

NEW DIRECTIONS IN DEMOGRAPHIC SECURITY



- 2 **Flash Points and Tipping Points: Security Implications of Global Population Changes**
Jack A. Goldstone
- 10 **Half a Chance: Youth Bulges and Transitions to Liberal Democracy**
Richard Cincotta
- 19 **Population in Defense Policy Planning**
Jennifer Dabbs Sciubba
- 27 **Climate Change, Demography, Environmental Degradation, and Armed Conflict**
Clionadh Raleigh and Henrik Urdal
- 34 **Migration as the Demographic Wild Card in Civil Conflict: Mauritius and Fiji**
Christian Leuprecht
- 40 **Beginning the Demographic Transition: Very Young and Youthful Age Structures**
Elizabeth Leahy

Flash Points and Tipping Points: Security Implications of Global Population Changes

Is improving relations between Western and Muslim countries crucial to fixing pension programs in Europe and the United States? Can reversing the “brain drain” of medical talent migrating from developing countries to developed ones improve the budget balance of developed nations? Will economic growth in China and India draw investment and innovation away from the United States, Japan, and Europe?

These questions are sparked by predicted trends in global population dynamics over the next half century. In this article, I examine four major trends that are likely to pose significant security challenges to Europe, Japan, and most other developed nations in the next two decades:¹

- (1) Disproportionate population growth in large and Muslim countries;
- (2) Shrinking population in the European Union and European former Soviet countries;

- (3) Sharply opposing age shifts between aging developed countries and youthful developing countries; and
- (4) Increased immigration from developing to developed countries.

The security and conflict problems caused by population growth are not mainly due to shortages of resources. Rather, population *distortions*—in which populations grow too young, or too fast, or too urbanized—make it difficult for prevailing economic and administrative institutions to maintain stable socialization and labor-force absorption (Goldstone, 2002; Cincotta et al., 2003; Leahy et al., 2007).

Big Emerging Markets and the World Economy

Countries are growing today for two major reasons: high population growth rates and demographic momentum.² In some countries, mainly in Africa and the Middle East (as well as a few in Latin America and South Asia), birth rates remain much higher than mortality rates, so growth rates are more than 2.0 percent per year. In these countries—which include Afghanistan, the Democratic Republic of the Congo, Guatemala, Iraq, Jordan, Nepal, Saudi Arabia, Pakistan, and Yemen—the population is still doubling every generation, or roughly every 30-35 years (UN Population Division, 2007).

In other countries, such as China, India, and Indonesia, population growth rates have recently dropped substantially; in percentage terms, they are growing more slowly than they have in the past (UN Population Division, 2007).

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However, these countries already have such a large cohort of women of childbearing age that their populations continue to add significant numbers each year. In China, for example, although most couples have fewer than two children, zero population growth is still several decades away. While current growth rates have sunk to around 0.6 percent per year, China will add nearly 80 million people during each of the next two decades before its population peaks.

India, though not quite as large as China today, is growing twice as fast, at 1.4 percent per year, and will add roughly 135 million people per decade for the next two decades. Even with a continued decline in their birth rates, these two countries alone are expected to add roughly 400 million people by 2025—more than the entire population of the United States, the United Kingdom, the Netherlands, and Belgium today *combined*.

Most of the 20 largest countries in the world have modest growth rates but large demographic momentum, and thus will make the largest contributions to total world population growth in the next 20 years. The fastest-growing countries are generally smaller, but are facing the largest burden of additional growth on a percentage basis (see Table 1). For the next several decades, global population growth will be concentrated in only a few regions and countries, mainly Muslim societies (almost the entire top half of Table 1) and huge states with populations of 75 million or more. Most of the states that dominate Table 1 are also among the world's lower income countries. By contrast, population growth rates in Europe and Japan are already low and, in some cases, negative.

Therefore, the proportion of the world's population living in Muslim states, or in the very largest and very poorest states, will grow, and the proportion of the world's population living in developed countries will shrink. The sole exception is the United States, which is expected to add 50 million people in the next 20 years—mostly due to recent and projected immigration of people born elsewhere.

Some countries with extremely rapid population growth are likely to manage it reason-

ably well due to sound management and strong economic growth (e.g., Kuwait and the United Arab Emirates). However, in a number of “flash points,” the inability to integrate rapidly expanding populations into politics and the economy will lead to radical political mobilization among those angry at not attaining the level of prosperity reached by some of their neighbors.

Some of the extremely large countries will probably manage their anticipated growth without conflicts. Yet the sheer size of the population increases they face in coming years, combined with their efforts to rapidly industrialize, means that many will also face a “tipping point,” when uneven development leaves tens of millions of disadvantaged people to watch other millions reap the benefits of rapid growth. The disparities of economic fortune among classes, regions, or ethnic groups may become so great as to spark violent protests. Or the migration of rural masses to urban and industrial centers could produce a social crisis.

We cannot predict which countries will face such crises, as they are due to failed political leadership and administrative management more than population changes *per se*. But we can say that in many of the largest countries, governments will face exceptional challenges in meeting their populations' demands for both strong and equitable economic growth and sound political management.

We can say with certainty that these trends pose major dilemmas for the economic policy and development of the West, particularly Europe. In 2005, only 5 of the 25 largest countries in the world were in Europe, with a combined population of roughly 400 million, or about one-tenth the total population of the remaining countries (UN Population Division, 2007). By 2025, just two decades distant, there will be only four European countries in the top 25, with a total population of 338 million, or about seven percent of the 5.5 billion inhabitants of the other 21 countries. By 2050, there will be only three European countries in the top 25 with a total population of 258 million, or just four percent of the 6.3 billion in the other



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22 countries. Europe's weight in the top 25 countries is shrinking dramatically.

The expected changes in Europe's global demographic weight are even more striking. In 2005, all of Europe comprised 731 million people, which is projected to shrink to just 664 million by 2050, while the rest of the world grows from 5.8 billion to 8.5 billion (UN Population Division, 2008). That is, in a single generation (the next 42 years), global population outside of Europe will increase by 2.7 billion while Europe's population will *decrease* by about 67 million.

The shrinking demographic weight of European countries puts them on the horns of a dilemma. If the economies of fast-growing developing countries do not catch up to those of the richer countries, then the standard of life enjoyed by the West will seem more elite and unfair than ever, fueling resentment of developing countries against the G-8. On the other hand, if economic growth in those countries does exceed that of the West, so that living standards in poor countries or regions starts to approach those of rich countries or regions, then the combination of shrinking population and lagging economies will render the G-8 countries more and more irrelevant to the world economy. Greater resentment or greater irrelevance: certainly a difficult choice.

Europe's combined GDP in 2007 was US\$14 trillion dollars (CIA, 2008). Assuming GDP growth per capita of 2.5 percent per year and no net population growth, Europe's economy would increase by US\$9 trillion (excluding inflation) by 2025. For Asia (excluding Japan), 2007 GDP was slightly larger, at US\$18 trillion dollars (CIA, 2008). But due to modest growth in GDP per capita plus large population increases in most countries, total GDP is growing far more rapidly in this region. Iran and Pakistan achieved recent growth rates of 4 and 6 percent per year, respectively, while India and China were growing by 8-10 percent per year—and despite the global economic downturn, both countries are expected to continue growing by 6-7 percent in 2009 (CIA, 2008; EIU,

2008). If Asia (excluding Japan) can sustain an overall growth rate of total GDP of 5 percent per year over the next 20 years, the increase in Asia's GDP would be US\$30 trillion, or more than three times the total economic growth of Europe.

If Asian GDP does not grow at 5 percent per year, living standards in Asia will not catch up to those in Europe (and Japan). Yet if Asian GDP does grow at that pace, then given the size of Asia, the preponderance of economic growth on the Eurasian continent will be occurring outside of Europe. Greater degrees of investment and innovation are likely to move to areas outside of Europe, further weakening its economic strength and leadership. In other words, we are on the cusp of a global tipping point, in which East and South Asia come to eclipse Europe and Japan as major sources of global economic growth—a point made all the more sharper as Europe and Japan slip into recession at the end of 2008.

These demographic and economic changes also indicate that the military capacities of large developing countries will increase, while the ability of rich nations to put “boots on the ground” in conflict zones will diminish. Managing conflicts involving developing countries will become more difficult, and will put more of a strain on developed countries' economies, than before.

As the portion of the global economy contributed by the G-8 countries shrinks, countries such as China, India, Turkey, Brazil, Indonesia, and Mexico will become global economic powers. Admitting major regional powers into international governance bodies is vital if those organizations are to retain legitimacy. The November 2008 Summit on Financial Markets and the World Economy expanded the “G-group” to include these big emerging democratic economies—a trend that must continue if such efforts are truly going to grapple with the global economy.

Naturally, these measures will provoke great opposition and controversy. However, if Europe chooses to isolate itself from the global popula-

tion and the global economy, it will continue to shrink in relation to the world. Moreover, if Europe fails to support economic growth outside of Europe, the rapidly increasing numbers of people in non-European and mainly Muslim countries is simply going to fuel ever-greater resentment of Europe's position, exacerbating the problems of terrorism, smuggling, and illegal trafficking as the ways to "get ahead" and "get even." In short, Europe has no choice but to support and actively engage the fast-growing countries of the world, improve relations with their populations, and support—and seek to share in—their growth.

The Great Slowdown in Population Growth in High-Income Countries

During the next several decades, the population of most European countries, including Russia, Germany, Italy, Ukraine, Spain, Poland, Romania, the Czech Republic, and Hungary, will shrink substantially, due mainly to a sharp decline in the number of children per couple, to well under 2.0 and in some cases under 1.5 (UN Population Division, 2007). This slowdown will be accompanied by a rapid increase in the percentage of the population in higher age brackets, as the number of young children falls further behind the number of aging baby boomers. By 2050, the percentage of Japan's and Europe's population over age 60 is expected to double, to 35 to 40 percent of total population (Jackson & Howe, 2008).

This pattern is highly novel and abnormal. Historically, population growth has stagnated on occasion, or been substantially reduced by major epidemics, but the cause was high mortality, especially among the young. Birth rates remained high, and when conditions were more propitious to growth, population increase resumed. In modern Europe, the United States, Canada, and Japan, decreasing birth rates have precipitated population decline. Women are marrying later, if at all, and having fewer children. The result is an unprecedented aging of populations (less so in the United States), at the

Table 1: Fastest Growing Countries, 2000–2005 (with at least 1 million people)

	ANNUAL GROWTH RATE, %
<i>United Arab Emirates</i>	4.7
<i>Sierra Leone</i>	4.2
<i>Eritrea</i>	4.1
<i>Afghanistan, Kuwait</i>	3.8
<i>Chad, Palestine (occupied)</i>	3.6
<i>Niger</i>	3.5
Burundi	3.3
<i>Burkina Faso, Benin, Uganda</i>	3.2
<i>Gambia, Guinea-Bissau</i>	3.1
Congo (Dem. Rep.), <i>Mali, Somalia, Yemen</i>	3.0
Angola, <i>Jordan, Mauritania, Togo</i>	2.9
<i>Iraq, Madagascar</i>	2.8
<i>Syria</i>	2.7
<i>Ethiopia, Kenya, Malawi, Senegal, Tanzania</i>	2.6
Guatemala, <i>Nigeria, Saudi Arabia</i>	2.5

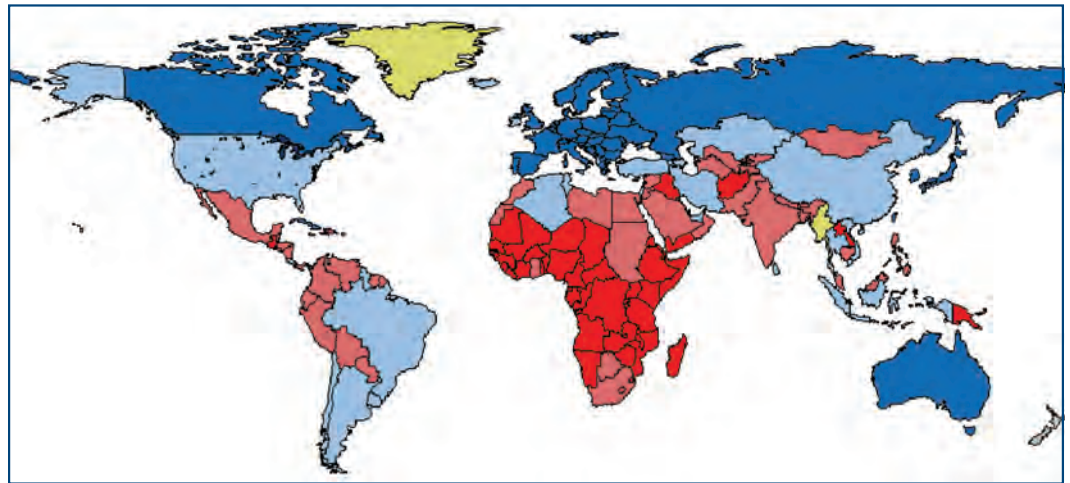
Note: Countries with large Muslim populations in italics.
Source: UN Population Division (2007).

very same time that national economies can be expected to decline dramatically as a percentage of global GDP.

This slowdown in population growth has major implications for overall economic growth (Eberstadt, 2001). The economies of aging nations will not be stimulated by growing numbers of consumers and demand for housing. The capital growth generated by larger generations of young people approaching their peak earning years and saving for retirement will cease as well. Even if the growth of Europe's income per capita remained constant, its overall economic growth rate would be cut in half as the population declines over the next 30-50 years.

An overall growth rate this small allows few margins for accumulation to invest for the future. As Benjamin Friedman (2005) has argued, substantial growth rates allow more groups to share to some degree in growth, and

Figure 1: Age Structures: Percentage of Population Under Age 15 (2005)



Red: 40+ Pink: 30–39 Light Blue: 20–29 Dark Blue: <20

Source: Data from UN Population Division (2007).

provide social resources for a variety of services and investments. Overall growth rates below 2 percent per year, by contrast, allow for little redistribution or investment, and tend to heighten social conflicts over such issues as pensions, migration, and labor/employer relations—situations we might see as the global economic downturn progresses.

At the same time, the populations of much of the developing world will be tilted in the opposite direction, to a larger percentage of youth (Fig. 1). The youngest countries—all in the developing world—will have populations with only about 5 percent above age 60, but with nearly 50 percent under age 14 (UN Population Division, 2007). While Europe and Japan will approach the mid-21st century with populations that are tilted toward the old, much of the developing world will have populations that are tilted toward the young (see map).

