RAND REVIEW

Spring 2008

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Baby Steps

Comparison of Neonatal Services
Points to National Health Care Lessons

—By Michael Hallsworth and Evi Hatziandreu

Fount of Knowledge: How Managers of Water Can Plumb Its Deep Uncertainties
—By David G. Groves

Disoriented: In Asia, U.S. Still Guards the Fort but Surrenders the Bank
—By William H. Overholt

Beyond the Spoils: In an Age of Polarization, What Makes a Policy "Successful"?
—By Diana Epstein and John D. Graham

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Message from the Editor

Clues, if Not Answers

Graduate schools of public policy often use the case-study method of instruction, because any good case study can focus the mind on how to resolve a tricky situation in ways that might also apply to other situations. An exemplary case study distills many of the economic, statistical, financial, organizational, political, and even personality-driven complications of a major public policy problem into a mercifully manageable microcosm. The case study thus contains clues for solving problems beyond the bounds of the case study itself.

Our two top stories in this issue of *RAND Review* offer similar payoffs. In what amounts to an international series of case studies, the cover story compares neonatal services across the United Kingdom, the United States, Canada, Australia, and Sweden. By zooming in on both the health status of newborns and the quality of neonatal care systems in these countries, Michael Hallsworth and Evi Hatziaandreu detect systemic strengths and weaknesses, identify how each system of care can improve the quality of life from the very beginning of life, and suggest what the countries might learn from one another—not just about neonatal health care services but also about national health care management.

Likewise, the story and centerpiece about water resources highlight broadly applicable lessons from local case studies. Focusing on the short-term and long-term options available to managers of two water utilities in the drought-prone western United States, David Groves offers encouraging words for water managers across America and around the world who must slake the thirst of expanding populations while facing uncertain changes in global climate. Groves outlines new methods for evaluating water resource strategies despite the uncertainty, for quantifying the value of water-efficiency programs, and for identifying additional strategies to reduce vulnerabilities to climate change.

—John Godges

**The case study contains clues
for solving problems beyond the
bounds of the case study.**

On the Cover

Newborn arrives in Sweden on February 21, 2007.

HANNA ANDERSSON/WWW.IMAGEBANK.SWEDEN.SE

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Still on Track After All These Years

Long-Standing Database Helps in Securing America's Railroads

TWO BLOODY TERRORIST INCIDENTS IN 1972—the attack by the Japanese Red Army on passengers at Lod (later Ben Gurion) International Airport in Israel and the murder of Israeli athletes by Palestinian terrorists at the Munich Olympics—signaled to the world that a new mode of warfare had begun. In response, RAND analysts began tracking and categorizing terrorist attacks around the world by means of a simple card catalog.

Today, the database that RAND began more than 35 years ago has become an indispensable resource for studies of diverse aspects of international and domestic terrorism, including a recent study that looks at how to secure America's passenger-rail systems.

Link by Link

As Brian Jenkins, who launched RAND's terrorism research program, has argued: "Knowledge is the antidote to anxiety." In 1972, he began tracking terrorist attacks on 3-by-5-inch index cards.

That early effort has grown into a full-fledged, online terrorism knowledge database managed by the Oklahoma City-based Memorial Institute for the Prevention of Terrorism (MIPT). Today, this MIPT Terrorism Knowledge Base® integrates data from multiple sources: the RAND Terrorism Chronology Database (documenting international terrorist incidents between 1968 and 1997), the RAND-MIPT Terrorism Incident Database (recording domestic and international terrorist incidents from 1998 to the present), the Terrorism Indictment database (from researchers at the University of Arkansas), and DeticaDFI's research on terrorist organizations (culled from terrorism specialists and regional experts who compile comprehensive profiles of each group and key leaders based on the most recent and relevant literature available).

As such, the database serves as a one-stop shop where policy-makers, journalists, first responders, and the general public can find comprehensive information on terrorism. The Web site now averages more than 100,000 visits a month from more than 65,000 users. Members of the U.S. Congress often cite statistics from the database, and the U.S. Department of Homeland Security is the largest civilian user.

**"Knowledge is the antidote
to anxiety."**

Guarding the Rails

While there have been no successful attacks on U.S. rail systems recently, attacks on passenger-rail systems around the world—such as in Madrid in 2004, on the London Underground in 2005, and in Delhi in 2007—highlight the vulnerability of rail travel and the importance of rail security.

"Millions ride the nation's railways every day, and it is critical to protect them from terrorist attacks. But we need ways to do so while getting the most for the money we invest," said Jeremy Wilson, lead author of *Securing America's Passenger-Rail Systems*. "By design, rail systems are open and accessible to large numbers of people and, for this reason, are difficult to secure."

Drawing on data from the RAND-MIPT Terrorist Incident Database (now the MIPT Terrorism Knowledge Base), researchers found that bombings are the most prevalent terrorist threat to rail systems, that most such attacks produce few fatalities or injuries, and that attacks in densely packed rail cars and train stations are of particular concern because of the casualties that can result. Not all such attacks come from explosives, so security measures must address the possibility of other attack modes as well. But given the damage from a relatively small number of large attacks, security measures that prevent only the largest-scale attacks could significantly reduce the associated human costs.

To understand how to protect people from such attacks, researchers examined eleven potential attack locations in a rail system and subjected them to eight potential attack modes. Each of the 88 scenarios was then categorized as high, medium, low, or no risk. (The latter occurs when the target-attack combination is not possible.) The figure summarizes the results.

"Some rail-attack modes are more of a concern than others," said coauthor Brian Jackson. "The use of small explosives is a high or medium risk for most targets, while hoaxes or threats pose a risk for only a few targets. Likewise, some targets are more of a concern than others. The system-operation and power infrastructure is a high or medium risk for seven of the eight attack modes. The underground infrastructure is less of a target in comparison."

The study used a composite passenger-rail system to avoid disclosing confidential details about any specific U.S. rail system. In examining how to defend such a system against the threats, the study compared the cost-effectiveness of adding dif-

To commemorate the 60th anniversary of the RAND Corporation, which was established as a nonprofit institution in 1948, stories about "RAND Then and Now" will appear in *RAND Review* through 2008.

The Use of Small Explosives Is a High or Medium Risk for Most Types of Targets

	Weapon placed inside train vehicle	Underground stations	Station access and pathways	Underground infrastructure	External, underground attack on the train	Ground-level stations	Ground-level infrastructure	External, ground-level or elevated attack on train	Elevated infrastructure	Elevated station	System-operation and power infrastructure
Large explosive			High			High	High	High	High	High	High
Small explosive	High	High	High	Medium	High	High	Low	High	Medium	High	High
Large incendiary			Medium			High	Low	High	Low	Medium	Medium
Small incendiary	High	High	Low		Low	Medium		Low		Medium	Medium
Armed attack	High	High	High		Medium	High		High		High	Medium
Unconventional weapon	High	High	Medium			Medium				Medium	Low
Sabotage	Medium			High	High		High	High	High		High
Hoax or threat	Low	Low	Low			Low				Low	Medium

NOTE: Blank cells indicate "no risk."

ferent security measures onto the system's baseline security. Four broad categories of cost-effective security measures emerged:

- relatively inexpensive solutions with high effectiveness, such as enhanced security training
- additional inexpensive solutions with reasonable levels of effectiveness, such as installing retractable bollards at the entrances and exits of the central operations center and power plant
- relatively expensive solutions with high effectiveness, such as installing fixed barriers at the curbsides of all entrances and passageways leading to train stations, both above ground and underground
- relatively expensive longer-term solutions, such as rail vehicle surveillance systems.

"While such options are specific to the particular system and to a particular point in time, the framework itself is useful for planning across all options," noted study coauthor Jack Riley.

Chugging Ahead

Since the modern face of terrorism emerged in 1972, the threats posed by it are constantly changing and evolving, taking on new, often more lethal forms designed to avoid government

countermeasures. Continuous data collection is crucial for staying one step ahead of the trends. The passenger-rail study is but one of a series of recent studies in which RAND researchers have used such data to get "inside the terrorist mind" and to understand how to outsmart it. ■

Related Reading

Breaching the Fortress Wall: Understanding Terrorist Efforts to Overcome Defensive Technologies, Brian A. Jackson, Peter Chalk, Kim Cragin, Bruce Newsome, John V. Parachini, William Rosenau, Erin M. Simpson, Melanie Sisson, Donald Temple, RAND/MG-481-DHS, 2007, 182 pp., ISBN 978-0-8330-3914-9, \$25.

Securing America's Passenger-Rail Systems, Jeremy M. Wilson, Brian A. Jackson, Mel Eisman, Paul Steinberg, K. Jack Riley, RAND/MG-705-NIJ, 2007, 142 pp., ISBN 978-0-8330-4117-3, \$28.

Sharing the Dragon's Teeth: Terrorist Groups and the Exchange of New Technologies, Kim Cragin, Peter Chalk, Sara A. Daly, Brian A. Jackson, RAND/MG-485-DHS, 2007, 136 pp., ISBN 978-0-8330-3915-6, \$20.

Stealing the Sword: Limiting Terrorist Use of Advanced Conventional Weapons, James Bonomo, Giacomo Bergamo, David R. Frelinger, John Gordon IV, Brian A. Jackson, RAND/MG-510-DHS, 2007, 154 pp., ISBN 978-0-8330-3965-1, \$20.

Diversity Programs Deemed Necessary but Not Sufficient for Diversity

Creating diverse workplaces is a growing priority for U.S. companies and a cottage industry for consulting firms specializing in diversity management, but adhering to the best diversity management practices “in themselves may not enable a company to achieve a high level of diversity,” according to a new RAND paper.

Firms that are recognized for workforce diversity share a core set of motives and practices, including both a conviction among senior managers that diversity improves business performance and a strong leadership commitment to various diversity planning and implementation activities beyond the standard recruitment, retention, and promotion programs, according to the paper.

The study compared the practices of eight companies ranked among *Fortune* magazine’s “50 Best Companies for Minorities”

against what the existing diversity literature says about best diversity practices. The study then contrasted these eight companies with six others classified under *Fortune* magazine’s “100 Best Companies to Work For.” The latter companies had been recognized for exemplary human resources departments, but not for their level of diversity.

As expected, the companies with exemplary diversity generally did better in following all or the majority of the best diversity guidelines than did the companies with exemplary human resources departments. More interesting, however, was the contrasting motivations for diversity between the two types of companies.

