

BAKER INSTITUTE REPORT

NOTES FROM THE JAMES A. BAKER III INSTITUTE FOR PUBLIC POLICY OF RICE UNIVERSITY

“GLOBAL WARMING: SCIENCE AND POLICY” CONFERENCE

The scientific, economic, and political issues surrounding global warming were debated extensively at a Baker Institute conference September 6–8, 2000. Titled “Global Warming: Science and Policy,” the conference featured experts from diverse fields, such as atmospheric physics, astronomy, biology, economics, geology, oceanography, and politics, who offered their perspectives on this contentious scientific and political issue.

A central question of the conference was to what extent human activity affects climates at the global level. The costs and benefits of possible climate change were discussed, along with the geographic distribution of those effects. The feasibility and costs of mitigating human influences on the global climate also were considered.

The accumulation in the atmo-



Nobel laureate Robert Curl, Jr., professor at Rice University, explains “Science and Crystal Balls.”

sphere of greenhouse gases (GHGs), such as carbon dioxide (CO₂), now is seen as a greater threat to human welfare than are air and water pollution. Unlike many air or water pollutants, CO₂ emissions are an unavoidable by-product of fossil fuel combustion and, therefore, of modern economic activity.

Over the past 100 years, industrial activity, the demand for electricity, and the demand for transportation services have increased exponentially. The degree to which humans rely on fossil fuels is indicated by the fact that in 1997 fossil fuels provided about 86 percent of primary

energy requirements globally. As a result, since 1958 the concentration of CO₂ in the atmosphere has risen about 14 percent and is now about 30 percent above pre-industrial levels. Furthermore, the Intergovernmental Panel on Climate Change (IPCC) currently estimates that CO₂ concentrations will rise during the next century to a level 90 percent above pre-industrial levels.

Although CO₂ does not harm humans in the way that nitrous or sulfurous oxides do, some argue that the accumulation of carbon dioxide in the atmosphere will warm the earth’s climate. A positive correlation, since about 1970, between the rising atmospheric concentration of CO₂ and rising average temperatures has led



Senator Charles Hagel speaks at the conference via a satellite broadcast.

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BERLIN WALL MONUMENT UNVEILED

Juergen Chrobog, the ambassador of the Federal Republic of Germany to the United States, and Rice University president Malcolm Gillis unveiled the Berlin Wall Monument in a ceremony November 10, 2000. The 12-foot-high structure was relocated recently to the southeast corner of Baker Hall to acknowledge former Secretary of State James A. Baker, III's foreign policy leadership role at the time the Berlin Wall was taken down and his key role in the "Two Plus Four" negotiations that led to Germany's unification in peace and freedom.

Gillis cited the symbolic significance of the wall on the campus. "Rice University has always been dedicated to the freedom of the human mind and the human experience. The segment of the Berlin Wall on the Rice campus is a tangible reminder of the physical bar-

rier that separated oppression from freedom for 28 years and the ultimate victory of freedom and the rule of law."

Chrobog recalled the 1989 destruction of the wall that had separated families and friends for nearly 30 years. "I cannot think of anything that better symbolizes the end of the Cold War," Chrobog said. The wall crumbled, he noted, "because the people of the former Germany, in a display of remarkable courage, exerted the will to be free." He said the fall of the wall "did not automatically usher in unification," and he acknowledged the support of the United States government and the role of "farsighted statesmen" like Secretary Baker in unifying Germany.

Edward Djerejian, director of the Baker Institute, presented Baker's remarks at the event in the latter's absence.

"For many who were not personally involved, the fall of the Berlin Wall has receded from memory. Yet there are important lessons to be learned from the West's long struggle with totalitarianism," Baker noted. "The most important is the need for leadership."

Baker paid tribute to the leadership role of former presidents Ronald Reagan and George Bush. "Were it not for the inspiring vision of Ronald Reagan and the consummate diplomacy of George Bush, the Cold War would have lasted far longer than it did, and its end might well not have been peaceful beyond all our expectations.

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the wall, hundreds of millions of people enjoy freedom. But in far too many places around the world, freedom of speech, religion, association and the press is only a dream. Fulfilling that dream and advancing freedom's cause will require leadership.

"We must all understand that the fall of the Berlin Wall marked not just the end of one chapter in the history of human aspiration, but the beginning of another," Baker concluded.

Djerejian noted that generations of Rice students will pass this monument at Baker Hall and be reminded of the historical significance of the fall of the wall and the end of the Cold War.

Immediately following the dedication ceremony, Richard Stoll, Rice professor of political science and associate director for academic programs, moderated a panel discussion on "Conse-

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quences of the Fall of the Wall.” Participants were John Ambler, professor of political science at Rice; Carl Caldwell, Allen Matusow, and Gale Stokes, all professors of history at Rice; and Susan Scarrow of the University of Houston’s political science department.

Ambler discussed the impact of unification on domestic German politics. He noted that many would have preferred that the fall of communism would lead to two Germanies. But that was not the case. A single Germany emerged. To facilitate the process of integration required a large-scale transfer of resources to the East, and this transfer has had a strong positive impact. But there is still resentment of the West in the East for its prosperity, and, in turn, people in the West are critical of what they see as the East’s lack of ambition. Genuine integration, with the East as prosperous as the West, probably will take a decade. But it will happen and will create a truly united Germany.

Caldwell talked about the historical context of the “German problem”: a problem of economic power and political instability in the heart of Europe, which led to the two world wars and genocide. The German state came into being in 1870, with a strong economy, a strong military, and a weak political system. This weak system persisted but then collapsed in World War I and was followed by the short-lived Weimar Republic. Political life then exploded in the streets, followed by the ascension of Adolf Hitler. He created unity by force, seeking to eliminate all groups he saw as being opposed to him and his vision of Germany.

This, of course, culminated in World War II and the postwar division of Germany. Thus, the history of German unity was not a positive one. But major transformations occurred in both Germanies after World War II; both sought to come to terms with the past. Since 1990, the challenge has been how to create national unity, a democratic political culture, along with the economic challenge of unification. This challenge has been met despite some problems. The new Germany has responded to the economic challenges of unification. While there have been some political problems, the main discourse about the far right has been how to control it. Every other political constituency has rejected the far right; it does not have credibility and is not a threat. At last, it seems that the “German problem” has been solved.

Matusow discussed the postwar history of Germany. At the end of the war, Germany and Berlin were divided into occupation zones. The U.S., leading the Western powers, began to revive the West German economy to serve as the engine for the recovery and development of Western Europe. The movement toward a West German state led to the Berlin Blockade and Airlift. Thus, Germany

(and in particular, Berlin) became a major focal point of the Cold War. There were a series of crises that revolved around control of Berlin, the status and legitimacy of West and East Germany, and the movement of people between West and East. In 1961, the wall was built, which in the short run achieved some degree of stability in East Germany, but in the long run served as a visible reminder that the communist regime in the East could only survive by force and repression. Ultimately, the

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At the dedication of the Berlin Wall Monument are (from left) Juergen Chrobog, ambassador of the Federal Republic of Germany to the United States; Rice president Malcolm Gillis; Hanno von Graevenitz, German consul general; and Edward Djerejian, director of the Baker Institute.

BERLIN WALL

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wall helped to de-legitimize and destabilize the regimes in East Germany and the Soviet Union.

