WORLD AFFAIRS INSTITUTE

Community Service Project of Rotary International and World Affairs Council of Pittsburgh

Forecasting Global Trends:
Your World in 2020 and Beyond

A BACKGROUND PAPER

FOR STUDENT DELEGATES

TO THE

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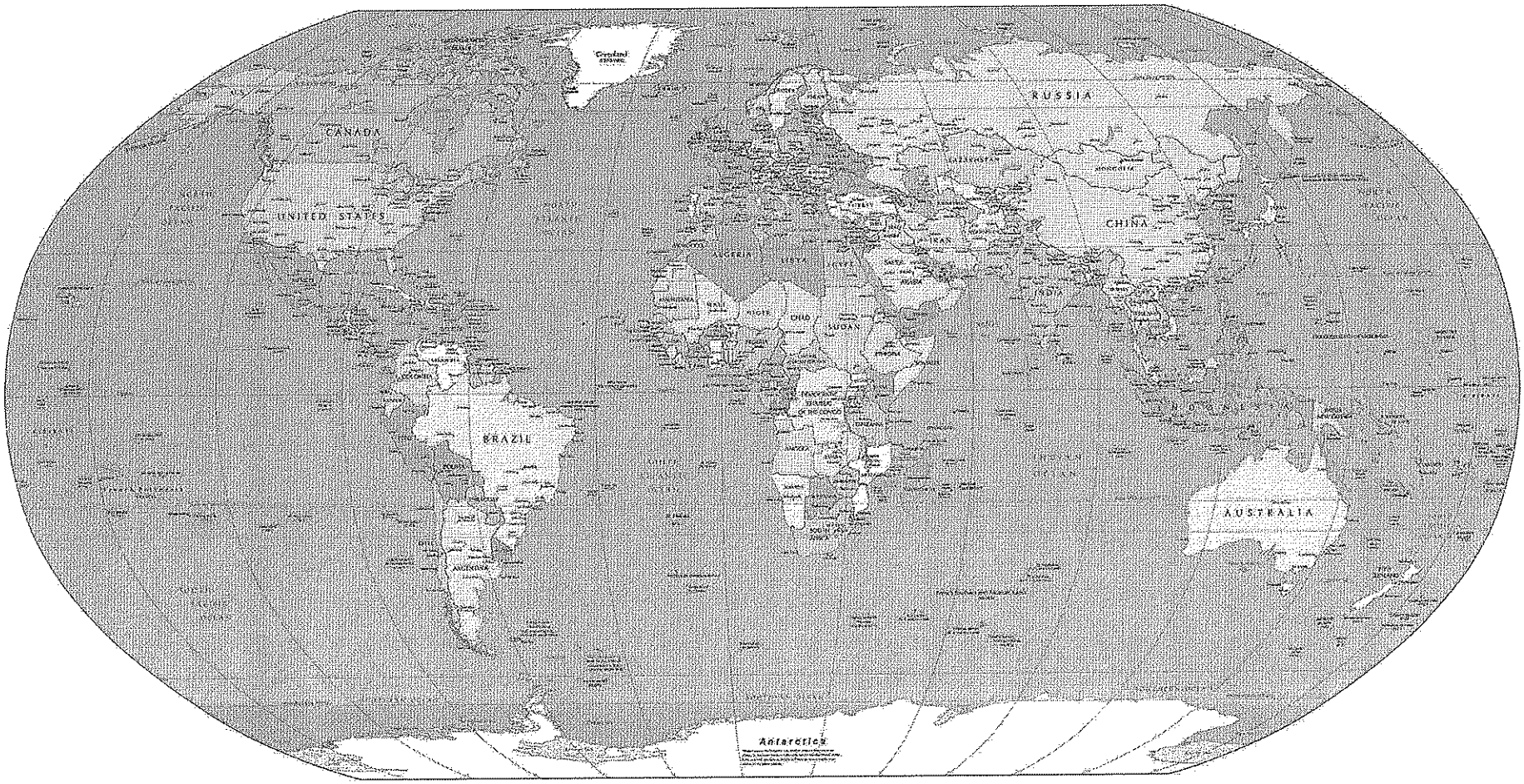
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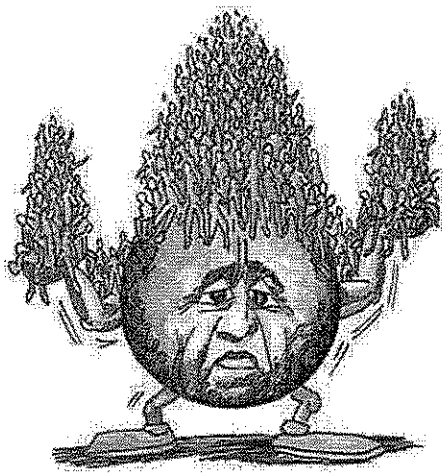
Forecasting Global Trends

Introduction

"For time and the world do not stand still. Change is the law of life. And those who look only to the past or the present are certain to miss the future."
~John F. Kennedy, June 25, 1963

Although President Kennedy uttered these words nearly 50 years ago, they remain true today. The only constant in life *is* change. And over the next forty years, if experts' predictions about the future are correct, you will be living through some very transformative times.

The transformation begins with people. By the middle of the century, there will probably be about nine billion of us living on earth. Putting aside for the moment the question of whether our planet can even sustain that many people, the larger issue is the demographic make-up of that population.



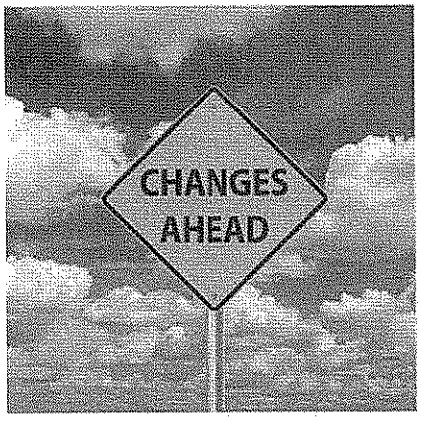
The developed world – with the exception of the United States – is in decline. Its population is shrinking and aging, and it is losing its economic vigor and dominance. The future belongs to the developing world where virtually all of the world's population growth over the next four decades will take place. That growth provides the potential for tremendous economic expansion – and greater power and influence on the world stage. Think China and India.

But population growth also brings challenges. Governments in poorer countries that are already struggling to manage existing problems will have to provide for, educate, and create employment opportunities for hundreds of millions of new citizens. Many experts question whether developing countries are up to this herculean task.

This poses a problem for developed countries. Thanks to the growing interconnectedness spawned by globalization, states that cannot function create a ripple effect of adverse consequences that is felt throughout the world. Think Pakistan and Somalia.

Globalization, in fact, is another driver of the coming transformation. The unprecedented economic growth of the last few decades has dramatically improved the lives of hundreds of millions of people worldwide. That growth has come at a price, however, and the bill is about to come due.

The natural resources that have fueled this burst of modernization can no longer support the world's insatiable demand for water, food, and energy. A battle is looming, not only between the planet and its billions of inhabitants, but between nations intent on securing for themselves – often at the expense of others – the earth's remaining bounty.



