America, and the inclusion of the Moroccan Regional Science Association in the European Regional Science Association. The inclusion of more developing and emerging economies into national, regional, and international regional science organizations will result in more attention being paid to issues less commonly encountered in OECD countries.

In addition to broadening the geographical foci of regional science, a greater diversity of disciplines in migration research, would contribute to a broader perspective on many research questions. For example, the North American Regional Science Council's web page lists seven interest groups: GeoComputation, Regional Development**,** Industry Studies**,** Location Analysis**,** Rural Development, Transportation, and Urban Economics. Most of these focus on economic or technical issues. Demography, sociology, or psychology are not well represented. The council members of the Regional Science Association International similarly show a predominance of economics and geography.[6]

The absence of demographic issues as a major focus should worry regional scientists, because we are in the midst of an unprecedented demographic shift. While large migrations occurred at many stages in human history, the increase in longevity, decline of fertility rates, and aging of populations have no counterpart. Although much longer in the making – modern urbanization began in the late 18th century in England – the degree of global urbanization, which passed the 50 percent mark only around 2010, is also without historical precedent and has not yet run its course.

In summary, natural migrations are important and will continue to be an integral part of our social, economic, and cultural fabric, but institutions that deal with them, for example in job and housing

[5] The Regional Science Association International (RSAI), which was first established in the United States under the leadership of Walter Isard, the North American Regional Science Council (NARSC) and its affiliated member organizations (Canadian, Western, Mid-continent, and Southern Regional Science Associations, respectively), and European Regional Science Association (ERSA) and its 16 affiliated associations.

[6] Of 19 council members on whom we could find information on the Regional Science Association International's (RSAI) homepage, we determined that ten were economists, six geographers, two planners, and one an engineer. The quantitative orientation of the council members was even more lopsided. http://www.regionalscience.org/index.php?option=com_k2&view=item&layout=item&id=378&Itemid=590, downloaded on May 6, 2016. The leadership of the North American Regional Science Council is also dominated by economists who hold ten of 19 leadership positions. http://www.narsc.org/newsite/background-history/narsc-council-directory/, downloaded on May 9, 2016.

markets, have existed and been tested for a long time. Most changes associated with natural migration are gradual and, therefore, much easier to anticipate and deal with than the often sudden changes that trigger structural migrations. Thus, the need for new research concerning natural migrations, particularly in the economically most advanced countries, does not appear to be pressing. The one exception is with respect to family migration, that is, the joint migration of more than one decision maker. While the theory of family migration is well established, data limitations have hindered progress in empirical research of this type of migration. New sources of data, such as data from mobile phones, hold some promise that this could change in the future. It is one of many potential changes in empirical regional science research tied to "big data."

While generation after generation repeats natural migrations, structural migrations, though they can last for a long time, are not similarly repetitive. Because of this, they are more challenging to deal with, particularly when they occur unexpectedly. Nevertheless, the study of such events may not only yield lessons concerning a specific structural migration, but generalizable lessons that can also be applied to new structural migrations in the future.

3.2. Domestic Structural Migrations

a. Environmental Disasters

Most individuals who have been displaced by an environmental disaster will relocate, or be relocated, to another region in the same country, though migrations beyond national borders also occur. Of the 65.3 million displaced persons in 2015, over 40 million were internally displaced (UNHCR, 2016). If displaced individuals can return home fairly quickly, then the most significant challenges will be related to logistics. However, if a quick return is infeasible, then the integration of displaced populations in new locations is a significant additional challenge. Countries where the vast majority of citizens share a common language, for example the United States, France, and Germany, do not have to contend with one of the most formidable barriers to the economic and social success of resettled individuals. The migration literature is unanimous in finding that language skills are one of the best indicators of assimilation and integration into the host society, as well as of economic success in a new location, in general.

Among the many aspects of potential interest to regional scientists in large population displacements are impacts on the demographic structure of origin and destination regions, and the long-term effects of a sudden population loss or gain, respectively. Past research taught us that migrants rarely if ever are a representative sample of the origin region's population, but biased in favor of the young and educated.