The obvious result of this imbalance is already taking place: a massive migration of young and working-age populations from the developing world to the developed world. Between 2000 and 2005, 2.6 million migrants moved each year to more developed countries from less developed regions (UN Population Division, 2006). Seeking new livelihood opportunities

and entry-level jobs, young people are irresistibly drawn from high-youth-density regions to those with a lower percentage of youth; the OECD countries currently host 10 million foreign-born immigrants ages 15-24 and 55 million between ages 25-64 (OECD, 2008).

Yet this immigration—increasingly contentious in the developed world—is not the only consequence of this imbalance. To sustain their elderly populations, Europe, Japan, and North America will have to spend more money on health care and pension support. Whether active or ailing, the elderly population will need intensive medical procedures and medications necessary to sustain an active and healthy life into older ages—at a time when the domestic supply of new doctors and nurses will likely decline.

Keeping the elderly population at work is not a solution; older workers will generally not welcome entry-level work at entry-level wages, nor physically demanding work. Those gaps in the labor force will have to be filled by younger workers. Moreover, while older workers excel in experience and judgment, they do less thinking “outside the box.” Path-breaking innovations in science and technology overwhelmingly come from those under age 45; countries with fewer



Muslim women and children eating cotton candy in Amsterdam (Courtesy flickr user CharlesFred; <http://www.flickr.com/photos/charlesfred/278131564/in/pool-euro-muslim>)

and fewer younger workers will likely lose an edge in innovation as well.

Developed nations can try to head off this impending growth slowdown in four ways. First, they can improve productivity by investing in technology, education, and innovation. An increase in productivity producing a 1 percent greater gain in output per capita per year would more than offset the change in population. Europe, in particular, should make it easier for individuals to start companies and use capital and labor flexibly to encourage entrepreneurial enterprises—which are the most important source of productivity-increasing growth (Goldstone, 2006). Universities should seek increased support for training and research in the most technically important fields of biology, materials science, and engineering, and offer incentives to steer more students to the technical and engineering fields.

Human capital must not be allowed to sit unused. In 2006, in the United States and Canada, roughly 63 percent of the population over age 16 were employed; in the EU-15, only 52 percent of people over age 16 were employed. Although some European countries had workforce participation rates of 60 percent or more, France, Germany and Spain were at

only 51-52 percent, and Italy at 46 percent (U.S. Department of Labor, 2008). Increasing Europe's overall employment participation rates to North American or upper European levels would by itself offset the decline in its working-age population for nearly a decade.

Secondly, countries could increase immigration and seek to raise immigrants' productivity and earnings to the average level as quickly as possible. While integrating and educating immigrants can take a generation or more, the United States, Australia, and Canada have enjoyed the benefits of making it easy for immigrants (especially skilled ones) to start businesses, acquire education, and move into the mainstream, such that the incomes of many immigrant groups exceeds the national norm. Even lower-skilled migrants can raise the overall productivity of a society, if they work for lower wages than had previously been paid to non-migrants for similar work.

Unfortunately, both in Europe and recently in the United States, debates on immigration have exposed the fear that immigration steals wealth from the native population. This pernicious view echoes the similarly mistaken idea that protecting trade by imposing high tariffs or blocking foreign investment will preserve the prosperity of a country. Migrants tend to



The most logical way to overcome the population distortions in varied regions will therefore be to ease the barriers to movement across borders to take advantage of the overall balance.

self-select for entrepreneurial talent, ambition, and energy, and therefore produce net gains for national economies that accept them (Simon, 1999). A European country (or Japan) that has lost much of its own demographic momentum and energy can ill afford to exclude new generations, even if they come from abroad.

A third way to head off this impending growth slowdown would be to pursue pro-natal policies that encourage larger families among the existing populations. However, it is not clear which policies would do this; demographers do not fully agree on the reasons underlying a baby boom. Unless societies start placing a higher worth on larger families than on expanding the consumption of consumer goods, small families will continue to be preferred. In richer countries, higher fertility is mainly found among more religious families, which is one of the factors accounting for much higher population growth in the United States than in Europe (Longman, 2006). Short of a religious revival in Europe, a major increase in fertility and family size seems the least likely solution to the continent's demographic and economic decline.

Fourth, and perhaps least discussed, encouraging a "reverse flow" of older migrants from developed to developing countries could create great benefits for both. If older migrants take their retirement along the southern coast of the Mediterranean, or in Latin America or Africa, it can greatly reduce the costs of their retirement. Of course, developing countries will need quality residential and medical facilities to make them desirable destinations. This effort could also counteract the constant drain of medical and nursing talent to rich developed countries. "Medical tourism" to many developing countries has already begun as residents of developed countries seek lower prices for medical procedures. Investing in facilities that will make long-term retirement attractive in cheaper locales will reduce the pension and medical cost burden for developed countries while channeling jobs and investment to developing countries with ample labor.

While Europe, the United States, and Japan will have older populations, and many nearby

developing countries will have young populations, the global population as a whole will be nonetheless be heading for a relatively healthy age distribution of population. The most logical way to overcome the population distortions in varied regions will therefore be to ease the barriers to movement across borders to take advantage of the overall balance.

No doubt, a combination of all four methods will be required to offset the slowdown in population growth in high-income countries. Yet we should recognize that one of the biggest obstacles is the growing antagonism between the West and much of the Muslim world. The way forward for the West lies in greater openness and integration, increased investment in growth abroad, better integration of immigrant communities, and reduced barriers to emigration from fast-growing but youthful societies. None of this is possible with the high levels of fear, mistrust, and antagonism between the West and populations of many of the largest and fastest growing countries of the world. We must reach the degree of cooperation necessary to respond to the global population changes already in place for the next half-century. Much more than terrorism, these trends will affect the long-term prosperity of the developed, but stagnating and rapidly aging, populations of the West, and the fast-growing and extremely youthful population of the developing and largely Muslim nations.

Notes

1. This article is based on a paper of the same title forthcoming in the *Mackinder Journal* and presented to the Mackinder Forum, Minster Lovell, United Kingdom, March 14-15, 2006. It was also presented to the Conference on Population Changes and Global Security, sponsored by the Federal Academy for Security Studies and Atlantik-Brücke, Berlin, Germany, November 13, 2006.

2. Migration is not a major factor in those countries experiencing substantial population growth, with the exception of the United States, where migration and the high birth rates of immigrants have produced exceptional population growth for a highly industrialized nation. In some other highly industrialized coun-

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Jack Goldstone and Eric Kaufman discussed “Flash Points and Tipping Points” in a Wilson Center webcast in February 2007: http://www.wilsoncenter.org/index.cfm?topic_id=1413&fuseaction=topics.event_summary&event_id=218994

The Global Report on Conflict, Governance, and State Fragility 2007: Gauging System Performance and Fragility in the Globalization Era, by Monty Marshall and Jack Goldstone, plots the profound split between “Haves” (about 15 percent of the global population) and “Have-nots,” while the report’s State Fragility Index and Matrix ranks countries according to their degree of stability: <http://www.fpbmonitor.com/action/reader?head=scorecard&jid=FPB>

Jack Goldstone and Monty Marshall presented the *The Global Report on Conflict, Governance, and State Fragility* in a Woodrow Wilson Center webcast in March 2007: http://www.wilsoncenter.org/index.cfm?fuseaction=events.event_summary&event_id=225091

tries—the United Kingdom, France, the Netherlands, and the Scandinavian countries—migration is offsetting decline or stagnation in the native-born population, but it is not sufficient to substantially increase the population. For example, the projected growth rate in the United Kingdom to 2025, including migration, is only 0.32 percent per annum.

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Half a Chance: Youth Bulges and Transitions to Liberal Democracy

Is it over? Has democracy’s “third wave”—the virtually uninterrupted uptick in the number of democracies since the early 1970s described by Samuel Huntington (1991)—finally spent all of its momentum? Some analysts contend that it has, and that a reverse wave of neo-authoritarianism is already on the rise (Diamond, 1996; Carothers, 2002). In this article, I argue that the recent leveling-off in measures of global democracy is temporary, and that as youthful demographic profiles mature, new and more stable liberal democracies are likely to arise before 2020 in Latin America, North Africa, and Asia.

Why such optimism? Because my analysis of recent demographic and political trends shows that countries with a large proportion of young adults in the working-age population (referred to as a “youth bulge”) are much less likely to attain a stable liberal democracy than countries with a more mature age structure. If fertility continues to decline and age structure continues to mature in many of the world’s current

youth-bulge countries, analysts should expect most of these states to ultimately attain and maintain liberal democracy. Of course, there will be exceptions; since the early 1970s, charismatic authoritarian leaders and single-party ideological elites have demonstrated a capacity to resist democratization, persisting even as their countries’ age structures matured.

In my analysis, I compared two measures: (1) the youth-bulge proportion—defined as the proportion of young adults (ages 15 to 29) in the working-age population (ages 15 to 64)—which is derived from estimates and projections published by the UN Population Division (2007); and (2) liberal democracy, which is identified by a rating of “Free” in Freedom House’s (2008) annual evaluations of political rights and civil liberties (from 1972 to 2007).¹

The Youth Bulge: Constraining Liberal Democracy?

Clues to the relationship between the youth bulge and liberal democracy can be seen in the wake of demographic changes that swept through much of East Asia and Latin America in the late 1980s and 1990s. In response to declines in women’s fertility, the proportion of young working-age adults in about a dozen countries dropped steeply, to between 0.36 and 0.42. When it did, liberal democracies evolved in most of these countries, with little of the military preemption and backsliding that previously typified their regions—with the recent notable exception of Thailand (see Fig. 1).

In contrast, where liberal democracy emerged before a large youth bulge declined—

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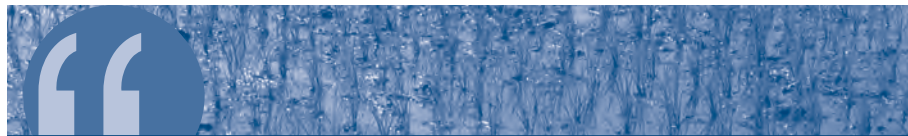
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as in Colombia, Ecuador, Fiji, India, Malaysia, Papua New Guinea, Peru, Sri Lanka, Turkey, Venezuela, and numerous others—regimes failed to stabilize, retreating to less democratic practices and institutions of governance. In some cases, deliberalization occurred periodically, as in Turkey and India. In others, such as Malaysia and Fiji, the preemption has lasted for decades.

The Youth Bulge and the Hobbesian Bargain

Why should a youthful age structure influence political regimes? Numerous studies have concluded that countries with a large youth-bulge proportion experience a high risk of political violence and civil strife (Leahy et al., 2007; Urdal, 2006; Mesquida & Wiener, 1996). Assuming, as Thomas Hobbes did in the middle of the 17th century, that citizens are willing to relinquish liberties when faced with threats to their security and property, it is not surprising that support for authoritarian regimes should rise—especially among the commercial elite—during a large youth bulge, when much of the population is young and jobless. Youth bulges tend to give rise to youth cultures that coalesce around distinctive identities and untempered ideologies, and find expression through experimentation and risk-taking. Such conditions, some theorists argue, facilitate the political mobilization and recruitment of young adults—particularly young men—by non-state and state-supported organizations capable of political or criminal violence (see Goldstone, 1991; Moller, 1967/68).

The influence of a youthful age structure on regime type can be understood as a two-stage process.² Countries with a large proportion of young adults find themselves in the first stage: They are saddled with a social environment where the regime’s legitimacy is strained and the political mobilization of young men is relatively easy. The resulting politics tend to be fractious and potentially violent. In this stage, regimes typically concentrate resources on preserving



Countries with a large proportion of young adults in the working-age population (referred to as a “youth bulge”) are much less likely to attain a stable liberal democracy than countries with a more mature age structure.

their position by limiting dissent and maintaining order, a focus that engenders the support of commercial elites and other propertied segments of society.

States can make democratic gains during this stage, and are sometimes pressured into political reforms by youth-led democracy movements. Yet countries with large youth bulges do not usually attain a high level of civil liberties and political rights. When they do—when enlightened authoritarians impose a “democratic legacy” under youth-bulge conditions, or when democratic institutions are imposed at independence or as part of a treaty—these gains face unfavorable odds. Countries that sustained a liberal democracy over periods of youth-bulge conditions (such as Costa Rica, India, Jamaica, and South Africa) have shown extraordinary dedication to maintaining democratic institutions under the stresses of ethnic violence, intense criminal activity, or external threat.

In the second stage, the dissipation of a large youth bulge tends to yield relative political calm and a “demographic dividend”: a decline in the number of children each working adult has to support and a bulge in the middle-aged section of the working-age population, which relieves pressure on child health and educational services, stimulates savings, contributes to productivity, and facilitates increased human capital investment and, ultimately, wage growth (see

A woman in Liberia holds up her inked finger indicating she voted in the first democratic elections in Liberia following 14 years of civil war. According to the “half a chance” benchmark, Liberia’s democracy is one of the most fragile. (© 2005 Omar Eid, courtesy of Photoshare)



Bloom et al., 2002; Lee & Mason, 2006).

With much of society’s political volatility depleted, authoritarian executives tend to lose the support of the commercial elite, who find the regime’s grip on communication and commerce economically stifling and the privileges granted to family members and cronies of the political elite financially debilitating. As both Huntington (1991) and Schmitter (1980) have noted, political calm and improved economic and social conditions—which usually advance hand-in-hand with the maturing of age structures—provide authoritarians with opportunities to make a deal for a safe exit.

The Probability of Liberal Democracy: A Schedule

By dividing the world into five regions and analyzing data every five years beginning in 1975, I found (with surprising consistency) that as the regional average of the proportion of young adults declined, the number of liberal democracies grew.³ Averaging all countries, I found that a youthfully structured country has a 50 percent chance of being rated a liberal

democracy once its young-adult proportion drops to about 0.40.⁴

This “half-a-chance benchmark” has, in the recent past, provided a fair indication—plus or minus a decade—of when a country will become a stable liberal democracy. Equipped with this basic statistic, as well as population estimates and projections, I arranged a timetable identifying each country’s current probability of liberal democracy and the year in which each youth-bulge country passed, or is projected to pass, the half-a-chance benchmark. The map (Fig. 2) highlights five categories of interest to analysts:

- Fragile liberal democracies (probability of liberal democracy is 40 to 60 percent);
- The most fragile liberal democracies (probability less than 40 percent);
- Other regime types projected to have more than 50 percent probability of attaining stable liberal democracy before 2030;
- Other regime types with a less than 50 percent probability of attaining stable liberal democracy before 2030; and
- Other regimes that are demographically long overdue for liberal democracy (probability is greater than 70 percent)—this category includes, and helps define, neo-authoritarian regimes.