Governments will be preoccupied with more than just "resource wars" in the decades to come. Many experts believe that a reshuffling of the international order is on the horizon. Demographics have stacked the deck in favor of emerging countries – primarily in Asia – that are already flexing their geopolitical muscles, at least on a regional basis.

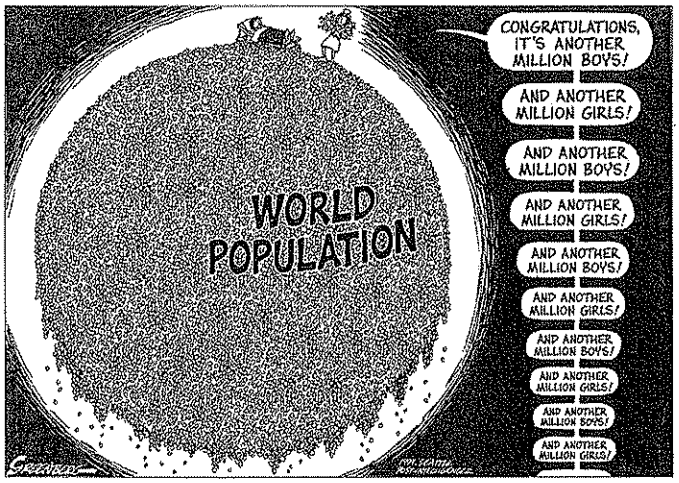
The United States, thanks to steady population growth and a relatively strong economy, will continue to be a powerful actor on the world stage as we head toward the middle of the century. It is, however, likely to lose its status as the dominant power.

To quote another famous American, "the times they are a-changin." Let's take a look, then, at the trends, transitions, and challenges that will shape your world in 2020 and beyond.

Growing Pains

"Over the next 20 years, the vast majority of the world's population growth will occur in the developing world, in nations least capable of supporting it either politically, environmentally, or economically.
~ Seven Revolutions Project, Center for Strategic and International Studies

The world is in the midst of a demographics transition. Developing countries are growing, while most industrialized nations – save the United States – are shrinking. These shifting patterns of population growth will likely have profound effects not only on individual countries but also on the global balance of power.



It's Not a Small World After All

Nine billion. That's the number of people – give or take a few hundred million – which the United Nations projects will inhabit the earth in 2050. As of July 2010, the global population numbered approximately 6.9 billion. Over the next four decades, you can expect to be sharing this planet with an additional two billion people.

Significantly, this population expansion will not be evenly distributed. "Of current global population growth, 75-80 million a year," says Dr. Joel E. Cohen, a demography expert at The Rockefeller University, "five percent occurs in developed countries, 95 percent in developing countries. By 2050, the rich countries will lose a million persons a year, while the developing nations will add 35 million a year."

It is the least-developed countries – almost all located in sub-Saharan Africa – that will account for a disproportionate share of the developing world's population boom. For example, the Democratic Republic of the Congo, Uganda, Liberia, Niger, Mali, Chad, and Burundi are all "expected to experience growth of 100 to 200 percent," says Martin Walker, a senior scholar at the Woodrow Wilson Center. Unfortunately, "[t]hese are the countries with the weakest state institutions, the least infrastructure, the feeblest economies, and thus the poorest health and education systems," notes Martin.

But, It is Not Growing as Quickly as Before

The sizeable increase in the absolute number of the world's inhabitants belies the fact that fertility rates are plummeting in most parts of the world. Experts attribute this sea change to vastly improved living standards in much of the developing world; the continued transition of societies from agrarian economies to industrial ones; and the spread of female education, all of which encourage and enable smaller families.

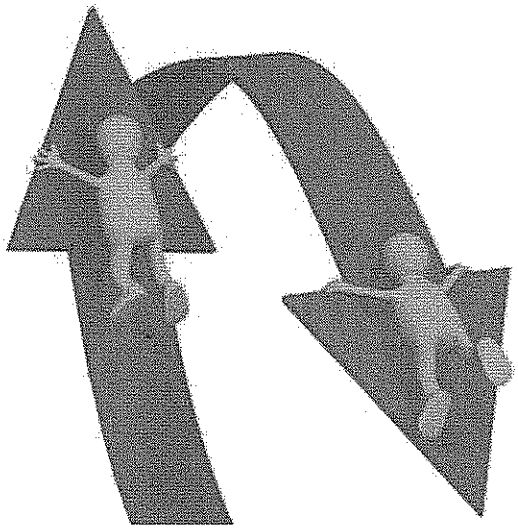
What makes the current drop in fertility unique – most industrialized nations have had declining rates of fertility for decades – is the warp speed at which this transition is occurring. "Poor countries are racing through the same demographic transitions as rich ones, starting at an earlier stage of development and moving more quickly," explains *The Economist.*

Capitalizing on Declining Fertility

The rapid pace of this transition will certainly present novel challenges to developing countries, but it can also produce a golden opportunity for economic growth and development. This opportunity comes from having fewer dependent children (freeing up resources that can be used for investment and savings) and a burgeoning labor force.

This so-called "demographic dividend" is not automatic, however, and it won't last forever. Countries will only benefit if the right social and economic policies are in place. Some developing countries will undoubtedly be able to capitalize on their demographic dividend, as the "Asian Tigers" (Singapore, South Korea, Taiwan, and Hong Kong) did a generation ago.

Unfortunately, the swift pace of today's transition may present more challenges than opportunities for the developing world. Countries in sub-Saharan Africa which have "large youth bulges, high poverty rates, weak governments, and chronic civil unrest offer the least prospect of success," note Richard Jackson and Neil Howe of the Center for Strategic and International Studies. In the Muslim world, "substantial economic growth is more likely," they say, "but... terrorism and destructive revolutions and wars are also more likely."

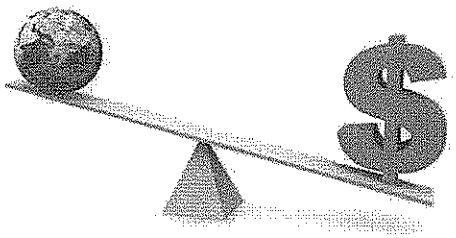


A Shrinking Presence

Countries in the developed world face their own set of challenges. As mentioned earlier, most rich countries have experienced decades of declining fertility rates. As a result, the relative size of the developed world is shrinking.

"[T]he last half century saw, and the next half century will see, an enormous shift in the demographic balance between the more developed regions of the world and the less developed ones," notes Dr. Cohen from The Rockefeller University. "In 1950 the less developed regions had roughly twice the population of the more developed ones. By 2050," he explains, "the ratio will probably exceed six to one."

This demographic rebalancing of the world is "shifting economic power to the developing nations," says Jack A. Goldstone, a professor at George Mason School of Public Policy. "The proportion of global [gross domestic product] produced by Europe, the United States, and Canada fell from 68 percent in 1950 to 47 percent in 2003 and will decline even more steeply in the future," notes Goldstone.

