THE NEW LIBERTARIANS MAKE WAVES

Baby-boom business leaders are taking a fresh look at politics. Neither consistent liberals nor conservatives, they oppose government intervention in both the economy and personal lives. The major parties are listening to them. ■ *by Thomas Moore*

LIKE MANY young executives and professionals who came of age during the political tumult of the 1960s and 1970s, Fred Gibbons, 35, has strong ideas about politics and government. He doesn't like either. The chief executive of Software Publishing Corp., a firm that has built annual sales to $34 million in five years, he recalls attending a dinner at which former California governor Jerry Brown urged a group of Silicon Valley entrepreneurs to get involved in politics. "Jerry, around here we try to minimize politics," Gibbons told Brown after the dinner. "Our philosophy of government is less, not more. We don't want anybody telling us what to wear, who to be, or what to do."

Gibbons's politics, or antipolitics, are typical of baby-boom executives, entrepreneurs, and professionals whom FORTUNE interviewed around the U.S. and who confirm what pollsters and political strategists are finding. Most young executives have been so preoccupied with making it in business that they have largely withdrawn from political activity, except to cast an occasional vote. Such behavior is fairly common at their busy stage of life, but a few, having achieved some measure of success, are beginning to take a fresh, if skeptical, look at politics. Whether these executives are newly intrigued by politics or still standing on the sidelines, how they see the world is colored by their vantage point in business.

Their views are increasingly important to politicians and policymakers. Young managers, especially the entrepreneurs, are emerging as role models and opinion leaders for their generation. Says Robert Lichter, one of two political scientists who conduct the Rothman & Lichter survey on attitudes of business and media leaders, "While the status of FORTUNE 500 leaders is low in public opinion polls, young antiestablishment entrepreneurs are being exalted today and can be very influential, particularly among their own age group." Baby-boomers will make up about half the electorate by 1988—a statistic strategists for both major parties know by heart.

The Administration has already started to pitch key policies to the young managerial class. President Reagan, in a speech rallying support for his tax reform plan, claimed it would help entrepreneurs—63% of whom are under the age of 45, according to a recent Gallup/*Wall Street Journal* poll. He appealed to young Americans to "follow in the footsteps of those two college students who launched one of America's great computer firms from the garage behind their house"—Steven Jobs and Stephen Wozniak of Apple Computer.

The problem for politicians is that young managers defy conventional pigeonholes. As a group, they are neither liberal nor conservative, Democratic nor Republican. What they tend to be, in attitude if not ideology, is libertarians: people who believe in maximizing personal liberties and minimizing government controls. They believe individuals should be allowed to do, think, and live however they please, so long as their actions do not hurt or interfere with others.

Few, however, belong to the utopian Libertarian party. It peaked in popularity in 1980, when it captured 1% of the U.S. presidential vote, and has since been taken over by ideologues who champion a romantic individualism that opposes nearly all tax-supported government activity, including many police and defense functions. The new libertarians are realists who have little interest in leading or following lost causes. D. Quinn Mills, a Harvard Business School professor and the author of a new book about baby-boom executives called *The New Competitors*, estimates that 60% of the young managerial group could be considered libertarian, 35% conservative, and 5% liberal.

Libertarianism has yet to establish itself as a widely recognized creed. The label itself confuses many Americans, conjuring up images of extremists cavorting naked in public. Some young managers we spoke to prefer to bill themselves as neo-liberal or neoconservative, with an emphasis on neo. Most feel uncomfortable with any