Therefore, a large permanent population loss or gain, particularly if it occurs over a short period, is likely to have important social and economic implications. Even if a disaster indiscriminately pushes out everyone in the affected region, the young and educated tend to have more options to choose from and the impacts will, therefore, still not be uniform across receiving regions. Immigrants also tend to be biased towards the young and not representative of the demographic structure of the destination region, which they will, therefore, change if they arrive in large numbers.

Finally, in countries with regionally distinct populations, a large internal population shift may challenge political stability. There are many ethnically, culturally, and linguistically diverse countries and this is, therefore, a concern shared by many national and subnational governments. It can even turn into a foreign policy challenge, particularly when a subnational region is made up of ethnic groups related to the population of a neighboring country, although we expect that this is more likely in the case of displacement because of an internal conflict than because of an environmental disaster.

b. Oppression, Civil Unrest, and War

Civil unrest or wars add political dimensions and violence not usually present in internal structural migrations that have other causes. In addition, government institutions are often damaged by unrest and war and important actors in government and private organizations may have been drawn into the war effort and their resources and expertise may, therefore, not be available to assist the displaced population. International organizations may strive to fill the gap, but coordinating the efforts of different aid organizations from a variety of countries is no small task and often also has political undertones. The aftermath of the disastrous 2010 Haiti earthquake demonstrated the difficulties that arise when a national government has become incapacitated to assume its expected leadership role, and the war in Syria provides a current example.

Oppression can also trigger migrations. Thus, the Great Migration of African Americans out of the southern U.S. can be interpreted not only as a response to better economic opportunities elsewhere, but also as a political migration. Empirically, it is not always easy to distinguish economic from political motives, and it could be in the interest of migrants who move for political reasons to publicly claim that the move was economically motivated. For example, in the post-World War II era, a Spaniard who was opposed to the Franco regime could leave as a guest worker for France, Germany, or Switzerland, without compromising his ability to return for visits or the fear of repercussions for relatives or close friends left behind (see Schaeffer, 2010 for a theory of political migration).

Finally, we call attention to the potential of turning an internal into an international conflict if one of the ethnic groups involved in the struggle has co-ethnics in other countries. This potential is particularly vividly demonstrated by the 2014 annexation of the Crimean Peninsula by Russia, as well as the tensions between Russia and the western alliance that intervened in the Kosovo Conflict in 1998 – 1999. The possibility of an internal conflict turning into an international one is a complicating factor in designing policies to address internal strife[7], unrest, or civil war. More detailed statistical information on internally displaced populations can be found in publications of the Internal Displacement Monitoring Centre (2015, 2016).

c. Domestic Structural Migrations in Response to Economic Changes

Even positive economic change can be disruptive. Industrialization created many new opportunities and improved the economic well-being of almost everyone, but it also displaced many traditional businesses, changed industries, and the ways in which we work. The concentration of industries in urban areas was responsible for the initial urbanization process. In recent decades, the decline of traditional manufacturing industries in the northeastern United States triggered an outmigration to the south and the west that changed the economic and political landscape of the United States. The decline of upper Midwest cities like Detroit has similarly rearranged the ranking of U.S. cities. The earlier (in the United States and Europe) urbanization process shifted populations from rural to urban places, and many formerly rural places became urbanized. Politicians in rural regions understood that urbanization reduced their political power at the national level. In the highly urbanized United States a recent, unsuccessful, court challenge to the allocation of representatives on the basis of population size rather than the number of citizens (CBS, 2016), demonstrates the continuing political conflict potential of urbanization. The nature of cities also changed with immigration from rural places, a process that was accelerated by changes in transportation infrastructure. Large migrations over a short time period are particularly disruptive, as they allow no time for gradual adjustment. Because of such concerns, some countries, including the PR China, imposed restrictions on domestic migrations, which therefore became more similar to international migrations, where legal migration is possible only with the permission of the receiving country and, in some cases, the sending country, as well.

[7] Internal strife can also be due to criminal activities. For example, violence related to drug cartels is responsible for internal displacement in Mexico and gang violence is at least partially responsible for the flight of youths to the United States from Central America, particularly Honduras.

Industrialization has also been supported by massive infrastructure projects, for example, dams for irrigation and electricity generation (e.g., Aswan High Dam in Egypt – Nile, Attatürk Dam in Turkey – Euphrates, and the Three Gorges Dam in China – Yangtze). Such projects frequently permanently displace many people and households. While they help create new opportunities, among the displaced are farmers who lost their land and other small self-employed individuals. Although large infrastructure projects usually enhance the efficiency of national economies, we should not ignore equity issues associated with displacement.