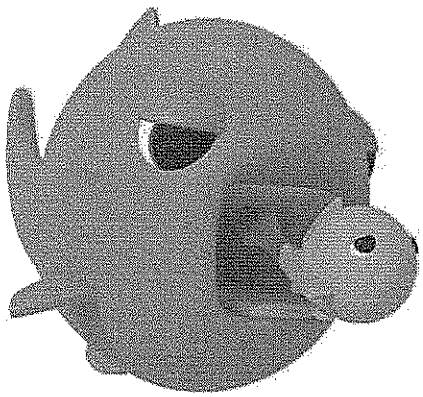


Many experts predict that by 2050 the West will have only a 30 percent share of global GDP. In an increasingly globalized world where economic power translates into geopolitical power, this will likely be a game-changer.

America: A Bigger Fish in a Smaller Pond

The lone bright spot in the industrialized world, demographically speaking, will be the United States. As a result of relatively higher rates of fertility and immigration, America is expected to retain its ranking as the world's third most populous country. In addition, the U.S. economy is expected to hold its own vis-à-vis the global economy.

As we head toward the middle of the century, America's standing among its industrialized peers will rise dramatically. Its share of the developed world's population, which currently stands at 34 percent, will increase to 43 percent, and it will likely account for more than half of the developed world's GDP. As a result, "America will be the only developed country that still matters geopolitically," argues *The Economist*.



Russia: A Hobbled Bear

Russia is falling off a demographic cliff. Fertility rates have been plummeting since the collapse of the Soviet Union in 1991, reaching an abysmal 1.2 in 1999. (A country generally needs a fertility rate of 2.1 to ensure a stable population.) Although this number has increased in the last year or two – likely as a result of government support packages for families – it remains substantially below the replacement rate.

Too few babies are not the country's biggest problem, however. As a result of HIV/AIDS, rampant alcoholism, and a deplorable health care system, life expectancy in Russia (for males) is now only 59 years – less than it was two generations ago.

The demographic double whammy of low fertility and high mortality is expected to shrink Russia's population from 140 million to 116 million over the next 40 years. "Russia is suffering a demographic decline," says Martin Walker, a senior scholar at the Woodrow Wilson Center, "on a scale that is normally associated with the effects of a major war."

It is difficult to reconcile Russia's projected demographic demise with the ambitious plans of its increasingly authoritarian government. "[F]rankly," says Richard Jackson of the Center for Strategic and International Studies, "there's no country in the world today where the demographics are more fundamentally out of whack with the geopolitical aspirations than in Russia."

A Graying Globe

"Global aging is not a transitory wave like the baby boom that many affluent countries experienced in the 1950s....It is, instead, a fundamental demographic shift with no parallel in the history of humanity."
~ Richard Jackson & Neil Howe, Center for Strategic and International Studies

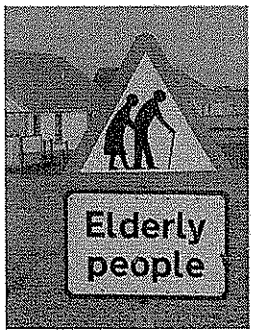
The world is growing old. Today, approximately 11% of the world's population is over 60. That figure is projected to double to 22%, or 2 billion people, by 2050. In just 35 years – for the first time in history – the world will be populated by more old people than children. The economic ramifications of these changes may significantly alter the lives of young and old alike in the years to come.

Longer Lives + Fewer Babies = Aging Societies

Increased longevity and declining rates of fertility are aging the world. People worldwide are living significantly longer lives than they were even 50 years ago. In 1960, life expectancy at birth for the world's population was 52; today, that number is 66. Most demographers agree, however, that the predominant reason for global aging is the dramatic decline in fertility rates in almost all parts of the world.

Although the world as a whole is aging, there are pronounced differences between developed and developing countries. For example, more than 20 percent of the population of developed regions is already over the age of 60, compared to just 8 percent in the developing world. Countries in developing regions, however, are aging at a faster rate than countries in more advanced regions. This presents several problems.

First, developing countries will have less time than advanced countries to deal with the consequences of aging. Second, "the absolute numbers of older people there will swell alarmingly, simply because these countries are so populous," explains *The Economist*. Moreover, the level of economic development in most of these countries is still very low. "[M]ost poor countries have little or nothing in the way of a state-funded welfare net," notes *The Economist*, making the swelling population of seniors "hard to mange."



Looming Budget Busters

The problem faced by most industrialized countries is two-fold: a rapid drop in their working-age populations, coupled with a rapid expansion of their elderly populations. Although some countries – most notably, Japan – are already grappling with this demographic time bomb, most developed countries will not see its full effects for another decade or so when the hundreds of millions of people born during the post-World War II baby boom (1945-65) begin to retire *en masse.*

A future populated by fewer workers and more retirees will adversely affect economic growth and severely strain the budgets of virtually all industrialized nations. The problem is particularly acute in many parts of Europe. As many as 30 million Europeans will leave the work force by 2050, and the population of 80 and 90-year-olds will increase significantly.

No Turning Back Time

There is little that governments can do in the next decade to substantially change the number of old people they will have to support, or the number of workers who will be available to pay for that support. Even if governments could entice women to have more children, it would take decades to reverse the aging trend.

A quicker way to rejuvenate an aging population is through immigration. It is unlikely, however, that governments in affluent countries would pursue this controversial option given current pubic opposition to immigration.

With no quick ways to increase the number of young people (and productive workers) in its societies, the only options left for most governments are not pleasant: raise taxes, decrease benefits, extend the retirement age, or run fiscally irresponsible deficits.

China: Prematurely Aging

At the moment, China is a demographically young country. That status is about to change, and in a big way. Over the next 40 years, China's median age will increase from 30 to 45. Five years ago, approximately 11% of China's population was 60 or older. By 2050, fully one-third of the population – roughly 475 million people – will be elderly. By the middle of the century, China will be an older country than the United States.

This stunning transition is a result of the same forces that are causing the rest of the world to age: increased longevity and decreased fertility. But in China, these trends are supersized. In 1960, average life expectancy in China was about 50 years. By 2005, Chinese could expect to live to 73. As a result of its "one-child policy," China has seen its fertility rate drop from 5.8 in 1970 to 1.8 today.

What troubles analysts most about the country's aging population is not the sheer size of the elderly population nor the rate at which China is aging. Rather, it is the fact that China is aging prematurely. "While today's developed countries were all affluent societies with mature welfare states by the time they became aging societies," explains a 2009 report from the Center for Strategic and International Studies, "China is aging at a much earlier stage of economic and social development."

China's status as an economic superpower – in August 2010, its economy overtook Japan's to become the world's second largest economy – belies the fact that it is still a relatively poor country. China's per capita GDP in 2009 was just $6,600. (By comparison, the per capita GDP for the U.S. was $46,000.) Hundreds of millions of Chinese, who are already struggling to make ends meet, face a dire retirement – and could quickly become a destabilizing force in the country.

America: Graying at the Temples

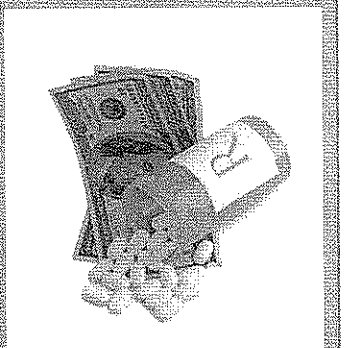
Compared to most of its peers in the developed world, the United States has a young population. For example, in 2009, the median age in the U.S. was roughly 36; in Japan and Germany, it was 44. Eighteen percent of the U.S. population in 2009 was aged 60 or over. In Japan, almost 30% of the population is already 60 or older, while in Italy, more than 26% of the population is elderly. Higher rates of fertility and immigration will help ensure that the U.S. population ages at a slower rate.