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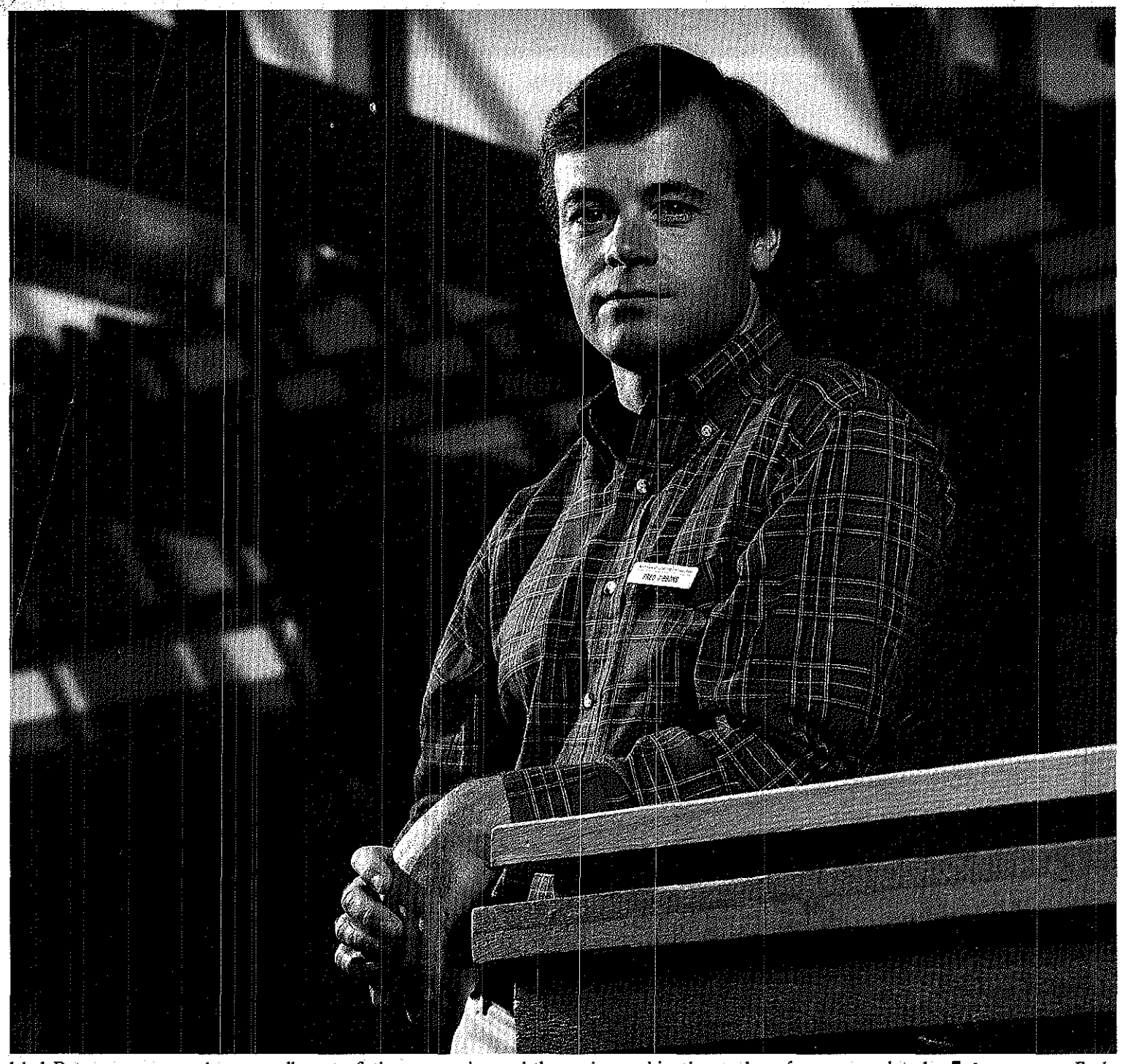

label. But many agree, as do some pollsters, business consultants, and political analysts, that most young managers are indeed libertarian in attitudes toward government and its role in the economy and people's lives.

Their mind-set borrows heavily from Jeffersonian ideas about a limited role for government and the importance of individual rights. It has been conditioned by what young executives see as the failures of big activist government in the past two decades: Vietnam, the Great Society, Watergate, stagflation economics, and the gaping budget deficit. It has found expression and validation in a resurging entrepreneurial spirit in the U.S.

As baby-boom executives begin to reconsider politics, they are applying lessons and values they have picked up on the job. Many were contemptuous of business and materialism in the 1960s and 1970s and have belatedly discovered the marketplace and made competition an article of faith. "Overwhelmingly this generation of managers wants to be measured on the most objective and performance-related standards," says Mills. "They are very worried that the older generation, if it measures them on more subjective and social criteria, will object to aspects of their lifestyle, their self-expression, their attitudes."