In summary, massive demographic shifts between regions can cause conflict. Even if there is no open conflict, behind the scenes, changing political power usually leads to policy changes, many of which have regional impacts. Some policies reinforce trends, while others strain to oppose them, and yet others, to assist the losers in the process of change. All of these are questions of high relevance to regional science research, but the dearth of consistent long-term data has made it difficult to conduct empirical studies and learn systematic lessons on how to deal with ongoing changes from the same, or new disruptive processes.

3.3. International Migration, in General

a. Sending Regions

Large population losses over just a few years frequently have negative impacts on the sending regions. The most widely researched of these impacts is the brain drain. Stark, Helmenstein, and Prskawetz (1997) present a theoretical argument that brain drain may actually increase the native human capital beyond what would have occurred without it, but empirical evidence in support of this contention is lacking. The original view that brain drain has negative impacts persists.

The negative impact of the brain drain can be severe, as in sub-Saharan Africa, which has lost so many health professionals to emigration that the integrity of even basic health care services is threatened in some regions. The guest workers of the 1950s to 1970s from southern Italy and Spain to northern Europe, later followed by workers from the former Yugoslav Socialist Republic and Turkey, or the Mexicans and Central Americans entering into the United States, were not particularly well educated individuals, but their loss in large numbers over a period of sometimes only two or three decades, left the remaining population with an imbalanced demographic structure, since migrants are not representative of their native regions' populations. In addition, it takes initiative and an ability to cope with risk to migrate to a foreign country. For individuals with relatively little education, to move to a country (or region within a

country) with different laws, language, customs, and food is intimidating. Those who move show courage, which could otherwise be used at home in a variety of ways, including entrepreneurial initiatives or civic and political leadership. Emigration from shrinking communities may rob them of future leaders at a time when they need them particularly badly. Since immigrants are also drawn from among the young and may additionally be gender-imbalanced, long-term effects are likely to include negative aspects, but systematic empirical evidence, positive or negative, of entire sending regions is lacking. With large migration movements spreading to ever more countries, these are issues in need of attention.

Because of the dominance of economists and economic geographers in our discipline, and particularly in leadership positions, the regional science literature pays more attention to economic than, for example, social impacts. Sociologists are more likely to address demographic issues and study populations "left behind," and psychologists to psychological costs of tied movers (e.g., McCollum, 1990; in the international context, see Groysberg, Nohria, and Herman, 2011 for a more recent contribution). That is why a concerted effort to invite and include a more diverse mixture of scholars is important for the future viability of and innovative capacity of regional science migration research.

There also seem to be cycles in large migration movements. First, not all migrants stay. In the great immigration to the United States that began in the 19th century and lasted until the start of World War I, about one-third of immigrants eventually returned home. Similarly, of the more than 500,000 Italian immigrants to Switzerland in the post-war period, about a third left to go "home." Most recently, Gonzalez-Barrera (2015) reports that net immigration of Mexicans to the United States has turned negative, with some 140,000 fewer immigrants than return migrants over the period from 2009 to 2014. The major reason cited by return migrants was family reunification.

b. Receiving Regions

Large inflows of foreign nationals can create serious challenges, even when there is a close cultural affinity between natives and newcomers. This was demonstrated by the inflow of highly skilled German professionals into Switzerland in the first decade of this century. Their addition to the labor force was a gain for the economy, but in tight housing markets with vacancy rates below 1 percent, particularly in the Zurich metropolitan region, the newcomers, whose earnings gave them significant purchasing power, "crowded out" established renters from many housing markets. The resulting discontent fed xenophobic sentiments that were also expressed at the ballot box. In general, a large population inflow into a region – for whatever reason – increases competition for scarce resources that will last until regional markets and public institutions have caught up with the added demand. In the interim, crowding out effects could

turn natives against the newcomers, even if initial attitudes were welcoming. A recent example of such a reversal was witnessed in 2015-16 in Germany, where the initial welcome extended to Syrian refugees has cooled and authorities had to worry about sporadic violence and the firebombing of asylum centers. The presence of large numbers of immigrants in Zambia has also triggered violent reactions (BBC, 2016). South Africa similarly has experienced sometimes violent opposition to the arrival of large numbers of often illegal immigrants. In Europe, the former head of Britain secret service MI6, Richard Dearlove, recently warned of a popular uprising in the European Union in response to the Syrian refugee immigration crisis.

