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## *Introduction*

**Eric P. Kaufmann and Monica Duffy Toft**

**T**HE FIELD OF POLITICAL DEMOGRAPHY, DEFINED AS “the study of the size, composition, and distribution of population in relation to both government and politics,” is dramatically under-represented in political science (Weiner and Teitelbaum 2001, pp. 11–12). This neglect is especially glaring in the field of international relations, where it contrasts markedly with the rising interest coming from policymakers. “Ten years ago, [demography] was hardly on the radar screen,” remark Neil Howe and Richard Jackson of the Center for Strategic and International Studies, two contributors to this volume. They continue: “Today, it dominates almost any discussion of America’s long-term fiscal, economic, or foreign-policy direction,” (Jackson, Howe et al. 2008, p. 17).

Recently, two past presidents of the American Political Science Association, Robert Putnam and M. Kent Jennings, pointed to rapid demographic change as one of the most predictable future trends, yet one of the least studied by

political scientists (Hochschild 2005). One could add that demographers and political scientists seem to exist in parallel disciplinary universes. Migration studies—one aspect of demography—occupies an academic archipelago, isolated from associated questions on the political impact of migration on the sending and receiving societies. At the same time, those working in international relations or comparative politics repeatedly encounter issues of political demography, yet have no forum for sharing common ideas. It is our hope that this book will crystallize and systematize the disparate insights that have so far floated quite loosely across the fields of demography and political science.

We claim that demography must be considered a major driver of politics alongside classic materialist, idealist, and institutional perspectives. Just as no credible political scientist can afford to ignore the role of economic incentives, institutions, or culture, we believe the chapters in this volume demonstrate that political scientists cannot afford to ignore demography in seeking to understand patterns of political identities, conflict, and change. This is better recognized in studies of long-term history, as when considering the role of demographic change in the origins of revolutions (Goldstone 1991), or in the rise and collapse of societies (Diamond 1997). Yet demographic factors also powerfully influence current geopolitics, fiscal politics, ethnic and religious conflicts, and voting patterns.

Population change needs to be considered as a political force in its own right—one that is on the rise today due to unprecedented global demographic turbulence that is likely to crest around 2050. Jack Goldstone, arguably a “founding father” of the discipline, points out in his chapter in this volume that the next four decades will present unprecedented changes in long-term demographic trends, including the shrinkage of Europe’s labor force, the extreme aging of the advanced industrial societies, a global shift from mainly rural to mainly urban habitation, and a substantial turn in global economic growth toward the developing world (where 9 out of every 10 of the world’s children under 15 now live).

Demographic shifts caused by the uneven global demographic transition will intensify by the 2020s and continue up through 2050. Political effects will arise from growing demographic disparities between: (a) *nation-states*, e.g., a declining Russia versus a rising Pakistan; (b) *age groups*, e.g., the growing proportion of young versus old people in Afghanistan; (c) *rural-urban groups*, e.g., urbanization in the Middle East; and (d) *ethnic or religious groups* within states, e.g., Hindus versus Muslims in India, or evangelicals versus seculars in the United States.

Each form of demographic disparity is associated with distinct political dilemmas: Interstate changes in population size and age structure affect the global balance of power. Unbalanced age (and sex) ratios tend to alter rates of economic growth, unemployment, instability, and violence. Urbanization creates dislocations that have traditionally been associated with religious, ethnic, class, or nationalist movements. And differential ethno-religious population growth may set the stage for ethnic, religious, and nationalist violence, value conflict, or challenges to the unity of what are often fragile states.

Consider global power dynamics. Whether looking at economic power or military capacity, population increase and decrease have always been identified as vital to a state's security and war-making capabilities. Though identified as critical by classical thinkers like Polybius, Cicero, and Ibn Khaldun, the importance of raw population as an increment of state power has waxed and waned over time, often in response to changes in the technology of war and the sources of military recruits (de Bliokh 1977; Mearsheimer 2001; Howe and Jackson, this volume).

Beginning with the American Civil War and continuing in World War I and World War II, the dominant role of machines in warfare appeared to make populations more vulnerable and at the same time less relevant to fighting power. Yet since the 1970s, population as a key component of national security again began to rise after a series of asymmetric wars in which high-tech, capital-intensive militaries lost bitter contests to relatively backward, labor-intensive militaries in Asia and Africa, such as the United States in Vietnam or the Soviet Union in Afghanistan (Arreguín-Toft 2005). Moreover, interstate wars between major industrialized powers—the type of conflict that had appeared to relegate people to insignificance from the 1880s to the 1940s—ceased to exist, while civil wars became the norm insofar as large-scale political violence is concerned. Iraq and Afghanistan provide further examples of this logic: Asymmetric warfare within these states between foreign troops or central governments and insurgents places the accent on labor-intensive, longer-term counterinsurgency operations. As a result, a large military recruitment pool and a sufficient tax base to finance costly campaigns are again becoming vital for great power projection. The demographic trends of the twenty-first century—aging great powers with shrinking labor forces alongside youthful and rapidly growing developing nations home to terrorism and turbulence—thus mark new challenges for geopolitical order.

If demography matters for war, it matters just as much in shaping politics in peace. This is especially the case due to another long-term trend following World War II: the increasing democratization of states, including Eastern

Europe, Latin America, and even more so, in Africa and Asia. Because democracy has as its foundation the principle of majority rule, states adopting democratic forms of government will find themselves keenly interested in the proportions of the politically active groups that inhabit their territories (Toft 2003). Shifts in population composition can affect who wins and loses in political battles, leading to party realignments (as argued in William Frey's article in this volume), or fueling violent conflict in fragile and transitional states (Goldstone 2002).

Nonetheless, mainstream political science research has devoted surprisingly little attention to the impact of population on politics. A search of the major journals devoted to war and conflict reveals that in the last 15 years only a handful of articles have been dedicated to understanding how demographic shifts contribute to large-scale violence both within states and beyond them.

The shifting nature of war and the so-called third wave of democratization are only part of the reason why demography is emerging as a critical issue in policy circles. Another is the demographic revolution that is sweeping across the globe. Unprecedented population aging in East Asia and Europe will see many developed countries' over-60 populations approach 40 percent of the national total by 2050. Because it is historically without precedent, we do not know what to expect from a state with over one-third of its population over 60, nor how its economic growth and finances will be impacted (see Howe and Jackson, this volume).