“While best diversity companies favored diversity for reasons related to boosting business performance, best human resources companies stressed nonbusiness reasons

like an enhanced work environment that results from improvements in basic recruiting, retention, and promotion programs,” noted Jeff Marquis, a RAND political scientist and lead study author.

When looking across all 150 companies on both *Fortune* lists, the study uncovered intriguing patterns. As shown in the figure, the best diversity companies were concentrated in certain industries, such as accommodation and food services or arts and entertainment, whereas the best human relations companies tended to be in the health care and professional services sectors. There was very little overlap between best diversity firms and best human resources firms with respect to industry. A broad swath of U.S. industrial sectors had no representatives on either one of the magazine’s annual lists.

The results show that context—in this case, the industry sector—could play a large role in determining diversity. Other contextual factors that might play a role include demographic trends and a company’s size, age, location, and history with diversity issues.

“One of the key messages we take away from the study is that companies recognized for exemplary diversity follow a core set of motives and behaviors,” said Marquis. “But diversity results are not only a matter of strategy. They also depend on companies’ operating environments.” ■

For more information: *Managing Diversity in Corporate America: An Exploratory Analysis*, RAND/OP-206-RC, ISBN 978-0-8330-4305-4, 2008.

Deportable Immigrants Pose No Unique Threat to Public Safety

One factor driving the recent crackdown on illegal immigration in some areas of the country is a fear that illegal immigrants increase crime. But recidivism rates are no higher among deportable immigrants than among similar nondeportable ones, according to a RAND study published in the February 2008 issue of *Criminology & Public Policy*.

“Our findings run counter to the notion that illegal immigrants are more likely than other immigrants to cycle in and out of the local criminal justice system,” said Laura Hickman, a RAND researcher and assistant professor with the Criminal Justice Policy Research Institute at Portland State University.

“Deportable” immigrants are those who either entered the United States illegally or entered legally but whose permission to remain in the country has lapsed or has been revoked. “Nondeportable” immigrants are those who are either legal or naturalized.

The study followed foreign-born male inmates (including 517 deportable and 780 nondeportable immigrants) released from the Los Angeles County Jail in August and September 2002, tracking them for a year to see whether there were differences between the two groups in their rates of rearrest.

There was a difference between deportable and nondeportable immigrants in the percentage that were rearrested—43 percent compared with 35 percent, respectively. But these simple percentages fail to account for other factors well

known to be related to recidivism. Thus, comparison of these two percentages is not very informative, “like comparing apples and oranges,” Hickman said.

“Research has shown that some individual-level factors are consistently related to recidivism, and we have to take such factors into account to make a fair comparison,” she noted. These factors include demographic characteristics (such as age), criminal history, and reason for the original incarceration. For example, across all kinds of crime research, younger people and those jailed on drug charges have higher rates of recidivism than do other groups.

When researchers adjusted for differences between the immigrant groups on recidivism-related factors, the raw difference between the two groups shrank nearly in half. Most important, the analysis showed that this adjusted difference was not significant. As shown

by the dashed vertical line in the figure, the top two confidence intervals overlap, indicating that the adjusted difference in rearrest between the two groups falls within the margin of error. Just as we interpret margin of error in election polls, for example, the results suggest that the five-percentage-point difference between the two groups is not meaningful.

The study illustrates two basic points, said Hickman. “First, it highlights the need for basic descriptive research on immigration and crime.” She said the lack of research has allowed the void to be filled by ideologically based assumptions and untested rhetoric.

Second, the study sends the cautionary message that simple percentages can be misleading. Such percentages “are the easiest for researchers to produce and for the public to understand, but we cannot learn much from them.” ■

When Adjusting for Known Recidivism Factors, Deportable Immigrants Are No More Likely to Be Rearrested Than Are Nondeportable Immigrants

SOURCE: “Are Deportable Aliens a Unique Threat to Public Safety? Comparing the Recidivism of Deportable and Nondeportable Aliens,” *Criminology & Public Policy*, Vol. 7, No. 1, 2008, pp. 59–82, Laura J. Hickman, Marika J. Sutorp.

NOTE: “Adjusted” means the data account for factors known to cause recidivism, including age, number of previous arrests, and the type of previous charge (such as having at least one property-related charge and/or one drug charge).

Grassroots Program Seems to Reduce Malnutrition in India at Low Cost

India accounts for nearly 40 percent of the world's malnourished children, but a new program shows promise in cost-effectively reducing child malnutrition there, according to a study published in the September 2007 issue of *Food and Nutrition Bulletin*.

Initiated by the United Nations Children's Fund (UNICEF) in collaboration with the Indian states of Bihar and Jharkhand, the "Dular strategy" is a nutrition program that capitalizes on grassroots community resources. The emphasis is on neighborhood-based "local resource persons" who track the health status of women and of children up to three years old. (*Dular* is the Hindi word for "love and care.")

Launched in Bihar in 1999 and in Jharkhand in 2001—areas with a high proportion of India's malnourished children—the program consists of a low-cost, replicable strategy of family and community involvement. "Such programs could become a cost-effective instrument for reducing child malnutrition in India," said Tamara Dubowitz, a RAND health policy researcher who directed the study.

The program objectives include increased prenatal care attendance, improved delivery of breast milk and colostrum (the first, antibody-rich secretion from the mammary glands after birth), improved nutritional practices, and decreased malnutrition.

In the study, villages were divided into Dular and non-Dular villages. Non-Dular villages received services normally provided by India's Integrated Child Development Services (ICDS), including

standard prenatal counseling and well-baby checkups. Dular villages received the services from ICDS but also had a team of local villagers trained to be health workers responsible for consistent contact, follow-up, and emphasis on such key issues as maternal nutrition, the need to feed infants colostrum, and breastfeeding.

"Dular Regular" villages were those with initial Dular activities, including identification of local resource persons and delivery of their preliminary services. "Dular Intensive" villages received the program in its full implementation.

The figure shows that there were statistically significant differences in all seven of the measured outcomes between Dular and non-Dular villages. The former had significantly more mothers following positive practices for prenatal care, delivery of breast milk, delivery of colostrum, up-to-date immunizations, use of iodized salt, maintenance of proper iodized salt status, and use of childbirth delivery kits.

Particularly noteworthy is that young children in Dular areas had a 45 percent lower prevalence of severe malnutrition and were four times more likely to receive colostrum than were those in non-Dular villages.

"The far greater Dular outreach capacity with the use of local resource persons, focusing even on a relatively small number of behavioral changes, can have a considerable impact at a low cost," said Dubowitz. "The cost of the Dular overlay of services, excluding ICDS costs, is just over \$16 per child per year." ■

"The cost . . . is just over \$16 per child per year."

Mothers in Dular Villages Made Great Strides in Reducing Child Malnutrition

SOURCE: "Identifying Efforts to Reduce Child Malnutrition in India: An Evaluation of the Dular Program in Jharkhand, India," *Food and Nutrition Bulletin*, Vol. 28, No. 3, September 2007, pp. 266–273, Tamara Dubowitz, Dorothy Levinson, Jerusha Nelson Peterman, Geeta Verma, Sangita Jacob, Werner Schultink.

NOTE: Differences between Dular and non-Dular villages are statistically significant in all cases.

How North Korea Can Modernize Politically, Economically, Peacefully

The United States and other nations can promote peaceful modernization of North Korea's political, economic, and security systems using policy recommendations put forth by a unique multinational collaboration, according to a RAND report.

The proposed policy changes “won’t work overnight, and they won’t work at all if North Korean leaders are not convinced that their country will gain from change,” said Charles Wolf Jr., lead author and a RAND senior economic adviser. “But by collaborating with other nations and working together to encourage North Korea to modernize, the United States has a better chance to create a win-win situation that benefits all.”

The study stems from a two-and-a-half-year collaboration among RAND and five other institutions from China, Russia, Japan, and South Korea, each with its own interest in modernizing North Korea.

The study outlines a set of policy instruments that could be used to engender fundamental, but peaceful, system change in North Korea. The instruments fit within four “baskets”—political, economic, security, and sociocultural—whose components could be packaged into alternative “portfolios” for modernizing the North Korean system.

Researchers from the six institutions agreed on a consensus portfolio. It includes these components: verifiable denuclearization of the Korean peninsula; a six-nation declaration of nonaggression and peaceful coexistence; direct bilateral and multilateral talks aimed toward normalization of relations with North Korea; encour-

agement of fledgling market-oriented experiments, such as free economic zones; assistance for developing small businesses and protecting private property rights; creation of modern financial and budgetary systems; generation of government revenues by taxing legitimate enterprises; joint programs for medical monitoring, telecommunications, and the environment; and academic, cultural, and arts exchanges.

The consensus plan calls for implementation in two phases, each encompassing a mixture of incentives and disincentives, rewards and penalties, and actions taken by North Korea in parallel with actions taken by the five other countries.

The study has been translated into Korean. “As such, it will be distributed through intermediaries into the North Korean system with the hope its ideas will be discussed and pursued by potential change agents in North Korea,” said Wolf.

“Although modernization of North Korea would benefit the

interests of the United States and its allies,” he concluded, “North Korea also has much to gain, including higher economic growth rates, a larger domestic economy, enhanced political legitimacy, improved prospects for stability, the survival of the current regime and its leadership, expanded interactions between North and South Korea, and wider participation and increased influence in the international community.”

The other institutions participating with RAND were the China Reform Forum, of Beijing; the Center for Contemporary Korean Studies at the Institute of World Economy and International Relations, of Moscow; the Institute for International Policy Studies, of Tokyo; and the POSCO Research Institute and the Research Institute for National Security Affairs, both of Seoul. ■

For more information: *Modernizing the North Korean System: Objectives, Method, Application*, RAND/MG-710-SRF/MCF/RC, ISBN 978-0-8330-4406-8, 2008.

The audience stands for the U.S. national anthem at the start of a concert by the New York Philharmonic at the East Pyongyang Grand Theater in the North Korean capital on February 26, 2008, marking the largest cultural exchange ever held between the two countries—which are still technically at war. The flags of both countries are on stage.