Scarrow discussed new (and unanticipated) policy changes for Germany and where the country stands in the new Europe after unification. Germany is faced with a set of new economic challenges, being at the center of a new Europe rather than on the periphery of Western Europe. This provides new opportunities but also new economic competitors. The eastern expansion of Eastern Europe (EU) is eagerly sought by many states, including Germany, but also has raised new problems. For example, EU citizens can work where they wish in Europe, creating potential immigration problems. It also creates the possibility of new competitors to Germany that can produce goods with cheaper labor costs. There also are fears among Germany's neigh-

bors to the east. They fear the economic power and the expansion of a rich Germany. The great influx of people into Germany has raised the issue of what it means to be German. Formerly, to be German was to be born of ethnically German parents, whether inside or outside the political boundaries of the German state. But the passage of the 1999 citizenship law offers a new definition of what it is to be German: If you are born within the German state, you have the rights of citizenship even if your parents did not give them to you as an "ethnic inheritance."

Stokes directed his comments to events just prior to the fall of the wall and its consequences for EU. He emphasized the critical role of Gorbachev, who wanted to create a pluralist socialism and attempted to carry this out by standing back from EU. As well, the beginnings of openness in Poland

and Hungary helped to facilitate the fall of communism in the region. Perhaps the final legacy of the divisions and rivalries in Europe is what might be termed "the Serbian problem." Echoing the earlier German problem, there are questions of who is, and who is not, Serbian, including the issue of whether all Serbs, no matter where they live, should be ruled by a Serbian government. Since Serbia is in the center of the Balkans (another analogy with Germany, which stands in the center of Europe), a lack of stability in Serbia reverberates to create instability in the adjacent areas. As with Germany, the ultimate solution must involve the rule of law, democratic rights, and a solution to the question of ethnic identity. Only if this occurs can there be long-term stability.

The presentations were part of the Baker Institute's Shell Lecture Series.



Panelists for the discussion of "Consequences of the Fall of the Wall" were (from left) John Ambler, Peter Caldwell, Richard Stoll (moderator), Allen Matusow, Susan Scarrow, and Gale Stokes.

NEAL LANE BECOMES SENIOR FELLOW AT BAKER INSTITUTE

Neal Lane, assistant to the president of the United States for science and technology, director of the U.S. Office of Science and Technology Policy, and former director of the National Science Foundation, has rejoined the faculty at Rice University.

Lane, 62, returned to Rice from the Clinton White House to take the position of University Professor in the Department of Physics and Astronomy and senior fellow at the James A. Baker III Institute for Public Policy. University Professor is a special appointment entitling the holder to teach in any department in the university. Lane is the only person ever to hold the position at Rice.

"This is another signal day for Rice University, as we welcome back our colleague and faculty member Neal Lane, who has served his country with such distinction in several vital national positions," Rice president Malcolm Gillis said.

"I have had the privilege to serve in the Clinton-Gore administration for more than seven years and now am excited to be coming home to Rice, where my wife, Joni, and I have so many friends," Lane said. "I look forward to teaching again and working with Rice's outstanding students and faculty on physics research and science and technology policy."

"Neal Lane will make a significant contribution to the Baker Institute's future research and programs on science, technology and engineering issues," said Director Edward Djerejian. "He will, in effect, be a natural bridge between

the Baker Institute and The Wiess School of Natural Sciences and The George R. Brown School of Engineering. We are delighted that he will play this important role in the institute's outreach across the Rice campus."

Lane had been assistant to President Clinton and director of the Office of Science and Technology Policy since August 1998. He resigned from both positions to return to Rice, where he served as provost from 1986 to 1993 and was an award-winning teacher and researcher in atomic and molecular physics for more than 27 years.

In his most recent role, Lane provided the president with advice in all areas of science and technology policy, and he coordinated policy and programs across the federal government. He also co-chaired the president's Committee of Advisers on Science and Technology Policy and managed the president's National Science and Technology Council.

President Clinton named Lane in 1993 to lead the National Science Foundation (NSF), the federal agency that provides more than \$3 billion in support for research and education in science, mathematics, engineering, and technology. Lane also served ex officio on the National Science Board for six years.

Lane earned his undergraduate, master's, and doctoral degrees from the University of Oklahoma



Neal Lane

in the early 1960s. He joined the Rice faculty in 1966 as an assistant professor of physics and was named chair of the physics department in 1977. While departmental chair, Lane spent 1979 serving as director of the Division of Physics for the NSF.

Lane left Rice in 1984 to become chancellor of the University of Colorado at Colorado Springs. In 1986, he returned to Rice as provost.

Lane is a fellow with the American Physical Society, the American Academy of Arts and Sciences, and the American Association for the Advancement of Science. In his previous time at Rice, he was awarded an Alfred P. Sloan Foundation Fellowship and twice won the George R. Brown Prize for Superior Teaching. He also has studied as a postdoctoral fellow at Queen's University of Belfast, Northern Ireland, and has held several visiting fellowships at the Joint Institute for Laboratory Astrophysics in Boulder, Colorado.

“TIME” PHOTO EXHIBIT HIGHLIGHTS PRESIDENCY

A traveling photo exhibit profiling 11 U.S. presidents was on display at the Baker Institute during January.

The exhibit, titled “*Time* and the Presidency,” featured nearly 100 pictures taken by *Time* magazine photographers. The collection included nine photos each of Franklin Roosevelt, Harry Truman, Dwight Eisenhower, John Kennedy, Lyndon Johnson, Richard Nixon, Gerald Ford, Jimmy Carter, Ronald Reagan, George Bush, and Bill Clinton. The photos were selected from various issues of *Time* to portray each president in a professional and behind-the-scenes manner to capture the breadth of the presidential experience.

Accompanying the photos were comments by Hugh Sidey, who served as *Time’s* Washington bureau chief from 1967 to 1979. Sidey began covering Eisenhower for *Life* magazine in 1957 and later

became *Time’s* political and White House correspondent. He has covered every U.S. president since Eisenhower.

Prominent photographers whose work was included in the exhibit are Eddie Adams, P.F. Bentley, David Burnett, Michael Evans, Dirck Halstead, David Hume Kennerly, Diana Walker, and Hank Walker.

Sponsored by American Century Investments, the exhibit debuted in 1999 at the Harry S Truman

Presidential Library and Museum in Independence, Mo., and has been on tour around the nation since then. Keynote addresses on the occasion of the “*Time* and the Presidency” exhibit were delivered by Sidey and James A. Baker, III, honorary chair of the Baker Institute at Rice.

Computer users can view a virtual exhibit of the display at the following website: <http://www.pathfinder.com/offers/presidents/>.

BAKER WEBSITE REDESIGNED

The Baker Institute’s newly redesigned website can be found at <http://bakerinstitute.org>.

New to the website are virtual museums, including an exhibit on James A. Baker, III’s “Thirty Years of Politics and Public Service” and one on “Reconstruction and Unification: Germany and the United States 1945–1990,” which highlights the historic ties between the people of post-war Germany and the United States.



This 1939 photo of Franklin Roosevelt was one of 99 pictures in the “Time and the Presidency” exhibit. (Photo: AP–World Wide Photos)

AMERICAS PROJECT FOCUSES ON POVERTY AND INCOME DISTRIBUTION IN THE AMERICAS

“The gap between the ‘fast caste’ and the large number of Latin Americans mired in poverty has been growing,” Abraham Lowenthal told participants in this year’s Americas Project conference at the Baker Institute.

Although business and trade in Latin America have benefited from liberal economic reforms during the past several years, more and more people live under the poverty line, said Lowenthal, professor of international relations at the University of Southern California and president of the Pacific Council on International Policy, an independent leadership forum.

He moderated a panel discussion at the Baker Institute October 2, 2000, on “The Roles of Government, Private Sector, and Non-Governmental Organizations.” The panel of experts shared their expertise with the 20 fellows attending the Baker Institute’s Americas Project, a leadership forum for discussion of the challenges confronting nations in the Western Hemisphere.