Meanwhile, many parts of the developing world will be transitioning through equally historic population booms. While Europe's improved sanitation and medical technology helped to cut infant mortality and generate a population explosion after 1750, the technical improvements were nowhere near as effective during the West's (and Japan's) population boom as they are today. The typical European population expanded three to five times during its demographic transition from 1750 to 1950, but today's developing countries—which are benefitting from the latest medical technology—can expect to see their populations expand 8 to 24 times before their demographic transition runs its course (Skirbekk 2009).

The young populations of the growing global South will strain at the seams of an economy and infrastructure that is not only underdeveloped, but designed for a much smaller population. This “youth bulge” is already having political repercussions. Youth bulges occur when there is an exceptionally large proportion of young people aged 15 to 29 among the adult population. The existence of a youth bulge—especially when it is dominated by unemployed young males—is associated with a higher incidence of violence and revolu-

tion, and may retard the onset of democracy (Huntington 1996; Urdal, this volume; Cincotta, this volume).

In both population growth and age structure, the contrast between the rich and poor worlds is glaring. It could well lead to enhanced North-South conflict over resources, migration, and climate change, while making developed-country military interventions even more problematic than they are today. The first two sections of this volume explore questions linked to changing age structures and population sizes between states. Neil Howe and Richard Jackson discuss how population aging and uneven population growth between regions impacts international politics. They pay particular attention to the history of political concerns over demography and the “softer” dimension of political consciousness that accompanies younger or older populations. In the chapters that follow, Mark Haas and Jennifer Sciubba address contemporary security concerns that accompany aging populations. Whereas Haas explores the impact of an aging society on U.S. national security, finding major effects on its economic development and military might, Sciubba broadens the lens, introducing a theoretical framework using power transition theory for understanding the implications of some of the dynamics that might be at play as societies age.

The next section looks at age structure in terms of development, democracy, and violence. Elizabeth Leahy Madsen provides a global analysis of different types of age structures and the implications for policy responses in the countries experiencing them. In contrast, both Richard Cincotta and Henrik Urdal take up the question of whether a particular age distribution—a high proportion of youths—influences the development of liberal democracy or violence. Richard Matthew then looks at the complex but increasingly pressing relations among population change, climate change, and conflict.

The next two parts of the book consider social and political conflicts arising from the changing ethnic and religious composition of states in an era of soaring domestic and international migration and widening fertility gaps.

We begin with American politics. William Frey shows the role of the decline of the white majority in the United States and the importance of minority ethnic groups in electing the nation’s first nonwhite president. As Frey points out, in 2008 almost one in four voters were minorities, up from just over one in five in 2004. Moreover, shifts in minority populations were concentrated in electorally crucial “battleground” states. Frey demonstrates how both demographic change and differential ethnic voter turnout will have major implications for the future of American politics. Brian Gratton’s chapter then steps back to look at American ethno-political demography in historical

perspective. Against the prevailing view that anti-immigrant “nativism” takes the form of irrational outbursts whipped up during crises, Gratton shows how both rational interests (notably business pressure) and concrete demographic changes wrought by immigration hold the key to explaining the ebb and flow of American immigration politics.

David Coleman turns our attention to today’s Europe and how ethno-demographic change is raising burning questions of identity, multiculturalism, security, and freedom of expression. The rapid rise of the non-European-origin population in Europe and the United States may herald what Coleman calls a “third demographic transition” in which differences between demographically mature host populations and youthful immigrants reconfigure domestic culture, identity, and power.

Eric Kaufmann and Vegard Skirbekk then discuss how demography underpins the growth of Islam in the world and in Europe in particular. They point to specific features of major world religions, such as pronatalism and traditional gender roles, which are precipitating the long-term demographic rise of religious fundamentalism while placing demographically weak seculars at a disadvantage.

The essays in Part V then look more closely at religious and ethnic conflict. Monica Duffy Toft examines how differential fertility can be seen as a “weapon” used by certain groups to increase their social power relative to others. Toft refers to this as “wombfare.” In Christian Leuprecht’s cases, Northern Ireland and Israel-Palestine, Leuprecht convincingly argues that demographic changes alter the incentives for ethnic groups to engage in violence or embrace peace negotiations. When Northern Ireland’s Catholics enjoyed rapid population growth and a young age structure, they found the costs of violent conflict to be lower. As their age structure matured, peace became more attractive. Unionists likewise felt less threatened as the pace of demographic change slackened. In Israel-Palestine, however, the rising Arab demographic advantage over Jews portends continued difficulty in clinching a peace deal.

Elliott Green also considers the effects of differential ethnic population growth, but shifts our perspective from the developed to the developing world. Instead of examining changes generated by international migration between states, he directs us to the importance of intranational population movements from one ethnic region to another within African countries. Intranational migratory movements began in colonial times, encouraged by colonizers in the context of uneven population density. The collision of settlers from overpopulated ethnic source regions with “sons of the soil” natives in sparsely populated destination regions mimics the process of North-South immigra-

tion. The difference is that in an environment of land scarcity, subsistence agriculture, and weak state legitimacy, violent conflict is more likely, as he shows in Uganda and Kenya.

From Uganda and Kenya in the east, we head west to Côte D'Ivoire on the Atlantic coast, where Ragnhild Nordas considers a conflict that combines religious (Muslim-Christian), ethnic (North-South), and nationalist (Ivoirian-foreigner) dimensions. The demographic ascent of the Muslim north is undeniable, but Nordas emphasizes that demography alone cannot explain why and when conflict erupted. Shifts in the salience of varied ethnic, regional, and national identities built on demographic changes but depended on deliberate political mobilization as well.

This raises a key theoretical point. States have demarcated boundaries and therefore behave more like the biological populations that demographers and epidemiologists study. But what about social groups defined by ethnic identities and religions? If their boundaries are tight and they change little over time, we may surmise that differential ethnic growth inevitably produces conflict (Vanhanen 1999). The opposing perspective in nationalism theory is that ethnic boundaries are socially constructed: sensitive to political manipulation and therefore relatively impervious to population shifts (Laitin 2007). In reality, the tightness or looseness of ethnic boundaries differs greatly, ranging from endogamous and rigidly defined South Asia and Northern Ireland to the more fluid contexts of sub-Saharan Africa, the Caribbean, and the Americas (Wimmer 2007). Future research will need to explore the interactions between the pace of demographic change and the nature of identity boundary mechanisms.

In varying ways and in a wide variety of settings, all of our contributors demonstrate that demography is a vital ingredient in shaping the political process. Its effect can be proximate or remote; first, second, or third order; necessary, but rarely sufficient; it can serve as a precipitant or a conditioning factor (Hout 2006; Horowitz 1985, pp. 258–259). But regardless of how it operates, demography in all its facets—population size, age structure, fertility, migration, mortality—urgently needs to be brought into the mainstream of political science. Especially in our age of demographic turbulence, the study of international security and global politics cannot go forward without grasping how the key concepts and data on population change bear on these issues.