An additional risk in receiving regions relates not to immigrants, but to their offspring, frequently referred to as the second generation. Children of immigrants who obtain their education in the schools of their parents' host country, and who speak the country's language without accent, have different expectations than their parents. Many of them consider the country of their birth their home country[8] and react with disappointment and even anger to any real or perceived rejection (e.g., Portes and Stepick, 1994)[9]. Possible consequences of the failure to integrate the "second generation" were demonstrated in the 2005 riots in France that followed the accidental deaths of two youths who had been hiding from the police. The role played by Belgium citizens in the terror attacks in Paris in 2015 and Brussels in 2016 are even more urgent reminders of the importance of learning more about the integration and assimilation process (see Schaeffer, 2006, for an outline of a theory of assimilation).

3.4. Political International Migrations: Refugees

Political migrations pose particular problems. International migrants are people who seek to play a role in the host economy, even those with relatively little education. By contrast, refugees are a mixed group that often includes individuals who are not – or not immediately – ready to become part of the host economy. They are more also likely to include dependents – young and old – than recent labor immigrants. In fact, a relatively new phenomenon has been the immigration to the United States of Honduran minors fleeing violence (Robles and Shear, 2014) and of child refugees from Syria to Europe. These young refugees, in particular, are dependent on the host government's support for a period that can last

[8] In those countries where citizenship is awarded to all children born there, they are in fact citizens with all rights and obligations. But even in countries where this is not the case, such as in Switzerland or Israel, the second generation may feel more at home in the country of their birth than the one of their citizenship.

[9] An indication of differences of identification with the country of birth vs. the parents' country is the case of two soccer stars, born in Switzerland to immigrant parents from Albania, one who is playing for the Albanian national team and the other for the Swiss national team.

relatively long. Unlike labor migrants who can often rely on co-nationals and co-ethnics who had arrived earlier, refugees rarely have access to similarly well-established networks to ease the challenge of making a new beginning in a foreign land. At the same time, refugee children may make demands on school systems that are expensive to meet. For example, children who witnessed the violence of war may initially be too traumatized to focus on conventional learning but instead need counseling to cope with their experiences. Thus, refugees to Switzerland from the Kosovo conflict at the end of the 20th century included many children who had to adapt to a new environment and language, make up for weeks, months or even longer periods of schooling missed because of the war, and deal with traumatic experiences, to boot. Serving such children is an expensive long-term task.

There is also the question of the spatial distribution of refugees, if their numbers are very large. In terms of the ability to accommodate them, distributing refugees among a large number of communities has many advantages, but it robs them of the ability to establish dense ethnic networks and create markets big enough for ethnic businesses to flourish. Such businesses are an opportunity for entrepreneurial members of the refugee community to establish an existence in the host country and a scarcity of such opportunities might slow down their overall economic integration. This has to be balanced, however, against the risk of establishing large inward-looking refugee communities that could slow down the social integration into the host community. The downside of establishing large refugee camps are demonstrated by the experience with Palestinian refugee camps in Lebanon, the first two of which date to 1948 and still exist today. Although there are complex reasons for this state of affairs in this particular instance, but clearly, the human and political costs, domestic and international, are high.

At present, the vivid images on television and in the press of Syrian refugees stranded in Greece and the Balkans have made us only too aware of the challenges of political migrations. An initially welcoming mood in Germany has turned as more and more refugees arrived. Unfortunately, refugee crises have been a recurring event. The expectation at the time when the United Nations High Commission for Refugees (UNHCR) was founded in 1950 to deal with European refugees after World War II was that the need for its services would eventually decline significantly; this did not materialize. The UNHCR reports that the number of refugees has been increasing from 10,489,000 people in 2012 to 14,385,300 in 2014 (+37%). While the number of refugees increased, the number of those who were able to return home fell to 126,800, the lowest since 1983 (*Statistical Yearbook,* UNHCR 2015a: Table 5.2, p. 66)[10]. This recent

[10] Not all displaced individuals are recognized as refugees. In addition, they also include internally displaced persons who are not "technically" regarded as refugees. This is why the number of displaced people is much larger than the number of refugees. The number of displaced persons increased from 59.5 million in 2014 to 65.3 million

increase in refugee numbers comes after a period of decline, an indication of the present unpredictability of refugee numbers very far into the future. For statistics on refugees and asylum seekers in the United States see Mossaad (2016). Although Syrian refugees and asylum seekers in Europe are currently in the headlines, Africa has the largest number of refugees (UNHCR 2015b).