Panelist David Brown, Rice assistant professor of political science, said it is not clear whether neoliberal economic policies are hurting Latin America. “It depends on which groups you’re talking about and which factors you’re looking at,” he said. As an example, he cited less-restrictive tariffs that allow wealthier people to import sports cars at half the cost and noted that tariffs can also be lifted on food imports, allowing people from lower socioeconomic groups to benefit as well.

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“The most accurate way to figure out what’s going on in Latin America is to find out what the people themselves think and see what sorts of policy reform they’re voting for,” Brown said. He cautioned that democracy does not guarantee that every individual or

group will have full, if any, representation and that indigenous groups should not vote for reform “under the disillusion that they will be enfranchised by democratic regimes.”

Panelist Wendy Hunter, an associate professor of political science at Vanderbilt University, said it’s too soon to evaluate the effectiveness of economic reforms. “Everything takes time to shake out and get going,” she said.

Hunter noted that gaps among wage earners reflect levels of education. In Brazil, unless a family makes two minimum salaries (about \$270 per month when combined), they are likely to take their kids out of school so they can sell fruit on the streets to supplement the family income, she said. “Someone needs to get gutsy and put money where it counts in socially useful ways and

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Doug Schuler, project coordinator for the Americas Project conference, is associate professor in the Jesse H. Jones Graduate School of Management at Rice University.

AMERICAS PROJECT

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not fund universities where students are middle-class.”

Panelist Roy Thomasson, director of the Young Americas Business Trust of the Organization of American States, also noted that young people’s education often parallels that of their parents. “If there is no investment in their education, they will be in the same economic level 20 to 30 years from now,” he said.

Thomasson acknowledged that some people might feel helpless and hopeless when multinational corporations establish a presence in their country. He suggested that they preserve their culture by commercializing it, becoming entrepreneurs and taking advantage of the Internet to sell products to tourists and to customers all over the world.

Katharine Donato, also a panelist and a Rice associate professor of sociology, commented on the effects the North American Free Trade Agreement (NAFTA) has had on poverty and inequality in Mexico. “NAFTA has widened the gap between those who have and those who don’t,” she said. The Mexican government has allowed land to be sold for capital investments, which has increased the cost for farmers. Consequently, much of Mexico’s poor population in the rural areas has migrated to Mexican cities and the United States, where the unemployment rate is low. “This has produced a growing labor shortage in many Mexican communities, which is likely to fester and

create instability,” Donato said.

Panelist Peter Rodriguez, assistant professor of international business and public policy at Texas A&M University, said the growing economic inequality is not a malfunction of economic reform policies. “Open markets tend to work like that in the near term,” he said. “You give people great rewards for taking great risks. Neoliberal policy has opened the door

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... governments not only need to give business people the incentives to improve through liberalization measures, but they also must ensure that each citizen can play in this new liberal economy.

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to the global market, but it has also raised the admission price.” He anticipates slow generational growth, with average income convening over the long term.

In addition to the panel of experts, fellows at the Americas Project spent several days discussing the issues among themselves. They also heard a presentation by Domingo Cavallo, Argentina’s former minister of economy.

Cavallo advocated the neoliberal

view of opening markets and privatizing as the way to improve society. But he did not ignore the importance of democratic institutions as well as the social institutions such as health, education, and infrastructure, citing the Argentine experience as an example. Cavallo noted that governments not only need to give business people the incentives to improve through liberalization measures but also must ensure that each citizen can play in this new liberal economy. Since the liberalized economy still relies upon governmental institutions to do such things as define property rights and regulate competition, it is imperative that the public servants serve the public interest and not their own private interests.

Doug Schuler, associate professor of management in the Jesse H. Jones Graduate School of Management at Rice and project coordinator for the 2000 Americas Project conference, said the fellows at the event represented 17 countries.

“Boom To Whom? The Effects of Foreign Trade and Investment Liberalization on Poverty and Income Distribution in the Americas” was the theme of the conference, which was organized by Rice’s Baker Institute, the Organization of American States, and the Greater Houston Partnership.

Support for the 2000 Americas Project was provided by The Starr Foundation, The Coca-Cola Foundation, Strake Foundation, Mitchell Energy and Development Corp., and Parkway Investments/Texas, Inc.

TRANSNATIONAL CHINA PROJECT

Contemporary Chinese culture is both firmly grounded in traditional institutions and beliefs and yet more and more shaped by global economic forces and the emergence of a distinctly Chinese culture of capitalism. That is the conclusion of the distinguished scholars, researchers, and authorities who came to the Baker Institute to participate in the fall 2000 series of public lectures organized by the Transnational China Project (TCP). The project examines how the circulation of people, ideas, values, and technologies among Chinese societies affects contemporary Chinese culture. Visit the project's website, <http://www.ruf.rice.edu/~tnchina>, for archives of workshops and lectures.

Popular Chinese Religious Values

Westerners know of Falungong only as a dissident religious movement in China, but it is merely one form of popular Chinese fundamentalism that has evolved over the last five centuries. This is the conclusion of research presented by David Ownby, professor of history at the University of Montreal, in his October 2000 talk, "Falungong as a Cultural Revitalization Movement."

Ownby's research has revealed that movements like Falungong inherited the cosmologies, the goal of universal salvation, and the unregulated creation of scripture from such largely agrarian "folk

Buddhist" groups as the White Lotus that began to appear in North China more than five centuries ago. With the Chinese Republican and Communist revolutions in the 20th century, however, Falungong and dozens of other fundamentalist movements have emerged to serve the needs and values of contemporary Chinese, including the public welfare social work of a growing middle class.

These popular religions emphasize the cultivation of both physical and moral health. Practitioners



The Transnational
China Project

中美跨文化游廊

believe that the study of traditional Chinese exercise techniques, such as Qigong and Taijichuan, in combination with moral behavior will earn them redemption and salvation.

Ownby also argued that Falungong's popularity is based largely on the way that its founder, Li Hongzhi, has rhetorically woven together popular beliefs that are often contradictory. Hongzhi has

built a movement that emphasizes morality, is, distinctly, almost nationalistically Chinese, and makes an appeal to a universal scientific vision while at the same time cultivating supernatural powers.

The text of Ownby's talk is available on the TCP website. His talk was co-sponsored by Asian Studies and the Center for the Study of Cultures.

Modern Society and Popular Values

Chinese societies share many of the same social problems as Western societies, including an inability to develop broad social consensus on how to resolve them. That is the argument made by R.C.T. Lee, noted writer, educator, and humanitarian from Taiwan. Lee, most recently the president of Chinan University, which was destroyed by the earthquake of 1999, came to Rice to present "The Serious Problems Facing Mankind" as part of a September 2000 lecture co-sponsored by the North American Chinese Writer's Association of Houston.

Lee identified key problems facing all societies, including a declining sense of public morality, poverty, the depletion of natural resources, and the privatization of public-oriented scientific research. He argued that the persistence of

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these problems is due largely to the indifference of intellectuals, without whose leadership and support a broad consensus in society cannot be formed. On the other hand, as Lee stated through discussion with Rice faculty and students, his experience in humanitarian work has revealed that younger generations in Chinese societies are more altruistic and volunteer-oriented than their predecessors. A transcript of Lee's talk is available on the TCP website.