On economic issues, younger managers have come to adopt many beliefs held by their superiors and older colleagues. According to the Rothman & Lichter poll, most executives under 40, like those over 40, feel that less government regulation of business is

Entrepreneur *Fred Gibbons (above) told former California governor Jerry Brown he didn't want to have anything to do with politics. Brown retorted: "If you don't get involved, other people will, and they are not going to represent your interests."*

PHOTOGRAPH BY BOB SEIDEMANN

my, many are skeptical. "I find the cooperation of industry with government dangerous," says Scott Wurcer, 35, a senior design engineer at Analog Devices, a Massachusetts electronics components manufacturer. "You end up forming a dependent relationship."

Where young managers differ most with their elders is on social rather than economic issues. Younger executives tend to be more tolerant of nonconformist behavior and believe more strongly in equal opportunity without regard to sex or sexual preference. For instance, two-thirds of the executives under 40 surveyed in a Rothman & Lichter poll believe lesbians and homosexuals should be allowed to teach in public schools, compared with less than half of the executives over 40. Only one out of ten of the under-40s thinks married women should be laid off before men, vs. one out of four of the over-40s. Younger executives also tend to be less receptive to top-down hierarchical command—the military model many senior executives learned during World War II.

POLITICALLY, the new libertarian managers oppose government attempts to engineer social affairs or intervene in matters involving personal liberties—a position that brings them into conflict with elements of both major parties. Contrary to Democratic doctrine, they tend to be against gun control laws. They believe that equal opportunity is fundamental to society and free markets, but government-enforced affirmative action plans go into too much detail and often don't work. "Affirmative action became a liberal-chic thing to do at a given time and was done really badly," says David Liddle, 40, chief executive of Metaphor Computer Systems in Mountain View, California.

Libertarians also bridle at proposals favored by many Republicans, the Moral Majority, and Ronald Reagan to promulgate traditional values through government action, arguing that such actions infringe on individual rights. For example, they object to laws against so-called victimless crimes, such as pornography, prostitution, and marijuana smoking. They oppose prayers in public schools and laws discriminating against homosexuals. According to the Rothman & Lichter poll, over 80% of executives under 40 believe women should have the right to decide whether to have abortions.

Like many Americans, libertarians have trouble making up their minds about foreign policy. On one hand, Vietnam was the formative experience of their generation, and they distrust American urges to intervene militarily abroad. According to poll data, three-quarters of the baby-boom generation would oppose an American invasion of Nicaragua—about the same level of opposition as is found among most other age groups. Many libertarians oppose the draft, and quite a few have been uncomfortable with Reagan's big increases in defense spending.

On the other hand, libertarians find it hard to ignore the Soviet threat to the liberty they believe in. While the Libertarian party advocates unilateral and drastic defense cuts, many new libertarian executives are realists about Soviet aggression, in addition to being philosophically opposed to just about everything the authoritarian Communist state represents. "The greatest tyranny on the planet is the Soviet Union and it is projecting its tyranny worldwide," says Gary Hudson, 35, president of Pacific American, a California space vehicle design firm with no government contracts. "We are the bulwark against that threat, and so we have to spend on defense."

Both parties have started to cultivate this young managerial group, looking for ideas, endorsements, organizational support, and money. More libertarians are Republicans (34%) than Democrats (17%), according to an analysis of 1980 election data by William Maddox and Stuart Lilie in their recent book, *Beyond Liberal and Conservative*. The Republicans hope to expand the array of young business and professional groups formed for Reagan in 1984—such as Young Bankers for Reagan, Young Realtors for Reagan, and Young Lawyers for Reagan—into a political base for future candidates. Says a Republican strategist who helped organize the 1984 effort, "We will be forming a new national organization targeting these people."