Outliers: Resistant Authoritarians and Persistent Liberal Democracies

How well does this timetable work? It performed most accurately when forecasting liberal democracy among states ruled by military “caretaker” regimes, weak personal dictatorships, or partial democracies. However, a close inspection of this method’s failures suggests that the demographic changes (and associated social and economic changes) it tracks are too weak to undermine regimes dominated by a strong and charismatic authoritarian, such as Russia’s Vladimir Putin, Cuba’s Fidel Castro, or Singapore’s Lee Kwan Yew; or by a unified ideological elite deemed synonymous with the state, such as the Chinese Communist Party. Interestingly, these regimes’

Figure 1: Freedom Scores and the Proportion of Young Adults in the Working-Age Population

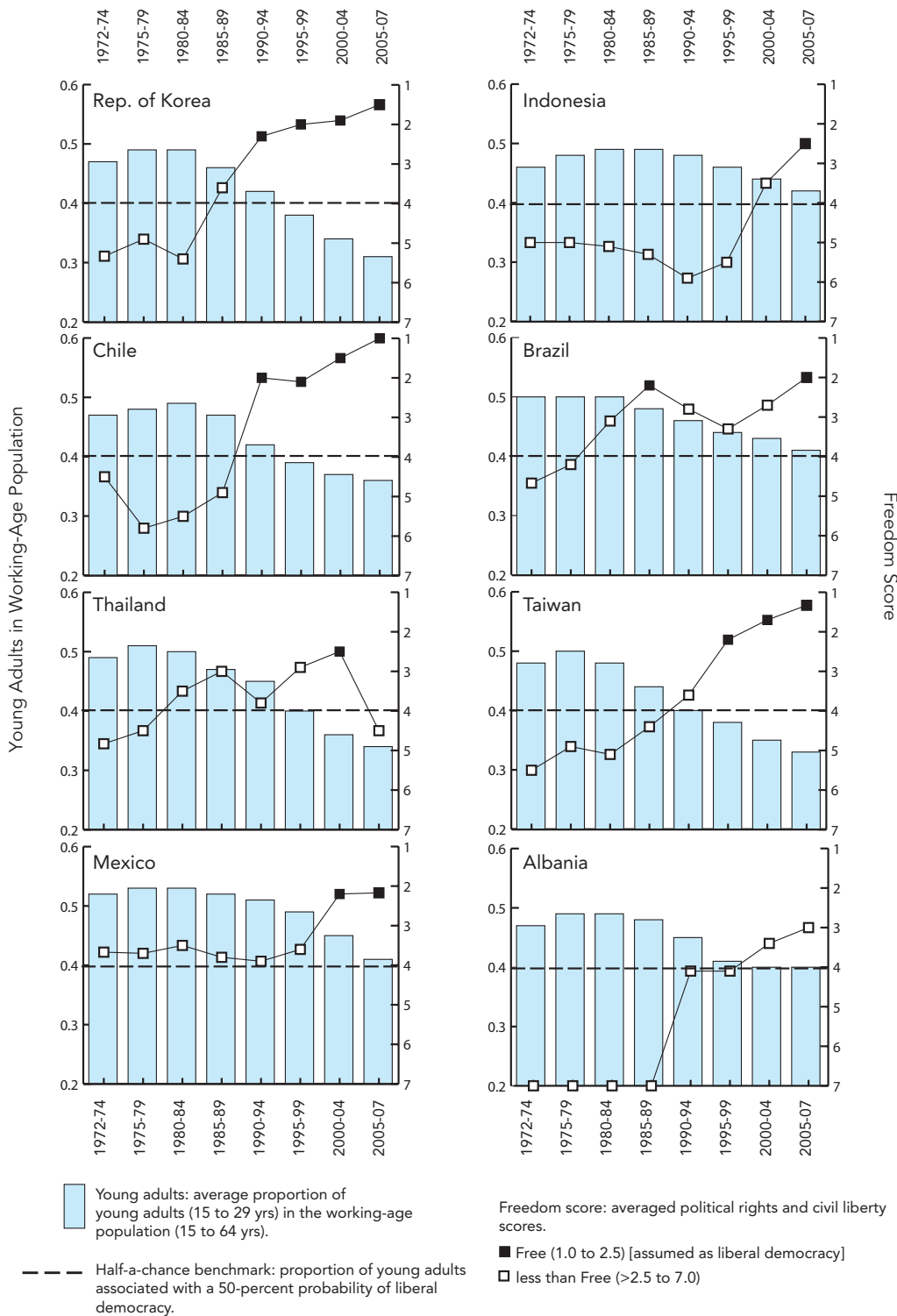
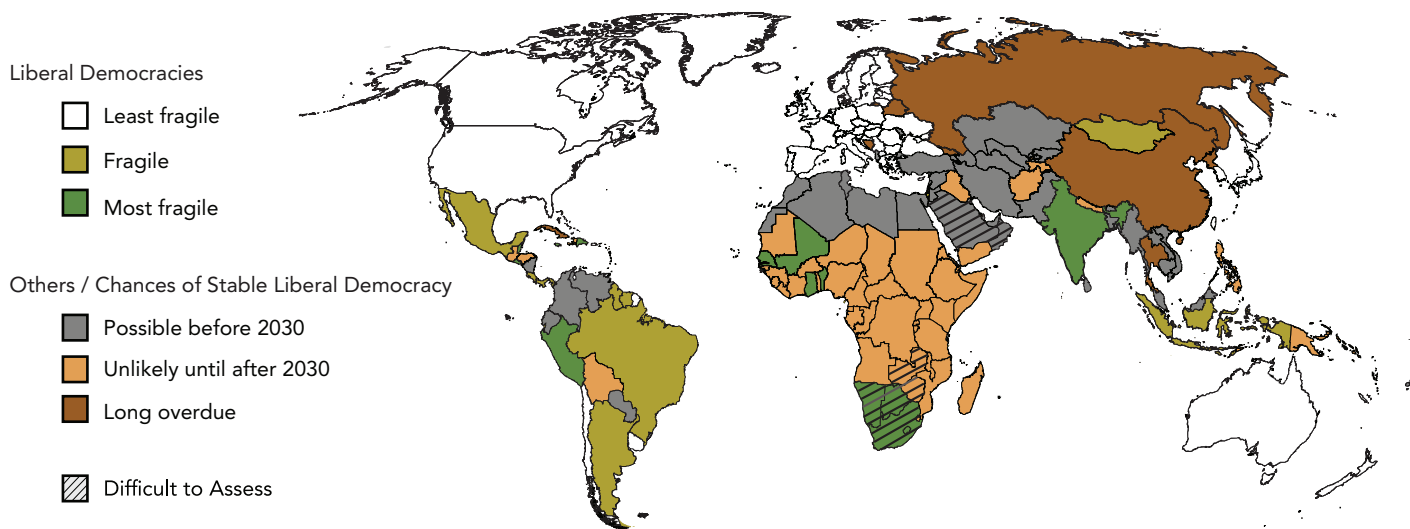


Figure 2: Demographically Derived Categories (2008)



Source: Data from Freedom House (2008); UN Population Division (2007). Map produced by Esther Akitobi, research assistant at Population Action International.

Note: The age structures in countries marked "difficult to assess" are heavily impacted by HIV/AIDS or immigration.

institutions and policies may have evolved, and may continue to evolve, to withstand and counter the liberalizing side-effects of demographic and socio-economic changes.

The method also identifies states that became liberal democracies far ahead of schedule. Latin American countries have tended, as a group, to embrace liberal democracy while hosting a large youth bulge, which may partly explain why 60 percent of these states have flip-flopped between a liberal democracy and a less democratic regime at least once since the early 1970s, far more than any other region.

A Test: Eastern Europe and Former Soviet States

The youth-bulge method can be tested by predicting regime patterns among the Eastern Bloc states: the former-communist states of Eastern Europe and their ex-Soviet neighbors. While these 28 states are quite different, their collective experience as single-party autocracies provides some common starting points.⁵ To prove useful, the method I have outlined should predict, with reasonable accuracy, the proportion and distribution of liberal democracies among

these states, with some allowance for delays and complications due to the persistence of Soviet-era political institutions and instabilities.

Does the youth-bulge method pass this test? Yes; by 2007, the average young-adult proportion among the Eastern Bloc countries had declined to 0.36. Meanwhile, the region's proportion of liberal democracies plodded upward to 46 percent since the early 1990s—close, but still short (by three liberal democracies) of the 57 percent that was predicted. Better yet, the distribution of regimes that emerged is consistent with the method's expectations: Liberal democracies dominate the category with the lowest young-adult proportions (Fig. 3).

Is this evidence sufficient to claim that a youthful age structure is the sole constraint to greater political liberalization in the lagging Eastern Bloc states? No, not at all; the countries that, so far, have not attained liberal democracy show geographic affinities and similarities in their per capita income and urbanization—factors that are also associated, to some degree, with the pace of demographic transition. Because income measures are difficult to predict, they do not provide a simple means to project a timetable for liberal democracy.



The dissipation of a large youth bulge tends to yield relative political calm and a "demographic dividend."



Hindu pilgrims protest against the local government. According to the “half a chance” benchmark, India’s democracy is one of the most fragile. (© 2007 Arup Halder, courtesy of Photoshare)

Forecasting Liberal Democracy

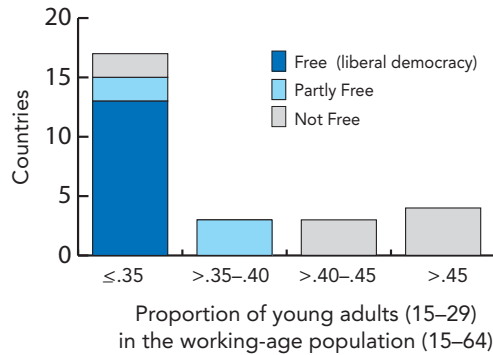
If this relationship continues to hold, demographic projections could help analysts identify regions, and states within regions, that in the near and medium term are likely to experience population age structures that are conducive to liberal democracy—and those where liberal democracy is at risk. Nearly all of the countries in two geographical sub-regions are projected to pass the half-a-chance benchmark by 2020: those along the northern rim of Africa (Morocco, Algeria, Tunisia, Libya, and Egypt) and along the northwestern rim of South America (Colombia, Venezuela, and Ecuador). None of these North African states has previously attained liberal democracy, while Colombia, Venezuela, and Ecuador reached these heights early, and then retreated. Analysts should expect one or more liberal democracies arising in each of these sub-regions by 2020 or before. Other countries, which are not currently liberal democracies, that are projected to pass the half-a-chance benchmark before 2020 include Albania, Armenia, Azerbaijan, Iran, Kazakhstan,

Kyrgyzstan, Lebanon, Malaysia, Myanmar, Turkey, Turkmenistan, and Vietnam.

Admittedly, several of these states face daunting impediments to completing their democratic reforms. For Colombia, Algeria, and Lebanon, further liberalization is unlikely while non-state actors threaten lives and property, control territory, and operate state-like institutions and militias. Yet the age-structural clock is ticking; as fertility declines and populations mature, recruitment will likely become more difficult and more expensive, helping diminish the already-dwindling field strength of insurgencies, whittling them to a small criminalized core, or pressuring them to focus their resources on electoral politics (as in the evolution of Northern Ireland’s “Troubles”).

In several states, regimes will be able to stall or resist. For example, Vietnam’s communist party and Iran’s clerical non-elected leadership bear similarities to other state elites that have withstood the tide of age-structural change. On the other hand, Venezuela’s President Hugo Chávez, having lost a constitutional referendum in November 2007 that would have augmented

Figure 3: Freedom Ratings of 28 Former Communist Eastern European and Asian States



Data sources: Freedom House (2008); UN Population Division (2007).

his constituency by lowering the voting age to 16, is left with only non-electoral means to dismantle checks on his own authority—a heavy-handed tactic that, when previously applied by Chávez, has alienated influential supporters.

Beyond Prediction: Southern Africa, the Gulf States, and the Future of Europe

Two clusters of countries with extraordinary age structures were omitted from this analysis: (1) the seven most seriously AIDS-affected countries (Botswana, Lesotho, Namibia, South Africa, Swaziland, Zambia, and Zimbabwe), where premature adult mortality buoys a high proportion of young adults; and (2) the six oil-rich Gulf States (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates), where large populations of foreign workers mask more youthful indigenous populations. This demographic method provides little insight about governance in either of these clusters.

For example, highly elevated death rates among people 20 to 55 years old and the persistence of very youthful age structures in the

most seriously AIDS-affected states—while the source of great suffering among individuals, families, and communities—has not led to the state failures that analysts once feared, but instead to a confusing *mélange* of outcomes. Four states are rated liberal democracies (Botswana, Lesotho, Namibia, and South Africa), while two others are among the most autocratic (Swaziland and Zimbabwe). In the oil-rich Gulf States, the composite age structure—the sum of a foreign-worker population overlaid on a much younger, socioeconomically and ethnically separate age structure of citizens—produces misleading indications of age-structural maturity, and therefore overlooks both the political volatility of Arab youth culture in the Gulf States and grievances arising among foreign workers (Henderson, 2006).

As age structures have matured, the speed of ethnic shifts has quickened. The list of these relative shifts is long, including: increased proportions of indigenous populations in Latin American states; growing numbers of Arabs and ultra-Orthodox Jews in Israel; and larger populations of Muslims in Western Europe. How will democracies respond to the emergence of ethnic groups who previously have been political outsiders? Will the liberal democracies of European welfare states retain their suite of liberties and generous social programs as they undergo dramatic ethnic shifts? On these weighty topics the youth-bulge method is unresponsive.

Summary

By focusing exclusively on the institutional reforms and changes in political leadership that precede political liberalization, analysts have overlooked the influence of population age structure on the timing and stability of liberal democracy. My analysis provides evidence suggesting that a youthful age structure—indicated by a large proportion of young adults in the working-age population—can constrain liberal democracy and destabilize it. This research also

shows that the calculation of a country's youth-bulge proportion can be used to assess a liberal democracy's fragility, identify uncommonly persistent authoritarian regimes, and generate reasonable and testable expectations for the advent and stability of liberal democracy.

Notes

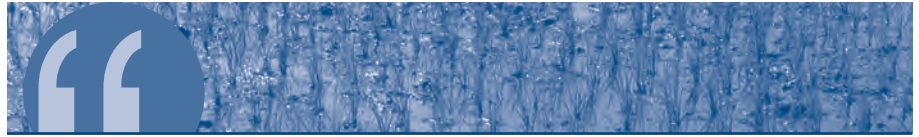
1. This analysis includes countries with a minimum 2020 population of 500,000 people and uses Freedom House composite scores, which are the average of political rights, "PR" (scaled 1 to 7, with 1 being the maximum realization of political rights), and civil liberties, "CL" (similarly scaled 1 to 7). The category "Free" is assigned to assessments where the average of PR and CL scores ranges from 1.0 to 2.5.