China's Economic Development, Stability, and Democratization

The prospects for development in mainland China come down to three fundamental issues: whether or not it will surpass the U.S. as an economic superpower, whether or not it will become unstable, and when democratization will be achieved. These issues were addressed by Ambassador Yang Chengxu, president of the China Institute for International Studies (CIIS) and one of Beijing's most influential foreign policymakers, in a roundtable discussion with faculty, researchers, and students at the Baker Institute in December 2000. The Baker Institute and CIIS signed a formal agreement in May 1999 to conduct joint research on energy security and international relations.

Yang stated that although China has had high economic growth rates throughout the 1990s—between 7 and 8 percent—the huge gap between the gross domestic product of the U.S. and China will not narrow unless growth can be

sustained for the next 50 years. Yang also identified significant obstacles in China's development, including disparities in income distribution across regions, pollution, corruption, and the complex restructuring of the state-owned enterprises. Current government policies to develop the poorer, interior regions and to develop a nationwide social welfare system, however, gradually will resolve

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many of these problems.

Yang also argued that globalization has "opened the eyes" of the Chinese people and contributed to China's democratization through the circulation of people,

ideas, and technologies. Through the more than 200,000 Chinese who have studied in the U.S. since 1978, and through foreign investment and technologies such as the Internet, the outside world has come to play a large role in China's political and economic life. China in recent years has even engaged in pilot projects in which officials at the grassroots level are chosen through direct, competitive elections. In sum, Yang argued, China will not surpass the U.S. in the near future, but it will maintain its stability and gradually develop its own "unique" democratic system. A transcript of Yang's talk is available on the Baker Institute website.

Bilingual Curriculum Resources on Chinese Cultural Studies

The Transnational China Project is making available to scholars and students valuable "insider" perspectives on the hot debates among Chinese intellectuals today. The website now contains a bilingual transcript of a frank roundtable discussion on feminism, film, and literary culture in Chinese societies between noted mainland literary critic and theorist Dai Jinhua of Beijing University and Chinese film and literature scholars Yvonne Chang, Ying Fenghuang, and Cindy Chan of The University of Texas at Austin. The roundtable discussed how the commercialization of film and literature has made these media less "elitist" and yet has not improved the low status of women and gender studies in general. Also, in early 2001 the TCP will be adding to the website a collection of articles from *Dushu* (The Reader) reflecting some of the most topi-

cal debates among Chinese and foreign intellectuals. *Dushu* has been China's most prestigious and visible forum for intellectual debate, much like that of the *New York Review of Books* or the *Times Literary Supplement*. Wang Hui, editor of *Dushu*, selected the articles and will introduce them.

The Future of Chinese Culture, Transnational Identity and Transnational Law

How are Chinese being told to think of themselves? Are they being told to think of themselves as citizens of China, Hong Kong, Singapore, and Taiwan or as members of a transnational, diasporic Chinese middle class? The answers to these questions have profound implications for the future of Chinese culture and such important issues as nationalism, citizenship, territorial conflict, and the social effects of consumerism. In 2001 the TCP will bring together scholars from China, the U.S., Australia, Hong Kong, and Taiwan to answer these questions at a multidisciplinary workshop, "Advertising Culture and Transnational Identity," at Hong Kong University. The TCP will work with these scholars to analyze nearly 2,000 images of advertisements shown in public places in Beijing, Hong Kong, Kaohsiung, Shanghai, Seoul, Singapore, Taipei, and Tokyo. These pioneering advertising surveys, begun by the TCP in 1998, will facilitate greatly the study of the role of advertising in identity formation as well as the flow of advertising appeals across national boundaries in Asian societies.

With whom will Asian Americans identify in the future? The TCP

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also will work with Asian studies scholars and students to explore the various issues of identity formation in the American cultural context at a February 2001 symposium on Asian American film and literature at Rice University. Finally, as China calls on foreign investors and corporations to play a greater role in its economic development, will it have to rely on traditional Chinese or foreign formal models of legal institutions, or will it develop more "transnational" institutions, such as nongovernmental arbitration, for resolving disputes? The TCP is working with the Baker Institute's energy program and the China Institute for International Studies, Beijing's premier foreign-policy think tank, to plan research workshops on the role of transnational law in the development of China's crucial energy infrastructure.

Reports, transcripts, audio files, and extensive image archives from workshops and public lectures can

be found on the Transnational China Project's critically acclaimed bilingual website, <http://www.ruf.rice.edu/~tchina>. The website was cited recently by the *Encyclopedia Britannica* as one of the top 100 websites for reference on China. The Transnational China Project is generously supported by Ford Motor Co. and PricewaterhouseCoopers, and it is directed by Steven Lewis, senior researcher at the Baker Institute; Benjamin Lee, professor of anthropology; and Richard Smith, George and Nancy Rupp Professor of Humanities and professor of history.

WALID KHADDURI ADDRESSES ENERGY FORUM

Middle East and energy expert Walid Khadduri gave a keynote address on “The Middle East, Oil, and Iraq” to members of the Baker Institute Energy Forum and other guests December 14, 2000.

In his address, Khadduri, the editor of the authoritative journal *Middle East Economic Survey*, said that despite the breakdown in the Arab–Israeli peace process, leaders in the Persian Gulf are strongly willing to hold oil policy separate from political issues. But Khadduri noted that Arab attitudes toward the U.S. were at an extremely low point, with local Arab television and print media commentary highly critical of what they perceive to be U.S. bias in favor of Israel and biased Western media coverage of the events unfolding in the Middle East.

“This set off a wave of reaction in the region,” he said. “Writers and other intellectuals who have been previously supportive of the peace process have suffered personally from the outcry these events have stimulated.”

Khadduri noted that his message might not be popular in the U.S. but that future U.S. policy would have to take negative Arab reaction to recent events into account. He stated that many Arab leaders no longer viewed the U.S. as an honest broker for peace and would seek to widen the role of other countries or institutions in the peace process.

Khadduri said that despite the outrage felt about the U.S. role in the Arab–Israeli dispute, the actions of the Gulf states had clearly

indicated a lack of interest in linking political dissatisfaction with U.S. policy to oil-production policies, and he added that proposals to revive the “oil weapon” received no support at the recent summit of the Arab league.

He outlined the details of Iraq’s conflict with the United Nations over the terms for its sale of oil under UN auspices to purchase humanitarian aid and said it re-

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mained to be seen how Iraq’s demand for a 40-cent surcharge of oil purchases to go directly to Baghdad’s treasury would play out. Khadduri said several oil traders were loading oil cargoes and had claimed they would not pay the surcharge but added that some oil-industry commentators were skeptical that the UN could prevent certain parties from providing back-door payments to Saddam Hussein.

Khadduri said that the tension between Iraq and the UN, which had led to the cessation of Iraqi oil exports for several days and could continue to slow these oil shipments in the future, might obviate the need for the Organization for Petroleum Exporting Countries (OPEC) to negotiate a cutback in oil production as seasonal winter-oil demand recedes early this year. Khadduri, like some other oil commentators, expects oil prices to fall back into the \$22–\$28 range this year as the seasonal demand for oil falls off and the world economy slows. He believes that if Iraq’s oil returns to the market at full tilt, OPEC will convene to discuss a joint reduction in output to hold spot-market oil prices near \$25–\$28 a barrel. He added that OPEC countries were conservatively assessing oil prices in their national budgets at \$20–\$22 a barrel. The crude oil of several OPEC countries trades at about \$2 below spot-market levels for North Sea oil, due to quality considerations.

The Baker Institute Energy Forum members and donors include Apache, Noble Drilling, BP, Occidental, Chevron, Schlumberger, Conoco, Shell, Devon Energy, Unocal, Enron, Wallace S. Wilson, ExxonMobil, Halliburton, Center for International Political Economy, IRI International, Tasajillo Charitable Trust, and Marathon.