Several Democratic groups of baby-boom executives and professionals have sprung up to help raise funds and develop a new agenda. The Lexington Group, an organization of business-oriented baby-boom Democrats in California, was formed in 1981 and has spawned similar organizations elsewhere, such as the Hudson Group in New York and the Potomac Group in Washington, D.C. They have been pushing a flat-tax proposal since the spring of 1982—which Democratic leaders chose to ignore during last year's election. The groups have over 750 members, who each pay on average $250 in annual dues. State and local Democratic committees are organizing similar groups, says John Emerson, 31, a Los Angeles lawyer who helped found the Lexington Group and is on the Democratic National Committee. "The younger generation of Democratic leaders recognizes that young managerial talent is moving into positions of power in the private sector and is politically up for grabs," he says.

To appeal to the largest number of baby-boom managers, both parties would have to make libertarian adjustments. At a panel on the politics of the baby boom, sponsored by the Cato Institute, a libertarian think tank in Washington, party strategists concluded that the Republicans need to loosen ties with the Moral Majority and come across as more socially tolerant, while the Democrats must unhitch themselves from big labor and discard their notions about economic intervention. "There's no question that the appeal of libertarian views is the fastest-growing political phenomenon," says Lee Atwater, 34, a political strategist in the Reagan campaign. "There's a consensus out there that's going to bite people in the ass."

WALTER MONDALE and the Democratic party have already been bitten. In the 1984 election nearly 60% of voters under 40 voted for Ronald Reagan. They did so, say many pollsters and analysts, largely because of Reagan's libertarian appeal on economic matters. Reagan had cut taxes, started to deregulate the economy, and exhorted Congress to cut the size of the federal government. And it seemed to be working: inflation was down and the economy was growing. In contrast, Mondale wanted to raise taxes rather than reduce government programs; he had the backing of old party hacks, big labor, and special interests; and, worst sin of all, he didn't come across as open to new ideas. Laments Democratic pollster Patrick Caddell, "The Democratic party has a death wish to drive this generation away."

continued

A political strategist in the Reagan campaign says: "There's no question that the appeal of libertarian views is the fastest-growing political phenomenon."

NIH Role in Biotechnology Debated

Science adviser thinks NIH should go beyond its health mission when it comes to nonmedical biotechnology research

For some time now, James B. Wyngaarden, director of the National Institutes of Health (NIH), and presidential science adviser George A. Keyworth, II, have been discussing NIH's role in the development of the biotechnology industry in the Untied States. Wyngaarden, believing that the NIH should focus most of its energy on basic biomedical research, has resisted suggestions that the institutes support biotechnology in nonmedical areas such as agriculture or computer architecture. Keyworth takes the contrary view. As an advocate of government measures to increase the United States' competitive position in biotechnology, Keyworth thinks that NIH should show its support for the national effort by broadening its sense of mission. Debate on this issue is said to have strained relations between the two.

The debate moved to a public forum recently when Wyngaarden called the members of his NIH director's advisory committee together for a 2 day meeting on the proper role of the institutes in the arena of biotechnology policy. The unspoken hope was that Keyworth would be convinced by the evidence that NIH does best when left to its traditional mission. Keyworth was in China.

A look at the NIH budget reveals the extent of the institutes' biotechnology effort both in dollars and in areas of research. For instance, in fiscal year 1983, NIH support for basic research and training "directly related" to biotechnology came to $442 million or 11 percent of the total NIH budget, according to figures in a report NIH prepared for Congress. In FY 1983, support for the "underlying basic research," came to $994 million or 25 percent of the total budget. For FY 1985, projected estimates are $600 million for research and training directly related to biotechnology and $1.3 billion for the broader effort. Giving examples of areas in which these funds are spent, NIH's report includes the following: understanding cancer, genetics and transplantation biology, clinical immunology and allergic response, and disease prevention through vaccine production. NIH's identity as a medical research agency is evident and the kind of diversification Keyworth is asking for truly constitutes a change of course.

Bernadine Healy, deputy director of the White House Office of Science and Technology Policy (OSTP), presented Keyworth's position. Describing NIH's "disease mission" as "too narrow a focus," Healy said that the Administration's commitment to basic research "is as strong as ever," but that Keyworth is looking for a "broadening of NIH's awareness" of the needs of other fields that will benefit from the new biology. Among specific suggestions was one that NIH support training in biotechnology in all disciplines, including the agricultural and physical sciences. NIH's recent collaboration with the National Science Foundation (NSF) in support of a new bioengineering center at the Massachusetts Institute of Technology was something Healy cited as an example of what

> To maintain leadership in biotechnology, we should "let the NIH be the NIH," Theodore Cooper says.