Although the U.S. may be better positioned than most industrialized nations to weather the coming age storm, it will still need to make some painful reforms.

Americans work longer than retirees in almost every other advanced society. This is important because it generates more payroll tax revenue to cover payments to retirees. In addition, America's social security system is much less generous than the social welfare programs in other developed countries, and accounts for a smaller percentage of its gross domestic product (GDP). That's the good news. The bad news is that America's public pension scheme has been living on borrowed time.

"[F]or many years, the United States has used payroll tax revenues collected for social security to help fund the rest of government," explains Robert J. Shapiro, author of *Futurecast*. "As retiring boomers claim those excess revenues, U.S. presidents and congresses will have to cut other programs or raise other taxes...," says Shapiro.

Many analysts believe that the social security problem pales in comparison to another problem: the rising cost of healthcare. "In the United States, in particular, the age-related spending burden is not really about pensions at all," says George Magnus, senior economic adviser at UBS Investment Bank. It's "about healthcare." If America wants to ensure that its elderly population has a comfortable retirement, it will have to significantly reform the country's healthcare system – not an easy challenge.



The Perils of Youth

"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 is under age 15. These huge youth cohorts – commonly known as 'youth bulges' – can be desperate or disgruntled if they have few economic or political opportunities."
~ Jennifer Dabbs Sciubba, Rhodes College Fellow

Although much of the world may be aging, there remain pockets of the globe – almost exclusively in the less developed regions – where the population is still young. In fact, the numbers of young people there are at an all-time high. According to the most recent United Nations statistics, there are 1.6 billion children under age 15 and an additional one billion young persons aged 15-24 living in the developing world.

The numbers are even more striking when one considers the level at which children and young people dominate the populations of particular countries. For instance, two-thirds of the population of the Democratic Republic of the Congo, Niger, and Afghanistan are under the age of 25, with Pakistan, the Palestinian Territories, and Yemen falling just below the two-thirds level.

Having a predominantly youthful population – or youth bulge – is not necessarily a bad thing. In countries where "most young adults...have been educated or technically trained," notes a report from Population Action International, "and where their energy and ingenuity are sought by employers, such a large proportion of young people...is seen as an asset." Unfortunately, this is not the scenario that is likely to play out in many countries in the Middle East, sub-Saharan Africa, and South Asia which will be grappling with youth bulges in the decades to come.

A Recipe For Disaster

Many of the youth bulge countries share common characteristics: overwhelmed social systems unable to provide even basic necessities; slowly growing or stagnant economies incapable of producing a sufficient number of jobs; woefully inadequate infrastructure that cannot support the influx of young people from rural communities to urban centers; and weak or corrupt political institutions.

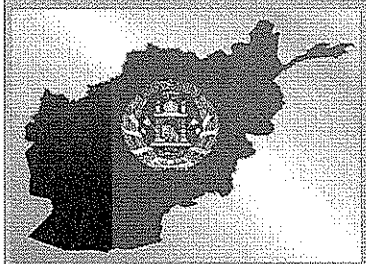
Taken together, this spells disaster. Studies have shown that "countries have a high propensity for internal armed conflict, terrorism, and rioting if they have poorly performing economies, weak governance, and a large youth share of the adult population," explains Richard Curtain, a public policy consultant for UNICEF and the UN Population Fund.

In addition to dealing with many of these common problems, particular regions also face their own set of unique youth bulge-related issues. In the Middle East, for example, an antiquated education system fails to produce students with marketable skills, contributing to youth unemployment rates that range from 20-40%, nearly double the world average.

In sub-Saharan Africa – whose youth bulge is not expected to peak until 2050 – HIV/AIDS has decimated the working-age population of many countries, creating disproportionately large numbers of very young people. If current trends hold, a high percentage of these children will be orphans and may become street children, "a likely source of future urban discontent, criminal activity, and recruits for insurgencies or police states," notes Population Action International.

AFGHANISTAN: AN IMPOSSIBLE CHALLENGE

The situation in Afghanistan – a country that is vital to United States' security interests – is particularly dire. The country is home to one of the world's fastest-growing populations. Today, there are approximately 29 million Afghanis. In just 20 years, if UN projections hold true, Afghanistan's population will exceed 50 million.



It would be difficult for any country to provide adequate services, education and training, and job opportunities for such a burgeoning population. Many experts believe that for a country like Afghanistan, it will be almost impossible. Afghanistan's continuing youth bulge and high rates of fertility, notes demographer Richard Cincotti, "diminish the probability that a coherent Afghan state, if one emerges, could remain intact."

The ramifications of this demographic challenge will reverberate beyond Afghanistan. "[A] lengthy perpetuation of Afghanistan's extraordinary youth bulge," warns Cincotti, will create "competition in an opportunity-sparse society [that] is bad news for young men seeking employment or land ownership – and good news for extremist recruiters."

LIFE IN THE BIG CITY

"This vast urban expansion in developing countries has global implications....What happens in the cities of the less developed world in coming years will shape prospects for global economic growth, poverty alleviation, population stabilization, environmental sustainability and, ultimately, the exercise of human rights."
~ United Nations Population Fund

For the first time in history, half of the world – more than 3 billion people – lives in urban areas. By 2050, as much as 70% of the global population may be living in towns and cities. Although they got a much later start, the number of urban dwellers in the developing world is already more than double the urban population of the developed world, a gap that will only accelerate over the next few decades.

Although mega-cities – urban areas with populations of 10 million or more – receive all the attention, population growth in these megalopolises is actually projected to stabilize, and in some cases, even shrink as we head toward the middle of the century. The real focus should be on smaller cities (less than 500,000 people) which will see half of all urban population growth in the near future.

Another common misconception is that rural migration (peasants in search of a better life) is swelling the ranks of urban centers. With the exception of China, this is no longer the case. Cities in the developing world are primarily expanding as a result of so-called natural growth – city dwellers having babies. In sub-Saharan Africa, drought, famine, ethnic conflicts, and civil strife have also added to the numbers of urban dwellers.

URBANIZATION 2.0

The urbanization process currently transforming the developing world differs in key respects from that which occurred in Europe and North America. That process unfolded over two centuries (1750-1950) and involved much smaller growth in terms of absolute numbers: from 15 million to 423 million urban dwellers.

In contrast, the urbanization process that began in less developed regions of the world in 1950 will see an initial urban population of 309 million swell to 3.9 billion in the space of just 80 years. In addition, notes Jack A. Goldstone of George Mason School of Public Policy, "[d]eveloping countries that urbanize in the twenty-first century will have far lower per capita incomes than did many industrial countries when they first urbanized."

This fact has led to another key distinguishing feature of many of today's urban centers: large numbers of poor people living in slums. Historically, it has been the rural areas rather than the urban areas that have seen widespread and extreme poverty. No longer. A shocking number of urban areas in the developing world – from Latin America to Central Asia to sub-Saharan Africa – have 40-50% of their urban populations living in poverty.