2. The theoretical breakdown of this process was first presented by Jack Goldstone at a seminar on democratization processes sponsored by the National Intelligence Council, March 2008.

3. The five regions are: North and South America, Europe (including Russia), Middle East-North Africa, sub-Saharan Africa, and other Asia-Oceania. This analysis omits two sets of countries with irregular (non-transitional) age structures: the seven countries with high rates of HIV/AIDS and the six Gulf States with a large immigrant population.

4. This analysis employs weighted least-squares regression to determine regression coefficients and intercepts for linear models generating the proportion of liberal democracies expected in a region (Y) from the average proportion of young adults (X) among countries in that region (not the regional young-adult proportion). Seven regressions were generated, one for each five years, from 1975 to 2005. None of the regression parameters from these were statistically different. The regression equation for these composite data are: $LD = -0.033(YA*100)+1.83$, where LD is the expected proportion of liberal democracies in a regional grouping of countries and YA is the proportion of young adults, age 15 to 29, in the working-age population, 15 to 64. This analysis also has been performed using Polity IV data, assuming liberal democracy as polity scores from +8 to +10, with very similar results.

5. The former Eastern Bloc states are Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Poland, Serbia, Slovak Republic, Slovenia, Romania, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.



Latin American countries have tended, as a group, to embrace liberal democracy while hosting a large youth bulge, which may partly explain why 60 percent of these states have flip-flopped between a liberal democracy and a less democratic regime at least once since the early 1970s, far more than any other region.

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REPORT ONLINE

Two graphics accompanying Richard Cincotta's *Foreign Policy* magazine article, "How Democracies Grow Up," are available online:

A map of "The Young World" indicates the year when each country is projected to pass the "half-a-chance" benchmark based on the proportion of young adults in the working-age population: www.foreignpolicy.com/story/cms.php?story_id=4199

"Where Youth and Freedom Collide" illustrates the likelihood of liberal democracy at various youth-bulge proportions: www.foreignpolicy.com/story/cms.php?story_id=4174

Freedom House rates countries as "free," "partly free," or "not free" based on assessments of their political rights and civil liberties: www.freedomhouse.org/uploads/FIWAIScores.xls

Map of Freedom in the World, 2008 edition: www.freedomhouse.org/template.cfm?page=363&year=2008

Along with fellow *Report 13* author Jack Goldstone, Cincotta assessed the evidence for "the security demographic" at the Wilson Center in June 2006: http://www.wilsoncenter.org/index.cfm?topic_id=1413&fuseaction=topics.event_summary&event_id=205876

Two previous *ECSP Report* articles by Cincotta analyze different aspects of the links between age structure and conflict:

"Population Age Structure and Its Relation to Civil Conflict: A Graphic Metric" (coauthored by Elizabeth Leahy): <http://www.wilsoncenter.org/topics/pubs/PopAgeStructures&CivilConflict12.pdf>

"Demographic Security Comes of Age": http://www.wilsoncenter.org/topics/pubs/ecspr10_C-cincotta.pdf

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Population in Defense Policy Planning

In 1974, the National Security Council expressed concern that population growth in less-developed countries would increase competition for resources, as a result of its assessment of “the likelihood that population growth or imbalances will produce disruptive foreign policies and international instability” (Kissinger, 1974, p. 1). Today’s defense community has a broader view of the connections between demography and security, focusing less on competition for resources or on population policies to stem growth and more on a wider range of population issues, such as age structure and migration. But government interest in the influence of population on stability and foreign policy remains high—and, since 9/11, has intensified.

To prepare for terrorist attacks and other irregular, non-state challenges, the Department of Defense (DoD) has begun to seriously examine the roles of demography, ethnic and national identity, and environmental issues in disrupting state stability and instigating conflict. While some in the government have long recognized the importance of these issues, the most recent Quadrennial Defense Review (QDR), released in February 2006, encouraged the systematic analysis and incorporation of these factors into a comprehensive national security framework. For example, the 2006 QDR directed DoD to build partnership capacity, to shift from “conducting activities ourselves to enabling partners to do more for themselves” (Rumsfeld, 2006, p. 2). DoD recognizes that the inability of some states to meet the needs of their growing populations may impede this goal; instead of increasing the ability of partners to aid in achieving U.S. goals, domestic strains are likely to hamper these states’ efforts to defend their borders and prevent the spread of terrorist networks. In this article, I

outline the military and intelligence communities’ interests in population trends in three key regions—the Middle East, Central Asia, and Africa—and describe their use of demography to support military planning and strategy.

Four Trends for Defense

Interest in population trends has recently increased due to the wars in Iraq and Afghanistan, as well as the launch of the new Africa Command (AFRICOM). Four global demographic trends are particularly relevant to U.S. defense planning in these regions: youthful populations, changes in military personnel, international migration, and urbanization.

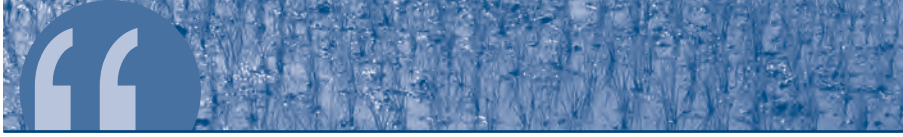
Youthful Populations

In the Middle East and Africa—the two fastest growing regions in the world—between 30 and 50 percent of the populations in most countries

Jennifer Dabbs Sciubba is a Mellon Environmental Fellow in the Department of International Studies at Rhodes College. She has been a consultant for Policy Planning in the Office of the Secretary of Defense at the U.S. Department of Defense, where she developed several projects linking specific demographic trends to security issues. Sciubba received her doctorate from the Government and Politics Department at the University of Maryland. The views expressed in this article are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. government. (Photo by David Hawxhurst, Woodrow Wilson Center)

**JENNIFER
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The United States does not have a robust and comprehensive strategy for targeting the connections between youth and conflict. Given that 45 percent of the Afghan population is under age 15, victory—in whatever form—will remain elusive as long as this segment of the population is marginalized.

are under age 15 (PRB, 2007). These huge youth cohorts—commonly known as “youth bulges”—can be desperate or disgruntled if they have few economic or political opportunities. Lack of employment may also prevent them from getting married or participating in other traditional rites of passage. Youth bulges and armed conflict are strongly correlated, especially in underdeveloped countries (see, e.g., Urdal, 2006). Thus, the Middle East and Africa are likely to become more turbulent as the population grows and remains youthful, especially where young people lack job opportunities or other positive outlets. In Africa, the already-dire situation is compounded by the prevalence of deadly infectious diseases—such as HIV/AIDS, malaria, and tuberculosis—that kill the most productive segments of society.

Through Operations Enduring Freedom and Iraqi Freedom, as well as larger efforts to combat global terrorist networks, the U.S. military is highly engaged in these regions. However, the United States does not have a robust and comprehensive strategy for targeting the connections between youth and conflict. Given that 45 percent of the Afghan population is under age 15, victory—in whatever form—will remain elusive as long as this segment of the popula-

tion is marginalized (PRB, 2007). Ongoing programs to build schools and improve education, such as those carried out by the Combined Joint Task Force-Horn of Africa under U.S. Central Command, are a start, but more concentrated efforts to engage children and youth in positive activities would not only improve their attitudes toward U.S. soldiers, but would also empower them to contribute to rebuilding their societies.

U.S. soldiers helping to construct some schools and distribute educational supplies may improve public relations, but as part of U.S. strategy for the Middle East and Africa, DoD should focus on training and engaging youth in more meaningful ways. Programs that focus on leadership skills and encourage peaceful contact between youth and U.S. military personnel would be a start. The discipline and leadership required of soldiers makes them good role models for youth in developing states, and the more meaningful interactions these youth have with soldiers, the more successful DoD will be in encouraging stability in these volatile regions. The nature of conflict is changing, leading the U.S. military to undertake such new and innovative missions and roles.

Military Personnel

Demographic trends in fertility and mortality rates can directly affect a military’s recruiting pool. Diseases like HIV/AIDS, malaria, and tuberculosis are weakening African militaries at the same time that conflict may be increasing due to more youthful populations, strained resources, and a lack of governance. HIV/AIDS has devastated the most productive segments of African society, especially its military-age population (PRB, 2008). Although there is little comprehensive data, UN and government reports show that infection rates in many African militaries are slightly higher than in the general population, as rates are exacerbated by the extended time soldiers spend away from home, easier access to money for prostitutes and drugs, and risky behavior characteristic both of



Spc. Josh Jenkins, a medic of the 82nd Airborne Division, inspects an Afghani child for symptoms of pink eye, on Sept. 30, 2002, Kandahar, Afghanistan. Jenkins is part of the Psychological Operations (PSYOP) teams, humanitarian aid package that goes out on daily patrols to local villages to help build a positive rapport with the local communities and U.S. Forces. (Photo by Spc. Marshall Emerson; courtesy U.S. Army)

the young in general and military culture in particular (Garrett, 2005). The U.S. military is concerned that these diseases could have a devastating effect on African peacekeeping forces, as well as on efforts of Americans and Africans to work together against terrorism.

In many countries in the Middle East, growing youthful populations mean the pool of potential recruits is too big—and the military is one of the few employment outlets for young men in a region where jobs are scarce. In Iraq under Saddam Hussein, young Sunni men joined the military, but now that the Iraqi system has been disrupted, youth are increasingly vulnerable to recruitment by extremists. With few ways to earn a living and support their families, many young Iraqi men are more willing to accept a couple of hundred dollars—or less—to plant a roadside bomb or take up arms for warring factions. Unless economic development accompanies U.S. efforts in Iraq and these young men are able to find legitimate employment, they will continue to be more susceptible to recruitment by anti-U.S. groups.

International Migration

Large-scale movements of people can change the composition of a country's population within days or weeks—much more quickly than fertility and mortality trends. When people move, so do their politics; clashes of identity and interests may lead to conflict or create deep social divisions. In the Middle East and Africa, migration is often conflict-driven. The millions displaced by troubles in Sudan and Iraq, for example, could potentially carry their domestic political skirmishes across borders and further disrupt these regions. Already, environmentally induced migration in South Asia has caused conflict. Since the 1950s, 12-17 million Bangladeshis have moved to India because of floods, drought, land scarcity, and other environmental conditions. This migration led to violence between eastern Indians and Bangladeshis in the 1980s (Reuveny, 2007).

UNHCR (2007) estimates that more than two million Iraqi refugees are elsewhere in the Middle East—more than one million in Syria alone. Governments in the region have been



Unmet expectations in overcrowded cities can be the catalyst for civil conflict.

struggling to meet the needs of this displaced population and provide social services, jobs, and housing. Tensions between citizens of the receiving states and the refugees are producing social strife in an unstable region and overly burdening governments that already have trouble providing for their populations. While internal strife could potentially unseat regimes that are unfriendly to the United States, like Iran, there is no guarantee that the new government would be a more peaceful or stable one. The United States is seeking to build the capacity of states in the Middle East to address their internal issues and aid in the war on terror by encouraging stable governments that could stem sectarian violence, but international migration will continue to challenge these efforts in the region.

Urbanization

Two major global urbanization trends could challenge the U.S. military to continue to increase its global role: the growing concentration of people in megacities and coastal areas and the growth of urban slums. By 2020, all but four of the world's megacities—those cities with more than 10 million people—will be in developing states (UN-HABITAT, 2006c). In addition, 75 percent of the world's population already lives in areas that were affected by at least one natural disaster between 1980 and 2000 (UN-HABITAT, 2006a). Megacities and coastal cities in developing countries lack the infrastructure to withstand most disasters and the capacity to deal with the after-effects. The vulnerability of these areas will likely increase demand for stability operations (military efforts to maintain or restore order) and humanitarian assistance. Though these increased requirements may strain U.S. capabilities, conducting stability operations or providing humanitarian assistance could also help build a positive image of the U.S. military abroad, as demonstrated by the relief efforts following the 2004 Southeast Asian tsunami and the 2005 Pakistani earthquake. Soldiers can also increase their own cultural awareness by engaging with locals in areas

where they otherwise would not be deployed.

Whereas urbanization in developed states offers benefits to city residents—sanitation, education, jobs, and transportation—slums offer no such services or governance. “Slumization” in sub-Saharan Africa increases ungoverned areas and the potential for internal instability, and thus provides an environment conducive to terrorist recruitment and activity. Rapid urbanization can increase the risk of civil conflict: “During the 1990s, countries with urban population growth rates greater than 4 percent a year were twice as likely to experience civil conflict than those where urban growth was more paced” (UN-HABITAT, 2006b, p. 1).

In most slums and cities in developing states, population growth is outpacing the ability of the state to create jobs for these citizens and to build infrastructure to accommodate concomitant growth in pollution and sewage. Such unmet expectations in overcrowded cities can be the catalyst for civil conflict. Urban instability—as we have seen in Iraq—requires that U.S. forces be prepared for a variety of missions in urban environments, and could increasingly blur the distinctions between police and military functions.

Opportunities to Address These Trends in Current Policy

The defense community has three major opportunities to address these trends and implications through policies aimed at the Middle East, Africa, and Central Asia. First, the establishment of AFRICOM demonstrates recognition that the military and intelligence communities should be more anticipatory, rather than reactionary. In planning for the roles and missions of this command, DoD—in partnership with the intelligence community—should develop strategies to mediate effects of HIV/AIDS, conflict-driven migration, and youthful populations. For example, the military could devise programs that engage youth through leadership training and through their involvement in building infrastructure alongside soldiers. AFRICOM may also offer more opportuni-



Sgt. Freddy Valdez, assigned to the 27th BSB, 4th BCT, 1st Cav. Div., attempts to reach a soccer ball before an Iraqi MTR Soldier with the 10th IA Div., can kick the ball away during a soccer match at Contingency Operations Base Adder in southern Iraq Oct. 23, 2008. The contest was an effort to further strengthen the two units' partnership in stabilizing Iraq. (Photo by Maj. Jesse Henderson; courtesy U.S. Army)

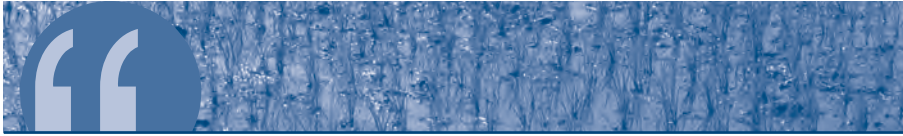
ties to partner with African militaries to help them combat HIV/AIDS, by expanding HIV/AIDS education and leadership training—some of which can be funded under existing foreign military training and education programs.