The political stress that can result from large refugee streams is also demonstrated by the Syrian refugee crisis, which is threatening the cohesion of the E.U. (e.g., Spiegel Online, 2016). Beyond the acceptance or non-acceptance of refugees, refugees themselves can become a political problem, even a foreign policy problem. For example, political and military activities among Palestinian refugees in Lebanon were at the heart of the 1982 Israel-Lebanon war. The large number of Kurdish immigrants in Germany similarly has brought conflicts in Turkey, Iraq, and Syria to German cities, for example, in large demonstrations. Some activities by refugees have created diplomatic problems for the host country.

3.5. Environmental International Migrations

The last two decades have seen a significant growth of research on resilience (e.g. World Conference on Disaster Reduction, 2005 for the Hyogo Framework for Action). Most of this research deals with the affected communities and regions. However, the examples of Chernobyl and Fukushima show that in the case of dealing with displaced populations, including international refugees, we also need to identify likely receiving regions and examine their resilience to assure that they are at least sufficiently prepared to deal with the immediate aftermath of a large inflow of people (e.g., Renaud and Perez, 2010).

Environmental international migrations are a relatively new phenomenon and laws and rules, and even the definition of what constitutes an environmental refugee, are not yet settled, though the United Nations has published guidelines (McAdam, 2011). A summary of research and definitions until about 2000 can be found in Black (2001). The lack of agreement makes the politics of environmental refugee migrations particularly difficult. This is an emerging topic of research and is relevant in many regions. Although there is not much research on this topic in regional science, it is not new. The 1930s Dust Bowl, which triggered the emigration of many from Oklahoma to California, has become part of the collective national memory of the United States, particularly through John Steinbeck's (1939) novel *The Grapes of Wrath*.

in 2015; that is one of every 113 people currently alive (UNHCR, 2016). About a third are officially recognized refugees.

International Migration, the official journal of the United Nations' International Organization for Migration, in 2011 dedicated a special issue to environmentally induced migrations. One of the pioneers of research on this topic, Fabrice Renaud, coauthored a noteworthy article that lays out a framework and agenda for research (Renaud et al., 2011). More research is urgently needed if some of the most pessimistic predictions concerning the number of environmental refugees come true. A recent special report by a large Swiss newspaper writes of about 200 million environmental refuges, though the time frame over which this is expected to occur is not mentioned (Jeska, 2016). Borger (2008) provides complementary information, including a map that shows where environmentally displaced people might come from, but stresses the connection between climate change, conflict, and forced displacement. In other words, there is an overlap of conflict and environmentally induced displacement.

4. Conclusions

In this chapter we argue for prioritizing research in new topics in migration research, particularly those related to structural migrations. Because large scale economic, political, environmental and demographic changes trigger migration responses that are unique, we need to find currently missing information and develop theories to address these changes. Many changes are already under way with some of them continuing for some time, while others have not yet fully started. An example of the latter are environmentally caused displacements, but their growing importance is very likely. Although natural migrations also continue to be an important social and demographic phenomenon, our understanding of them is advanced and sufficient for policy design and recommendations, which is not the case for many of the structural migrations.

The successful research into ongoing and emerging large scale structural migrations, both domestic and international, requires a broader disciplinary range than has been the case over the last few decades, when economics and geography have been dominant in shaping the development of regional science methods and foci.

In addition, economic growth has transformed the world and more scholars from developing and emerging economies are joining the regional science community. They will introduce new questions that reflect the needs and interests of their countries. We hope that regional science will welcome these newcomers and see in their joining our efforts an opportunity to further advance our discipline not only along established lines of research, but also by expanding its scope. We believe that failure to do so could stifle the future growth and development of regional science and over time diminish its relevance.

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