The urban centers of tomorrow will also have to deal with unprecedented numbers of young people – by 2030, it is estimated that upwards of 60% of all urban dwellers will be under 18 – as well as a rapidly growing population of elderly people relocating from rural areas.

Reaping Urbanization's Benefits

Although the prospect of a world dominated by cities teeming with the poor and the young sounds ominous, historically urbanization has been a very good thing. "Countries that are highly urbanized have higher incomes, more stable economies, [and] stronger institutions," notes Anna Tibaijuka, executive director of UN-HABITAT. "They are better able to withstand the volatility of the global economy," she adds. These benefits of urbanization, however, do not materialize of their own accord – just ask the residents of Mumbai or Sao Paulo. It takes resources (financial, technical, and human), as well as thoughtful planning.

Unfortunately, most observers would agree that countries in the developing world are not doing nearly enough to benefit from their unprecedented scale of urban growth, nor to manage its consequences.

Straining the Limits of Sustainability

"Unprecedented economic growth – positive in so many other regards – will continue to put pressure on a number of highly strategic resources, including energy, food, and water, and demand is projected to outstrip easily available supplies over the next decade or so."
~ Global Trends 2025: A Transformed World, National Intelligence Council

Many experts believe that the world has reached a tipping point when it comes to natural resources. Decades of abuse, over-consumption, and poor management have taken their toll on the environment. They see a future in which vast regions of the world are

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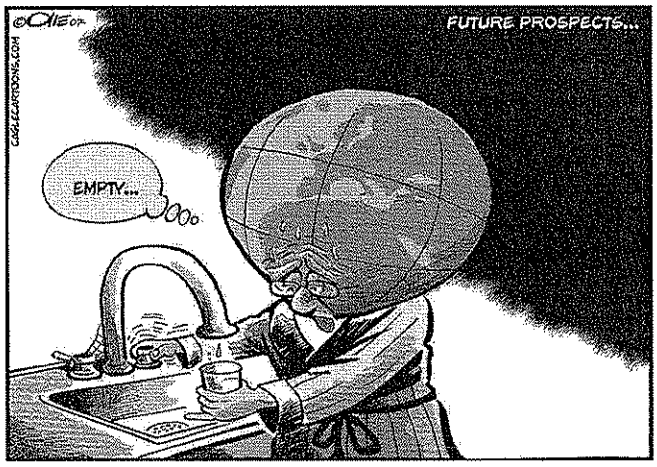
thirsty, hungry, and struggling to secure access to clean, reliable sources of energy.

Dying of Thirst

Although 70% of the earth's surface is covered by water, less than one percent is fresh water in a form – rivers, lakes, and groundwater – that is available for human use. This finite supply of freshwater is quickly being exploited to the point of extinction in some countries, and extinguished by pollution in many others.

"The proportion of people living in countries chronically short of water, which stood at 8% (500 million) at the turn of the 21st century, is set to rise to 45% (4 billion) by 2050," notes *The Economist.* Water scarcity is not limited to the developing world; it affects every continent on the planet, rich and poor countries alike.

The growing scarcity of water is related to a number of factors. First, and perhaps most important, is distribution. "There is enough freshwater on the planet for six billion people," notes the UN Water for Life project, "but it is distributed unevenly and too much of it is wasted, polluted and unsustainably managed."



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China and India together are home to over a third of the world's population yet they have less than 10% of the world's freshwater supplies. And, those supplies are quickly being depleted. The amount of groundwater being withdrawn by China and India regularly exceeds the replenishment rate, and key rivers in both countries that have historically served as a primary source of freshwater have been rendered unusable because of untreated sewage and industrial waste.

It is not just the imbalance in the distribution of population and water that is a problem. Increasingly, the problem is one of diet. As countries in the developing world have moved up the economic ladder, a huge global middle class has emerged that is quickly developing a taste for items, such as beef and dairy products, previously found only in Western diets. Unfortunately, these food products require significantly more water to produce. "With 2 billion people around the world about to enter the middle class," notes *The Economist*, "the agricultural demands on water would increase even if the population stood still."

In fact, global agriculture already consumes nearly 70% of the world's freshwater supplies. Industry uses about 22% of available supplies, with the remaining 8% going to domestic uses. Population growth, increasing urbanization, more affluent consumers, and the energy needs of growing economies in the developing world will lead to competing and conflicting demands for water among these three sectors in the years to come.