## 2

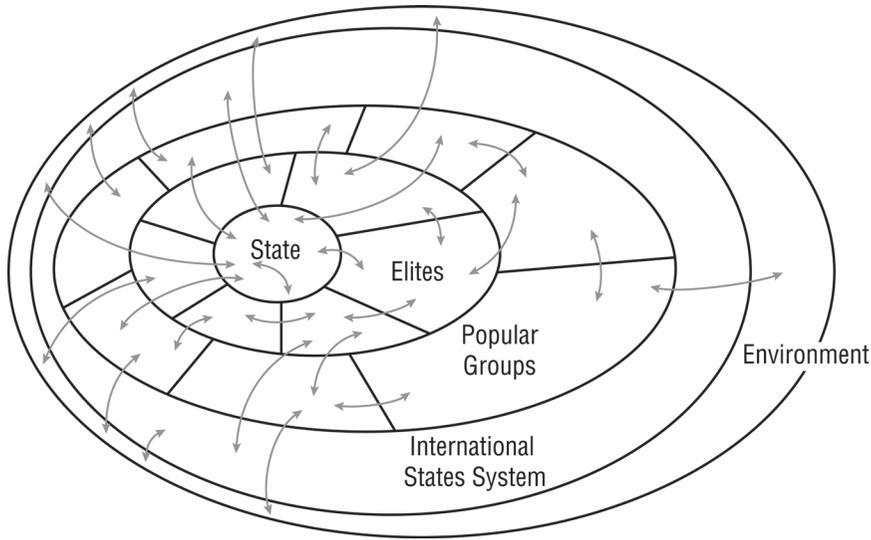
# *A Theory of Political Demography*

## *Human and Institutional Reproduction*

**Jack A. Goldstone**

### **Rethinking Politics and Population Change**

**F**OR MOST OF THE LAST TWO HUNDRED-ODD YEARS, SINCE THE WORK OF Thomas Malthus, debates regarding population have focused on a single issue: Will population growth and its effects (including pollution and consumption of natural resources) outrun the carrying capacity of local or global ecosystems, leading to widespread poverty? Or will technological progress outrun population increases, providing sufficient resources for continued income growth, so that only the distribution of resources is a valid concern? Although this debate continues today, it is remarkable that the discussion of how population affects



**Figure 2.1** Society as a Nested Hierarchy of Structures and Processes

political systems has persisted so long in terms of simple aggregates: the ratio of total population versus total amounts of resources.

Political society is a set of nested and connected social groups and institutions—state administration, elites, and popular groups, all drawing from the natural environment and interacting with other societies—that is sustained by a continuous, ongoing set of processes involving flows and exchanges of resources and actions. Those flows and exchanges support states and elites, maintain varied popular groups in diverse economic and political roles, and allow administration, coordination, and security for the whole. I call this system a “nested hierarchy,” and depict it roughly as shown in Figure 2.1.

Rather like a fishing net, this nested hierarchy can function even with some tears or disruptions in the overall set of flows. However, if the disruption of flows is too numerous, so that the state is starved of resources, or intra-elite competition becomes too great and violent, or widespread shortages occur in cities or in substantial rural areas, the system as whole starts to tear, and rebellion, state breakdown, and revolutions can arise (Goldstone 1991).

The point of this diagramming exercise is to illustrate that the dichotomy between problems of total population-resource ratios vs. problems in the distribution of resources that dominates the traditional discourse on population and politics is fundamentally wrongheaded. Because political systems

are constantly in the act of distributing and redistributing resources across the various levels and segments of society, any significant changes in population—not only in the overall size of the population relative to environmental resources, but in the size and resources of any subgroups, including the state and elites—will likely affect the dynamic distribution of resources, and hence have political impacts.

In recent decades, political scientists and political sociologists have incorporated this fundamental insight into their work, helping to create the emerging field of *political demography*. This new political demography often begins by asking what the relationship is between the population of a society and its natural resource base and what the relevant trends are in the ratio of total population to overall resources. But that is just a basic starting point. Political demography goes on to study what changes in the distribution of resources and political power are likely to arise from changes in the absolute and relative sizes of various population subgroups: urban or rural populations; groups bearing various religious, regional, or ethnic identities; various elite groups or political factions; and different age groups.

During periods when populations are growing fairly slowly, or when most societies have populations that are fairly homogenous and growing at a reasonably constant and steady fashion over time, these questions may not seem pressing for current politics. Yet we no longer live in such a world. The twenty-first century—following a century of global and regional intermixing borne by technological change and economic integration—is a time when diverse and rapid population shifts are taking place across the globe. Around the world, very young and very old age groups are increasing rapidly, and urban populations are dramatically expanding. At the same time, migration and the political boundaries left from the days of imperialism and colonialism have produced numerous multiethnic societies with shifting ethnic or religious compositions. In short, whether we look at issues of governance in the United States or the European Union, the impact of the BRIC nations (Brazil, Russia, India, China) on global economic and political affairs, or problems of governance and instability in Africa, the Middle East, Latin America, and Asia, the challenge of understanding the political impacts of demographic factors is inescapable.

### A Primer in Demography

Demography, much like studies of economic behavior or social mobility, has evolved into a highly specialized and technical field, requiring advanced

mathematics and the analysis of enormous amounts of data. The goal of this advanced work is to identify and plot the causes and patterns of population dynamics—that is, why and how populations change over time. Political scientists thus have some reason for steering clear of the field.

Yet the consequences of demographic change are too important to be left solely to the demographers. While demographers and their research are crucial to identifying the factors that produce various kinds of population change—from voluntary changes in behavior to patterns of nutrition and climate and disease—and to estimating how the current and future size and distribution of various populations and groups is likely to vary depending on those factors, demographers usually cannot tell us how people and social institutions will react to those changes. That is the task of political demography. Fortunately it requires only a very basic understanding of key demographic concepts to grasp the various dimensions of population change. But such an understanding must then be coupled with a sophisticated and empirically sound understanding of political behavior and social institutions to draw out the consequences of how various kinds of population change will likely affect political relations.

The following paragraphs provide an introduction to the main demographic concepts that are critical for political demography.