NIH ought to be doing. The NIH's unwillingness to expand the role of its recombinant DNA advisory committee into a government-wide body rather than one tied exclusively to the institutes was noted as an example of NIH's recalcitrance. There is, said Healy, a "broad cultural gap" between the way NIH sees itself and the way Keyworth thinks it should be. NIH, she said, could do with a little consciousness raising.

Other participants in the advisory meeting took different positions that fall into two categories. On the one hand were those who, like Wyngaarden, think that NIH should retain its focus on basic research. On the other were representatives of biotechnology companies who argued for NIH funding of work they would like have supported in "generic applied research," which includes bioprocessing technologies.

According to Nanette Newell of Calgene, Inc., in Davis, California, the U.S. position in the world market demands a substantial commitment to research that falls in between truly basic research and clearly applied work. Japan, she said, has been ranked second to the United States largely because the Japanese are good at fermentation technology. However, recent indications that one cannot get sufficiently pure proteins from fermentation have lead to a new interest in finding ways to use mammalian cell cultures as a growth medium. Identifying this as an example of generic applied research, she observed that learning how to grow mammalian cells in industrial quantities could be important competitively. According to Newell, the U.S. spends about 1 percent of its research budget in generic applied research; Japan spends closer to 50 percent.

Newell called for NIH funding of this kind of intermediate research, as did Robert A. Swanson of Genentech in South San Francisco. "Our lead is fragile," said Swanson, who pointed out that both the Japanese and Europeans are targeting funds in the area of biotechnology development, particularly since they can take advantage of the U.S. commitment to basic research through licensing agreements. In Japan, he said, which has signed some 32,000 licensing agreements with American companies, the largest share of the research dollar goes to work that includes bioprocessing and development. The question of who should fund this kind of intermediate research promises to loom large in the overall biotechnology debate. NIH does not now see a major role for itself in this. But Newell observed that it is a kind of research that is both expensive and risky, something which the big companies can afford but which may be out of reach for smaller biotechnology outfits unless there is federal support.

Company representatives called for NIH participation in the development of the biotech industry in other ways as well. Richard Nesbit of Beckman Instruments suggested that NIH should promote "intellectual support" for biotechnology companies. "It is not usual," he said, "for academics to espouse the philosophy that business should succeed." Mark Pearson of Dupont suggested that since industry allows its staff to consult with NIH, it would be useful if NIH scientists were permitted to consult with industry. (Pearson's comments prompted Wyngaarden to report that NIH is, in fact, about to change its policy on this score. New guidelines defining the circumstances under which NIH researchers can consult will be issued soon.)

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Biotech Policy Draws Flood of Comments

Hardly anybody seems to be comfortable with the way the Environmental Protection Agency (EPA) plans to regulate genetically engineered products, but there is little agreement on how it should be done differently. This is apparent from dozens of letters submitted by university researchers, professional societies, industry, and environmental groups in response to a draft proposal to regulate biotechnology that was circulated by the federal government in January.

The proposal articulated the plans of several agencies that will be involved in regulating various aspects of biotechnology—namely the Environmental Protection Agency, the Food and Drug Administration, and the U.S. Department of Agriculture—and was coordinated by the White House Office of Science and Technology Policy. It was EPA's approach that elicited the most comment.

A persistent complaint is that EPA intends to subject genetic engineering methods and products to more elaborate review than similar products produced by conventional techniques. EPA, in fact, is already asking Monsanto and University of California researchers for more information before they can conduct field tests of genetically engineered microbial pesticides.

Many objected to EPA's premise that products produced by genetic manipulation may pose special risks. Commenters pointed out that the Department of Agriculture and the Food and Drug Administration have said that they plan to evaluate biotechnology products no differently from any others. The American Society for Microbiology remarked that EPA's plans to single out biotechnology products "is unfair, unnecessary and not in the public interest." EPA should evaluate the product on its own merits, regardless of its method of manufacture, it said.