Second, DoD could continue to take demographic issues into account when crafting the next iterations of policy planning documents, as it did in the latest National Defense Strategy (see brief on page 26). The NDS and other policy reports analyze long-term trends (like climate change, globalization, and technology) and help shape the types of programs DoD funds, the capabilities the military develops, and priorities for intelligence collection. Analyzing demographic issues in the Middle East and Central Asia is also a robust piece of the strategy for winning the “long war.”

Finally, the defense and intelligence communities must recognize their limited ability to

influence these trends. According to the standard division of labor within the U.S. government, the intelligence community is tasked with providing analysis, not recommending or implementing policies that address these population concerns. And, while it is within the scope of the military’s mandate to prepare for humanitarian missions and stability operations, devising education programs for youthful populations and even distributing aid requires the help of partners in other agencies. DoD will need to partner with the U.S. Agency for International Development and non-governmental organizations; many of these agencies are better suited to work with local populations and can function as advisors and planners.

While interaction among the agencies at all personnel levels is frequent, fostering the type of large-scale collaboration necessary to address demographic trends requires two key steps.



The military does not always have the tools to address these population and development issues, but by drawing on a wider community for support, they lessen the chances that they will have to deal with the consequences.

First, it needs the support and encouragement of senior leadership, both political appointees and career civil servants, in all departments. Second, top-down direction from Congress and the executive branch could help institutionalize the process.

Additionally, in its dealings with Congress, the military can voice its support for development in the Middle East, Africa, and Central Asia, and communicate the connections between demographic issues and security. DoD could also encourage congressional funding for necessary programs. The military does not always have the tools to address these population and development issues, but by drawing on a wider community for support, they lessen the chances that they will have to deal with the consequences.

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REPORT ONLINE

The latest National Defense Strategy, released in June 2008 by Secretary of Defense Robert M. Gates, recognizes the security risks posed by both population growth and deficit—due to aging, shrinking, or disease—the role of climate pressures, and the connections between population and the environment: <http://www.defenselink.mil/news/2008%20national%20defense%20strategy.pdf>

The Department of Defense's Stability Operations Capabilities notes that "integrated military and civilian operations are the now the norm with most military operations taking place in the midst of civilian populations. U.S. military forces must be prepared to support civilian stabilization and reconstruction efforts and to lead and conduct these missions when civilians cannot": http://www.defenselink.mil/policy/sections/policy_offices/solic/stabilityOps/

LTC Shannon Beebe (USA), senior Africa analyst at the Department of the Army, wrote in the *New Security Beat* that "security in Africa depends heavily on non-military factors that fall outside the traditional purview of the armed forces. For AFRICOM to be successful, it must approach security as a mutually beneficial proposition, not a zero-sum game": <http://newsecuritybeat.blogspot.com/2007/07/guest-contributor-shannon-beebe-on.html?showComment=1221690660000#c9183747927274650178>



Sgt. Catherine Olivarez looks over a toddler during a medical civil action program, July 24, 2008, at a village school in Goubetto, Djibouti. Olivarez is a medic with the 345th Civil Affairs Brigade working with Combined Joint Task Force-Horn of Africa (JTF-HOA). On Oct. 1, 2008, the Department of Defense stood up U.S. Africa Command, or AFRICOM. (Photo by Air Force Tech Sergeant Jeremy T. Lock; courtesy JTF-HOA)

Environment, Population in the 2008 National Defense Strategy

by JENNIFER
DABBS
SCIUBBA

Source: *The New Security Beat*,
<http://newsecuritybeat.blogspot.com>

The 2008 National Defense Strategy (NDS; Gates, 2008), released by the U.S. Department of Defense (DoD) in July, delivers the expected, but also throws in a few surprises. The NDS reflects traditional concerns over terrorism, rogue states, and the rise of China, but also gives a more prominent role to the connections among people, their environment, and national security. Both natural disasters and growing competition for resources are listed alongside terrorism as some of the main challenges facing the United States.

This NDS is groundbreaking in that it recognizes the security risks posed by both population growth and deficit—due to aging, shrinking, or disease—and the role of climate pressures, and the connections between population and the environment. In the wake of the Intergovernmental Panel on Climate Change reports on climate change and the 2007 CNA study on climate change and security, Congress mandated that the NDS include language on climate change. The document is required to include guidance for military planners to assess the risks of projected climate change on the armed forces (see Section 931 of the FY08 National Defense Authorization Act). The document also recognizes the need to address the “root causes of turmoil”—which could be interpreted as underlying population-environment connections, although the authors provide no specifics. One missed opportunity in the NDS is the chance to explicitly connect ungoverned areas in failed or weak states with population-environment issues.

What really stands out about this NDS is how the authors characterize the future security environment: “Over the next twenty years physical pressures—population, resource, energy, climatic and environmental—could combine with rapid social, cultural, technological and geopolitical change to create greater uncertainty,” they write. The challenge, according to DoD, is the uncertainty of how these trends and the interactions among them will play out. DoD is concerned with environmental security issues insofar as they shift the power of states and pose risks, but it is unclear from the NDS what pre-

cisely those risks are, as the authors never explicitly identify them. Instead, they emphasize flexibility in preparing to meet a range of possible challenges.

The environmental security language in this NDS grew out of several years of work within the Department, primarily in the Office of Policy Planning under the Office of the Under Secretary for Defense, to study individual trends, such as population, energy, and environment, as well as a series of workshops and exercises outlining possible “shocks.” For example, the NDS says “we must take account of the implications of demographic trends, particularly population growth in much of the developing world and the population deficit in much of the developed world.”

Finally, although the NDS mentions the goal of reducing fuel demand and the need to “assist wider U.S. Government energy security and environmental objectives,” its main energy concern seems to be securing access to energy resources, perhaps with military involvement. Is this another missed opportunity to bring in environmental concerns, or is it more appropriate for DoD to stick to straight energy security? The NDS seems to have taken a politically safe route: recognizing energy security as a problem and suggesting both the need for the Department to actively protect energy resources (especially petroleum) while also being open to broader ways to achieve energy independence.

According to the NDS, DoD should continue studying how the trends outlined above affect national security and should use trend considerations in decisions about equipment and capabilities; alliances and partnerships; and relationships with other nations. As the foundational document from which almost all other DoD guidance documents and programs are derived, the NDS is highly significant. If the Obama administration continues to build off of the current NDS instead of starting anew, we can expect environmental security to play a more central role in national defense planning. If not, environmental security could again take a back seat to other national defense issues, as it has done so often in the past.



Climate Change, Demography, Environmental Degradation, and Armed Conflict

Climate change is expected to alter the availability of freshwater, the productive capacity of soils, and patterns of human settlement. But we do not know the extent and geographical distribution of these changes, nor can we know how climate-related environmental change may influence human societies and political systems. The most dire predictions warn that climate change may greatly increase the risk of violent conflict over increasingly scarce resources, such as freshwater and arable land. We argue that such forecasts would be more accurate and less sensational if they were based on the relationships between demography, environment, and violent conflict found in the recent past.

Land degradation, freshwater availability, and population density and change are important factors that many scholars argue have both influenced the risk of conflict in the past and will be strongly influenced by climate change. As previous quantitative studies have found mixed evidence for the resource scarcity and conflict nexus, we sought to reconcile these diverse findings by looking below national aggregates at local-level data. In our study, we found that local-level demographic and environmental factors do have some effect on conflict risk, but are generally outweighed by political and economic factors.¹

Building on propositions from the literature on environmental security, we have identified potential links between natural resource scarcity and violent conflict. Combining these propositions with environmental change scenarios from the Intergovernmental Panel on Climate Change (IPCC), we tested hypotheses about the expected relationships in a statistical model with global coverage. While previous studies have mostly

focused on national-level aggregates, we used a new approach to assess the impact of environmental change on internal armed conflict by using geo-referenced (GIS) data and geographical, rather than political, units of analysis.

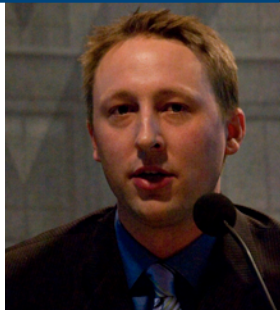
Obviously, climate change may bring about more severe and more abrupt forms of environmental change than we have experienced in the past. While this argument is frequently invoked to support dire claims about climate change and conflict, major changes are likely to be the result of smaller changes compounding over a considerable period of time. Also, while environmental change may be more severe in the future than the past, we are unable to assess the extent to which increased technological and institutional capacity will enhance our adaptability to the effects of climate change.

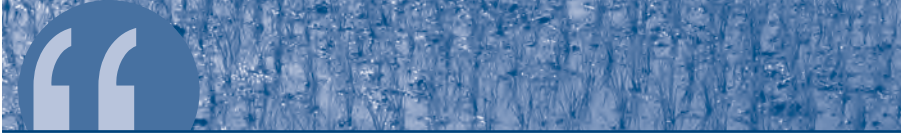
Societal Consequences of Climate Change: Literature Review

As the focus on environmental consequences of climate change increases, greater attention has

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While abrupt displacements may happen, we primarily expect to see climate change causing a gradual migration by people searching for more fertile land—or for other economic opportunities to replace lost livelihoods.

been paid to climate change's potential influence on patterns of war and peace (e.g., Renner, 1996; Homer-Dixon & Blitt, 1998; Rahman, 1999; Klare, 2001; Brauch, 2002; Purvis & Busby, 2004; CNA, 2007; Buhaug et al., 2008; Burke & Parthemore, 2008; Raleigh et al., 2008; Salehyan, 2008). The literature on climate change and security focuses on two interrelated processes expected to result in resource scarcity. First, increasing temperatures, precipitation anomalies, and extreme weather are expected to aggravate the ongoing degradation of environmental resources (Renner, 1996; Homer-Dixon & Blitt, 1998; Klare, 2001; Purvis & Busby, 2004; Buhaug et al., 2008).

Second, scholars warn that rising sea levels, as well as more extreme weather conditions, will force millions of people to migrate, potentially leading to higher pressures on resources in the destination areas and subsequently fostering competition over resources (Renner, 1996; Rahman, 1999; Barnett, 2001; Oxfam, 2007; Renaud et al., 2007; Raleigh et al., 2008). Although climate change is usually viewed as a potential future threat, some argue that global climate change has already been a contributing factor in current conflicts such as the Darfur crisis (Byers & Dragojlovic, 2004; Ki-moon, 2007).

Although they warn against overstating the relationship between climate change and armed conflict, Jon Barnett (2001), as well as Nigel Purvis and Joshua Busby (2004), accept that

the depletion and altered distribution of natural resources likely to result from climate change could, under certain circumstances, increase the risk of some forms of violent conflict. It is not likely to be a major or sufficient cause of conflict, but may form a mounting environmental challenge that could play a contributing role (Brauch, 2002; Tänzler & Carius, 2002).

Climate change is likely to influence the capacity of many areas to produce food. Some areas may experience a reduction in crop yields, but others are likely to benefit. While an increase in temperature of a few degrees could generally increase crop yields in temperate areas, greater warming may reduce agricultural output. In tropical areas, where dryland agriculture dominates, even minimal increases in temperature may be detrimental to food production (IPCC, 2001). Adverse changes in temperature and precipitation are likely to intensify the degradation of soil and water resources, although adaptive behavior could mitigate these impacts, since land use and management have been shown to have a greater impact on soil conditions than the indirect effect of climate change.

According to the IPCC (2001), 1.7 billion people currently live in countries that are water-stressed, meaning that they use more than 20 percent of their renewable water supply. This number is projected to increase as population grows and industries intensify; climate change may aggravate this trend by decreasing streamflow and groundwater recharge. Non-climatic factors may influence freshwater availability and quality more than climate change, so good water management may significantly reduce vulnerability. However, in areas where vulnerability increases and water management fails, increased freshwater scarcity is likely.

Due to rising sea levels and increased risk of flooding, climate change is expected to contribute to migration from coastal and riverine settlements (IPCC, 2001). Extreme weather events and flooding may cause substantial, sudden, and acute displacement of people. However, the most dramatic form of change—sea-level rise—is likely to happen gradually. Improved forecasting skills

Table 1: Summary Results of Empirical Analysis

	ALL COUNTRIES	HIGH-INCOME COUNTRIES	LOW-INCOME COUNTRIES
Low land degradation	Not significant	Higher risk	Lower risk
Medium land degradation	Higher risk	Higher risk	Not significant
Very high land degradation	Higher risk	Higher risk	Not significant
Water scarcity	Higher risk	Higher risk	Higher risk (weak)
Population density	Higher risk	Higher risk	Higher risk
Population growth	Higher risk	Higher risk	Higher risk
Population growth *density	Higher risk	Not significant	Higher risk
Population growth *water scarcity	Higher risk	Not significant	Higher risk (weak)
Population growth *medium degradation	Not significant	Lower risk (weak)	Not significant
Population growth *high degradation	Not significant	Not significant	Not significant
Instability interactions	Negative or not significant	Not significant	Not significant

Note: For actual values, see full results in Raleigh & Urdal (2007).

will make adaptation easier and reduce the problem of population displacements (Chimeli et al., 2002). While abrupt displacements may happen, we primarily expect to see climate change causing a gradual migration by people searching for more fertile land—or for other economic opportunities to replace lost livelihoods.

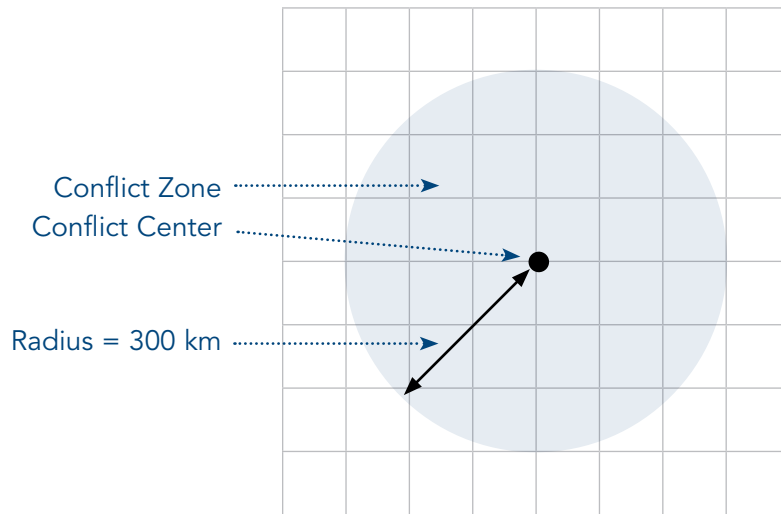
Kahl (2006) identifies two distinct “state-centric” causal pathways from resource scarcity to conflict: the “state failure” and the “state exploitation” hypotheses. Both start from the premise that resource scarcity may put severe pressure on both society at large and on state institutions. Lower agricultural wages and economic marginalization can lead to rural-to-rural migration, potentially causing inter-ethnic conflicts over land, and migration from rural to urban areas, leading to urban “hotspots.” The state failure hypothesis posits that resource scarcity will weaken state institutions and provide opportunities for potential rebels to challenge state author-

ity. The state exploitation hypothesis suggests that resource scarcity may be an opportunity for weakened states to bolster their support base by mobilizing ethnic groups to capture scarce resources. However, quantitative studies (Esty et al., 1998; Hauge & Ellingsen, 1998; Urdal, 2005; Theisen, 2008) have found mixed evidence for the resource scarcity and conflict nexus.