## **Births, Deaths, Migration**

The key elements of population change are straightforward; people enter or leave populations by three routes: births, deaths, and net migration (immigrants minus emigrants). Thus the growth rate of a population is easily determined: It is the crude birth rate (CBR, births per 1,000 population per year) minus the crude death rate (CDR, deaths per 1,000 population), plus the net migration rate (NMR, net migrants per 1,000 population). Adding these three rates gives the annual change in population per 1,000 people. So if in a country the rate of births minus deaths plus migrants is 10, the annual growth rate would be 10/1,000, which equals .01 or 1 percent.

For a typical developed country, such as France, these figures for 2010 were 12.4 births per 1,000 population, 8.9 deaths per 1,000, and 1.6 net migrants per 1,000. When we add these up, we find there was a total excess of births and migrants over deaths of 5.1 per 1,000 population. That means France had an annual growth rate of 0.51 percent, that is, about one-half percent per year.

For a poorer developing country, such as Ethiopia, while the principle is exactly the same, these numbers look very different (although developing

countries vary widely, so none is truly typical). In 2010 Ethiopia had a CBR of 30.0, a CDR of 9.1, and a net migration rate of -0.2 (mainly refugees), for an annual growth rate of 2.07 percent. Thus, while its death rate was about the same as that of France, its birth rate was almost three times higher. These differences result in an annual growth rate that is *four times* higher.<sup>1</sup>

Many of the most interesting results of demography come from the power of exponential growth—that is, from sustaining positive annual growth rates over time. In 1995 France and Ethiopia were similar-sized countries: France had 58 million people; Ethiopia had 57 million. Just 15 years later, after growth in Ethiopia that averaged 2.5 percent per year but growth in France that was only one-half a percent per year, France had increased to 63 million, while Ethiopia had 83 million people! If France and Ethiopia continue to grow at these annual rates for another 25 years, they will be completely different in size. In 2035 France will reach 71 million, but Ethiopia's population will have increased to 154 million.

Will France continue to grow so slowly, and Ethiopia to grow so rapidly? Actually, these estimates may be conservative; if we look in more detail at the age structure of their populations, the growth rate in France seems likely to decline, while Ethiopia's growth rate may increase.

## Cohorts and Age Structure

When people are born, they enter a population in a particular age group—those under one year of age. Demographers speak of those people who are born during a certain period—a one-year, five-year, or other period—as a *birth cohort*, or just “cohort” for short. Thus, all those babies born in France between 1960 and 1969 constitute the 1960–1969 birth cohort. Today, the survivors of that cohort are all aged 41 to 50, and because death rates for infants, children, and young adults are low in a developed country such as France, most of that cohort is still alive in 2010. Coming after the end of World War II, this was an unusually large cohort—bigger than the cohorts of the 1940s or 1970s, and thus part of what is known as the “baby boom.” As this cohort passes into retirement, France's labor force will decline. Meanwhile, the smaller cohorts now entering their twenties and thirties will have smaller numbers of women in the prime child-bearing years; thus France's overall birth rate may decline unless these women decide, for whatever reason, to have more children than their baby boom predecessors.

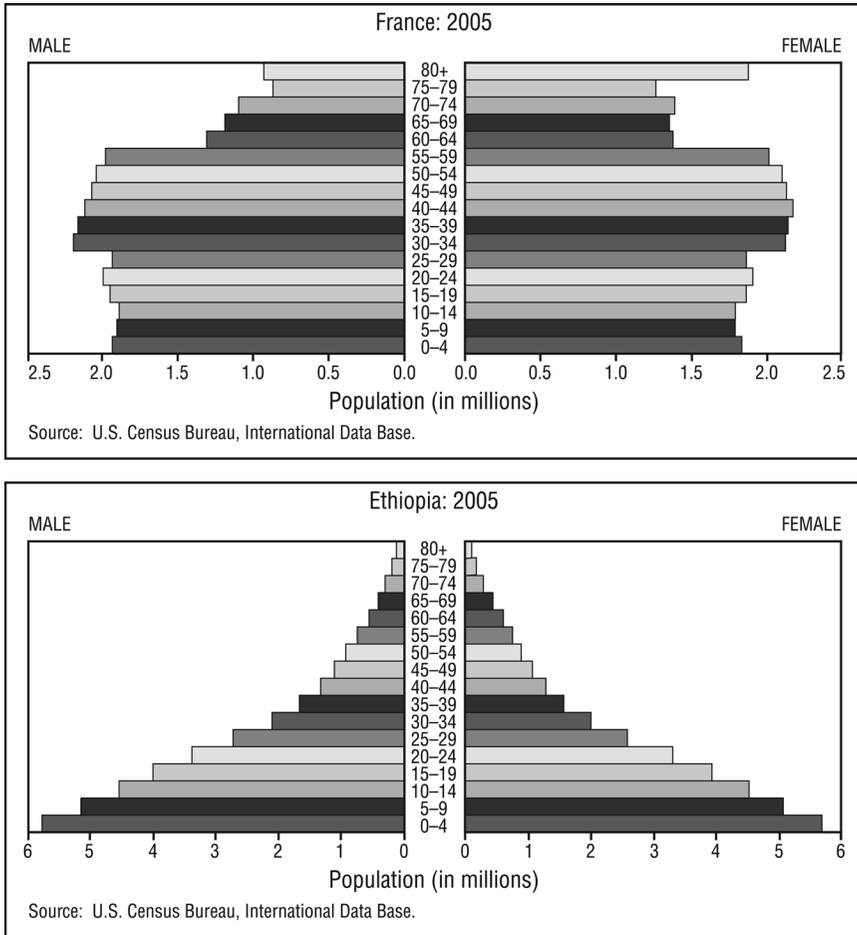
By contrast, in Ethiopia, with its very high birth rates, the younger cohorts will continue to be much larger than the cohorts born before them. That means

each new cohort has more women of child-bearing age than the cohorts born before them. Thus, even if the number of children born to each mother should slightly decline, the fact that there are more potential mothers entering the child-bearing years means that births per thousand population, the CBR, can continue to grow.

Moreover, to examine total population growth, we also need to look at deaths. Unlike with births, people can exit the population by death at any age. Indeed, in poor countries, most of those dying are not older people, but are infants and children. In Ethiopia, in 1995–2000 over 160 out of every 1,000 live-born children died before the age of 5. By 2005–2010, that figure had been cut by almost one-third, to 113 deaths by age 5 (United Nations Population Division 2011). Yet this progress not only cuts the crude death rate, but because those being saved are young, they can now survive to adulthood and have children themselves. Reductions in death rates among the very young therefore mean higher birth rates in the future.