The Natural Resources Defense Council took a different view, however. "The technology is new, and the risks therefore, though unknown and not easily characterized or quantifiable, may indeed be fundamentally different from the risks posed by chemical substances and other industrial products," it argued.

(The National Academy of Sciences proposed last year to address some of these issues in a $600,000 study. No government agency has signed up to fund the project, however. The study would evaluate the scientific basis for predicting possible adverse effects of genetically engineered organisms released into the environment. The American Society for Microbiology will hold a 4-day meeting on this topic beginning 10 June in Philadelphia.)

The scope of EPA's authority was also challenged. Under federal law, EPA can require a variety of information about a new chemical before it is manufactured. But what constitutes a "new" chemical and what is naturally occurring in the context of biotechnology have not yet been precisely defined by the agency. Whatever definition the agency chooses will influence the speed with which products are approved for manufacture. In its draft proposal, EPA suggested that a chemical is new if it is manufactured by recombinant DNA methods and also by other genetic techniques that do not rely on recombinant DNA, such as cell fusion, plasmid transfer, and transfection.

Several biotechnology companies and many researchers said that EPA should not define "new" so broadly because nonrecombinant DNA techniques mimic what already occurs in nature. The National Institutes of Health (NIH) advisory group on recombinant DNA—commonly known by its acronym RAC—also pointed out that cell fusion is already subject to federal standards governing basic laboratory research.

The biotechnology company Genex, of Rockville, Maryland, was virtually alone in supporting the idea of putting all these techniques under the heading of new chemicals. "Speculations about what could exist in nature seem likely to be wasteful of time and resources," company president J. Leslie Glick wrote. " . . . [T]echniques used to produce a microorganism are not necessarily related to the degree of risk that the microorganism may pose to either health or the environment." Rather, the risk is related to the microbe's genetic characteristics, its ability to survive and to transfer genetic information to other species, and the concentration in which it will be used. To distinguish between the different genetic techniques "would seem to suggest—and will probably so imply to the lay public that recombinant DNA techniques are more likely . . . to produce dangerous microorganisms" than other methods that are less precise in producing genetic changes.

In the January document, the White House science office floated the idea of creating a biotechnology science board, and this idea drew many questions. It proposed setting up committees similar to NIH's RAC at EPA, Agriculture, the Food and Drug Administration, and the National Science Foundation. The committees, which would be composed of scientists, would report to the science board. The science office recommended that the board be placed directly under the assistant secretary of health at the Department of Health and Human Services, but intentionally left the function of this new review mechanism vague and solicited comment.

Industrial Biotechnology Association, a trade group representing major companies involved in genetic engineering, echoed the comments of many by remarking that "it had reservations about how this [review mechanism] would work in reality." The association said it was worried that the board would introduce another layer of bureaucracy in the review process.

A working group of RAC had a host of questions about the board and the new committees, their authority and role, but did not offer any clear-cut plan of its own. "Whatever approach is adopted, it must retain public confidence and trust." Representatives of the public, it said, should be included in the membership of the committees and boards, and meetings should be open. The other point, the working group stressed, is that the NIH committee should continue to have oversight over all laboratory research in recombinant DNA, both academic and industrial.

All these comments are now being mulled over by the various agencies. According to EPA staff members, there were no big surprises among the responses. Nevertheless, the issues raised and their resolution will shape the course of U.S. research and development in biotechnology. The Administration plans to circulate the final policy document this fall.—**MARJORIE SUN**

Government R&D expenditure by fields (1980). [Source: Gary Saxonhouse and Daniel Okimoto]

	United States	Japan	France
Defense and aerospace	47.3 percent	16.3 percent	49.3 percent
Industry	0.3 percent	12.2 percent	7.9 percent
Agriculture	2.7 percent	25.4 percent	4.3 percent
Energy and infrastructure	14.2 percent	34.4 percent	16.0 percent
Health and welfare	15.2 percent	11.2 percent	7.5 percent

ported that there are 1600 subsidiaries of Japanese firms in Los Angeles County, increasing so far this year at the rate of about one a day.