SCHOLAR DISCUSSES TRANSFORMATION FROM AUTHORITARIANISM TO DEMOCRACY IN LATIN AMERICA

The Baker Institute's Energy Forum, in conjunction with the Notre Dame Club of Houston, sponsored a visit to Rice University by distinguished Latin American studies scholar Scott Mainwaring for meetings with faculty and students from the Latin American studies program and a public lecture December 11, 2000. His speech was titled "The Great Transformation: From Authoritarianism to Democracy in Latin America."

Mainwaring is the Eugene and Helen Conley Professor of Government and International Studies at the University of Notre Dame and director of the Helen Kellogg Institute for International Studies. Also a fellow at the Joan B. Kroc Institute for International Peace Studies, Mainwaring is a leading expert on democratization in Latin America and the role of the Catholic Church in the region. His lecture is part of a broader Baker Institute energy program on Brazil and Latin America sponsored by the BP Foundation.

In his presentation to the Baker Institute Energy Forum, Mainwaring pointed out that there has been a steady rise in the measure of democratic practices in Latin America in recent years. He believes that the continent has never enjoyed as widespread proliferation of democratic institutions and practices in its history as is currently in place. Although such bursts of democratic expansion in the past have not been sustained in several Latin American

One reason Mainwaring says he expects democracy to continue to flourish is that the Catholic Church, which plays an important role in many Latin American societies, has placed its strong support in favor of democratization and democratic institutions in recent years. In the past, the church, fearing the influence of leftist political elements, had failed to take this kind of progressive stance.

countries, Mainwaring remains optimistic about the prospects that the current trend will be lasting but warned that a resumption of economic hardship and unemployment in the region could threaten the strength of evolving democratic institutions.

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Mainwaring outlined the challenges to democracy in a variety of countries around the region and noted that recent political changes in Venezuela had reduced that country's measure of

democratic practices. He added that the 1970s-style populism that was becoming prominent in Venezuelan foreign-policy statements was unlikely to gain in popularity around the region unless programs for economic reform and liberalization that are being widely applied throughout the region were to fail significantly to bring greater economic progress and to narrow income disparity among the various groups in Latin society.

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DEPUTY TREASURY SECRETARY EIZENSTAT SPEAKS ON CHALLENGES FOR NEW ADMINISTRATION

New information technology has helped create an economic transformation as profound as that of the Industrial Revolution of the 19th century, according to U.S. Deputy Treasury Secretary Stuart Eizenstat, who spoke at the Baker Institute November 17, 2000. Eizenstat discussed the challenges of the global economy that await the next administration.

Information technology, along with sound fiscal and monetary policies, has been the single most important factor in the remarkable increase in U.S. productivity, he said. The new information technology also has been a driving force behind globalization, where trade barriers are falling, the market for capital is international, access to information is instantaneous, and economies are increasingly interconnected.

Eizenstat noted that the rising divergence in national incomes is not because more countries are integrating themselves with the global economy but because so many countries are *not* becoming fully linked to the global economy.

Strong and Stable Flow of Global Capital

The challenges to the next administration posed by globalization fall into three broad categories. The first is to ensure a strong and stable flow of global capital. A critical component of this is an effort by the international community to make financial crises, such as the recent one in Asia, less frequent and less costly. The Asian crisis was caused by two elements

coming together: weaknesses in the fundamentals (questionable banking systems, domestic credit bubbles, unsustainable exchange rates, and deteriorating fiscal positions) that resulted in a reassessment of the country's capacity to safely absorb foreign capital, and an element of panic by domestic

The challenge faced by the global community is to find ways to facilitate the inclusion of the poorest countries in the global economy by overcoming the barriers to their integration.

and foreign investors. This experience has led to a reform of the international financial architecture, putting in place more effective means to prevent crises, safer policies in the emerging market economies, and reorienting the International Monetary Fund so that it is better equipped for modern crisis response.

Opening Borders to Increased Trade Flows

An open world-trading system is

the cornerstone of the new global economy, and the new U.S. administration should continue in this direction. Globalization has a number of positive effects. It reduces conflict because people are working together for common prosperity and therefore have enormous incentives to set aside their differences. It has positive effects on the internal evolution of states; as countries open their economies, this increases the need for them to have a stronger rule of law, openness, and accountability. Ultimately, this strengthens domestic forces and improves human rights. Critical to an open world-trading system is finding ways to cooperatively resolve trade disputes, such as the long-standing one between the U.S. and the European communities on beef and bananas.

Support for the Poorest Countries

Open markets and open trade alone cannot carry the burden of lifting the poorest nations out of poverty. The challenge faced by the global community is to find ways to facilitate the inclusion of the poorest countries in the global economy by overcoming the barriers to their integration. This will be difficult as long as half the world's population has yet to use a telephone and 40 percent of African adults cannot read. Meeting this challenge requires concerned action by the public sector in both the industrial and developing countries as well as support by the private sector.

Industrial nations must provide



(From left) Baker Institute director Edward Djerejian greets William Arnold, vice president for government and industry relations at Shell International E.P., and U.S. Deputy Treasury Secretary Stuart Eizenstat.

more—and more effective—official external assistance. It is also necessary to improve the developmental effectiveness of international financial institutions by greater selectivity in lending, a strengthened link between lending allocations and country performance, the placement of more attention on the provision of global public goods, and improved donor coordination and collaboration. In addition, industrial nations need to take a realistic approach to debt by relieving the world's poorest nations of the burden of their massive debt.

Developing nations also must do their part. These governments need to put in place institutions and rules that allow markets to function well. They need to make public investments in critical areas such as health care and education. They need to promote the effective rule of law through good governance, transparency, and support for the emergence of a healthy civil society. Developing nations also must introduce and maintain solid macroeconomic policies to accelerate and sustain

economic growth.

Finally, the private sector needs to take proactive measures to integrate developing nations into the global economy. Companies have a social responsibility to act as good corporate citizens. But it is also in their self-interest to do so; the developing world has five times as many consumers as does the developed world. However, this potential market in the developing countries cannot be fully tapped unless economic and social conditions improve.

The overarching economic and humanitarian challenge of our

time is to build a successful and truly global economy that works well for all the world's people. This challenge can be met by continuing to promote open economies and strengthening the rules and institutions with which they operate. This can be done with a concerted effort by both the public and private sector, while at the same time protecting those most vulnerable to the impact of economic forces.

Eizenstat's presentation was part of the Baker Institute's Shell Lecture Series.

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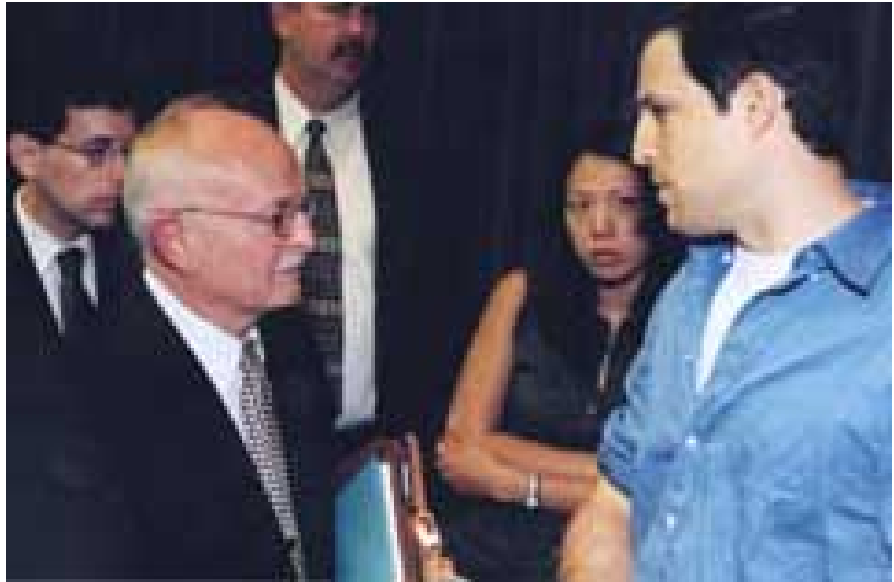
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ISRAELI AMBASSADOR TO U.S. SPEAKS ON THEATER BALLISTIC MISSILE DEFENSE

The security situation facing Israel has made it necessary for Israel to develop a theater ballistic missile defense capability, according to David Ivry, Israel's ambassador to the United States.