By contrast, in a developed country like France there are relatively few child deaths (only 4 per 1,000 live births, or around 4 percent as high as in Ethiopia). That means that in France, any reductions in death rates come mostly from extending the life of the elderly, those who are not going to have any more children. So while in Ethiopia, gains in health and reductions in death rates will almost certainly translate into higher birth rates and higher rates of population growth, the opposite may be true in France—reductions in death rates will likely mean seniors living longer, having to be supported by higher taxes on working families, who therefore may choose to have fewer children. In sum, we might therefore expect France's rate of population growth to slow down in the near future, while Ethiopia's might well increase further (and indeed in 2008–2010, Ethiopia's crude birth rate was substantially higher than in 2003–2007).<sup>2</sup>

The relative size of a country's age cohorts can easily be seen by graphing the cohorts in a “stack” or “age pyramid.” Figure 2.2 shows the age pyramids for France and Ethiopia in 2005; the very different shapes immediately indicate the relative proportions of different age groups. In France, the population is mostly middle-aged; between the small cohorts born in the Depression and World War II (now aged 60–80+), and recent smaller cohorts, is the “baby boom” bulge in the middle (though there is also an unusually high-surviving group of women over age 80). In Ethiopia, the population is mostly very young; the large base and small top of the age pyramid indicate that the overall population distribution is dominated by ever-larger young and very young cohorts.



**Figure 2.2 Age Pyramids for France and Ethiopia, 2005**

### Fertility and Life Expectancy

Because societies can differ so greatly in age structure, the crude birth and death rates, which only indicate the total of births or deaths per 1,000 total population, do not really tell us what is happening to specific age cohorts. Demographers thus have developed measures that try to better capture the varying experience of different cohorts.

In regard to births, demographers commonly speak of the *total fertility rate* of a society. This is arrived at by looking at the number of children born

to women in each birth cohort. Demographers collect data on age-specific fertility: How many children were born in this year, on average, to women 22 years old, 23 years old, 24 years old, and so on? Then the *total fertility rate* is the sum of all the average age-specific fertility levels. Another, perhaps easier way to look at this is to say that *total fertility* is the total number of children that a woman would be expected to have if she lived out her entire child-bearing years and had the average number of children at each stage of her life as the overall average experience of all women in her society. In France, for example, where most women have few children, the total fertility rate in 1995–2000 was 1.76; in Ethiopia it was 6.48 (United Nations Population Division 2011).

Because some people will die before reaching adulthood, it is usually considered that a total fertility rate of 2.1 (just over two children for each woman) is needed to prevent a population from naturally declining. This means that in a country like France, the current fertility rate is not quite enough to assure replacement of the current population, and so France would not be able to keep growing without the positive contribution of net migration. In Ethiopia, however, if all children survived, then each generation would be roughly three times as large as the parent's generation. As we noted, Ethiopia's child mortality rates remain high, but the potential for growth remains enormous if fertility does not decline (although it does seem to have declined sharply in just the last few years).

A similar adjustment for cohort rates is made for deaths and is called *life expectancy*. As with fertility, demographers collect data on age-specific death rates: how many deaths were there per person in this age group for those aged zero to one this year, how many for those aged one, aged two, aged three, and so on. *Life expectancy*—or more accurately, life expectancy at birth—is then the average number of years that a group of infants would live if they died at the rate of each age-specific death rate summed over their entire lifetimes. To choose a very simple example, let us say that half the children born in a society die before age 1, but the others all live until age 60, and then die. The average life span in this society—hence the life expectancy at birth—is 30 years. So in this society, even though a typical adult lives to age 60 if he or she survives childhood, for demographers the life expectancy is still only 30—because half of all children die before reaching 1 year of age.

Demographers also calculate age-specific life expectancies by starting at different ages. This is particularly relevant for the elderly. Even in societies where average life expectancy at birth is 75, we would expect to see a large number of people living beyond that age. So we would want to know what is the life expectancy for people who reach age 75; in modern developed countries it

can be substantial. In the United States in 2004, life expectancy at age 75 was 11.9 years; so the average person who reached 75 could expect to live to be 86.

In poorer countries, where child death rates are very high, life expectancies are lower; in Ethiopia it is 57 years. In most rich countries, life expectancies are in the upper 70s; in France it is 81 years. But that is not mainly because adults live longer in France than in Ethiopia; most of the 26-year difference in life expectancies is because children in France survive in far greater numbers than they do in Ethiopia (United Nations Population Division 2011).

## The Demographic Transition

Fertility, life expectancy, and cohort experiences all come together in the phenomenon known as the *demographic transition*. In this process, societies move from having a combination of low life expectancy and high fertility to the opposite condition, with high life expectancy and low fertility.

For most of human history, with food supplies uncertain, minimal sanitation, and few medicines to halt the spread and impact of disease, death rates were very high. Infant mortality was particularly severe. As a result, even as late as the eighteenth century, life expectancy at birth in societies from Europe to China was very low, usually only around 30 years. Mothers therefore had to bear many children just to ensure that two or more survived to adulthood and could reproduce. It was common in preindustrial societies for fertility levels to range from four to six children per married woman, of whom only two, or very occasionally three, would survive to bear children of their own. High child mortality was thus balanced by high fertility, with the overall result that population grew only very slowly. Up to 1800, long-term historical population growth rates in most societies were only about one-tenth of one percent per year.

As societies grew richer, however, this situation changed. Small investments in sanitation and cleaner water supplies, better nutrition, and a bit of cheap medical care (just understanding that infants suffering stomach infections needed to be given lots of clean water to drink, or having access to generic antibiotics to treat infections) drastically lowered the death rate, especially for children. This had huge and immediate impacts on population growth and age structure. If women continued to have four or five children each, but now three rather than only two usually survived to adulthood, the population growth rate would rise from being negligible to a gain of 50 percent every generation, or an annual rate of roughly 1 percent per year. If four children survived, on average, then the population would double every generation, for an annual population growth rate of over 2 percent per year.

In this initial stage of demographic transition, with life expectancy growing mainly due to steep falls in infant mortality, but fertility remaining high, populations experience a huge surge in growth. From the long-term historical growth rate of perhaps one-tenth of a percent per year, growth rates increase by ten- or twentyfold! Populations go from remaining nearly stable for centuries to doubling in 60 or even in 30 years. It is this phenomenon—the onset of the demographic transition, which began in Europe in the eighteenth century and has since spread throughout the world—that has driven global population growth over the last two centuries. The world's population was only about 250 million people in 0 AD, and was still less than 1 billion almost 2,000 years later in 1800 AD. However, as the demographic transition spread to Asia, Africa, and Latin America, the world's population suddenly leaped to 6 billion by 2000 AD (Livi-Bacci 2007, p. 26).