AP IMAGES/DAVID GUTTENFELDER

Weighty Debate

Health Experts Seek Common Ground in Fight Against Obesity

TWO-THIRDS OF ALL AMERICANS are now overweight or obese, a public health crisis blamed on everything from the omnipresence of high-caloric foods to the breakdown of personal responsibility. At a recent symposium held at RAND's Pittsburgh office, three health experts debated the causes of the trend and what could be done about it. Their perspectives differed regarding the causes, but they agreed that the solutions need to involve everyone: government, the health care system, the food industry, employers, and, yes, individuals themselves.

Our Environment, Ourselves

Deborah Cohen, an obesity researcher at RAND, attributed the rise in obesity to our surroundings. The

inability to manage one's weight cannot be attributed to personal failing or lack of willpower, she said. Rather, the human brain is wired to respond to visual food cues—things like ads, fast food icons, and food itself—by craving food. Moreover, our surroundings have undergone a transformation over the past 20

years, with an explosion of these cues. "I even see chocolate being sold in the lingerie department!"

These changes, coupled with our brain wiring, she argued, conspire to prevent us from managing our weight. She also pointed to the larger portions served at restaurants and the surging consumption of sugary beverages, such as sodas and sports drinks.

Weight management is a matter of balancing caloric intake (food) and caloric output (exercise), but Cohen said the environment is also thwarting our ability to exercise: Many inner city areas lack parks and other recreational facilities; high crime rates make many parents fearful of allowing their children to play outdoors; and suburbs are often designed to discourage walking.

Health Insurance Incentives

As obesity spreads, health care costs rise for chronic health conditions like Type II diabetes, heart disease, and osteoarthritis. With mounting trepidation, employ-

ers who provide health insurance have asked their health insurance companies what they intend to do about it. Donald Fischer, senior vice president for integrated clinical services at Highmark Blue Cross Blue Shield in Pittsburgh, said that if the trend continues, health care and insurance costs will increase at faster rates.

Fischer began by echoing Cohen. "It's not uncommon to find kids who are drinking more than a thousand calories a day in juices, sodas, and sports drinks," he said, noting that schools have a perverse incentive to maintain soft drink vending machines, because the proceeds from sales and sponsorships subsidize extracurricular activities.

But he also cited factors that interfere with the clinical treatment of overweight or obese patients. Parents of overweight children rarely see their children as being overweight, he said. If a physician raises the issue, parents tend to view it as simply a cosmetic one, failing to comprehend the health consequences.

For their part, physicians say they lack the knowledge to diagnose and effectively treat obesity. Perhaps more to the point, their schedules allow little or no time for counseling patients about weight loss: Because obesity has not traditionally been classified as a disease, physicians receive no reimbursement for their time spent treating it.

In response, Highmark has made several key policy changes. The insurance company has redefined obesity as a diagnosable disease and now reimburses for its treatment, based on the recommendation by the American Academy of Pediatrics (AAP) that overweight children need to be treated medically. Highmark has also assembled an obesity toolkit for physicians. This toolkit includes a small device for determining a child's body mass index, a measure of body weight relative to height; a chart showing the health risks associated with increasing body mass; and a copy of the AAP treatment guidelines.

Fischer emphasized that childhood obesity is "everyone's problem and everyone's responsibility. While the health care system plays a vital role, we can't put all the responsibility on it. Instead, we need to continue to work hand-in-hand with employers,

**Childhood obesity is
"everyone's problem
and everyone's
responsibility."**

JENNIFER NIELSEN

Gathering for a conversation at the RAND Pittsburgh office are Donald Fischer, senior vice president for integrated clinical services at Highmark Blue Cross Blue Shield in Pittsburgh; Philip Hallen (moderator), chairman of the Pittsburgh History & Landmarks Foundation and chairman emeritus of the Pennsylvania Humanities Council; Deborah Cohen, a RAND behavioral scientist; and Stephen Thomas, director of the Center for Minority Health and the Philip Hallen Professor of Community Health at the University of Pittsburgh Medical Center.

health care providers, municipal parks and recreation departments, and others.”

It Takes a Community

Stephen Thomas, who is director of the Center for Minority Health and the Philip Hallen Professor of Community Health at the University of Pittsburgh Medical Center, turned the audience’s attention to the fact that blacks and Latinos are far more likely to be obese than are whites. “Many in the minority community are poor,” he said, “and I can buy a coke for 50 cents, but a bottle of water costs a dollar.”

He described an innovative University of Pittsburgh program designed to prevent obesity. Called the Healthy Black Family Project, the program has enrolled about 6,000 people, educating them to make healthy changes in their lives. The program is housed in the inner city, rather than on the university campus, to be close to the community it serves.

“We need to actually go into neighborhoods to appreciate both the opportunities and the challenges. It’s not enough for a physician to say you need to lose weight; it must be balanced by what you actually do when you leave the doctor’s office. This project, which takes the results of all the studies and puts the findings into practice, is giving real people the help they need to take charge of their weight.”

Thomas emphasized the far-reaching effects of the obesity epidemic, citing the results of a recent nationwide health survey that found California to be the 6th healthiest state in the nation but Pennsylvania to be only 45th. “Corporations are not going to want to open factories in places with so many unhealthy people, so good health is an investment in economic growth!”

Fischer left the audience with a note of promise. He pointed to improved school lunches and to society’s shift in attitudes toward smoking over the past 10 to 20 years as evidence that people can change their behavior, even deeply ingrained behavior.

“No one gets fat on purpose,” Cohen reassured the audience. “No one can rely on willpower alone against the food environment.”

One audience member observed that the mass media “advertise all these fattening foods, but they could be helping inform people about the consequences of their choices.” Another said that physicians should communicate to parents in terms they understand. A food services manager added, “To make better choices, consumers need information at the point of purchase.”

Thomas summed up the general mood. “We need to resist shifting responsibility,” he said, “and stay on point, continue to innovate, and cross-collaborate.” ■

Fount of Knowledge

How Managers of Water Can Plumb Its Deep Uncertainties

By David G. Groves

David Groves is an associate policy researcher at RAND.

Across America and around the world, water managers face increasing difficulties in ensuring water supplies for expanding populations, particularly with the threat of a changing climate. Recent RAND projects examining these issues in the western United States show how some of these challenges can be managed.

One important action for water managers is to invest in water-use efficiency improvements, and better valuations of these programs can help managers make better choices among the investments. For example, if one looks at the efficiency benefits of reducing the costs of water procurement and delivery alone (known as short-run avoided costs), just 7 of the 21 efficiency programs considered by a Colorado water utility appear to be cost-effective. But when long-run avoided costs, such as those from deferred infrastructure projects, and environmental and recreational benefits are factored into the equation, all but 5 of the 21 programs stand out as cost-effective. As shown in one RAND study, accounting for the additional benefits is critical to recognizing the full value of water-efficiency programs.

Another study focused on methods to evaluate the uncertain risk of climate change on water management, using Southern California's Inland Empire Utilities Agency as a case study. Even though there is significant uncertainty about the effects of climate change on the region's water supply and demand, the

study found that sensible investments can be identified now for the Inland Empire. Specifically, it would be prudent for this utility's managers today to invest more heavily in local resources, including increased water efficiency and more-aggressive, innovative groundwater management programs.

Water Efficiency Benefits

Choosing how much to invest in water efficiency can be difficult because estimating its benefits can be difficult. Most utilities typically consider only the reduced costs of using current water facilities to meet reduced demand (short-run avoided costs). But there are also deferred or downsized investments in future infrastructure (long-run avoided costs), reduced withdrawals of water from rivers and streams using existing facilities (short-run environmental benefits), and reduced environmental and recreational impacts thanks to the delayed construction of new facilities or the postponed expansion of existing ones (long-run environmental benefits). The environmental and recreational benefits pertain to riparian and wetland habitats, air quality, river fishing, and river rafting.

A more complete estimate of the value of water efficiency is thus the sum of each of these benefits: the short-run and long-run avoided costs and the short-run and long-run environmental benefits. Without adding up all four factors, utility managers are likely to underestimate the benefits and to under invest in efficiency.

The RAND analysis examined, as a case study, the benefits of efficiency in the Denver region. The local utility, Denver Water, serves more than one million people a day, drawing from three water collection systems:

the South Platte River, the Roberts Tunnel system, and the Moffat system. Denver Water has projected that the population in its service area will grow by more than 50 percent by 2050, the end of the utility's long-term planning horizon. At this rate, the average annual water demand will exceed the average annual water supply by 2016. To address the projected shortfall, Denver Water plans to build two new water-supply projects and to expand its water efficiency programs.

The short-run benefits of the efficiency programs likely will be realized immediately and will accrue into the future. The long-run benefits might not appear for many years, perhaps not for a decade or more. To capture all the benefits of sustained water efficiency improvements, we summed up the present value of the benefits from 2007 to 2050.

We also distinguished between two types of efficiency programs: those that save water uniformly throughout the year and those that save water primarily during summer. Water savings concentrated during the summer, when water is scarcer and demand is greatest, are worth more than water savings that are spread throughout the year. This is because many water agencies make capital investments to increase water supplies in response to rising peak demand. Therefore, efficiency programs that save water exclusively during peak times will allow longer deferrals of supply projects than will those programs that save the identical amount annually, but spread out across the year.

Because our calculations depend on several unpredictable factors (such as water needs decades from now and the impact of climate change or severe droughts on water supply), we estimated the benefits across a wide range of assumptions, yielding wide ranges of potential benefits. Although we did not arrive at a single unequivocal estimate of the benefits, the ranges themselves proved to be quite telling.

For programs that save water uniformly throughout the year, the short-run avoided costs alone of saving 1 million gallons of water a year for 43 years in a row were estimated to have a median present value of just \$13,400. Adding the long-run avoided costs increased this value to \$45,800. Adding all environmental benefits increased this amount further to \$63,400, which fell within a range of total estimated benefits stretching from \$41,000 to nearly \$100,000 (see the centerpiece on pages 16–17). Although this range is large, the lower bound (\$41,000) is nearly double that of the upper bound of the short-run avoided costs

alone (\$22,000). Thus, if Denver Water were to consider only the short-run avoided costs, it could possibly undervalue efficiency by 50 percent or more.

For programs that save water primarily during summer, we estimated the median present value of total benefits to be 76 percent higher than those for year-round efficiency programs: \$111,600 compared with \$63,400 per million gallons saved once a year for 43 years. (As with all analyses of present value, the results are sensitive to the choice of discount rate; in each case cited above, a rate of 6 percent was used.)