Testing the Climate Change and Conflict Scenario: Methodology

In our model, we tested whether areas with high levels of resource scarcity—which is likely to become more prevalent as a result of climate change—have been more susceptible to conflict in the past. We assumed that population density, freshwater scarcity, and environmental degradation would be associated with a higher risk of conflict if they occurred in areas with high population growth. We further assumed that

Figure 1: Conflict Zones Upon Grid Squares



Globally, medium to high levels of land degradation are related to increased conflict, as are very high levels of water scarcity, but the relative increases in risk are quite small.

the effects of demographic and environmental factors are stronger in poor countries than in wealthy ones, and stronger in periods of regime collapse and political transition.

For this sub-national study, we created a geo-spatial dataset by dividing the globe into 100 km by 100 km squares. Using the PRIO/Uppsala dataset, we identified the location of armed conflicts from 1990-2004 (Buhaug & Gates, 2002; Gleditsch et al., 2002), coding all grids within a 300-km radius as part of the conflict zone (see Figure 1). We used geographical data on human-induced soil degradation from the International Soil Reference and Information Centre (ISRIC), data on easily available freshwater from TERRASTAT, and population data from the Center for International Earth Science Information Network (CIESIN). We also controlled for state-level factors like GDP per capita and national regime type.

Results

We assessed the risk of conflict for a global sample, and then for richer and poorer states separately. Our disaggregated analysis shows that demographic and environmental variables

have a very moderate effect on the risk of civil conflict (see Table 1 for a summary).

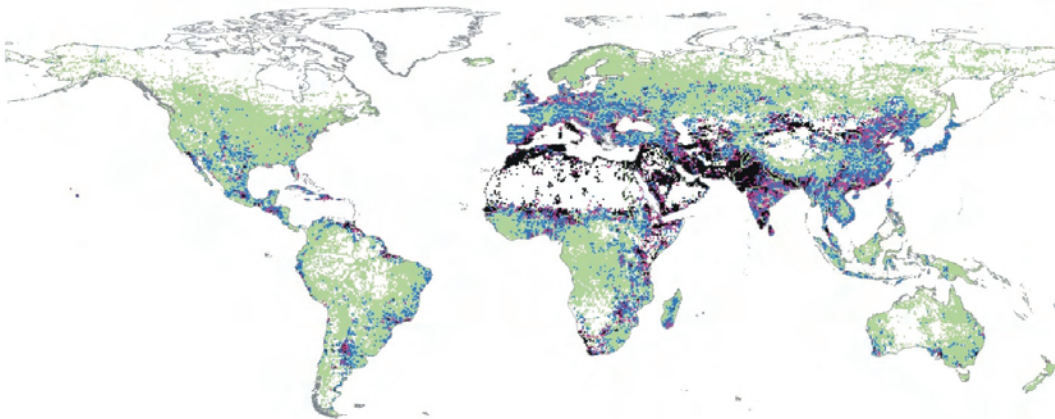
Globally, medium to high levels of land degradation are related to increased conflict, as are very high levels of water scarcity, but the relative increases in risk are quite small. Increasing levels of land degradation increase the risk of conflict from a baseline of 1 percent to between 2-4 percent. Freshwater scarcity appears to exert a somewhat stronger effect, increasing the risk of conflict to 6 percent for areas with very high levels of scarcity.

High population density, measured locally, is a consistently strong predictor of armed conflict. However, population density and conflict are presumably correlated, as densely populated areas and large cities are attractive locations for conflict because not only do they provide better opportunities for organizing and financing conflict, they also represent strategic targets (Hegre & Raleigh, 2007).

Based on our literature review, we expected that the interactions between demand-induced scarcity (measured by population growth) and supply-induced scarcity (represented by land degradation, water scarcity, and population density) were likely to produce multiple stresses that could trigger resource scarcity conflicts. In the global model, only the interaction between population growth and water scarcity, as well as that between population growth and density, were statistically significant.

Separating the group by income confirms the well-established importance of wealth and political systems. Lower levels of GDP are the most important predictor of armed conflict. States with low GDP depend more on their environment for individual and state income than states with higher GDP, and also have a lower capacity to attenuate tensions arising from degradation. However, our results show that resource scarcity affects the risk of conflict less in low-income states than in wealthier states. And while political instability is a strong driver of internal conflict in poor states, it does not seem to interact with demographic and environmental factors to increase the risk of conflict.

Figure 2: Water Scarcity Index for Contemporary Conditions



The water scarcity index describes the relationship between water availability and the number of people that can be supported by that water supply. The scarcity index is expressed in terms of the number of people per flow unit where a flow unit of water is equal to 1 million cubic meters per year.

Source: Levy et al. (2008).

WATER SCARCITY INDEX

- Water Barrier (>2000 people/flow unit)
- Water Scarcity/Stress (600–2000 people/flow unit)
- Populations Vulnerable to Water Stress (100–600 people/flow unit)
- Adequate Supply (<100 people/flow unit)
- Low Density Population

Recommendations for Future Research

Our models are more explanatory than many comparable cross-national studies, partly due to the inclusion of geo-referenced environmental and demographic data. Since conflict often does not occur throughout entire countries, additional localized data on conflict needs to be incorporated into future models to develop a comprehensive understanding of the links between conflict and demographic and environmental changes.

Moreover, we believe a clearer link between the physical changes associated with environmental variables and the political process of rebellion must be established. The use of local measures of income, state capacity, and ethnic relationships will significantly clarify the environment-conflict nexus and help analyze the role of state policies and market fluctuations in mediating it.

Our results caution against a disproportionate focus on environmental factors—including climate change—in causing conflict and instability in the developing world. By paying greater attention to how resources are distributed and how political institutions create vulnerability to climate change, we can better assess where, and under what circumstances, environmental factors contribute to or catalyze conflict. However, as future climate changes occur with greater frequency and intensity, any assumptions about the future must consider that the thresholds for both environmental change and political instability will undoubtedly fluctuate.

Note

1. This article is based on a study published in *Political Geography* (Raleigh & Urdal, 2007).



REPORT ONLINE

The full article on which this commentary is based, "Climate change, environmental degradation and armed conflict," was published in a special issue of *Political Geography* on climate change and conflict (Volume 26, Issue 6, August 2007): <http://linkinghub.elsevier.com/retrieve/pii/S0962629807000856>

The Uppsala Conflict Database is a free resource on armed conflicts; currently, it includes information on 124 conflicts for the period 1989-2007: <http://www.pcr.uu.se/gpdatabase/search.php>

Armed Conflict Location and Event Data (ACLED) is an event-based dataset based on the Uppsala Conflict Database, which records the location and date of conflict occurrences in Africa. Version 1.2 is available online: <http://www.prio.no/CSCW/Datasets/Armed-Conflict/Armed-Conflict-Location-and-Event-Data/>

The World Bank's Social Development Division convened a workshop and commissioned overview papers on the "Social Dimensions of Climate Change" on March 5, 2008: <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTSOCIALDEVELOPMENT/0,,contentMDK:21659919~pagePK:210058~piPK:210062~theSitePK:244363,00.html>

For a balanced report on climate change and migration, see *Future Floods of Refugees: A Comment on Climate Change, Conflict and Forced Migration*, by Vikram Odedra Kolmannskog (Norwegian Refugee Council, 2008): http://www.nrc.no/arch/_img/9268480.pdf

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Migration as the Demographic Wild Card in Civil Conflict: Mauritius and Fiji

Research on the relationship between demographic change and internecine violence has gained some momentum in recent years (see, e.g., Dabelko, 2005). However, this work has mostly been confined to examining age structure phenomena such as youth bulges. By contrast, the intervening variable of migration is strikingly absent—even though migration is the third in the troika of core demographic variables, alongside fertility and mortality. Yet its absence is also understandable, because accurate and consistent data in conflict areas are very difficult to obtain. As a result, we actually know embarrassingly little about the bearing (if any) the demographic shifts precipitated by in- or out-migration have on internecine conflict. In this article, I focus on the demographic disequilibrium that results from migration and its impact on ethnic relations and conflict, using the cases of Mauritius and Fiji.

Since the paucity of data currently thwarts any attempt to test hypotheses that depend on a thorough statistical analysis (a large-n quan-

titative approach), I used a most-similar-systems critical case-study approach to compare different outcomes with respect to ethnic conflict in the small-island states of Mauritius and Fiji.¹ The conditions in these islands are, for the social sciences, a fair real-world approximation of controlled laboratory experiments; these small, (fairly) closed systems allow us to control for variables in a way that is virtually impossible to do with complex conflicts in larger countries.

Notwithstanding ominous predictions to the contrary, demographic trends in Mauritius have actually proven to be a source of political stability. However, the converse holds true for Fiji.

Comparing Mauritius and Fiji

Although they are located on different continents, a comparison of Mauritius and Fiji is appropriate because their colonial, economic, political, and social histories are similar.

About 850,000 people live in Fiji, while Mauritius is home to about 1.2 million people. At 720 square miles, Mauritius has less than one-tenth of Fiji's landmass, and is among the most densely populated countries on the planet. Indian migrants—who originated as indentured laborers shipped in by their British colonizers to work on the sugar plantations—comprise a substantial proportion of the population in both countries. Mauritius has a highly heterogeneous society, with 15 linguistic groups and four world religions. Although the main ethnic cleavage is between the Creole minority (27 percent) and the Indian majority (68 percent), the high degree of differentiation and stratifi-

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cation within Mauritian society makes ethnic categories less powerful than expected.² In Fiji, about half the population is of Indian descent, while the other half is native Melanesian with a Polynesian admixture.

If density, natural increase, and ethnic heterogeneity are the sole determinants of interethnic violence, then Mauritius beat the odds. On the advent of Mauritius' independence in 1968, Nobel Laureate James Meade, a British commission, and others arrived at ominous conclusions about the country's prospects for ethnic harmony, economic development, and political stability (Meade, 1961; Titmuss & Abel-Smith, 1968; Naipaul, 1973). Rapid population growth, the absence of economic growth, and growing population density on a small island with no natural resources caused some concern among policymakers. Independence also flamed the inter-ethnic fires, for the Franco-Mauritian and Creole communities saw independence as a ploy by the Indian majority to gain control of the state apparatus. In addition, the 1960s witnessed considerable labor and inter-communal unrest on Mauritius.

By contrast, prior to Fiji's independence in 1970, the experts were optimistic. Yet the outcomes in Mauritius and Fiji were contrary to expectations. Civil conflict in Fiji intensified, coming to a head in 1987 when, for the first time in its post-independence history, a party headed by a Fijian of Indian ancestry won the majority of seats. In response, some native Fijians staged a military coup, followed by subsequent coups in 2000 and 2006.

Could demographic patterns explain why Mauritius defied dire predictions while Fiji continues to struggle with civil tensions? While the presence of an indigenous population that considers Fiji its ancestral homeland is an indisputable source of tension, this explanation does not tell us why civil conflict worsens when it does. In contrast, the claims I advance about demographics in general, and migration in particular, distinguish themselves from much of the literature precisely because they have intrinsic predictive potential.

Migratory Trends

Mauritius is today the only country in the world where the Indian diaspora enjoys a two-thirds majority. As depicted in Figure 1, the Indian population of Mauritius quickly grew from zero in 1834 to a majority in the 1860s; since then, the proportion has remained fairly stable (Lutz & Wils, 1994).

In Fiji, the immigration of indentured Indian laborers occurred later; some 60,000 of these *girmityas* were brought to Fiji between 1879 and 1916. The demographic impact of this population movement was compounded by a subsequent wave of Indian immigration to Fiji between the world wars. In absolute terms and relative to the native population, migration to Fiji was disproportionately smaller than to Mauritius. As Figure 2 shows, since the onset of Indian immigration to Fiji, the numerical gap between Indians and native Melanesians has always been much narrower than the gap between Indians and the "general population" in Mauritius.

The differentials between the two main population groups on each island are largely a function of colonial migratory policy—that is, colonial migratory policy had the unintended consequence of producing a clear Indian majority in Mauritius. In Fiji, by contrast, it generated only a sizeable Indian minority.

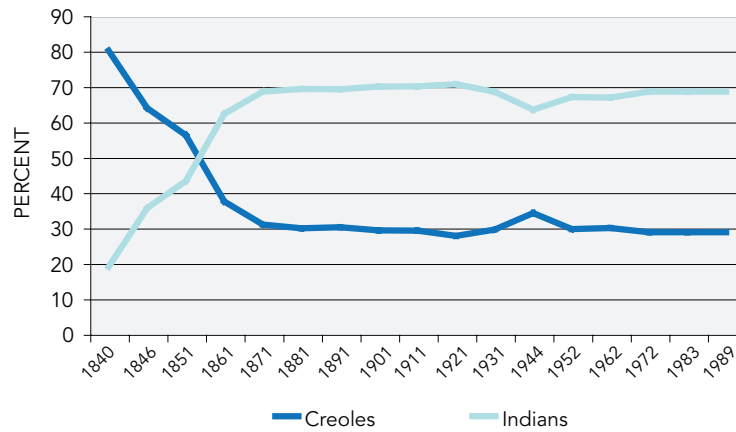
Effect on Age Structure

In another unintended consequence of colonial migratory policy, the Indian minority in Fiji inadvertently challenged native predominance. Indian migration to Fiji postdates migration to Mauritius by several decades. Having entered the demographic transition later, the age structure of Indians in Fiji was comparatively younger than that of Indians in Mauritius. The age-structure differential is partially accountable for the rapid population growth among Indians in Fiji during the first half of the 20th century. While immigration had virtually ceased by 1921, Fiji's Indian population quadrupled between 1921 and 1966.