At the same time, because this growth was driven by greater survival among the young, the increase in population is concentrated among the younger age cohorts. It is this situation that gives rise to age pyramids like that of Ethiopia, where each new younger generation (as those aged 10–24) is twice as numerous as the generation before them (those aged 25–39).

As societies grow richer still, there are further changes in their demographic behavior. As societies become more industrial and service oriented, more people move to cities, where living space is expensive. As education becomes a more important way to get ahead, parents want to invest more in the education of their children, which is also costly. Most important, parents may gain confidence that nearly all of their children will survive to adulthood, and thus do not need to ensure that outcome by giving birth to so many. As a result of all of these trends, women usually prefer to have fewer children than before.

Of course, there is a time lag for changes in preferences for children to spread through society. Moreover, even though preferences may change, it requires both access to birth control and education in how to use it for women to effectively limit the number of children they bear. As these become available and preferences change, the next stage in the demographic transition is a decline in fertility, as women have fewer children in the course of their married and child-bearing years.

For a considerable while, the increased survival of children tends to stay ahead of changes in fertility. That is, infant mortality tends to fall rapidly and stay low, while fertility falls more gradually. The result is a sustained period in which societies face rapid population growth and very young populations. However, in recent years, countries have seen fertility dropping more rapidly. It took 130 years for fertility to fall from 5 children per family to 2 in Great

Britain, one of the first countries to begin the transition, from 1800 to 1930. It took only 20 years, from 1965 to 1985, for the same change to occur in South Korea. In Iran, it took only 22 years, from 1984 to 2006, for fertility to drop from 7 to under 2, perhaps the most rapid decline in fertility in any society (*The Economist* 2009, p. 15). We can say the fertility transition is completed when fertility has fallen to the level where even with almost all children surviving to adulthood, a society's natural population growth again is at negligible levels. As we noted, demographers estimate this is usually the case when fertility is at 2.1 children born per woman. Most of the rich countries of the world reached this level, and thus completed their demographic transition, by the last quarter of the twentieth century. In countries that have made this transition, total population growth rates are minimal, or depend mainly on migration. Moreover, successive cohorts are all roughly the same size, as shown in the age pyramid of France in Figure 2.2.

While some countries have been moving rapidly through the demographic transition, it must be noted that other countries are moving more slowly, or even getting stuck at the first stage. Ethiopia is one of 45 countries around the world, mostly in the Middle East and Africa, with population still increasing at 2.0 percent per year or more. In Ethiopia, life expectancy is still rising—it grew from 51 in 2000 to 56 in 2010—but fertility is not declining very much; it declined only from 6.4 to 6.1 over the same period. Ethiopia's growth rate thus increased from 3.0 percent per year in 2000 to 3.2 percent per year in 2010 (U.S. Census Bureau 2011).

Even if fertility in such countries were to start declining tomorrow, so many young women will enter their child-bearing years in the next 20 years—nearly twice as many as those who were in their child-bearing years in the last 2 decades—that the number of total births will stay very high for another generation. This is called *demographic momentum*; and it means that even some countries where fertility rates have fallen below 2.0, such as China, will still continue to increase in overall size for years to come, due to both continuing increases in life expectancy and to the high fertility they experienced—and hence, the very large cohorts of young women who were born—in the 1960s and 1970s.

We thus live in a world with societies with very different demographic profiles. Wealthier countries have mostly completed their demographic transition, while most poorer countries have not. The overall trend, however, is clearly toward completing the transition. Even among poorer countries, in the last 40 years average fertility has fallen from close to 6 children per woman to about 3. In their middle-of-the-road scenario (the medium variant projection), the United Nations Population Division assumes that this trend will continue, making global

population growth slow dramatically by 2050. If this scenario comes to pass, world population would reach about 9 billion in 2050, and then approach stabilization at about 10 billion people by 2100 (United Nations Population Division 2011).

## The Demography of Subgroups

A wonderful feature of these demographic concepts—cohorts, fertility, migration, and so forth—is that they can all be applied to subgroups of any population, not just to a complete society. Thus, we can speak of the fertility of a particular ethnic or religious group by looking at the age-specific birth rates of women in that group, and compare that fertility to the average in society, or to other groups. We can examine the size of youth cohorts in cities, rather than in the total society—for the migration of young men to cities looking for work often results in cities having age structures that are very different, and far more “youth bulgy,” than that of society as a whole.

We can also combine a number of demographic characteristics to understand complex changes and their effects. For example, there is great anxiety among some in Europe about large numbers of Muslim immigrants “taking over” European societies. In fact, the total numbers make this preposterous; Muslims in almost all European countries (excepting only countries that were formerly part of the Ottoman Empire) remain a small percentage, roughly 3 to 6 percent, of the total population (PEW Forum on Religion and Public Life 2009, p. 22). However, most of the Muslims who migrate to Europe settle in or near cities, and concentrate in certain neighborhoods. In certain neighborhoods, they may thus be as much as 25 percent or more of the local population. Moreover, the fertility of Muslim immigrants is usually fairly high, while that of native Europeans is very low. If Muslim immigrants have, on average, twice as many children per household as native Europeans, then looking at elementary school enrollments we may find that even in neighborhoods where 25 percent of the total population is foreign-born Muslims, as many as half of the elementary school children may be from Muslim immigrant families.

The combination of group differences in fertility and selective migration to certain urban neighborhoods can thus give the appearance of a sudden “taking over” of local institutions, creating political anxieties and tensions, even if the overall fraction of Muslim immigrants in the total population remains small. In fact, however, we find that the fertility of Muslim immigrants typically falls after moving to Europe, and falls dramatically in the second generation, creating a rapid demographic transition among the immigrant community, so there is no threat of explosive growth of the kind that we see within Ethiopia

as compared to that within France. But without understanding the basic demography behind the phenomenon, we could not understand how the apparent changes could be so large in certain settings, nor grasp the likely trajectory in actual population numbers and behavior.

### **A Theory of Political Demography: Human and Institutional Reproduction**

We now are equipped with the concepts we need to develop a general theory of how population changes can affect political systems and to follow the various chapters in this volume regarding such effects.

Refer back to Figure 2.1. Imagine each “box” or segment of each ring to be peopled with a population of a given size, age distribution, and location. These people develop expectations regarding the exchanges—the flows of goods, services, taxes, work, patronage, benefits, opportunities—among various groups with whom they interact. Many of these exchanges may be extremely one-sided: Peasants may expect few services or opportunities but heavy taxes and work requirements. State rulers may expect to extract large amounts of resources to expend on patronage, consumption, war, and administration. Certain elites—for example church leaders or landlords—have their own expectations regarding relations with the state, other elites, and the populace.