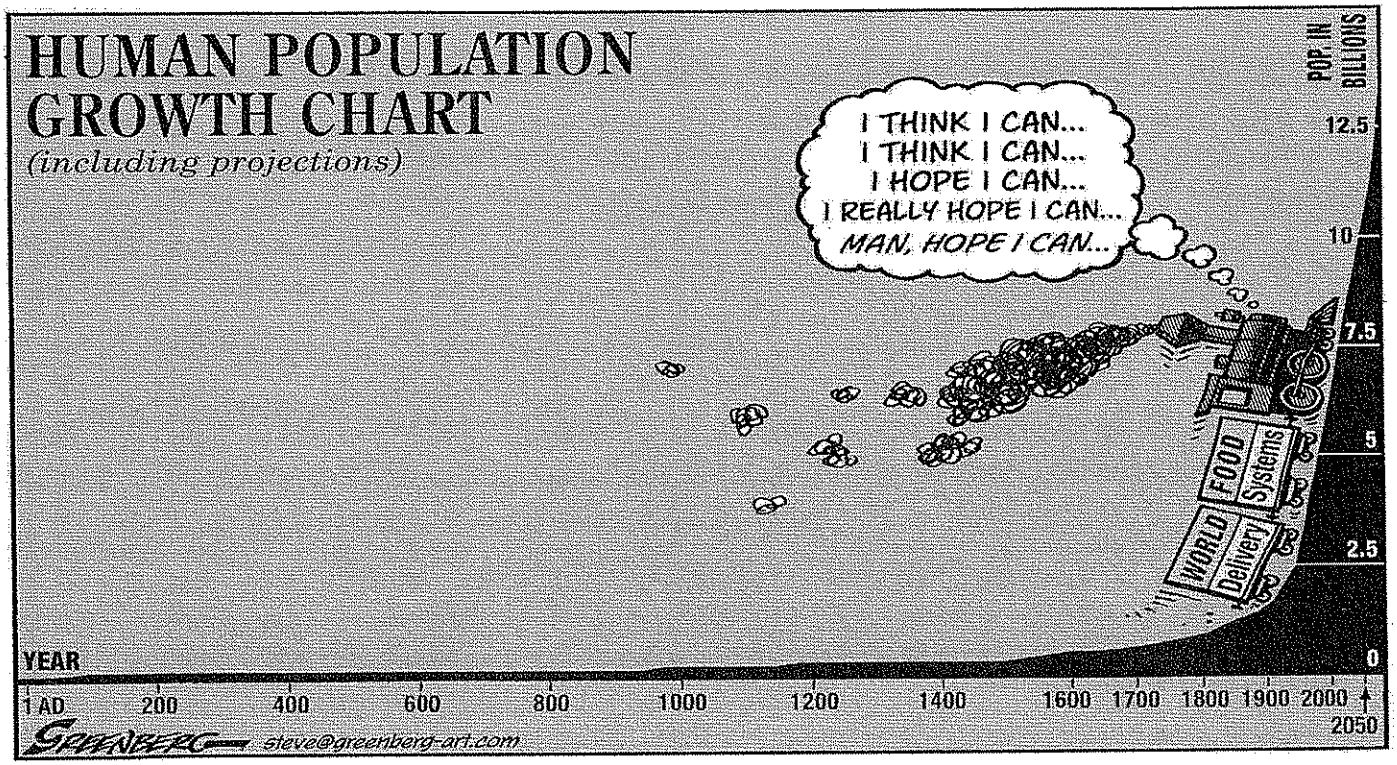
Food for Thought

In 2009, there were over one billion hungry people in the world – 100 million more than the year before, and 200 million more than when the United Nations adopted as one of its Millennium Development Goals the objective of cutting world hunger in half by 2015. What is going on? Why are the ranks of the hungry continuing to swell? And, what does this mean for future generations?

The simple answer is that persistently high prices are putting basic food supplies out of the reach of an increasing number of people. The reasons behind the price hike are more complex, involving elements of both supply and demand.

On the demand side, three factors are increasing pressure on global food supplies. First, population growth drives up demand. Although the overall rate of growth has slowed, the world still adds around 75 million new people each year. Another factor is the adoption of a Western diet by an increasingly large segment of the world's population. This is a problem because the typical Western diet involves the consumption of huge amounts of grain. Most of this grain is consumed indirectly; it is used as animal feed to produce the meat products that are quickly becoming a staple for vast numbers of people in the developing world.

But the largest source of new demand for agricultural commodities is the production of biofuels, particularly ethanol. Cropland that would otherwise be used for the production of food for humans is now being used to produce fuel for cars, a trend that is expected to increase in the years to come as the United States and other countries seek to reduce their dependence on fossil fuels. Most



analysts believe that the diversion of grains to the production of biofuels has been the primary cause of rising food prices.

In order to feed the nine billion people that are expected to inhabit the planet by the middle of the century, the Food and Agriculture Organization has estimated that overall food production must increase by 70% between now and 2050. In the developing world, which will see most of the population growth over the next 40 years, food production needs to almost double. Significantly, these figures do not take into account increases in agricultural production that will be needed to meet increased demand for biofuels.

It is not at all clear where this additional supply will come from. Most experts agree that substantially improving crop yields is not a realistic option, absent a significant technological breakthrough. The only other option is to increase the amount of land being cultivated, something that is easier said than done.

The amount of arable land in the world is shrinking, a victim of soil erosion, desertification, and urbanization. Although there are reserves of land that could theoretically be converted to arable land, most of these lands are located in just a few countries in Latin America and sub-Saharan Africa and the costs – both from a financial standpoint and an ecological one – make this an unrealistic option.

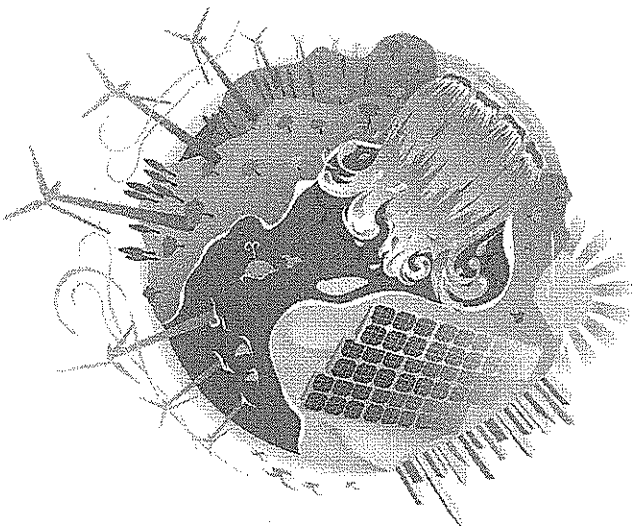
Powering the Future

"Between now and 2050 or so, the world will undergo a great social, economic, and technological transition," says Michael T. Klare, contributing editor of *Current History*. "In place of the fossil fuels – oil, coal, and natural gas – that now satisfy most of our energy needs and define key aspects of contemporary civilization, a new class of renewable energy sources will come to dominate the industrial landscape," notes Klare.

Several factors are driving this transition. The vast majority (86%) of the world's energy comes from burning fossil fuels, with oil accounting for more than a third of that energy. Worldwide energy demand is projected to increase by 40-50% over the next two decades, with emerging markets, particularly China and India, claiming over 90% of that increase.

Many experts believe that global oil supplies will not be sufficient to meet this increased demand: existing oil fields are quickly being depleted; newer fields have not been as productive as older fields; and the risks and costs associated with exploring and developing additional sources of oil are becoming prohibitive.

Production of natural gas – which is expected to peak within 20-30 years – will be able to replace only a small portion of the energy currently being produced by oil. That leaves coal, which is fast becoming the global fuel of choice because it is more widely available than oil or gas; will remain in abundant supply for decades, or even centuries, to come; and is relatively cheap.



Coal is also dirty, and its use to generate energy releases more carbon dioxide – the main heat-trapping gas that is building up in the earth's atmosphere – than oil or natural gas. In fact, concern about climate change is one of the primary factors behind the push to reduce the world's dependence on fossil fuels.

Reducing that dependence will not be easy. Nor will it be easy to develop and adopt cleaner, renewable forms of energy. Although progress is being made on the alternative energy front (solar, wind, geothermal, non-food based biofuels), most experts would agree that we are decades – and trillions of dollars – away from sufficient quantities of commercially viable, widespread sources of renewable energy.

This puts the world in a bind for the next few decades. "[F]orcibly cutting back on fossil fuel use before substitutes are widely available," warns the National Intelligence Council, "could threaten continued economic development...." But, continuing with business as usual is not a solution. The world may be a better place once we make it through the energy transition, but living through that transition may be difficult.

Emerging Security Challenges

"[T]he threats to security are now coming less from military power and more from the trends that undermine states, such as rapid population growth, poverty, deteriorating environmental support systems, and spreading water shortages."
~ Lester R. Brown, founder of Earth Policy Institute

The defining events of the 20th century – two world wars, a cold war, a nuclear arms race – are a lifetime away from the events that will likely shape the first half of this century. The world is in a state of transition when it comes to the drivers of instability and the sources of potential conflict.

Bad Things Happen When States Lose Control

In the last century, governments worried about other countries gaining too much power. In this century, the concern is about countries losing power. "In the decades to come, the most lethal threats to the United States' safety and security," warns Robert M. Gates, U.S. Secretary of Defense, "are likely to emanate from states that cannot adequately govern themselves or secure their own territory."

Known as "weak" or "failing" states, these countries are often in the midst of, or struggling to emerge from, civil conflict. The governments are typically weak or corrupt, unable or unwilling to provide even basic public services to their citizens. Failing states are generally among the poorest countries in the world, with limited prospects of achieving economic sustainability.