Ivry explained this policy at the Baker Institute September 25, 2000. He reviewed the changes in the Middle East since the Gulf War of 1991 that have created a heightened sense of threat for Israel. He noted that economic and social development challenges can lead to instability in a number of countries in the Middle East. The population growth in the region has not been accompanied by a corresponding increase in economic and social services. These factors, including the scarcity of water in the region, have come together to create a series of problems that encourage radicalization, not democratization.

At the same time, while the post-Cold War era has led to decreases in military spending in democratic countries, there has been no corresponding decrease in non-



David Ivry (left), Israeli ambassador to the United States, meets with students at the Baker Institute.

democratic countries in the Middle East. In addition, the international regime of treaties and agreements designed to stop the spread of missile technology does not appear to be working. Consequently, for Israel, the development of a tactical ballistic missile defense system is necessary and prudent. In this respect, Ivry has been a leading figure in the development of the Israeli Arrow TBM

defense system.

A working tactical ballistic missile defense system gives the decision process in the target state more time and will reduce the necessity to react immediately to a real or an apparent attack.

Development of a tactical ballistic missile defense system will have spin-offs for other portions of the Israeli defense industry, which will help Israel maintain its technological lead over its potential enemies. As well, an Israeli system would also serve to protect Israel's neighbors from tactical ballistic missile attacks.

Ivry argued that given the security situation faced by Israel, there are no options that will afford Israel with as much protection against the growing tactical ballistic missile threat in the region.

His talk was part of the Shell Lecture Series at the Baker Institute.

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SCIOLINO SHARES INSIGHT ON IRAN

Iran is a “series of competing battlefields,” according to *New York Times* reporter Elaine Sciolino, author of *Persian Mirrors: The Elusive Face of Iran*.

“On every level of society there is a fierce battle being fought out,” Sciolino told Rice students, faculty, staff, and other guests at the Baker Institute October 20, 2000.

Sciolino witnessed many of those battles firsthand during the more than 20 years she has spent covering Iran. Currently a senior writer at the Washington Bureau of the *New York Times* and a former foreign correspondent for *Newsweek*, she was one of the first female reporters assigned to the guarded, male-ruled world of the Islamic Republic.

“My stealth weapon operating in Iran is that I’m a woman,” Sciolino said. “That allows me access to 50 percent of the spaces that men cannot go.” Because most of the “meaningful” transac-

tions and conversations in Iran take place behind closed doors, Sciolino often visited aerobic studios, beauty parlors, homes, temples, and other places where she was likely to hear about matters not likely to be discussed in the open.

Describing Iran as a “grand experiment” with two volatile chemicals, Islam and democracy, Sciolino said, “Nobody can exactly figure out how much of each chemical to stick into the beaker without having a massive explosion.” She cited a number of situations in which those chemicals are being mixed.

The press, for example, is one of the competing battlefields in Iran. After Mohammad Khatami was elected president in 1997, hundreds of newspapers and magazines surfaced. “For the first time, Iranians could read the truth—they could see the political battles in print every single day,” Sciolino said. However, most of

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the reformist newspapers that challenged the basis of the Islamic Republic were shut down earlier this year. “But there’s always a way around the restrictions,” Sciolino said, noting that an imprisoned journalist’s article criticizing the regime was published in another Iranian reformist newspaper.

The parliament is also a battlefield. Seventy percent of the elected parliamentarians are reformists. “This is a parliament that has fewer clerics than at any time during Iran’s revolution,” Sciolino said. However, the parliament was prevented from reconsidering a restrictive press law, so the reformists have not necessarily won the battle.

Another battlefield is the courts. “We on the outside see the court system of Iran as terribly repressive and unfair and violating all



New York Times reporter Elaine Sciolino signs copies of her book, *Persian Mirrors: The Elusive Face of Iran*, at the Baker Institute.

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the norms of the legal procedure,” Sciolino said. But there are ways to prove how repressive the courts can be, as evidenced by a politician who was put on trial for corruption and embezzlement. He convinced television producers to air his entire trial on TV and even rescheduled his testimony so that it would not compete with coverage of Iran’s participation in the World Cup soccer match. He used the trial to talk about a taboo issue—torture—and questioned how the government coerced confessions from some of the people who testified against him. “Everyone in Iran was watching this trial,” Sciolino said. “It was like the Iranian version of the O.J. Simpson trial.”

The streets also provide a battleground where women can confront the Islamic restrictions on dress and where students can

The streets also provide a battleground where women can confront the Islamic restrictions on dress and where students can demonstrate for their right to freedom of speech.

demonstrate for their right to freedom of speech.

Sciolino said people sometimes ask her why Americans should care about Iran, and she gives several reasons.

“On the crassest level, look at oil prices,” Sciolino said, noting that Iran is the second-largest oil producer in OPEC and that the country has the second-largest reserves of natural gas. Because Iran is the only country that borders the Caspian Sea and the Persian Gulf, American sanctions and policy are probably the only thing preventing Iran from building a pipeline from the north to the south, Sciolino said.

She also cited political reasons for Americans’ interest in Iran. “Iran is one of our last enemies on earth . . . and it is also in one of the most dangerous neighborhoods in the world,” Sciolino said. Iran shares a 700-mile border with Iraq and is bordered on the other side by Pakistan—a country that tested its nuclear weapons on Iran’s eastern border. The administration of President Bill Clinton classified Iran as “a state of concern” that is developing weapons of mass destruction and supporting terrorism, Sciolino said.

“But I would argue that the main reason we should care about Iran is that its greatest resource is not its oil, but its people,” she said. “I have never met a more resourceful, hospitable people than the Iranian people.”

The tales of those people inspired Sciolino to write *Persian Mirrors*. “I wrote this book because of the extraordinary people I had met,” she said. “I wanted to capture their stories, such as the two sisters who at age 40 decided they

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wanted to do something for women and also make some money, so they transformed part of their house into an aerobics studio.”

The book’s title refers to a room in Iran’s Green Palace where the walls and ceilings are covered with thousands of pieces of mirrors. “My first impression upon entering this room of mirror mosaics was that it was very welcoming, warm, life-filled, and dazzling—until I tried to look at myself in the mirror,” Sciolino said. “You can’t see yourself in those mirrors. The image was distorted and reality was elusive. I wanted the book title to capture this complexity.”

Sciolino’s presentation was part of the Baker Institute’s Shell Lecture Series.

STEINBERG ADDRESSES BAKER INSTITUTE AUDIENCE ON PROBLEMS OF GLOBAL LANDMINES

Landmines are an ominous everyday reality in 70 countries around the world. Each year, about 22,000 of the 70 million landmines in these countries are stepped on, resulting in serious injury or death.