As long as these various exchanges conform to expectations over time, we may expect to see a certain rough stability across generations. Children of elites move into elite positions; children of peasants continue to work the land; states and elites continue to collect the revenues to support their lifestyles; workers continue to earn at least a living that will allow them to survive and reproduce. If these exchanges represent the working of social institutions, then the reproduction of those institutions over time requires that the human elements—the people in the various “boxes” or segments or stations of society—also continue to reproduce in roughly the same proportion to those exchanges as was the case before.

As long as the proportions remain roughly the same, growth (or even decline) can be accommodated. That is, if there are twice as many peasants, but the environment provides twice as much output as before (either due to cultivating more land or cultivating existing land more intensively), then twice as much surplus can support twice as large an elite and twice as powerful a state. However, problems can quickly arise if the numbers of people in various

segments do not grow in proportion, causing shifts in the resources available to circulate within the system and creating disruptions or changes in their flow.

To give just one example, let us say that a traditional society allocates land to families by redistribution when couples marry. As long as the fertility rate is roughly around 2.1, all will be well; on average a couple in one generation will vacate a holding by retirement or death for every couple that marries and seeks a new landholding. But if the fertility rate should creep up to 2.5, problems will arise. Either some couples will go without land, or parcels will have to be reduced by about 20 percent in size to distribute a parcel to all couples who seek one. Landless couples may converge on cities, creating sudden growth and demand for housing, sanitation, and jobs, or drive down the urban wages for existing workers. If land holdings are reduced by 20 percent, but the productivity of farming remains the same, a problem arises for the state and elites. Typically, in preindustrial societies peasants could survive on half the output of a typical family holding, while the other half was paid in taxes and rents and fees to elites and the state. If the typical family holding is reduced by 20 percent, then the “surplus” produced by each family holding above the peasant’s normal expected retained amount will decline by 40 percent. That means the elites and state are left to fight over a greatly reduced available surplus, or forced to squeeze the peasantry to unaccustomed levels. Either increased intra-elite conflict and competition or increased peasant rebellions, or both, become likely.

In fact, for most of history, fertility rates were very nearly 2.1. We can be certain of this simply from the arithmetic of population growth. The population of France today is 63 million. If France’s population had been growing at a steady rate of 1 percent per year for the last 500 years, then its population in 1500, during the Renaissance and just after the birth of Francois I, would have been only 435,000. In fact, we know from other historical evidence that the population of France in 1500 was closer to 15 million! And in fact, most of France’s population growth has taken place recently; as late as 1800, France’s population was only about 29 million. Net growth from 1500 to 1800 was thus a barely noticeable two-tenths of a percent per year (Livi-Bacci 2007).

However, while net growth was small, the historical pattern was one of long periods of population stagnation or regression punctuated by other periods of population disruption. In some periods, such as that of the Black Death, population suddenly plunged, leaving lords and peasants and states to scramble to adapt to a changed world, where land was suddenly plentiful and labor scarce. In other periods, such as that of the sixteenth century in Europe, population

grew steadily, often at 1 percent per year or more, disrupting landholdings, taxation, elite mobility, and international relations.

Throughout history, the ebb and flow of population—through natural growth, epidemic diseases, and migration—has been linked to the rise and fall of empires, to conquests and revolutions. Periods during which populations were stable in size also tended to be politically quiet. By contrast, periods in which societies showed sustained growth, such as the century from 1550 to 1650, or from 1730 to 1850, were marked by severe political disruptions. Real wages fell and peasants faced shortages of land; social mobility and competition for elite positions increased as more surviving sons and daughters meant that simple inheritance no longer provided for stable succession; and state and urban administrations were stressed by the need to keep food supplies flowing and to enforce order among rapidly growing populations. As these trends persisted over several decades, the result was often rebellions, revolutions, and civil wars (Goldstone 1991).

Given these complex, multiple competitions for resources among popular groups, elites, and the state, a modern theory of political demography would not simply rest, as with Malthus's approach, on assessing the overall balance of population and resources in a society. Rather a theory of political demography would have us approach social analysis through a series of queries aimed at identifying disruptions or holes in the nested hierarchies of peoples and resource flows. Thus we would ask:

1. For the major elite and popular groups in society, what are the recent and expected rates of population increase, age distribution, and geographic distribution? Do these pose any threats to the continuing balanced flow of resources—land, incomes, elite positions—to each group as per their expectations?
2. How will the flow of revenues to the state, and the demands upon the state administration, be affected by the changes in the situation of various population groups? Will there be any shortfalls in revenue or administrative capacity, or problems responding to conflicting demands from different groups?
3. How will the expected changes in population and flows of resources affect the relative power position of different groups, and the relative power of the state and its ability to balance among them?
4. In democracies, we would also ask about the voting behavior of various groups, and whether changes in the size and distribution of those groups across various localities would affect patterns of voting, and the formation of majorities in favor of particular parties.

Using the concepts of demography to pose these questions regarding the dynamics of political systems offers a fresh and powerful approach to identifying major drivers of political conflict and change.

Let us therefore now consider three major population trends that will shape political developments in the coming century.

### Three Demographic Trends That Will Shape the Global Future

The world has reached an unusual point. Most of the world's richer countries—in Europe, East Asia (Japan, South Korea, Taiwan, Singapore), and North America—have completed their demographic transition and have stable or very slow-growing populations. Several of them, including Germany and many in Eastern Europe, have seen fertility fall well below 2.0, so that they are forecast to decline in population in the near future unless they have considerable in-migration. By contrast, most of the world's poorer countries—mainly in Africa, the Middle East, and southern and Southeast Asia—have only begun their demographic transition, and so are continuing their rapid population growth. This contrast will govern global demography for the next few decades, giving rise to three important trends:

#### *1. The relative decline of Europe and the Americas compared to Asia and Africa.*

The demographic transition began in Europe with the onset of industrialization in 1800, leading to dramatic population growth. However, in the twentieth century the demographic transition ended in richer countries, while it began to spread to Asia and Africa, touching off rapid population growth in those regions that has only begun to slow down. Most of the world's population growth for the next four decades will thus occur outside of the rich countries of today. Between 2010 and 2050 the United Nations projects that the combined population of Europe, the United States, Canada, and Japan will increase by only 105 million, while the population of the rest of the world will increase by 2.3 *billion*. Most striking, in 1950 Europe alone had almost two and a half times the population of Africa; by 2050 this will be completely reversed, and Africa's population will be more than three times as large as that of Europe (United Nations Population Division 2011).