Demographic trends in Mauritius have actually proven to be a source of political stability. However, the converse holds true for Fiji.

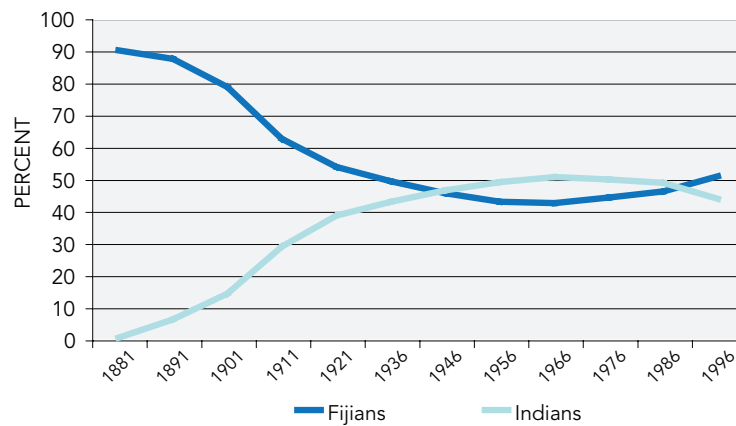
Figure 1: Mauritius, Proportions of Ethnic Groups (1840–1989)



Source: Mauritius Central Statistical Office (1973); Dinan (2002).

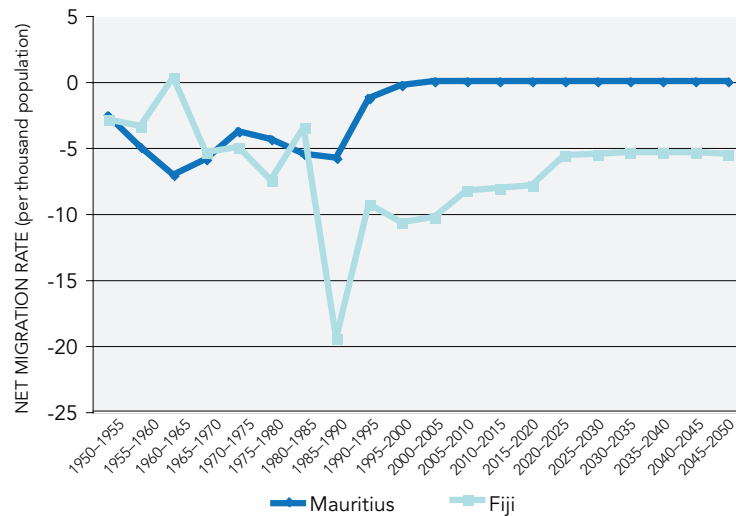
Note: Data after 1973 are based on estimates because Mauritius stopped collecting data by ethnic group at that time.

Figure 2: Fiji, Proportion of Ethnic Groups (1881–1996)



Source: Fiji Islands Bureau of Statistics (2007).

Figure 3: Mauritius vs. Fiji, Net Migration Rate (1950–2050)



Source: UN Department of Economic and Social Affairs, Population Division (2007).

If population growth remains constant, the total fertility rate (TFR) must be declining. However, even if TFR is declining, the number of women of childbearing age will continue to grow, due to population momentum. As a result, the crude birth rate may continue to rise, thus producing a sizeable youth cohort. These growth dynamics caused Indians to outnumber native Melanesians in Fiji by the end of World War II and approach an absolute majority by the late 1950s (Meller & Anthony, 1968; Milne, 1981).

Migrating populations tend to be fairly young, and accordingly, they reproduce at disproportionately high rates. Native populations may fear being “swamped” by migration. In addition, native populations may gradually end up being outnumbered by migrants due to differentials in natural increase. Neither phenomenon threatened political stability in Mauritius. Mauritius’ native population did not feel its territory was being “swamped,” and colonial migratory policy unintentionally preordained an incontrovertible Indian majority. In Fiji, by contrast, the feeling of being “swamped” was compounded by an unintended challenge to native plurality. Although in both cases the demographic outcome of colonial migratory policy was unintended, this outcome was not necessarily unpredictable. The impact of migration on conflict is a man-made problem; the way migration is managed (or not) can determine its potential for mitigating or escalating a conflict.

Both cases show evidence of significant differentials in age structure. Today, the ethnic populations on Mauritius are similarly structured. In contrast, Fiji’s minority population is younger than the majority population, whose demographic position has been undermined further by emigration. As a result, the minority is now in a position to challenge the majority’s plurality.

Migration, Age Structure, and Conflict

Demographic change *per se* never had a significant impact on conflict in Mauritius because the Indian population consolidated its majority



Military checkpoint after the 2006 coup, Fiji (Courtesy photobucket user loaspoa; http://i39.photobucket.com/albums/e159/loaspoa/fiji%20aftur/checkpoint_near_qeb.jpg)

early on. All population groups in the island state have been aging rapidly since the 1960s, and, as a result, no one group has the young age-structure dynamics that may call Indian hegemony into question. In Fiji, migration created a very young Indian population that reproduced rapidly and, in the process, undermined the hegemonic demographic position of the native population. However, the younger population structure among Fiji’s native population made it impossible for Indians to consolidate their temporary plurality. Figures 1 and 2 depict inter-communal population trends in Mauritius and Fiji, while Figure 3 visualizes why migration—particularly the past, present, and projected out-migration of Indo-Fijians—functions as a source of instability in Fiji. Both the size and rate of immigration and subsequent emigration rapidly changed the size and age structure of the Indo-Fijian population. In Mauritius, by contrast, the slower initial rate of change and subsequent equilibrium in population size and age structure could have contributed to the relative stability of inter-communal relations on Mauritius.

This comparison of Mauritius and Fiji suggests that the most volatile situations are those



REPORT ONLINE

Christian Leuprecht discussed demographic shifts and civil conflict at an event at the Wilson Center on June 13, 2007: http://www.wilsoncenter.org/index.cfm?topic_id=1413&fuseaction=topics.event_summary&event_id=238429

The UN Population Division's World Migrant Stock database provides estimates of refugees and migrants by country and region for every five years from 1960-2005: <http://esa.un.org/migration/index.asp?panel=2>

The UN's Small Island Developing States Network helps small islands face several challenges, including remoteness; poor connectivity; limited human and technological capacity; and economic and environmental vulnerability: <http://www.sidsnet.org/>

Ethnopolitics, the Journal of the Specialist Group on Ethnopolitics and the Association for the Study of Nationalities, is soliciting submissions for a special issue on the relationship between demographic change and ethnic politics/conflict/relations. Contact Christian Leuprecht, guest editor, at christian.leuprecht@rmc.ca with prospective submissions or inquiries: <http://www.ethnopolitics.org/ethnopolitics/cfp.html>



The impact of migration on conflict is a man-made problem; the way migration is managed (or not) can determine its potential for mitigating or escalating a conflict.

where a majority's demographic dominance is called into question, but where the same group is eventually able to recapture a demographically hegemonic position. This recapture may be due to its younger age structure, co-ethnic immigration, or emigration by the other group. A group with a younger age structure that regains a demographically dominant position is problematic not only because the group may use its numerical superiority to regain dominance and avenge past grievances, but also because of the general link between youthful populations and political instability.

I am not arguing that demography and migration are deterministic or monocausal explanations for conflict. Still, some important conclusions follow from this comparison. Strong differences and some similarities between Mauritius and Fiji were, at their root, attributable to migration, including demographic changes and relative differences in age structure between ethnic groups.

This study thus confirms that migration is an intervening variable in the different out-

comes of ethnic relations in the two island states. Migration turns out to be particularly problematic when a native population's majority (or even its plurality) is challenged temporarily by migration, but the native population's age structure makes it probable that it may one day recapture a position of demographic dominance. The propensity for serious political instability—and possibly violence—appears to be especially high once the native population is able to consolidate its hegemonic demographic position, a finding that is echoed in a recent quantitative study (Toft, 2007).

This conclusion is not just significant for Mauritius and Fiji, but for all small island developing states. Many small island states are ethnoculturally, religiously, and linguistically diverse. As a result, these states are realizing that managing civil relations is a prerequisite for achieving their economic and environmental goals. Ascertaining demographic—and especially migratory—patterns that may prove particularly problematic for civil relations is a significant contribution toward attaining these goals.



Street market in Port Louis, Mauritius (Courtesy flickr user austinevan; <http://www.flickr.com/photos/austinevan/2377033631>)

Notes

1. This article draws its methodological inspiration from Don Horowitz's (1989) piece comparing differences in outcome in Sri Lanka and Malaysia. Mauritius and Fiji are among 38 UN-member Small Island Developing States; another 14 small island states are either not UN members or associate members of the regional commissions.

2. Mauritian Creoles trace their origins to Madagascar and East Africa, especially Mozambique.

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Beginning the Demographic Transition: Very Young and Youthful Age Structures

In recent years, scholars, policymakers, and the media have paid increasing attention to the potential challenges of aging populations in industrialized countries in Europe, North America, and East Asia. These countries have crossed into the far reaches of the “demographic transition,” the process whereby high birth and death rates decline, producing smaller family sizes and longer life expectancies. The average fertility rate in Japan—which, along with Italy, has one of the world’s oldest populations—has been below replacement level since approximately 1965, and is expected to remain below replacement level until the end of this century (UNPD, 2007).

Scholars and policymakers are concerned about the economic consequences of population aging, including the difficulty of maintaining pension and health care systems as the working proportion of the population declines and the proportion of elderly rises. Yet these legitimate economic concerns have not altered the fact that historically, the critically serious problems of undemocratic governance and violent politi-

cal strife have been concentrated in countries at the opposite end of the demographic spectrum, whose youthful populations continue to grow.

Population Action International’s (PAI) 2007 report *The Shape of Things to Come: Why Age Structure Matters to a Safer, More Equitable World* defines very young and youthful age structures as those just beginning the demographic transition. In these countries, mortality rates have declined, and although fertility rates are starting to inch downward, they are still far above replacement level. The vast majority of the population is younger than 30; in some cases, this proportion can be as high as 77 percent. Such countries will continue to experience population growth for the foreseeable future.

Between 1970 and 1999, countries with a very young age structure were four times as likely as those at the end of the demographic transition to have experienced outbreaks of civil conflict (Leahy et al., 2007). Among countries with a youthful age structure, the ratio diminished, but they were still twice as likely to suffer from internal strife as those with a mature structure (in which at least 55 percent of the population is older than 30). Moreover, the pattern has continued, with six out of nine new outbreaks of civil conflict between 2000 and 2006 occurring in countries with very young or youthful age structures. Due to the complex linkages to other issues, there is no direct cause-and-effect relationship between demographics, conflict, and governance. Still, the association between age structure and development is powerful, and warrants a higher priority for population and reproductive health on policymakers’ agendas.

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LEAHY



Elizabeth Leahy is a research associate at Population Action International (PAI) and the primary author of *The Shape of Things to Come: Why Age Structure Matters to a Safer, More Equitable World*. PAI’s Tod Preston contributed to this article. (Photo courtesy Elizabeth Leahy)

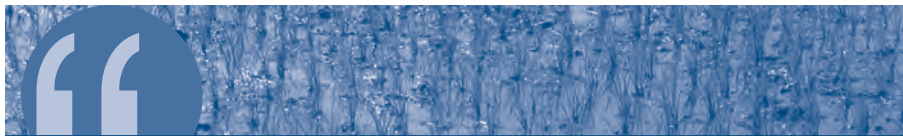
Beginning the Demographic Transition: Very Young Age Structures

In countries with a very young age structure, roughly two-thirds or more of the population is under the age of 30. In 2005, 62 countries representing 14 percent of the world's total population fell into this category—and all had a fertility rate higher than three children per woman. These countries are among the least developed in the world; their average gross national income (GNI) per capita in 2005 was \$827 (World Bank, 2007). In addition to a relatively high likelihood of civil conflict, these countries have autocratic or only partially democratic governments. In the last three decades of the 20th century, only 13 percent of countries with a very young age structure had fully democratic governments, compared with 83 percent of countries with a mature age structure.

Countries with a very young age structure are concentrated in sub-Saharan Africa, with only a few exceptions.¹ Meanwhile, only four countries in sub-Saharan Africa—Gabon, Mauritius, Réunion, and South Africa—have progressed far enough through the demographic transition to have passed beyond the very young age structure category.

At the beginning of the demographic transition, age structures follow the model of the classic “population pyramid,” with each successively younger age group comprising a larger share of the total population than the previous cohort. Better public health and nutrition lower mortality rates. However, fertility rates remain high, due to:

- Women's low social status and/or lack of educational attainment;
- Insufficient access to an array of modern contraceptive methods;
- Large desired family size for reasons of economic productivity or social status; and
- Parents' lack of confidence that most of their children will survive to adulthood.



Between 1970 and 1999, countries with a very young age structure were four times as likely as those at the end of the demographic transition to have experienced outbreaks of civil conflict.

While it is likely that fertility rates in countries at the beginning of the demographic transition will continue to decline over time, their populations will still continue to grow rapidly—in some cases, even double or triple—in the next few decades.

Nigeria

While most countries have experienced great demographic change in recent decades, those with a very young age structure have remained largely static, and a few have actually reversed their course along the demographic transition.



Nigerians participate in traditional theater with a family planning theme in Ogun state. (© CCP, courtesy of Photoshare)

A village man and a community-based distribution agent are engaged in a spirited conversation about family planning during a village gathering near the town of Awassa in central Ethiopia. The man has four children and wants four more, and is against family planning. (© 2005 Virginia Lamprecht, courtesy of Photoshare)



The share of Nigeria's population under age 30 in 2005 was actually 1.5 percent *greater* than in 1975—a remarkable anomaly given that most countries have made at least slight progress since then toward a more balanced population distribution (UNPD, 2007).

Only eight percent of Nigerian women use a modern contraceptive method. This low rate, combined with large desired family size, is primarily responsible for Nigeria's fertility rate of nearly six children per woman (National Population Commission & ORC Macro, 2004). One-fifth of Nigerian children die before their fifth birthday, and 42 percent of women have never been to school. These major social and public health concerns are partially responsible for Nigeria's stunted economic development. Although it holds the greatest petroleum reserves in Africa and is the eighth-largest oil producer in the world, the country's per capita GNI was \$560 in 2005, even lower than the average for countries with a very young age structure (EIA, 2007; World Bank, 2007).