We compared our benefit estimates to the costs of many different efficiency programs that had been included in Denver Water's draft 10-year conservation plan. We assumed that the 10-year program costs would be incurred repeatedly over the 43-year period from 2007 to 2050.

The table on page 16 shows that the discounted 43-year costs of the proposed efficiency programs vary widely, from about \$119,000 to replace urinals with low-flow versions to nearly \$168 million for irrigation-efficiency incentives (a program that saves water primarily in the summer months). The water savings also vary widely, from just 15 million gallons a year from car-wash certifications to nearly 2.3 billion gallons a year from time-of-sale retrofits of toilets, showerheads, and faucets.

To rank everything fairly by cost, we divided the estimated 43-year discounted cost of each program by its average annual water savings in million gallons. The result gave us the average cost of each program in saving 1 million gallons of water a year for 43 consecutive years. As an example, we divided the 43-year discounted cost of replacing urinals (\$119,000) by the average annual water savings (98 million gallons) to obtain an average cost of roughly \$1,200 to save a total of 43 million gallons over 43 years.

The centerpiece ranks the 12 programs that reduce demand uniformly all year long by cost and then compares these costs to the benefit estimates. If just the short-run avoided costs are valued, then just 4 of the programs appear cost-effective (those that cost less than \$13,400 to save a million gallons of water every year). But when considering all avoided costs and environmental benefits, 9 of the programs appear

Water savings concentrated during the summer are worth more than water savings spread throughout the year.

cost-effective, because they cost less than \$63,400 to save a million gallons of water every year.

Likewise, the centerpiece ranks the 9 programs that reduce demand primarily in summer. Just 3 appear cost-effective against the short-run avoided costs alone. Counting the long-run avoided costs qualifies 4 more as cost-effective, including irrigation checkups, which cost about \$89,000 per million gallons of water saved in each of the 43 years.

California Climate Change

In California, climate change will likely lead to higher temperatures, altered precipitation patterns, and less snow pack to supply state and federal water projects. Climate change might also alter the frequency and severity of extreme events, such as droughts and floods. These changing hydrological conditions could pose a major challenge for many water management agencies, not just in California but also throughout the West.

RAND researchers have deployed new computational methods that can help water agencies evaluate the risks of climate change and identify the policies

that can perform well over a multitude of plausible future conditions. These tools allow managers to assess their plans over many scenarios, identify vulnerabilities, and evaluate the most effective means to mitigate them. We have worked with Southern California's Inland Empire Utilities Agency (IEUA), based in Chino, California, to test these methods.

To accommodate rapid population growth, IEUA has charted aggressive plans to increase ground-

water use by 75 percent through replenishment, desalination, and the distribution of nearly all recycled urban wastewater back to its cities for outdoor use. We identified the risk that climate change could pose to this long-range plan and identified options that could reduce the risk in a cost-effective way. We found that the long-range plan would perform well if the region's climate were to remain unchanged or to grow wetter; however, there could be significant shortages if drier-climate projections come to pass.

Figure 1 plots the present-value costs of 200 dry-weather scenarios that IEUA could face if it follows its original plan through 2040. Each dot represents

one scenario, each with a combination of two costs: the cost of supplying water (the y-axis) and the cost of any water shortages (the x-axis). Scenarios in the green shaded area lead to total discounted costs through 2040 of less than \$3.75 billion (or about 20 percent higher than the expected cost if all of the agency's planning assumptions remain valid). Scenarios in the yellow shaded area would impose costs above this threshold, an amount deemed unacceptably high.

We used statistical methods to identify the conditions that would lead to these high-cost outcomes. We found that three conditions tend to hold simultaneously for the highest costs to be incurred: large (but plausible) precipitation declines over the next several decades, large reductions in water imports as a result of climate change, and a moderate reduction in natural percolation into the local groundwater basin. These conditions stand out as key vulnerabilities facing IEUA.

We considered a variety of options that IEUA could pursue to augment its plan: meeting recycling goals sooner, increasing groundwater replenishment with more recycled water, capturing more storm water to replenish the groundwater, meeting increased water-efficiency goals, and expanding the agency's dry-year-yield program (using more imported supplies when available in wet years so that more groundwater can be extracted in dry years). We evaluated eight modifications to the IEUA plan to see which might best reduce the climate vulnerabilities identified. Four "static" modifications alter the plan today but make no further adjustments through 2040. Four "adaptive" modifications implement some changes today, monitor water supply reserves, and take future actions if the average five-year supply level drops below a specified threshold.

Figure 2 shows the number of scenarios in which each of the alternative plans would impose 35-year costs greater than \$3.75 billion. The original plan would impose high costs in 116 of the 200 dry-weather scenarios generated. In contrast, implementing four modifications today—an expanded dry-year-yield program, an accelerated recycling program, increased storm water replenishment, and increased water efficiency—would eliminate almost all the identified vulnerabilities. Even just allowing updates to the plan would shrink the number of vulnerable scenarios down to 32. Any combination of current actions with future updates would reduce the number further. Significantly increasing efficiency now and updating the plan later, if needed, would succeed nearly as well as doing everything now.

Changing hydrological conditions could pose a major challenge for water management agencies throughout the West.

Figure 1—Many Dry-Weather Scenarios Could Be Costly Unless the Inland Empire Utilities Agency Augments Its Plans

SOURCE: *Preparing for an Uncertain Future Climate in the Inland Empire*, 2008.
 NOTES: Each dot represents one scenario. Total scenario costs are through 2040.

IEUA has estimated that it would be cheaper in the future to exploit its local options, such as increased efficiency, than to import water. As a result, the agency is in a fortuitous position: Taking more aggressive near-term actions can reduce not only the agency's long-term climate vulnerability but also its long-term financial costs. IEUA has begun to use these results both to highlight the benefits of the water-saving actions in its current plan and to argue for implementing even more aggressive actions.

Like those at IEUA, water managers across the United States and beyond face a new, changing, difficult-to-predict environment. Traditional planning assumptions, such as the future climate being similar to that of the past, will likely prove inadequate. Fortunately, a powerful new set of tools can help water managers identify, evaluate, and communicate their vulnerabilities and the best means of reducing them. ■

Related Reading

Estimating the Value of Water-Use Efficiency in the Intermountain West, David G. Groves, James Griffin, Sara Hajiamiri, RAND/TR-504-HF, 2008, 88 pp., ISBN 978-0-8330-4397-9, \$33. As of press time:

www.rand.org/pubs/technical_reports/TR504/

Preparing for an Uncertain Future Climate in the Inland Empire: Identifying Robust Water-Management Strategies, David G. Groves, Robert J. Lempert, Debra Knopman, Sandra H. Berry, RAND/DB-550-NSF, 2008, 100 pp., ISBN 978-0-8330-4405-1, \$36. As of press time:

www.rand.org/pubs/documented_briefings/DB550/

Presenting Uncertainty About Climate Change to Water-Resource Managers: A Summary of Workshops with the Inland Empire Utilities Agency, David G. Groves, Debra Knopman, Robert J. Lempert, Sandra H. Berry, Lynne Wainfan, RAND/TR-505-NSF, 2008, 102 pp., ISBN 978-0-8330-4398-6, \$20. As of press time: www.rand.org/pubs/technical_reports/TR505/

Figure 2—Implementing Additional Near-Term Strategies Now and Adapting Later, if Necessary, Will Reduce Vulnerabilities

SOURCE: *Preparing for an Uncertain Future Climate in the Inland Empire*, 2008.

Improved Valuations of Water-Efficiency Programs

JUST 7 OF THE 21 efficiency programs included in the ten-year conservation plan of Denver Water, a public utility for the Denver region, appear cost-effective when accounting for only the short-run avoided costs of reduced water demand. However, 16 of the

21 programs appear cost-effective when accounting for the long-run avoided costs and the environmental benefits as well. RAND researchers divided the present value of each program's 43-year operating cost by its average savings in million gallons of water

Costs

Denver Water Efficiency Programs	Costs ÷	Savings =	Average Costs
Programs That Save Water Uniformly Throughout the Year			
Low-flow urinals	\$119,000	98	\$1,200
Conservation education	\$7,036,000	963	\$7,300
Low-flow toilets	\$389,000	41	\$9,500
Car-wash certifications	\$164,000	15	\$11,000
Conservation kiosks	\$1,848,000	85	\$21,800
Plumbing retrofits at time of sale	\$75,551,000	2,278	\$33,200
Multifamily residential audits	\$750,000	22	\$33,400
Efficiency ratings	\$42,421,000	1,236	\$34,300
Toilet rebates	\$6,604,000	134	\$49,500
Corporate and industrial incentives	\$117,397,000	1,515	\$77,500
Clothing-washer rebates	\$37,844,000	438	\$86,400
Public housing retrofits	\$5,446,000	51	\$105,800
Programs That Save Water Primarily During Summer Months			
Cooling towers	\$1,344,000	524	\$2,600
Evapotranspiration controllers	\$626,000	234	\$2,700
Irrigation education	\$5,748,000	474	\$12,100
Irrigation meters	\$3,337,000	205	\$16,300
Rainfall-sensor rebates	\$1,174,000	54	\$21,700
Landscape conversion	\$34,738,000	563	\$61,700
Irrigation checkups	\$55,081,000	619	\$89,000
Irrigation-efficiency incentives	\$167,817,000	675	\$248,500
Xeriscape (drought-resistant landscape)	\$16,642,000	21	\$811,000

NOTES: Blue cells indicate programs that are cost-effective when counting all avoided costs and environmental benefits. All numbers are rounded. "Costs" show the present values of Denver Water's projected ten-year costs extended to 2050. "Savings" are in million gallons of water per year in an average year. "Average costs" are for saving 1 million gallons of water per year for 43 years (from 2007 to 2050).

Benefits

The median present value of Denver programs that save water uniformly throughout the year is \$13,400 per million gallons of water saved every year for each of the four types of efficiency programs.

NOTE: The median values above are not perfectly additive, because the factors influencing the calculations of the four types of efficiency programs are not perfectly additive.

The median present value of Denver programs that save water primarily during summer months is \$13,400 per million gallons of water saved every year for each of the four types of efficiency programs.

NOTE: Each stack illustrates one combination of representative efficiency programs.

SOURCE: *Estimating the Value of Water-Use Efficiency in the Intermountain West*, David G. Groves, James Griffin, Sara Hajiamiri, RAND/TR-504-HF, 2008.