Even though the rich countries of today will remain much wealthier per person than the poorer countries, the combined effect of tremendous population growth in the poorer countries, along with faster per capita income growth in most of them, means that by far the great majority of all the world's

economic growth in the next half-century will occur in Asia, Africa, and Latin America. Probably 75 percent of all global income growth to 2050 will come from these regions.

Today's poorer regions will also account for most of the growth in middle-class spending. The World Bank (2007a) projects that the number of "middle-class" consumers in the developing world—those who can buy appliances, homes, and aspire to an automobile—will rise from 400 million today to 1.2 billion by 2030; that will be more than the entire combined populations of Europe, the United States, and Japan in 2030.

Thus, the pattern of the last two centuries, with Europe and other richer areas leading the world in population growth, income growth, and consumption is about to change completely. In the next four decades, population in Europe and other richer areas will remain virtually stable while population, income growth, and middle-class consumption shifts dramatically to the developing world.

### *2. A fun house mirror of aging: older rich countries and very young poor ones.*

In a fun house, there are mirrors that distort the normal proportions of a person's image. If a normal age distribution is one in which most cohorts under age 60 are roughly the same size, and smoothly succeed each other in jobs and spending as they move through their life course, we will see few countries in the world with such age distributions until we reach the mid-21st century. Instead, we shall see mostly severely distorted images, with either excessively old or extremely young populations being more common.

In the richer countries, the elderly will soon outnumber the young. In the United States today, the number of people age 60 or older is about 10 percent less than the number of children under age 15. But by 2030, the U.N. projects that those 60 or older will be a third more numerous than children under 15. In France by 2030, the number of those aged 60 and above will be two-thirds larger than the number of children under 15. In Germany, if projections hold, by 2030 those over 60 will outnumber children under 15 by more than 2 to 1, and by 2050 there will be as many people aged 80 and over as children under age 15 (United Nations Population Division 2011). These are astonishing numbers, never before seen in human history. Unless there is a huge surge of fertility, or rapid migration from abroad, today's richer countries will face incredible burdens finding entry-level workers for demanding jobs in construction, cleaning, transportation, repair work, landscaping, and agriculture, while facing skyrocketing costs for medical and pension support for their aged populations.

By contrast, many poor countries will remain very young. Virtually all of the expected population growth in the next four decades—roughly 2.2 billion

more people than today—will occur in the developing world. Two-thirds of that growth will arise in just 15 large, low-income countries (LLICs)—India, Pakistan, Nigeria, Indonesia, Bangladesh, Ethiopia, the Democratic Republic of the Congo, the Philippines, Tanzania, Uganda, Kenya, Sudan, Afghanistan, and Iraq. In many of these countries, one-third to one-half the population today is under 15.

Over the next four decades, even with falling fertility in the developing world, 90 percent of all children born in the world will most likely be born in today's developing countries. By the end of the twenty-first century, the fate of the world will be in the hands of these cohorts.

With rich countries becoming quite elderly, it will be imperative that they integrate their economies, and perhaps even their societies, as much as possible with the younger countries of the world. Only the younger countries will have the manpower to meet the labor needs of companies in the future, to respond to humanitarian disasters and violent conflicts around the world, and to care for the large numbers of elderly in the rich world. Only the developing countries will have the overall economic growth and new markets to drive the world's economy forward. If the rich countries should choose to try to isolate themselves by excluding migrants and discouraging investment abroad, they will find themselves stranded without the economic growth or labor they will need.

Fortunately, a number of the large developing countries in the world—Mexico, Brazil, Turkey, Iran, Viet Nam, China, Indonesia—are entering a “sweet spot” in their demographic transition. They have already reduced their fertility substantially, so that fewer children are being born. Most of their population for the next few decades will be concentrated in their prime working years, from age 15 to 59. These countries are likely to be the chief motors of the world economy for the next 30 to 40 years.

However, the LLICs mentioned above are almost all still in the early stages of their demographic transition, and hence have considerably younger populations, with a third to half of their populations under age 15. They also are poorer than the large developing countries mentioned in the preceding paragraph. Thus, it will be a huge challenge for them to provide education and meaningful job opportunities for their young people. Unless they are able to do so, they face problems ranging from continued poverty and weak government to ideological radicalism, rebellion, and violence.

### *3. Migration, migration, everywhere.*

The world of today, and even more the world of tomorrow, will be a world of people on the move. The proximity of very young populations in Central and northern Latin America, North Africa and the Middle East, and South Asia to

richer but rapidly aging populations in North America, Europe, and far eastern Asia, will create enormous forces pulling labor migrants from developing countries into the rich world. If such migrants bring needed labor to developing countries and are able to integrate, learn valuable skills, and either return or send their children to their home societies with those new skills to build new industries and jobs, this will be a win-win situation. However, if migrants run into discrimination and migration barriers, both sending countries and rich potential host countries will lose out.

Migration streams within the developing world will also likely increase. Economic growth in the “sweet spot” countries will act as a magnet to the populations of younger, poorer countries seeking opportunities. And even within developing countries, the flow of migrants from the countryside to the city will dwarf anything yet seen in history. The world’s urban population is expected to double in the next 50 years, as developing countries reach levels of urban population—from 60 to 70 percent—that until recently were only seen in the rich world. Already, many of the world’s largest cities—Mumbai, Cairo, Calcutta, Jakarta, Lagos, Manila—are found in the world’s poorest countries. Around the globe, the number of cities with a million or more population in Asia and Africa will come to outnumber those in Europe, Japan, and North America.

Unfortunately, migration due to hardships and humanitarian disasters is also likely to increase. With poorer countries growing rapidly in population, one can expect shortages of land or the impacts of natural disasters to hit more and more population groups. The violent conflicts that are likely to arise in very poor, weakly governed, but youthful and rapidly growing countries are also likely to drive people out of their homes and countries. The world of the future thus will have to somehow cope with more people moving to cities, across borders in search of work, and in search of assistance or refuge, than ever before.

In short, the world of the future will not simply be the world of today, but with slightly more people. It will be a very different world, given that the distribution of population size, age, and growth rates is shifting markedly from today’s richer countries to today’s poorer ones. How the world handles this transition will be the key political challenge of the coming decades.

## NOTES

1. These population data are from United Nations Population Division 2011.
2. These birth rate data are from Index Mundi (2009).