Nigeria also remains hampered by political corruption, instability, and bureaucratic mis-

management, which prevent the government from effectively capitalizing on and fairly distributing income from the country's abundant natural resources. After decades of military rule, Nigeria achieved partial democracy in 1999. The 2007 elections were the first to transfer power among civilians. While international observers generally condemned the elections as blatantly manipulated, the outgoing president's handpicked successor, Umaru Yar'Adua, assumed power relatively peacefully. However, violence targeting foreign oil producers continues to destabilize the Niger Delta region, where rebel takeovers and kidnappings have led major multinational companies to significantly cut back their production levels.

Ethiopia

Ethiopia's progress along the demographic transition in the past 30 years has also been slight; the share of its population younger than 30 has remained virtually static. Population growth continues to contribute to a long trajectory of humanitarian crises in Ethiopia. The UN Emergencies Unit for Ethiopia (2003, p. 2)

found that “rapid and unhindered” population growth is a significant factor in exacerbating food shortages. For more than two decades, Ethiopia has been stricken with recurring and, at times, severe food shortages. Due to widespread malnutrition, more than half of all children under age five are stunted, while 47 percent are underweight (Haile, 2004).

Droughts and famine have become more frequent and more severe as, among other reasons, increased population density has led to erosion, the overcultivation of land, and ecological degradation. Most Ethiopians rely on wood and charcoal for energy, and deforestation is extensive—especially in the highlands, where more than 80 percent of the population lives. In 1900, 40 percent of Ethiopia was estimated to be covered by forests; today, this figure stands at less than three percent (Haile, 2005). Ethiopia is one of the poorest countries in the world, with a per capita GNI of \$160, about one-fifth the sub-Saharan African average (World Bank, 2007).

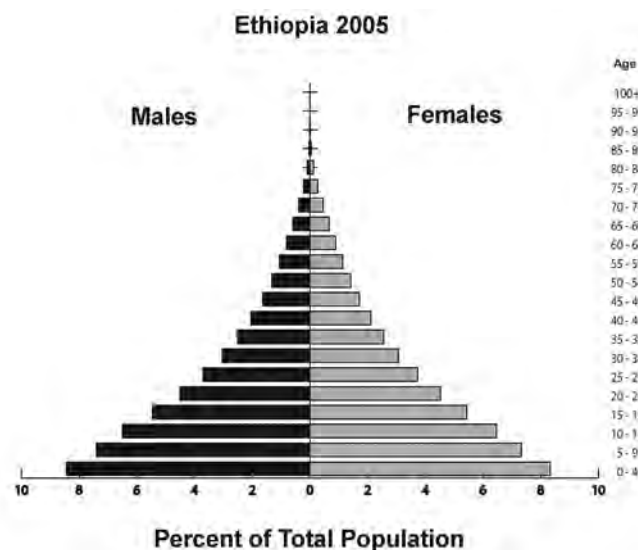
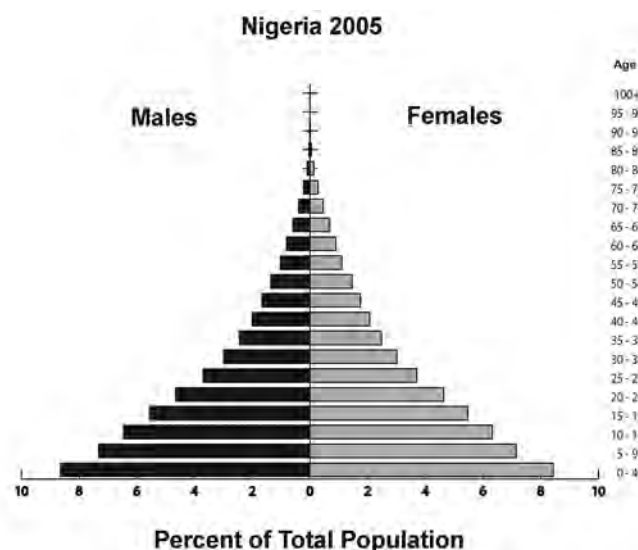
Compounding these environmental and economic problems, the vast majority of the population lives in rural areas, where access to modern health facilities is extremely limited. Use of modern contraceptives in rural areas, while increasing in recent years, remains very low, with a contraceptive prevalence rate of only 11 percent—compared to more than 40 percent in urban areas (Central Statistical Agency & ORC Macro, 2006). To merely maintain current primary school enrollment rates—a far cry from the Millennium Development Goal of achieving universal primary education by 2015—the country would need to build an additional 21,000 schools and train more than 280,000 teachers (Haile, 2005).

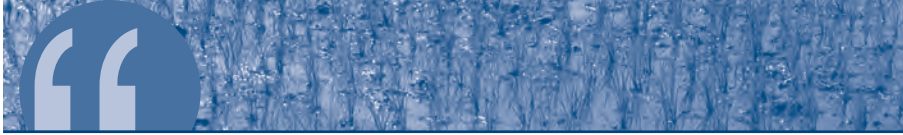
Continuing the Transition: Youthful Age Structures

The progress that countries with a youthful age structure have made along the demographic transition is evident in their population profiles, which reflect a less dramatic proportional increase in the size of each successively young-

er age group. However, populations in these countries are still growing, as women have an average of between two and four children each. The average per capita GNI in countries with a youthful age structure is \$2,429, about three times greater than that of countries with a very young age structure (World Bank, 2007).

Countries with a youthful age structure were about half as likely to experience civil conflict between 1970 and 1999 than those with a very young age structure—and slightly more likely to be democratic (21 percent were rated by the





Countries with a youthful age structure were about half as likely to experience civil conflict between 1970 and 1999 than those with a very young age structure—and slightly more likely to be democratic.

Polity IV project as full democracies, compared with 13 percent of countries with a very young structure). However, countries with a youthful age structure were still significantly more prone to conflict and much less democratic, on average, than those that had advanced further along the demographic transition.

Pakistan

There are fewer countries with a youthful age structure than with a very young age structure. However, the youthful group includes India, Pakistan, and Bangladesh, which together are home to more than one-fifth of the world's total population. Among these three South Asian countries, Pakistan has the most youthful age structure, as its birthrate did not begin declining until the 1990s, 20 years later than Bangladesh. In Pakistan, women now have an average of four children each; in Bangladesh, they average slightly more than three. Although the two countries had the same population (113 million) in 1990, Pakistan's population is projected to be 15 percent greater than its neighbor's by 2050. In Bangladesh, 47 percent of married women of reproductive age are using a modern contraceptive method, while in Pakistan, the figure is only 20 percent. Around the middle of the 21st century, Pakistan will become the fourth most populous country in the world, after India, China, and the United States (UNPD, 2007).

In recent decades, Pakistan has been embroiled in high-stakes geopolitical relationships, both internally and externally. The divisions between Pakistan's government and Islamic extremists reached a full-fledged confrontation in the summer of 2007, when the country's military president, Pervez Musharraf, ordered an attack on a mosque held by fundamentalists in Islamabad, leading to the deaths of nearly 300 people. The situation continues to change rapidly, following the assassination of former Prime Minister Benazir Bhutto and the election of a fragile coalition government, and culminating in Musharraf's resignation in August 2008. Overall, political infighting has hindered economic progress—and distracted the government from fighting terrorists and other militants (Toosi, 2008).

The link between age structure and Pakistan's political and social institutions is visible in the growth of the *madrasa* educational system. As the country's school-age population doubled between 1975 and 2000 and placement in public schools became more competitive, many parents—particularly the poor—turned to religious schools, or *madrasas*, to educate their sons. With more than 1.5 million students in Pakistan, *madrasas* provide free room and board to children in need, but their educational outlook is often limited to a strict religious orthodoxy with little practical application for employment. Some *madrasas* have been linked to sponsoring militant activities in Afghanistan and the Kashmir province (International Crisis Group, 2002).

Iran

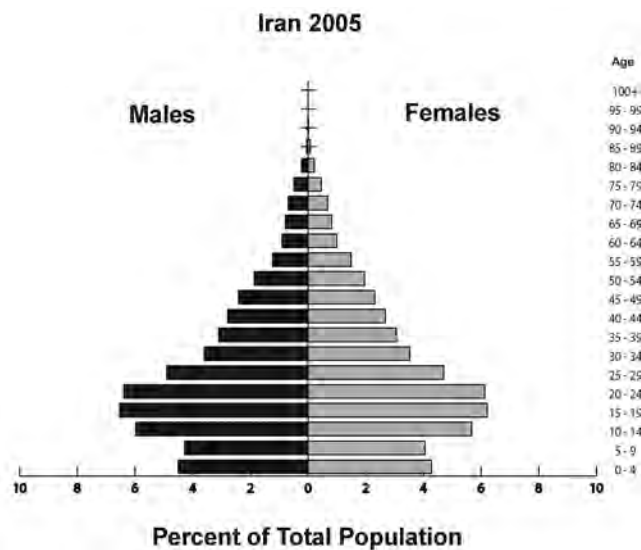
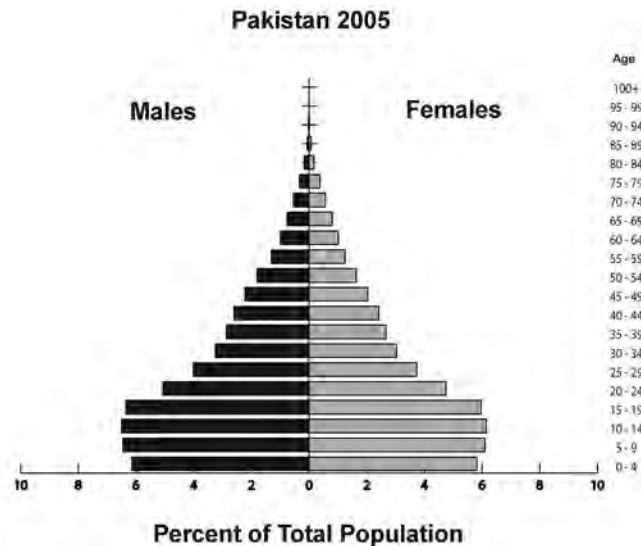
In the 1980s, during the prolonged war with Iraq, Iran's fertility rate was more than 6.5 children per woman, and the annual population growth rate surpassed four percent (UNPD, 2007). Concerned about the economic consequences of escalating demand for public services and jobs, in the 1990s government officials successfully convinced key clerics of the need for a concerted and extensive national family planning program.

Although the program does not focus on the reproductive health needs of the young and unmarried, it provides free modern contraceptive methods at public clinics. Prospective spouses must attend a government-sponsored class on family planning in order to receive a marriage license (Roudi-Fahimi, 2002). Indeed, the program has been even more successful at encouraging smaller families than the government had anticipated. The national fertility rate dropped to the replacement level of 2.1 children per woman (UNPD, 2007). As recently as 1995, Iran still had a very young age structure, but it has now reached the later stages of the youthful age structure category. According to UNPD projections that show fertility rates continuing to decline, Iran will achieve a transitional age structure by 2010.

Interestingly, Iran has made this rapid demographic progress under an autocratic government and with only slow economic development. A lower-middle income country, Iran's economic growth rate has averaged a little more than three percent annually over the past decade, and inflation and unemployment remain high (World Bank, 2007). The political establishment, controlled by Supreme Leader Ayatollah Khamenei and other clerics, has resisted recent efforts toward political reform and openness, while President Mahmoud Ahmadinejad has escalated tensions on the international stage over the country's nuclear development program.

In October 2006, President Ahmadinejad issued a challenge to Iran's now well-established family planning program, calling for higher fertility rates in an aim to increase the country's population by 70 percent, to 120 million. He proposed achieving this drastic change by cutting back women's working hours to encourage them to have more than two children each.

Despite Ahmadinejad's efforts, analysts doubt that Iran will return to high levels of population growth (Cincotta, 2006). The national family planning program and the social and economic changes it has promoted—including higher rates of women's participation in the workforce—are well-entrenched within Iranian



society. Iran's political and economic challenges are substantial, but the country seems well on its way to a more balanced age structure. Iran's history suggests that economic growth and democratic transformation are not prerequisites for a decline in fertility.

Policy Recommendations

Countries with very young and youthful age structures need interventions to encourage progress along the demographic transition, which in some cases they have not even begun.



When education, health care, and employment are available, young people renew and revitalize a country's economy and institutions. Unfortunately, these opportunities are not widespread in many countries that face a continually growing population.

REPORT ONLINE



The complete text of *The Shape of Things to Come: Why Age Structure Matters to a Safer, More Equitable World*, by Elizabeth Leahy and colleagues, is on Population Action International's website: http://www.populationaction.org/Publications/Reports/The_Shape_of_Things_to_Come/Summary.shtml

An earlier report from PAI, *The Security Demographic*, also focuses on age structure and security: http://www.populationaction.org/Publications/Reports/The_Security_Demographic/Summary.shtml

Leahy coauthored an article for *World Watch* magazine on "Population and Security" with ECSP's Sean Peoples: <http://www.worldwatch.org/node/5853>

Governments and civil society should collaborate on reproductive health programs, which must be long-term efforts with ongoing support from bilateral and multilateral donors.

Progress along the demographic transition is achieved through declines in mortality and fertility rates, which produce a more balanced age structure over time. These changes occur through access to basic health care, nutrition, and sanitation. The increased availability and use of modern contraceptive methods and higher levels of female educational attainment have both been shown to promote smaller family sizes (Bongaarts et al., 1990). Many countries—including Mexico, Thailand, and Tunisia—have successfully initiated a shift to smaller family sizes through state-supported voluntary family planning programs that provide free or affordable contraception, counseling, and related reproductive health care. In addition, countries in which most girls attend secondary school have lower fertility rates and better maternal and child health indicators (Abu-Ghaida & Klasen, 2004). This trend enables future generations of girls to be educated, and allows more women to join the labor force and increase their families' income.

Finally, policies and programs in countries at the beginning of the demographic transition must focus on the needs of and opportunities

for young people. People sometime misinterpret the fact that countries with youthful populations have been more vulnerable to conflict and poor governance to mean that young people are, in and of themselves, a security threat. This assumption could not be further from the truth. In fact, young people are an asset for any society, and their well-being and success determine the future of a country's development. When education, health care, and employment are available, young people renew and revitalize a country's economy and institutions. Unfortunately, these opportunities are not widespread in many countries that face a continually growing population. Providing them must be a major priority of these countries' development programs.

Note

1. Countries with a very young age structure outside of sub-Saharan Africa include Afghanistan, Cambodia, Guatemala, Haiti, Honduras, Iraq, Laos, Nicaragua, the Palestinian Territories, Syria, and Yemen.

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Saira, 11, attends a free adult teaching class at Fatehjang Training Center in Fatehjang district, Pakistan. She cannot afford school as she is an orphan. (© 2006 Jacob Simkin, courtesy of Photoshare)

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