Ambassador Donald Steinberg, special representative of the president and secretary of state for global humanitarian de-mining, spoke at the Baker Institute September 22, 2000, under the co-sponsorship of the United Nations Association. He described the problems caused by leftover mines and the programs his office administers to help ameliorate these problems.

The most serious problems of landmines are the deaths and injuries they cause. About 90 out of every 100 injuries caused by landmines are inflicted on civilians. But there are other issues as well. Landmines have been placed on roads, in schools, around water supplies, in agricultural fields, and even in marketplaces. People are too afraid to frequent these places until mines are removed from them. Consequently, it is common for people to stay in refugee camps long after the war is over and to remain dependent on international relief efforts. This prevents recovery from the war.

Steinberg is in charge of the U.S.'s Global 2010 Initiative, whose goal is to eliminate the threat of landmines to civilians around the world by the end of the decade. His office administers a budget of about \$110 million. This funding supports programs

geared toward getting American groups to participate in the process of global de-mining.

The office supports mine-clearance programs in 35 countries. It also supports a variety of programs in mine awareness. One program educates people on how to identify mines. Another program conducts surveys on the location of mines. Equally important are surveys that determine where mines are not located; once this has been established, rumors can be dispelled and people then can return to their homes.

Steinberg's office also assists victims of land mines and supports research on better techniques and technologies to detect and remove mines. His office tries to raise American groups' knowledge of and interest and involvement in the de-mining effort. One effort has been directed toward raising

mine awareness in the U.S. and around the world, and it has resulted in DC Comics' distribution of millions of comic books with world-recognized characters to educate children about what to do if they see mines.

Steinberg's office also has involved a variety of groups in purchasing mine-detecting dogs. And his staff promotes the Adopt-a-Minefield program, which identified the 100 most dangerous minefields that can be cleared (some minefields are located in areas that prevent their removal) and put a price tag on each. In about one and a half years, 65 of the 100 minefields have been adopted, and about one-half of these already have been cleared.

Steinberg urged the audience to get involved in the Global 2010 Initiative and, in particular, to participate in the Adopt-a-Minefield program.

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ROUNDTABLE ACTIVITIES



Susan G. Baker (right), honorary chair of the Roundtable, presents a thank-you gift to Judy Ley Allen, outgoing founding chair of the Baker Institute's Roundtable.

The Roundtable is the Baker Institute's premier donor-support membership organization. The Roundtable provides its members an opportunity to participate first-hand in many of the institute's programs and activities. Roundtable members receive invitations to Baker Institute events and are given exclusive opportunities to hear and meet guests of the Baker Institute as well as institute fellows, scholars, and staff. This past fall, Roundtable members received the following special briefings:

October 30, 2000: Alvin Tarlov, the Baker Institute Sid Richardson and Taylor and Robert H. Ray Senior Fellow in Health Policy, made a presentation on "The Social Determinants of the Health and Illness of Populations." This was followed by a dinner that allowed

Roundtable members to have individual discussions with Tarlov.

November 29, 2000: Terry Sullivan, the Thomas Cook and Mary Elizabeth Edwards Memorial Chair Scholar in American government at the Baker Institute, discussed the institute's White House 2001 Project, for which he is project coordinator. He also recounted highlights of the White House Chiefs of Staff conference (including video segments) that was jointly sponsored by the Woodrow Wilson Center in June 2000. This was followed by a reception.

In addition to the Baker events featured in this issue, among the other presentations that Roundtable members were invited to attend last year were an address by

the Honorable Robert McNamara, the eighth U.S. secretary of defense, about the Vietnam War; Egyptian Foreign Minister H.E. Amre Moussa's remarks on the Middle East peace process; and a talk by H.E. Luis Tellez, Mexico's secretary of energy.

For more information about the Baker Institute Roundtable, please contact Suzanne Stroud, the institute's senior staff assistant and coordinator for the Roundtable, by e-mail at bakerroundtable@rice.edu or by phone at (713) 348-2136.

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many to suggest such a causal relationship. This hypothesis, referred to as the "greenhouse effect," is plausible because CO₂ and other greenhouse gases absorb some of the infrared radiation that is emitted from the earth's surface after the sun warms it. This, in turn, warms the atmosphere, thereby increasing the amount of water vapor. Increased water vapor then can amplify the effect of CO₂ to produce noticeable temperature increases.

The fact that most warming is caused by higher humidity explains why the largest predicted temperature increases are at night in the cold winter air masses found in the polar regions. Since the coldest air masses are also the driest, they experience the largest percentage increases in humidity. In contrast, increased humidity at tropical and temperate latitudes produces an increase in cloud cover, which tends to cool the atmosphere by reflecting incoming solar radiation. At temperate latitudes, higher humidity increases winter snowfall, which again reduces the absorption of incoming solar radiation.

Many factors apart from the role of water vapor were identified to complicate the modeling of global climates. For example, the net effects of the initial increase in temperature produced by CO₂ are complicated by interactions between the atmosphere and the oceans. In particular, the oceans' ability to store heat, and thereby regulate the earth's climate, is largely unknown. There also is much to learn about the effects of

upper atmospheric disturbances on the climate. For example, ozone depletion and changes in stratospheric winds were pointed to as having significant effects on climate.

Another complication is that increased CO₂ can stimulate plant growth and, more generally, biosphere productivity. Since carbon compounds form a large part of living organisms, an expansion of the biosphere would tend to reduce CO₂ concentrations in the atmosphere. The existence of these types of competing factors makes the likely consequences of increased greenhouse gas concentrations difficult to predict. The only feasible way of making such predictions is to build complicated global computer models (the GCMs) that simulate the interactions among the various processes.

There is general agreement that the earth's surface has been warming in recent decades, but uncertainty remains as to how much warming has resulted from increased CO₂ and how much warming has resulted from other forcing phenomena. For example, it was argued that variation in solar activity could explain much of what has been observed in the surface temperature record. In addition, it was argued that control of greenhouse gases that are more potent than CO₂ could be the most effective and easily implemented means of combating global warming.

There also is considerable uncertainty about the degree to which temperatures will rise over the next century. An increase in average temperatures of 2°C by 2100 was the median projection in

the 1995 IPCC report. This figure is 23 percent below the IPCC's 1992 median projection, 38 percent below its 1990 median projection, and 75 percent below the figure projected at the Toronto conference of 1988, the year the IPCC was created. The instability of the projections (a 75 percent drop in seven years, and almost 40 percent in five) is an indication of the uncertainty of climate science. In fact, it was recognized throughout the conference that today's GCMs are inadequate, as indicated by the wide variability in the predictions of different models. However, it was argued that there is something to be learned by the fact that all of the GCMs are broadly consistent in predicting a warming trend.

The damage caused by global warming, were it to eventuate, could be considerable. For example, melting of land-based polar ice caps, combined with thermal expansion of the world's oceans, could raise sea levels and flood many of the world's port cities. In addition, adjusting to rising sea levels could be difficult because the change could occur abruptly. Initially, warming may cause a gradual melting of ice, but if large chunks of land-based ice fall into the ocean, they will melt more rapidly. Apart from the impact this would have on sea levels, the resulting influx of fresh water into the oceans could affect the circulation of ocean currents, producing further changes in climates. There is geological evidence that suggests the world's climate can switch rapidly from one stable state to another. Dam-

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age is likely to be greater when changes occur abruptly. The amount of CO₂ that must accumulate before a catastrophic event would occur, however, is unknown. The timing and severity of any potential damage, therefore, are also difficult to predict.