Can Help Water Managers Make the Most of Them

per year to determine each program's average cost of saving a million gallons of water once a year across all 43 years (see the table). The average cost of each program was then compared to the median present value of total efficiency benefits (shown in the

middle two figures). Water savings from programs that conserve mostly during the summer, when water is scarcer and demand is greatest, are worth more than are the water savings from programs that conserve more uniformly throughout the year. ■

Costs Versus Benefits

Water efficiency programs that save water uniformly throughout the year are 76 percent higher than the average cost of efficiency programs.

cause there is not a one-to-one correspondence among efficiency benefits.

Water efficiency programs that save water primarily during summer are 76 percent higher than the average cost of efficiency programs.

ve benefits across 1,000 scenarios.

2008, 88 pp., ISBN 978-0-8330-4397-9, \$33.

Of the 12 efficiency programs that save water uniformly throughout the year, 9 are cost-effective when accounting for the median present value of all efficiency benefits (all avoided costs plus all environmental benefits).

NOTE: The vertical bars show the average cost of each efficiency program (from table at left).

Of the 9 efficiency programs that save water primarily during summer, 7 are cost-effective when accounting for the median present value of all efficiency benefits (all avoided costs plus all environmental benefits).

NOTE: The vertical bars show the average cost of each efficiency program (from table at left).

Baby Steps

Comparison of Neonatal Services Points to National Health Care Lessons

By Michael Hallsworth and Evi Hatziandreu

Michael Hallsworth is an analyst at RAND Europe. Evi Hatziandreu is director of health and health care studies at RAND Europe.

An international comparison of neonatal services in Scotland, Wales, Northern Ireland, England, the United States, Canada, Australia, and Sweden shows a downward trend in mortality rates in all areas over the past decade. The study also points to several lessons that government health agencies can learn from one another.

Three mortality rates are of concern: perinatal mortality (death within 7 days of birth), neonatal mortality (death within 28 days of birth), and infant mortality (death within one year of birth). England, Scotland, Wales, Northern Ireland, Canada, and Australia all have similar perinatal, neonatal, and infant mortality rates. All three rates are consistently higher in the United States and consistently lower in Sweden.

Effective neonatal intensive care increases survival rates among premature newborns and those of low birthweight. Effective care also lowers morbidity rates, improving the long-term health prospects and quality of life for premature or low-birthweight babies while reducing the long-term burden on state health care and social welfare systems.

A pervasive problem in Scotland, Wales, and Northern Ireland is a shortage of neonatal staff, including nurses, consultants, and dedicated neonatal transportation teams. Across the United Kingdom, 78 percent of neonatal units had to turn away babies because of insufficient capacity in 2006, up from 70 percent in 2005. There is also some evidence of nursing shortages in the United States and, to a lesser extent, in Canada.

As might be expected from their large geographical areas, the United States, Canada, and Australia have highly regionalized services, provided at the state or sub-state level. Within these countries, sophisticated neonatal networks have been developed in four regions: California, British Columbia, Victoria, and New South Wales.

The highlighting of these four regional networks does not mean that others are poor. Some networks that serve smaller or more dispersed populations and that contain a limited number of institutions may rely on more informal networking practices, simply because the economies of scale do not justify the cost of formalizing the practices.

Of the countries studied, only Sweden is moving toward a more centralized system of neonatal care. The Swedish health care system is mainly region based, but neonatal intensive care is increasingly centralized, because relatively few Swedish children require it. The rates of premature births and low-birthweight births are both much lower in Sweden than in all other countries studied.

Progress and Patterns

In the past 20 years, significant advances in perinatal and neonatal medicine have resulted in substantial declines in infant mortality rates. A major factor contributing to the reduced mortality and improved long-

The rates of premature births and low-birthweight births are much lower in Sweden than in all other countries studied.

term outcomes for premature and ill newborns has been the development of neonatal intensive care units.

For newborns, the main health risks are low gestational age and low birthweight. In 1975, almost half the babies born prematurely with very low birthweight in the United Kingdom died within 28 days of birth. By 1995, this ratio had fallen to one in six. By 2005, premature babies of even just 27–28 weeks' gestation had an 88 percent survival rate. The increased effectiveness parallels an increased demand for neonatal services. Today, 10–12 percent of all babies born in the United Kingdom require some form of special care at birth, and 1–3 percent require the services of neonatal intensive care units.

As shown in Figure 1, neonatal mortality rates declined over the past decade throughout the United Kingdom. From 1995 to 2004, the largest decline came in Northern Ireland, where the rate fell from 5.5 to 3.7 deaths per 1,000 live births. England and Wales saw steadily declining rates. Scotland's rate fluctuated until 2000 and declined thereafter.

Neonatal mortality rates, which incorporate perinatal mortality rates, generally fell throughout the other countries as well. As shown in Figure 2, the U.S. rates were markedly higher than those of Canada, Australia, and England (shown as a representative British region), while Sweden's rates were much lower than those in all the other countries. In 2005, Sweden's rate fell even further, to just 1 death per 1,000 live births.

Infant mortality trends across the United Kingdom were mostly similar to the neonatal mortality trends. One distinction is that Northern Ireland's infant mortality rate rose during the last two years considered by the study (see Figure 3).

In the other four countries, infant mortality patterns also mirrored those of neonatal mortality. The United States had the highest infant mortality rates, and Sweden had the lowest, with Canada and Australia bunched in the middle (see Figure 4). In fact, this pattern held true across all five categories: premature births, low-weight births, perinatal mortality, neonatal mortality, and infant mortality. In each case, the United States had the highest rates, Sweden had the lowest, and the other countries ranked in between.

The British National Audit Office commissioned RAND Europe to conduct this international comparison of neonatal networks to supplement a study of those in England. Scotland, Wales, and Northern Ireland use different methods of organizing neona-

tal services than does England, while still operating within Britain's National Health Service.

The other countries were selected because they share a similar level of economic development, have contrasting health systems, and often adopt a structure whereby different regions coordinate neonatal services within a single country, which is roughly analogous to the situation in the United Kingdom. Sweden serves as an example of how another European country organizes neonatal services within a centralized health system.

Networks and Standards

Scotland, Wales, and Northern Ireland provide state-sponsored health care as part of Britain's National Health Service, but the executive government of each

Figure 1—Neonatal Mortality Rates Declined over the Past Decade Throughout the United Kingdom

SOURCE: *The Provision of Neonatal Services*, 2008.

Figure 2—Neonatal Mortality Rates Were Exceptionally High in the United States and Exceptionally Low in Sweden

SOURCES: *The Provision of Neonatal Services*, 2008; "Perinatal Statistics in the Nordic Countries, Statistical Summary 22/2007," STAKES National Research and Development Centre for Welfare and Health, 2007.

Figure 3—Across the United Kingdom, Falling Infant Mortality Rates Generally Followed Neonatal Mortality Rates

SOURCE: *The Provision of Neonatal Services*, 2008.

Figure 4—Among the Countries Studied, the United States Had the Highest Infant Mortality Rates, and Sweden Had the Lowest

SOURCE: *The Provision of Neonatal Services*, 2008.

region manages its own health budget and administration. This arrangement results in different organizational structures and funding streams. None of the regions operates a managed clinical network of neonatal services, although this is a stated aim across the regions. Northern Ireland appears to be closest to reaching the goal; Wales is perhaps the furthest away from it.

Scotland has the only networked neonatal transportation system in the United Kingdom. The network uses standardized training and equipment, ensuring maximum reach and efficiency; employs dedicated transfer teams, whose members are used solely to accompany neonatal transfers and do not form part of any nursing or medical staff; and coordinates transfers centrally, allowing clinicians to focus on medical care, not on time-consuming telephone calls to find appro-

priate beds and transportation modes. The network offers air transfer and has developed specialized incubators suitable for both rotary- and fixed-wing aircraft.

A neonatal transportation network can thus be the seed of a neonatal treatment network. As in Scotland, transportation services can themselves contribute to creating an informal clinical network and improving the efficiency and effectiveness of care.

The absence of a centralized transportation network with dedicated transportation teams also exacerbates the nursing shortage. Everywhere in the United Kingdom except Scotland, each neonatal transfer currently occupies the clinical staff at the hospital ward of origin for the duration of the transfer, further reducing the number of available ward staff.

In the United States, Canada, and Australia, the main organizing units for neonatal care are the states or provinces. Among the outstanding neonatal networks in these countries, the elements that constitute quality and sophistication include the communications and administrative systems, transportation techniques, centralized decisionmaking and oversight bodies, data-sharing infrastructures, best practice guidelines, reporting mechanisms, use of consultative committees, internal cohesion, family involvement, quality improvement, and evaluation exercises.

The United States has more neonatal intensive care resources per capita than do Canada and Australia, but the United States has lower survival rates for infants of low birthweight. This situation underscores that the organization and distribution of funds, not just the total value of funds, are paramount.

The organization of neonatal care in California is relatively sophisticated. Since 1976, the state has operated perinatal transportation systems and collected their data for analysis and planning. Northern and Southern California both operate perinatal transportation dispatch centers. The state sets detailed specifications for designated levels of neonatal intensive care. There is a sophisticated system for accrediting the level of care provided by neonatal intensive care units, all of which must provide monitoring data. California has also set up two major quality improvement efforts: one to collect information on neonatal outcomes and resource utilization, the other to eliminate blood infections at neonatal care units.

Nevertheless, there is evidence that the organization of perinatal and neonatal services in the United States as a whole has been hampered by competition and professional jealousies. It has been argued that a

combination of factors—the desire of physicians and hospitals to compete for families with health insurance, the cost-cutting incentives brought about by managed care, and the widespread availability of advanced technology and highly trained perinatal specialists—has led to a reduction in high-risk births at U.S. regional centers and an increase in community-based neonatal intensive care units that provide neonatologists on site but may lack the outreach and the ability to coordinate services regionally, thereby intensifying the competitive situation. The issue is controversial, but a 2001 survey of state perinatal health policies found substantial variation in the definition of neonatal intensive care levels, while disagreements among physicians and hospitals made it more difficult to enforce uniform definitions. In 2004, the American Academy of Pediatrics declared that “no national definition” of neonatal care levels existed.

Canada’s perinatal, neonatal, and infant mortality rates compare well with those of the United States and Australia. Canadians generally have good access to highly organized perinatal care. Unlike in the United States, universal health care is guaranteed. Standards of health care and health insurance must conform to federal criteria to be eligible for federal reimbursement. Nevertheless, the variations in quality of neonatal intensive care across the Canadian provinces can be as wide as the variations seen in the United States.