Top Ten List: Failed States

Somalia
Chad
Sudan
Zimbabwe
Dem. Republic of the Congo
Afghanistan
Iraq
Central African Republic
Guinea
Pakistan

Source: The Fund for Peace

Many observers warn of an increase in the number of failing states in the future – or a deepening failure of already weak states – as a result of key demographic trends that are closely associated with failing states: high rates of population growth; persistent youth bulges; rapid urbanization; environmental degradation and resource scarcity; and poverty.

The failure of a seemingly insignificant state can have far reaching effects, from destabilizing neighboring countries to providing a safe haven for terrorists and organized crime. "[T]here is particularly great concern," notes Barry R. Posen, director of security studies at Massachusetts Institute of Technology, "about states that are capable enough to build advanced weapons, especially nuclear weapons, but nevertheless weak enough to risk collapse and the loss of control over said weapons."

Failing states also disrupt the effective functioning of an increasingly globalized world. "As the number of failing states grows, dealing with international crises becomes more difficult," notes Lester R. Brown, founder of Earth Policy Institute. "Actions that may be relatively simple in a healthy world order, such as maintaining monetary stability or controlling an infectious disease outbreak, could become difficult or impossible in a world with numerous disintegrating states," Brown says.

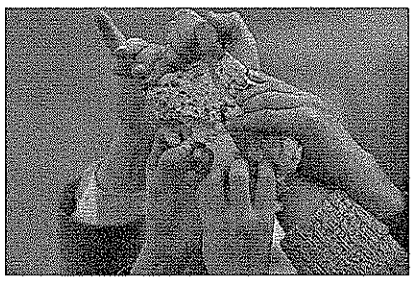
There is no quick or easy solution to this problem. "Fixing failed states," says James Traub, contributing editor to *Foreign Policy*, "requires not just a coherent plan, but very large commitments of money, people, and time." It would require a wholesale restructuring of a country's social, economic, and political foundations. Given the magnitude of these remedial measures, it is no surprise that only a small handful of failed states have been able to make even modest progress towards recovery – a statistic that does not bode well for the future.

Resource Wars

"Environmental security has been debated now for two decades," says Dr. Peter H. Gleick, cofounder of the Pacific Institute. "This debate has now shifted from whether there is a connection [between the environment and international politics] to when, where, and how environmental and resource problems will affect regional and international security," he says.

Welcome to the battlefield of the 21st century, where the fight is less about controlling territory, and more about controlling the precious resources found on that territory: water, food, and energy.

The problem of water scarcity is compounded by the fact that over 260 of the world's major river basins are shared by two or more countries. Historically, disputes over water rights have been resolved diplomatically. Some observers, however, are concerned that the insatiable demand for such a critical resource will eventually lead to outright conflict.



It is not just water that has the potential to spark conflict among and within countries; access to food is also a likely catalyst of future instability. In fact, it is already happening. When global food prices skyrocketed in 2007, riots and civil unrest broke out in nearly 40 countries. Rather than work toward a global solution to the crisis, some food-producing countries limited exports of key food staples, further exacerbating the problem.

Securing reliable access to food sources is creating an odd, and potentially destabilizing, phenomenon: wealthier countries are buying or leasing farm land from poor, developing countries. A land deal between South Korea and Madagascar reportedly contributed to civil unrest – and the ultimate overthrow of the government – in Madagascar when details of the secretive deal were made public.

Access to the fossil fuels that are currently powering the world's economy is also likely to be a future source of tension and conflict. "In a world in which every nation must endeavor to satisfy its requirement for an adequate supply of energy," says Michael T. Klare, *Current History* contributing editor, "the competition for access to the world's remaining reserves of oil and natural gas is destined to become increasingly fierce."

This competition, at least in the short term, will provide windfall profits for producing countries, along with power and leverage to influence international relations. Russia, for example, which is the world's largest producer of natural gas, has been accused of "using its energy resources as a political weapon to pressure European and former Soviet countries to adopt favorable stances towards Moscow," notes the BBC.

As the world weans itself off oil and begins transitioning to renewable sources of energy, petroleum-rich countries will struggle to diversify their economies. This could prove destabilizing in the Middle East. "[T]he geopolitical implications of a shift away from oil and natural gas will be immense," warns the National Intelligence Council.

It's Not Nice to Fool Mother Nature

Security experts are paying increased attention to a new threat: climate change. Until recently, climate change discussions have primarily centered on the environmental and humanitarian impacts of a warming planet. Now, the focus has broadened to include the threats posed to global security by rising sea levels, widespread droughts, melting glaciers, and intense weather events, to name just a few of the predicted effects of climate change.

The security implications of climate change have officially captured the attention of the Pentagon. In its 2010 Quadrennial Defense Review Report, the U.S. Department of Defense labeled climate change as "an accelerant of instability or conflict" and discussed the importance of "crafting a strategic approach to climate change" because it will "shape the operating environment, roles, and missions that we undertake."

Significantly, the most severe effects of climate change are likely to be felt in regions already struggling with water scarcity, weak governments, and high rates of population growth. These regions include South Asia, North Africa, sub-Saharan Africa, and Central America. "Climate change will further exacerbate regional tensions," in these areas notes the American Security Project, "increasing the risk of conflict, mass migration, and humanitarian emergencies that will jeopardize U.S. national interests...."

Experts are particularly concerned about the mass migration of peoples that is likely to be generated by climate change. "People have always moved from place to place in search of greater opportunity," notes Population Action International, "but climate change is expected to trigger larger and more complex waves of human migration." By one widely-cited estimate, "climate migrants" will number 200 million by the middle of the century.

Climate migration threatens to destabilize countries struggling to cope with internally displaced persons, and to spark conflict when those displaced persons move into neighboring countries. "Many likely receiving nations will have neither the resources nor interest to host these climate migrants," warns Dr. Thomas Fingar, chairman of the National Intelligence Council.

Toward a New World Order

"The world is changing. New relationships and animosities are emerging as the fulcrum of global power migrates eastward.
~Erik Gartzke, University of California, San Diego

International relations are in a state of flux. Although experts disagree on the speed, magnitude, and volatility of the coming transition, most observers agree that by the middle of the century the geopolitical landscape will look different than it does today.

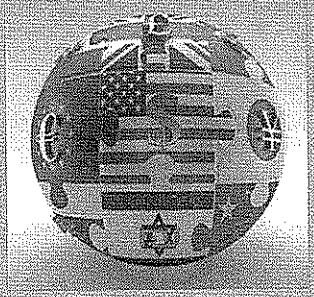
End of an Era

To understand the significance of the transition, it is important to understand the recent state of international politics. We have been living in a unique period in modern history where the world stage has been dominated by a single superpower: the United States. This "unipolarity" – which began with the collapse of the Soviet Union nearly 20 years ago – grew out of America's unprecedented and unrivaled economic, technological, and military strength. By most estimates, this unipole era is slowly, but surely, coming to an end.

Ironically, America created the very system that may ultimately diminish its relative power and influence. The strength and success of the American economy, explains Adam S. Posen, senior fellow at the Peterson Institute for International Economics "enabled the United States to promote worldwide economic openness and encourage buying into a set of institutions, both formal and informal, that resulted in increasing international economic integration."