Imports and investments are pouring into the United States because the U.S. dollar has a high relative value in currency trading. This gives U.S. buyers strong purchasing power and attracts transient capital to the United States. Several speakers bemoaned the federal budget deficit in this connection, saying that debt raises federal borrowing, which raises interest rates, which draws foreign investments. This web of relationships supports the economy, but in a precarious way, making it dependent on debt financing from overseas.

However, those who were adamant about the need to cut the federal deficit neglected to say how or where it should be cut. This may have been a tactful omission, in that many of the companies at the meeting have fed on the recent growth in the military budget.

No one suggested that Japan's success can be explained solely in tariff or financial terms. Japanese businesses have learned to develop novel process technologies, enabling them to make better use of materials. They have become good salesmen in widely different markets. And in the 1980's, they have become innovators in their own right, competing with America on what once seemed exclusively Western turf. Several speakers, including Brooks, said that Europe will probably end up a distant third in the high-tech competition of the next decade.

One of the organizers of the meeting, Stanford economist Nathan Rosenberg, spoke about different patterns of innovation and the ways they are perceived. Japan has excelled at the applied sciences. Rosenberg's coauthor in this paper, Stanford mechanical engineering professor Stephen Kline, called this "rejuggling what already exists." Corporations like IBM, AT&T, and Kodak have learned to compartmentalize this kind of inventiveness.

Another kind of innovation creates "technological discontinuity" and arises with the discovery of new facts about [illegible]. These inventions bring about sharp breaks with the past and involve the type of innovation at which America excels—the "revolutionary" kind, Rosenberg and Kline call it. Recent examples are the development of silicon chip electronics, lasers, and recombinant DNA pharmacology. Discoveries of this type are hard to monopolize.

But Rosenberg and Kline say that the popular view, which sees innovation as something that begins in the realm of science and moves through engineering and marketing, is naive. "Contrary to much common wisdom, the initiating step in most innovations is not research, but is rather a design." The creative process does not flow in one direction but involves both engineering and theory in a repetitive testing of ideas, always centered on a model. There must be a steady flow of information from the basic researchers to the designers and back.

U.S. policy since World War II has rested on what Rosenberg and Kline see as an oversimplified belief that research leads to development, development to products, and products to a fat GNP. The Carter and Reagan administrations invested billions of dollars in basic research, not for the sake of knowledge but in the hope it would improve national productivity. This may do wonders for science, but not so much for the economy.

There is "little doubt about the continuing excellence of the U.S. performance in basic science," said Harvey Brooks, but "our performance in applied science and in the commercialization of new knowledge is much more in question." He mentioned that the share of U.S. R&D-intensive manufactured goods in world trade dropped from 31 to 21 percent from 1962 to 1977, while Japan's share rose from 5 to 14 percent.

Brooks pointed to another sign of the weakening technological infrastructure in America. The U.S. machine tool industry has lost "half of its traditional market" in the last 5 years, he said, and during the same period, "over 50 percent of all machine tools purchased in the United States were manufactured abroad, mainly in Japan and to a lesser extent in West Germany." The message in this and other talks on America's applied sciences was that they deserve more respect and more money.

Ironically, while these experts would like to have more and better engineering, the Japanese are trying to break out of the engineering mold and do more basic science. Daniel Okimoto, a political science professor at Stanford, described the steps the Japanese government has taken since 1980 to boost research and encourage technological creativity.

Until now, Japan has had a very small venture-capital market. The government has begun to deregulate the financial system to promote high-risk private investments. It is "doing all it can to push Japan beyond the frontiers of technology by organizing a variety of ambitious national research projects in such seminal areas as new materials and optoelectronics," Okimoto said. It has increased government support for R&D and may reach a spending level of 3 percent of GNP by the 1990's. Most important, Japan has begun a general curriculum reform to reduce the emphasis on rote learning and encourage "creative synthesis" throughout the educational system.