British Columbia exhibits superior management of neonatal care systems. In this province, five regional health authorities deliver local health services, including neonatal services, while a province-wide authority oversees a specialized perinatal program. Thanks partly to a centralized system of patient referral and transfer, the province enjoys a very efficient utilization of neonatal intensive care beds, compared with the rest of Canada. Throughout the country, centralized neonatal transportation systems are coordinated either by neonatal intensive care institutions or by provincial services.

Australia has successfully managed its neonatal transportation services despite the vast distances between some rural communities and the nearest perinatal centers. The states of Victoria and New South Wales offer highly organized neonatal transportation systems. Victoria operates custom road ambulances, fixed-wing aircraft, and helicopters, all supported by a centralized information infrastructure that classifies referrals into three categories according to the urgency of response required. New South Wales provides clinical transportation guidelines, modified transportation

equipment, and specially built vehicles. There is evidence that the system has contributed to a significant improvement in the outcomes of extremely premature infants in New South Wales.

Victoria also maintains a perinatal information center database, collects standardized performance indicators, and includes quality improvement in its neonatal care guidelines. Meanwhile, the New South Wales neonatal network enhances its internal cohesion by operating a statewide database of available beds and a perinatal advice line.

In Sweden, the implementation of neonatal care varies from region to region but exists within a national framework of universal health care. Sweden has a compulsory, predominantly tax-based health care system that covers the entire population.

On the regional level, Swedish county councils oversee and finance health care services. To facilitate cooperation on specialized care, including neonatal intensive care, the 21 Swedish counties are grouped into six medical care regions. Clinical teams, fully equipped for neonatal care, were introduced in Sweden during the 1960s and gradually spread. Mobile transportation teams are also managed on a regional basis. All ambulance services are organized closely with local health care centers. The four northern counties of Sweden share two fixed-wing aircraft ambulances equipped for intensive care.

In recent decades, neonatal intensive care has become increasingly centralized in Sweden because of the relatively small number of children who require treatment. Indeed, Sweden has one of the lowest infant mortality rates in the world: At 3.1 deaths per 1,000 live births within a full year of birth, the rate is by far the lowest of the countries studied. These facts suggest that a centralized system for neonatal services may be appropriate for some countries because of the size, distribution, and health needs of the population. ■

The organization and distribution of funds, not just the total value of funds, are paramount.

Related Reading

The Provision of Neonatal Services: Data for International Comparisons, Michael Hallsworth, Alice Farrands, Wija J. Oortwijn, Evi Hatzianandreu, RAND/TR-515-NAO, 2008, 181 pp. As of press time (Web only): www.rand.org/pubs/technical_reports/TR515/

Disoriented

In Asia, U.S. Still Guards the Fort but Surrenders the Bank

By William H. Overholt

*Bill Overholt is director of the RAND Center for Asia Pacific Policy and holds the center's chair in Asia policy research. Previously, he was a joint senior fellow at the Harvard Kennedy School and the Harvard University Asia Center. From 1980 to 2001, he ran investment bank research teams, mainly in Asia, and served as a consultant to several major political figures in Asia. This essay is adapted from his latest book, *Asia, America, and the Transformation of Geopolitics* (Cambridge University Press, 2008). The study presented in the book was performed as part of the RAND Corporation's continuing program of self-sponsored independent research. The study does not necessarily reflect the opinions of RAND research clients and sponsors.*

The United States owes its victory in the Cold War to a joint military and economic strategy of nation-building and reconstruction. But in recent years, the United States has abandoned this recipe for success. Nowhere is this more apparent than in Asia.

The Cold War strategy built bulwarks of freedom by creating strong polities and economies in Western Europe, Japan, Southeast Asia, and elsewhere. American leaders created the Marshall Plan for Europe, encouraged the economic revitalization of Japan and funded aid and institution-building programs through the Agency for International Development, the Peace Corps, education programs, and other efforts. The United States and its European allies created major global institutions—the World Bank, the International Monetary Fund, the General Agreement on

Tariffs and Trade (now the World Trade Organization), the Asian Development Bank, and other development banks—to stabilize the free world. The U.S. military protected the allies and others, while the nation-building strategy gradually proceeded. Without the military, the nation-building would never have had time to succeed. Without the nation-building, the military defense was unsustainable.

The Asian economic miracle, supported by U.S. aid and institution-building programs and by the vast regional expenditures that accompanied the Korean and Vietnam wars, contributed to U.S. victory in the Cold War in two ways. First, the economic takeoff gave citizens of Asian countries a stake in the stability and success of their countries while giving governments the resources to build national administration, national infrastructure, and effective national military and police forces. From Japan to Indonesia, this economic expansion drained the motivation for ideological extremism while endowing governments with the administrative, police, and military capacity to suppress the residue of that extremism.

Second, the economic expansion changed the international priorities of most Western-oriented Asian governments. For centuries, the only path to wealth and power had been territorial aggrandizement: grabbing neighbors' territory, seizing their golden temples, and taxing their peasants. In the new world of the Asian miracle, domestic economic reform could lead to wealth and power at a speed unimaginable in the old era. Conversely, the devastating power of modern military technology often meant that the old strategy of forcible territorial aggrandizement would lead at best to a Pyrrhic victory.

At the turn of this century, there seemed little reason for the region not to continue on its path toward prosperity and peace. The United States had the world's preeminent economy, the world's overwhelmingly preeminent military, the world's preeminent ideology (free-market democracy), and the world's preeminent cultural influence. Its principal opponent, the Soviet Union, had collapsed. Its other Asian opponents of note, China and Vietnam, had responded positively to the incentives to join the U.S.-nurtured global economic system and likewise had responded to the disincentives against persisting with border disputes, ideological proselytization, and subversion of their neighbors. Japan, a strong ally that nonetheless saw itself as competing with the United States for geopolitical preeminence in Asia, had suffered a decade of troubles, leaving it a loyal ally but no longer a serious competitor. Clearly, it seemed, Asia was headed for an era of U.S. dominance, reduced polarization, and consolidation of a 50-year trend toward peaceful economic cooperation at the expense of old geopolitical conflicts.

But that is not what happened.

What Did Happen

China's emergence triggered a reaction in the United States and Japan. China had joined all the major economic institutions nurtured by the West in the Cold War, opened its economy far more than Japan did, resolved most of its border disputes to the satisfaction of its neighbors, and engaged in a very successful campaign for good diplomatic relations with most of its neighbors. All these seemed to support U.S. and Japanese interests, particularly in comparison with an earlier era when China had been systematically attempting to destabilize its neighbors and to spread communism globally.

Nonetheless, China's success evoked various theories that rising powers are inherently destabilizing, that undemocratic regimes are inherently aggressive, and that, since China is perhaps the only power that could conceivably challenge the United States, American military planning should focus on China. Tensions over Taiwan became a particular focus for the U.S. military, and thus, too, did the risk of Sino-American war. That focus was greatly intensified by various U.S. interest groups that had much to gain from building new weaponry for war against China or from hampering trade with China.

While China rose, Japan slipped. Through 1989, Japan's leaders had been anticipating that the 21st cen-

AP IMAGES/EUGENE HOSHIKO

Soaring housing prices, strong economic growth, and surging demand from developers and upwardly mobile families underlie the crowded skyline of Shanghai, China, seen here in November 2007.

tury would be the Asian century and that Japan would dominate Asia. But a dozen years of Japanese stagnation and financial crisis, together with U.S. economic resurgence and China's superior economic growth and openness, ended that dream. Japanese leaders abandoned their vision of regional leadership through economic diplomacy. Instead, ascendant Japanese leaders sought to build renewed national pride around a rewriting of the history of the 1930s and 1940s and adopted a resentful, threatened, defensive posture toward China's new eminence.

American policy, which for a half-century had protected China from Japan by keeping Japan disarmed and protected Japan from China by allying with Japan, tilted toward an emphasis on consolidating the military alliance with Japan, pressing for a revival of Japan's military, and overtly targeting China as the object of the alliance, even formally bringing the Taiwan conflict under the purview of the U.S.-Japan alliance. This led China, which had long tacitly supported U.S. bases and alliances in the region because they facilitated the peace and stability necessary for China's economic revival, to change its view of American bases and alliances, increasingly perceiving them as hostile.

Major changes in U.S. priorities spurred additional major changes in U.S. relations in the region. As the new century began, the role of the military and the emphasis on spreading democracy rose, while the emphasis on economic development and building

AP IMAGES/KYODO NEWS

Japanese lawmakers, led by former Agriculture Minister Yoshinobu Shimamura, follow a Shinto priest at Tokyo's Yasukuni Shrine on August 15, 2007, the 62nd anniversary of Japan's World War II surrender. Visits to the war shrine by Japanese lawmakers have outraged Japan's Asian neighbors. The shrine honors 2.5 million Japanese war dead, including executed World War II criminals.

regional institutions declined. These new priorities, combined with America's inability to support Indonesia and Thailand during the Asian financial crisis of the 1990s, have fundamentally weakened the U.S. relationship with Southeast Asia. The new priorities also preclude the possibility of following in Central Asia the kinds of policies that had led to success in East and Southeast Asia during the Cold War.

The decline of economic and regional institution-building priorities has led to a U.S. role in Asia organized predominantly around the U.S.-Japan alliance and the requirements for military bases. This shift has changed the U.S. image from one of a nation-builder defending that role to one of a great power asserting itself. It has caused negative reactions among smaller countries, including South Korea and most of Southeast Asia, whose concerns about Japan often exceed their important concerns about China. Virtually all Southeast Asian nations want a forward U.S. military presence, but they want it as a U.S. balance between Japan and China, not (as they see it) as U.S. support of a Japanese gun aimed at China. Similar issues in other contexts have recently led U.S. Secretary of Defense Robert Gates to call for a stronger State Department and led top U.S. generals to call for greater emphasis on economic development.