Despite the uncertainties surrounding the causes and ramifications of global warming, governments are being urged to act. An international agreement, known as the Kyoto Protocol and as of yet to be ratified by any of its signatories, calling for the reduction of greenhouse gas emissions was signed in 1997. The Kyoto Protocol specifies a greenhouse gas emissions target of between 5 percent and 8 percent below 1990 levels by 2008–2012 for a group of industrialized nations (referred to as Annex I countries). Carbon taxes or direct controls could be used to achieve these targets, but they are likely to be very costly. Costs also will be higher the faster controls are enforced since reducing emissions in the short term generally requires reducing production, causing some degree of capital obsolescence. Relatively low-cost methods of control, such as land-use changes, the clean-development mechanism (CDM), and emissions permit trading, have been proposed, but methods of implementation have yet to be worked out. The methods of control and the speed of enforcement will determine the magnitude of the costs of compliance. Countries also may incur lower costs if weak enforcement allows controls to be evaded.

Modeling the economic cost of taking CO₂ abatement measures is just as difficult as modeling the climate. Uncertainty pervades the exercise, due to a number of problems. The lack of clearly defined guidelines for reducing CO₂ emissions, an inadequate understanding of the potential of new technologies, and more conventional problems of projecting economic growth, the composition of fossil fuel use, and projecting energy prices each contributes to this uncertainty. Therefore, while we cannot be certain whether or not global warming is an immediate and serious threat, we also cannot be certain about the economic costs of taking steps to eliminate an uncertain threat.

A potential solution to the global warming problem lies in the wake of the development and implementation of new technologies. Energy sources such as solar power, fuel cells, hybrid technologies, and so forth could greatly increase efficiency of fossil fuel use or could eliminate it altogether. Computer technologies also have the potential to increase energy efficiency by more adequately regulating manufacturing facilities and the like. This could considerably reduce CO₂ emissions without imposing high economic cost. However, the time horizon for cost-competitive implementation is uncertain, and, if too far into the future, damages from global warming could be high.

In addition to the panel of experts in their respective fields at the conference, four keynote speakers addressed the participants and attendees, each presenting his own perspective on the issues at hand.

Neal Lane, assistant to the U.S. president for science and technology and director of the Office of Science and Technology Policy, addressed the difficulties with reconciling science and policy. He noted that science must advance in understanding how climate has changed in the past and how it will change in the future so that an accurate assessment of human activity can be made. He recognized the large amount of uncertainty in predicting future climates but presented evidence of the correlation between global temperature and atmospheric CO₂ levels.

Lane also presented possible climate-change impacts on different regions of the U.S., as predicted by different GCMs, that are, as he argued, aimed at raising the awareness of groups and individuals. He also stressed the global nature of climate change and argued that the largest impact on the U.S. could come from climate-related disruptions in other parts of the world. Finally, Lane recognized that policy will move forward, as it operates on a different time frame than does science. So, the best possible science needs to be communicated to policymakers as it becomes available.

Richard Burt, former ambassador to the Federal Republic of Germany and assistant secretary of State for Europe, addressed issues of international sovereignty. Recognizing that a global agreement to abate CO₂ emissions will require the formation of an international regulatory body, he questioned if governments should cede power to a new system of global governance. He argued that a United Nations-type body would be inefficient and, perhaps more

important, would hold no democratic accountability. Thus, Burt claimed, any such body that attempted to wield power would be rejected, particularly in the U.S., because it is anti-democratic in nature. A more suitable model, he added, would be one in which control and enforcement was instituted at a national level so that sovereignty is not infringed.

U.S. Senator Charles Hagel (Nebraska) argued for a new approach to the issue of climate change. Citing the ongoing debates within the scientific community and the lack of a definitive consensus prediction of climate change, he claimed that radical and swift action to abate CO₂, such as that called for in the Kyoto Protocol, is unnecessary. Hagel also added that such action could cause detriment to the U.S. economy that outweighs any benefit. He argued instead for a cautious approach that would allow for the advancement of climate science while preserving economic well-being.

Robert Curl, the Harry C. and Olga K. Wiess Professor of Natural Sciences at Rice and a 1996 Nobel laureate for chemistry, acknowledged that science often identifies problems that require a policy response but offers no clear means of dealing with those problems. According to Curl, the global warming issue is just one in a number of such issues. He emphasized the need for consensus within the scientific community so that clear policy direction can be formed. He recognized, as Lane did, that policy will move forward regardless of the state of science; thus, accurate and sound science is all the more necessary.

Although a clear policy agenda did not emerge from the conference, substantial agreement was reached on several points. Better measures of temperatures at ground level are a top policy priority and could be attained relatively cheaply. Society should not incur large costs for controlling CO₂ emissions on the basis of theoretical models alone. The models must be supported by reliable empirical evidence. Current measures of ground temperatures were not devised to test scientific theories of the effect of CO₂ on global temperatures. There is an urgent need to install climate metering instruments at the surface level that are specifically designed to gather data needed to test more thoroughly the predictions of computer models of the earth's atmosphere. The TAO/TRITON program to monitor El Niño in the equatorial Pacific Ocean provides a model for such a global climate monitoring system.

There are a number of questions regarding the science of global climate change that need further investigation. Current GCMs do not account for all of the mechanisms that affect climate. Better models will require improved understanding of the various interactions within the climate system. The following questions were identified as important to that understanding:

- What explains the divergence between measured temperature trends at different levels of the atmosphere and in different hemispheres or locations? Are some of the measures faulty, or do the GCMs need to be modified to explain real differences?
- What does change in the strato-

sphere imply about climate at the surface?

- What role do oceans play, both as a sink and as a global thermostat, and how can they be included better in climate models?
- What is the role of the sun in the earth's climate?
- How might clouds be included in models better than they are at present?
- What does the geological record tell us about global warming?
- Can the development of better geological records help predict rapid (a decade or less) changes in climate?
- What are the odds of a sudden catastrophic event, and what might the warning signs be?
- How does CO₂ compare with soot and other GHGs as a source of temperature change?

Economic models of the cost of reducing emissions were criticized for their limited predictive accuracy, as were the climate models. There was general agreement, however, that the more flexible the control mechanism, and the more gradually it is introduced, the lower the costs will be. There also was agreement that the high costs of reducing fossil fuel use and uncertainty about the science of global warming imply that we ought to be cautious about implementing emission controls.

Conference coordinators were Peter Hartley, chairman of economics; Andre Droxler, associate professor of geology and geophysics; and Kenneth Medlock, Baker Institute Scholar.

The conference on global warming was sponsored by Carolina Power and Light Service Co., ExxonMobil Corp., and Southern Company Services Inc.

BAKER INSTITUTE AND COUNCIL ON FOREIGN RELATIONS CO-SPONSOR DISCUSSION ON U.S.-CUBAN RELATIONS IN THE 21ST CENTURY

As part of the Council on Foreign Relations' (CFR) Independent Task Force on U.S. Policy toward Cuba, the Baker Institute and the CFR co-sponsored a session October 16, 2000, on U.S.-Cuban relations in the 21st century. The session was one of several meetings held around the country to re-examine the CFR's 1999 study of this topic so that timely recommenda-

tions for U.S. policy toward Cuba can be presented to the new administration early in 2001.

Texas CFR members, Rice faculty, and other Houstonians with an interest in and knowledge of the topic attended the discussion, which was chaired by Baker Institute director Edward Djerejian.

Julia Sweig, fellow and deputy director of Latin American studies

at the CFR, discussed the CFR Task Force's preliminary findings on the specific steps the U.S. government should take to contribute to a rapid, peaceful, and democratic transition in Cuba. A general discussion by the other attendees followed. The results of this closed discussion will be integrated into the CFR's final report on U.S.-Cuban relations.

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