This integration facilitated the emergence of developing countries, such as China, India, and Brazil, which are now challenging the U.S. (and other Western powers) for dominance of the global economy, and on matters outside the economic realm as well.

The World's Largest Economies in 2050



China
United States
India
Brazil
Mexico
Russia
Indonesia
Japan
United Kingdom
Germany

Source: Goldman Sachs, Global Economics Paper No. 153 (based on projected GDP)

Diffusion of Power

This shrinking economic gap between the United States (and other industrialized nations) and emerging markets is reflective of a larger trend in international relations: diffusion of power. "[A]dvances by others in science and technology, expanded adoption of irregular warfare tactics by both state and nonstate actors, proliferation of long-range precision weapons, and growing use of cyber warfare attacks," notes the National Intelligence Council, have created an environment where traditional notions of power have been turned on their heads.

"Great powers no longer dominate world politics in the same way they have throughout history," notes Leslie H. Gelb, president *emeritus* of the Council on Foreign Relations. "Today, weaker states are better able to resist the strong," he says.

This diffusion of power will likely constrain U.S. foreign policy in the future and diminish its ability to manage global events. "[T]he United States will find it harder to translate its power into successful outcomes," argues Rajan Menon, contributing editor for *Current History*. "Diffusion will surely reduce America's economic dominance, but even before that occurs, regional powers will try to thwart U.S. influence, especially in their own neighborhoods, and with growing success," says Menon.

New Threats, New Alliances

America's foreign policy choices will also be affected by the changing nature of global threats. "[M]any of the worst problems in today's world – civil wars, poverty, genocide, failing and failed states, domestic terrorism – occur within nations, rather than between them, and they are much harder to affect from the outside," explains Gelb. "At the same time," Gelb goes on to say, "many growing challenges, such as climate change, cyber security, and pandemics are transnational, global and terribly complex, and thus require the attention of many nations, and not just the most powerful."

Many experts believe that this new threat paradigm is altering the balance of power on the world stage. According to these experts, coalition building is the wave of the future, and the real power brokers are the lesser states who, by agreeing or refusing to join a coalition, can influence international events. "[S]econd world countries are the swing states that will determine which of the superpowers has the upper hand for the next generation of geopolitics," says Parag Khanna of the New America Foundation.

The more developed countries have no choice but to forge new, non-traditional alliances, explains Jack Goldstone, professor at George Mason University: "To cope with the instability that will likely arise from the new Third World's urbanization, economic strife, lawlessness, and potential terrorist activity, the aging industrialized nations of the new First World must build effective alliances with the growing powers of the new Second World and together reach out to Third World nations."

Most Populous Countries in 2050

India (1.6 billion)
China (1.4 billion)
United States (404 million)
Pakistan (335 million)
Nigeria (289 million)
Indonesia (288 million)
Bangladesh (222 million)
Brazil (219 million)
Ethiopia (174 million)
Dem. Republic of the Congo (148 million)

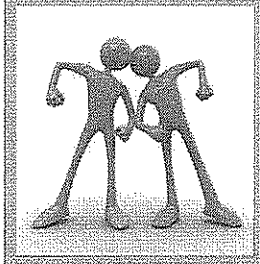
Source: UN World Population Prospects: The 2008 Revision

Uncertainty is the New Certainty

What effect these trends will have on the volatility of the transition is unclear. "The multiplicity of actors on the international scene could add strength – in terms of filling gaps left by aging post-World War II institutions – or further fragment the international system and incapacitate international cooperation," notes the National Intelligence Council. For the foreseeable future, the National Intelligence Council predicts that fragmentation is the likely outcome.

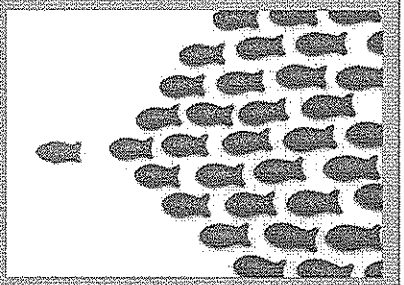
Other observers have a more optimistic view of the future of international relations. "What emerged in the twentieth century," notes Eric Gartzke, a professor at the University of California, "and what appears likely to persist in the twenty-first century, is the realization that commerce creates compatible interests among world powers." This may not be enough to prevent future conflicts, or even wars, between great powers, but "at least [it] creates the basis for an important set of mutual or compatible interests among states," he says.

Rising Powers



A hot topic of debate among foreign policy experts is whether any of today's regional powers will be able to challenge the United States for global supremacy in the decades to come. Some experts think this possibility is remote. The disparity in power between the United States and its closest rivals – China, India, and Russia – is too great to be overcome, they argue, and their rise to great power status is anything but assured. "Russia's development is an uncertain prospect," says Rajan Menon, contributing editor for *Current History*. "The ascent of China and India could be arrested, or even derailed, by the several constraints that these countries face, as well as by surprises," he explains.

Others, such as Stephen F. Szabo, executive director of the Transatlantic Academy, believe that the decline in America's economic and military dominance "makes the rise of countervailing powers more probable than in the past." Szabo argues that "[t]he world is becoming a global multipolar system for the first time in history, and American influence will be more limited than at any time since it became a global power."



Still others take a middle ground, arguing that the United States may no longer be a dominant power, but it will still be the leading power, "the one nation capable of exercising leadership on international issues such as security, trade, climate change, and terrorism," says Leslie H. Gelb, president *emeritus* of the Council on Foreign Relations. "The central issue regarding America's role in the world then becomes: How should Washington think about and use its power to either preempt problems or help solve them," notes Gelb.

Conclusion

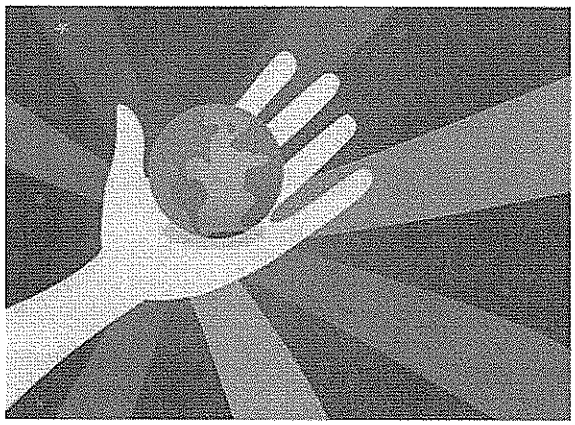
"Be the change you want to see in the world."
~Mahatma Gandhi

The future is full of complex issues that lack simple solutions. But it is not without hope. There is no limit to the ingenuity and resourcefulness of today's generation.

A brighter future will not happen, however, without leadership and action. What can be done to manage current trends to minimize their consequences and capitalize on the opportunities they present? How can the United States take the lead in solving transnational issues, such as climate change, failed states, and resource scarcity? What role should multilateral institutions play in tackling these issues?

These are obviously issues that must be tackled at the highest levels of government, but you, too, can have a hand in how the future unfolds. You have already taken the first step — educating yourself about the key trends that will shape the world you are about to inherit. To quote Kofi Annan, the former secretary-general of the United Nations: "Knowledge is power. Information is liberating."

You now have the power; use it wisely.



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