While the United States has always supported democratization in Asia, during the Cold War democ-

ratization took a back seat to economic development, regional institution-building, and military security. The post-Cold War case for treating democracy as a prerequisite of aid rests on the theory that democracies are better at economic development than are nondemocracies. This theory, however, is inconsistent with the Asian experience. Taiwan, Singapore, and South Korea all began as socialist or quasi-socialist economies led by leaders with Leninist visions. Taiwan and Singapore had fully developed Leninist parties. Taiwan and South Korea under Chiang Kai-shek, the early Chiang Ching-kuo, and Park Chung Hee were considerably more abusive of human rights than China is today. But today—because economic development has created educated, middle class societies—these three countries are the most robust democracies in the developing world. In contrast, the Philippines, originally America's greatest example of third-world democracy, has descended from Asia's second-richest country to a poor cousin. As a result, most East Asian countries see the U.S. emphasis on early democratization as dangerous ideological naiveté.

Related to this view, the smaller countries of Asia mostly see the differences between China's emerging post-socialist, post-Leninist regime and their own as developmental, whereas the United States sees a Manichean divide between good and evil, with Leninist systems on one side of a great political and moral chasm and democracies on the other, allowing no connection between the two sides other than a Soviet-style collapse into the chasm. The Asian reality, to the contrary, has been an evolutionary one: Subsequent to economic success, Asia's developmental authoritarian countries have mostly made relatively smooth transitions to more democratic politics. For most Asian countries, including such strong traditional allies as South Korea and Singapore, the degree of U.S. hostility toward China seems gratuitous. The Chinese, meanwhile, argue that successful democracy has almost always come after a considerable amount of economic development and that trying to reverse the natural path of evolution ensures failure.

Paradoxically, Washington is greatly increasing its military power but sharply degrading its political influence. Throughout Asia, the talk is of declining U.S. influence. No one in Asia doubts that the United States is the world's biggest military power, the world's biggest economy, and the world's greatest cultural influence, but it is seen as declining because it is preoccupied else-

where, has weakened its relationships with key quasi-allies, has lost its image as a partner in nation-building, has tarnished its moral standing by its actions in Iraq, and has allowed its leverage through regional organizations other than the U.S.-Japan alliance to wither.

The United States now finds itself torn between its increasing military reliance on the U.S.-Japan alliance and its increasing political and economic reliance on its relationship with China. The United States copes with the East Asian aspects of the war on terror, North Korea, regional crime, drug and human trafficking, and South-east Asian instability primarily through a partnership with China. China's more open economy is much more compatible with U.S. interests in free trade, freedom of investment, and modern agriculture than is Japan's more closed economy. The tension between military-ideological alignments and political-economic interests is increasingly severe, untenable, and prone to crisis.

How We Move Forward

For the United States, the great institutions of the Cold War, preeminent among them the U.S.-Japan alliance and the marriage of military defense with economic development, have served the country brilliantly. But the post-Cold War divorce of the U.S.-Japan alliance from the parallel reassurance of China, the divorce of military considerations from the economic priorities that led to strategic success, and the ideological triumph of the notion that democracy is, in all situations, the best path to stability, peace, prosperity, and human dignity can threaten much of the success achieved during the Cold War. The pain the United States is enduring in Iraq reflects in part the divorce of military strategy from economic strategy and an expanded strategic reliance on the promotion of democracy.

China is not free. It has not become a democratic society or anything approaching one. The continuing suppression of religious expression is inhumane and counterproductive. When the West criticizes the lack of human rights, it is correct. However, most Western observers miss key points. Unlike the Soviet Union, China does not seek to export its current system of government. Chinese leaders do not see their current political system as anything more than a transitional phase. Most see the Taiwanese political system, like the Taiwanese economic system, as more advanced than their own. They want to discover and test things themselves, step by step. They are willing to consider nearly everything.

The post-Cold War case for treating democracy as a prerequisite of aid rests on the theory that democracies are better at economic development than are nondemocracies. This theory, however, is inconsistent with the Asian experience.

Much of the current national-security establishment in Washington expresses fear of being forced out of Asia by China. China has indeed made disproportionate gains in recent years. But this is not because it has forced the United States out. It is because Washington has deliberately stepped back from Asian regional institutions that include the United States, such as the Asia-Pacific Economic Cooperation, and created a vacuum into which China has stepped with institutions that exclude the United States, such as the Shanghai Cooperation Organization, the East Asia Summit, and others. Likewise, South Korea and the Association of Southeast Asian Nations have distanced themselves from U.S. policy and cultivated a relationship with China that is much warmer than it was before. China's disproportionate success in both Asia and Africa has come from adopting policies that had been the core U.S. strategies in winning the Cold War. The United States had a patent on those strategies but ceded the intellectual-property rights to China.

There is a real risk that future historians will conclude that the most influential foreign-policy decisions of this era concerned not Iraq, not the war on terror, but rather the reignition and acceleration of Sino-Japanese rivalry. Washington can still reestablish the old balances between military and economic priorities and between China and Japan. Future U.S. administrations would do well to revive an Asia policy that emphasizes diplomacy with all Asian countries, promotes economic liberalization throughout the region, and abates rather than fosters hostility among regional neighbors. ■

Related Reading

Asia, America, and the Transformation of Geopolitics, William H. Overholt, New York: Cambridge University Press, 2008, 366 pp., ISBN 978-0-5217-2023-6, \$24.99.

Beyond the Spoils

In an Age of Polarization, What Makes a Policy “Successful”?

By Diana Epstein and John D. Graham

Diana Epstein is a doctoral fellow at the Frederick S. Pardee RAND Graduate School. John Graham is dean of the school and a professor of public policy.

America’s two major political parties have grown further apart on ideological grounds in recent decades, deepening a divide known as polarization. The split has been especially apparent among “political elites,” such as U.S. Congress members, party activists, and other influential players. But ordinary voters, too, have sorted themselves more tightly into parties that align with their core beliefs.

Scholars and the popular press have documented an increasing divide between the two major political parties since about 1960.

As the parties have moved further apart, there has been a marked decline in legislative centrists who can bridge the parties and broker crucial compromises. Within each party, the members of Congress have become more homogeneous in their voting and underlying beliefs. The potential for compromise on serious national problems has been diminished.

Polarization has many possible causes, including the partisan realignment of the South, the rise of new interest groups, the growth in income inequality, the balkanization of the mass media, and changed congressional procedures. Polarization has many con-

sequences: some positive, some negative, some empirically supported, and some only hypothesized.

We need a better understanding of how polarization affects the daily lives of U.S. citizens through legislation, regulations, and judicial decisions. We need to pay special attention to how polarization is complicating long-term policy challenges, such as Social Security and health care reform, that can be resolved only through bipartisan collaboration. We should ask whether polarization is changing how scientific and analytic information is—or is not—being generated and used by decisionmakers. In sum, we need to rethink what constitutes a “successful” public policy in a polarized political environment.

Who Is Polarized?

Scholars and the popular press have documented an increasing divide between the two major political parties since about 1960. The phenomenon appears to have occurred both among the political elite and among the political grassroots, and we suspect there is significant interaction and two-way causality between the two.

Political scientists define polarization in Congress as the ideological distance between the “median member” of each party in the U.S. House and U.S. Senate. Ideological distance is usually measured by congressional roll-call votes, with each member being assigned a composite score between –1 (most liberal) and +1 (most conservative), based on all votes in a given session. Figure 1 shows the distribution of House members on this scale, with the 87th House (of 1961–1962) on the top and the 106th House (of 1999–2000) on the bottom. Based on this scoring system, it appears that almost no one in 2000 occupied the middle ground.

Evidence of growing polarization among ordinary American citizens is mixed. The number of Americans who perceive themselves to be moderate has stayed relatively constant over the past three decades. However, polling data indicate that a sizable percentage of the electorate has moved further apart on certain salient issues, such as taxes, the role of religion in public life, foreign policy, and the use of military power.

The presidency of George W. Bush and the war in Iraq have produced some of the most extreme levels of polarization ever recorded in the history of popular polling in terms of presidential approval ratings and support of military actions. In 2004, the gap between Republicans and Democrats on support for the war reached 63 percentage points; this split was much higher than it was for the wars in Korea, Kosovo, Afghanistan, and even Vietnam, where the partisan gap averaged only 5 percentage points. The United States does not have a history of widespread partisan polarization in foreign policy, and so the recent split over Iraq represents a significant break from the past.

More voters are sticking consistently with their respective parties, as evidenced by the recent sharp decline in ticket splitting (voting for candidates of different parties in the same elections) and fewer close congressional races. Fewer candidates win elections in districts and regions that lean toward the other party, and fewer House seats are decided within a narrow range of 45–55 percent for each candidate (see Figure 2).

History and Causes

It would be inaccurate to suggest that today's polarization is unprecedented. The parties were even farther apart in the late 19th century, following the Civil War. However, unlike past eras when the parties tended to polarize on only one major issue at a time (for example, slavery or civil rights), the list of issues that divide the parties today seems to have grown larger over time since the early 1960s.

Southern realignment is one of the most potent explanations for polarization. With the sharp decrease in white Southern conservative Democrats, the increase in Southern Republicans, and the demise of Northeast Republicans, the parties have become not just more ideologically homogeneous but also more regionally concentrated.

The increased influence of party activists is another important source of polarization. These activists—many of whom belong to new interest groups focused on issues

Figure 1—Judging by Roll-Call Votes, It Appears That Almost No One in the U.S. House of Representatives in 2000 Could Claim Middle Ground

SOURCE: Based on data from *Culture War? The Myth of a Polarized America*, 2nd ed., Morris P. Fiorina, Samuel J. Abrams, Jeremy C. Pope, New York: Pearson Education, Inc., 2006.

NOTE: Overinterpretations of roll-call votes should be avoided, since votes reflect a mixture of policy preferences, pressures from constituent and party leaders, and strategic considerations.

Figure 2—The Number of Competitive U.S. House Seats Has Fallen Steadily Since the Nation's Centennial

SOURCE: *Red and Blue Nation? Vol. 1: Characteristics and Causes of America's Polarized Politics*, Pietro S. Nivola, David W. Brady, eds., Washington, D.C.: Brookings Institution Press, 2006; originally from "Re-evaluating the Theory of Surge and Decline: Seat Change Requires Competition," James E. Campbell, Chad Hankinson, Walter Koch, paper prepared for the annual meeting of the New England Political Science Association, Portland, Me., April 29–30, 2005. Used with permission.

NOTES: Marginal seats are those decided within a range of 45–55 percent of the two-party district vote. Elections since 2000 are included in 1976–2000.

of rights or morality—assert a large influence on the selection and election of candidates because of their disproportionate turnout in party primaries and caucuses.

Partisan gerrymandering may make congressional districts less competitive and reduce the incentive for safe incumbents to listen to opposing views. However,

the effect of gerrymandering is debatable, because parallel trends have occurred in both the House and the Senate, and Senate boundaries are fixed.

Some observers suggest that Americans increasingly cluster in like-minded communities, with fewer participating in institutions and organizations that bring different kinds of people together. Residential self-segregation by race and class, facilitated by increased mobility, leads to more congressional districts composed of like-minded people.

Income inequality and immigration may be widening the divide. Each of the parties is now identified with particular economic and fiscal policies, and voter income is closely tied to political party identification. Higher-income citizens tend to vote Republican, while those with lower incomes lean Democratic.

Another key trend is the emergence of evangelical Christians with strong links to the Republican Party. Issues driven by religion tend to be those on which it is harder to find common ground.

Meanwhile, a fragmented media market enables citizens to choose sources of information in line with their prior convictions more than ever before. Fewer people than in the past either subscribe to newspapers or watch the national network news, and media companies offer targeted, often adversarial, content to gain market share.

Finally, some scholars attribute polarization to institutional changes in Congress. These include the greater power of party leaders to enforce discipline, control the agenda, and determine committee assignments; more usage of restrictive rules; and a decline in meaningful deliberation.

Is Polarization Good or Bad?

The word “polarization” may connote something bad, but its effects on the country are not entirely clear

and may include beneficial, as well as detrimental, consequences.

Polarization probably has some positive effects. For starters, strong and distinct parties present clear options for voters. Clear options may help citizens understand what is at stake in an election, thereby encouraging them to participate. There is considerable evidence that public participation in American politics has increased with heightened polarization. As shown in Figure 3, the turnout of eligible voters in the 2004 presidential election was quite high by U.S. standards, reaching 60 percent and thus returning to a level not experienced since the 1950s and 1960s.

Polarization may clarify political mandates and reward (or punish) leaders who deliver (or fail to deliver) on them. If voters know what a candidate stands for, they may be more likely to hold him or her accountable for following through on campaign promises. Likewise, polarization prods candidates to differentiate themselves on substantive issues, reducing the relative importance of candidate personalities and campaign tactics and perhaps elevating the role of governing philosophies. Better policy might result if each side vigorously makes its case in this way.

But polarization probably has negative consequences as well. Legislative gridlock—leaving important issues unresolved in Congress—has risen since the 1940s. Historically, Congress has enacted the majority of significant legislation when it was least polarized. One study has found that the least polarized congressional term produced between 60 and 166 percent more legislation than did the most polarized terms. Gridlock could also bring greater delays in the confirmation of federal judicial nominations and more vacancies on the bench. Polarization could also undermine unified U.S. leadership in foreign policy, which could in turn damage America’s standing in the world. Closer to home, bitter partisan battles could weaken the confidence of Americans in their government’s ability to solve problems.

Polarization Versus Success

Current studies of polarization do not trace its effects on the daily lives of citizens. To move in this direction, the benchmarks for policy success will need to be modified. The existing literature often defines a successful policy as one favored by the median member of Congress or the median voter, presumably because a democracy should not favor extreme views. However,

The effect of gerrymandering is debatable, because parallel trends have occurred in both the House and the Senate, and Senate boundaries are fixed.

U.S. history demonstrates that centrist ideology does not always produce the best public policies. Slavery, for example, was not abolished by the work of centrists. We suggest a future research agenda that uses alternative criteria—namely, economic efficiency and distributive justice—to determine policy success.

The focus should extend beyond federal legislation and budgetary allocations. We need an accounting of how polarization affects the quantity and quality of regulations and judicial decisions. We should also examine the effects of polarization at the state and local levels, on the conduct of defense and foreign policy, and on other issues.

We also wonder if polarization is shifting policy influence away from objective sources and toward the policy shops of ideological think tanks, interest groups, and even the parties themselves. Are policy questions that require nuanced technical and economic information being resolved increasingly on partisan grounds? It might be useful to examine exactly how scientific information is or is not currently being used.

If we want to reduce polarization, we might require measures aimed at both elites and the lay public. Some measures might reduce polarization per se, while others might mitigate only its adverse consequences. Before interventions are attempted, much more needs to be learned about the positive and negative consequences of polarization and the proposed remedies. Here are some of the key ideas and possible solutions that have been put forth:

- Encourage more centrists to serve in Congress. Methods include opening up the primary process to greater numbers of independent voters, making congressional districts competitive rather than “safe,” and altering congressional procedures to strengthen members relative to party leaders, who tend to be highly partisan.
- Create a more deliberative process by allowing fewer filibusters, mandating minority participation in conference committees, or simply altering Congress’s schedule so that members work two full weeks at a time in Washington and then take two full weeks to go home to their districts. An additional option is to create more bipartisan commissions to tackle the tough, long-term problems that are currently gridlocked and for which neither party wants to assume sole responsibility.
- Increase political participation among moderate citizens by increasing voter turnout, capitalizing

Figure 3—As Polarization Has Increased, Voter Participation in Recent U.S. Presidential Elections Has Risen

SOURCE: Based on figure from George Mason University, United States Election Project. Used with permission. As of press time: elections.gmu.edu/turnout_rates_graph.htm

on demographic trends such as the growing Latino population, and engaging more citizens in local politics and deliberative democracy exercises.

- Reward balanced media coverage to alter the influence and tone of the mass media. For example, a rating system could score each network on the quality and objectivity of its coverage. America could also invest in civic education so that schoolchildren are taught to distinguish substance from impassioned nonsense.

Before we meddle with democracy, we need to compare how the proposed solutions fare on the criteria of economic efficiency and distributive justice. It will not be easy to launch research into these questions, but polarization has become a force powerful enough to require answers. In the meantime, we should take comfort in the fact that the framers of the U.S. Constitution designed a political system that has already survived several waves of intense partisan polarization. The country will likely survive this one as well. ■

Centrist ideology does not always produce the best public policies. Slavery, for example, was not abolished by the work of centrists.

Related Reading

Polarized Politics and Policy Consequences, Diana Epstein, John D. Graham, RAND/OP-197-PV/EMR, 2007, 40 pp., ISBN 978-0-8330-4220-0, \$20. As of press time: www.rand.org/pubs/occasional_papers/OP197/

Newcomers' Burden

Who, if Not Immigrants, Will Pay for the Baby Boomers' Retirement?

By James A. Thomson

James Thomson is president and chief executive officer of the RAND Corporation.

PHOTO: DIANE BALDWIN

Lost in the developed world's heated debate over immigration is a stark demographic reality: As their populations age over the coming decades, the United States, Western Europe, and vast swaths of Asia will grow increasingly dependent upon immigrants to join their workforces, prop up their economies, and help fund social welfare programs.

Growing longevity is good for individuals, but it confronts nations and societies with a host of problems as well. Not least are the costs of social welfare programs for the elderly, such as Social Security and Medicare in the United States. From now through mid-century, the retirement of the post-World War II baby-boom generation will shift the balance in many countries between those paying into such programs and those drawing benefits from them. Between 2006 and 2050, the share of the U.S. population over age 60 will rise from 17 percent to 26 percent. In China, it will nearly triple, from 11 percent to 31 percent; in Europe, it will climb from 21 percent to 34 percent.

As graying workers exit the workforce, new workers will be needed to replace them. In this respect, the United States should fare relatively well. To maintain a constant labor force between now and 2050, the United States will need to "import" only 330,000 immigrants a year; currently, the United States adds about 1 million immigrants to its population annually. But maintaining a constant labor force will be a huge

challenge for other developed countries. Japan, an "immigration-resistant" society, would need to import 600,000 a year; and Europe as a whole would need to import 2.9 million a year.

Even with large-scale immigrant-driven population infusions, however, the social welfare programs of all these societies will still be threatened, because their dependency ratios—the proportion of retirees drawing from social welfare programs to workers paying into the programs—will still climb. To maintain a constant dependency ratio through 2050, the United States would need 10.8 million new immigrants per year. This is ten times the current level of U.S. immigration and clearly not a realistic target.

The fiscal repercussions of aging populations will therefore be profound. Developed societies will see mounting financial pressures on old-age pension systems and dramatic increases in the cost of health care. In places where safety nets for the elderly are incomplete or do not exist today—such as China, India, and other developing countries—there likely will be clamors to devise and implement basic programs.

Many U.S. policy options were spelled out by RAND researchers in a 2004 book, *The 21st Century at Work*. To help refine the options for several aging nations, RAND researchers are involved in health and retirement surveys of people over age 50 in the United States, 15 European countries, Mexico, Japan, China, and South Korea. RAND Europe has also found that government-subsidized programs designed to raise fertility rates show some promise.

The policy options inevitably must fall into one of two categories: increasing tax collection or decreasing benefits. Immigration falls into the first category, as do increased fertility, greater labor force participation, longer careers, employment of retirees, and higher tax rates. In the second category are such options as raising retirement ages, indexing benefits to prices rather than wages, limiting health care benefits, requiring greater cost-sharing for health care, and means-testing.

At RAND, we hope to determine the best ways forward. At a minimum, we in several nations around the world would be unwise to deny ourselves the dividends of immigration, because it will lessen the burden of other, probably more challenging, options, such as reducing benefits. ■

The policy options inevitably must fall into one of two categories: increasing tax collection or decreasing benefits.

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Program Overview

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A gala evening reception will feature a moderated conversation with high-profile policymakers and RAND researchers.

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A daylong program will include panel discussions, roundtable dialogues, and other exchanges to address a range of pressing policy issues that should be foremost in the minds of government leaders and other decisionmakers at home and abroad. Saturday activities will be held at RAND's award-winning headquarters campus in Santa Monica.

On Saturday evening, guests will attend one of a dozen small dinner parties hosted in distinctive homes across Los Angeles where the conversation with top RAND researchers and renowned policymakers will continue in an informal setting.

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To learn more about *Politics Aside* or to inquire about sponsorship opportunities, contact Tamara Turoff Keough, director of development, at (800) 757-4618 or Tamara_Keough@rand.org.

Greg Treverton, director of the RAND Center for Global Risk and Security, offers a sneak peek of what attendees will experience during the November Politics Aside weekend.

PHOTOS BY DIANE BALDWIN

RAND friends and supporters mingle in a private home as a preview of the upcoming Politics Aside weekend.

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