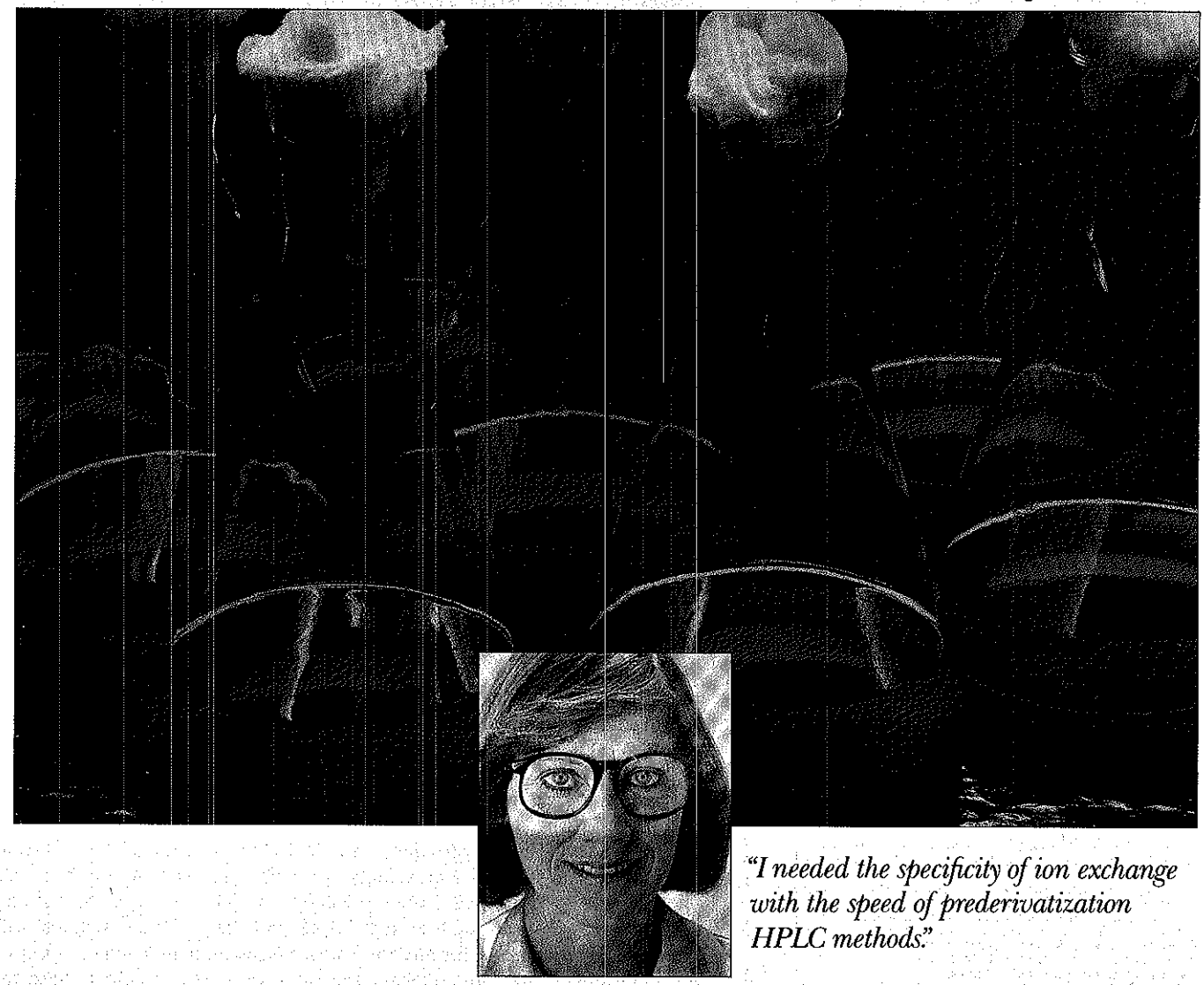
Okimoto thinks that Japan's system of "targeting" special industries for fast development should not be seen as supercompetitive, but as compensation for the lack of venture capital and absence of a military procurement budget. Okimoto predicted that Japan will have to become more innovative, if only to stay ahead of the "new Japans"—Singapore, Taiwan, and South Korea.

Conferences such as this abound in gloomy forecasts. However, despite the air of foreboding, a few speakers conceded that the news for the United States was not all bad. They seemed to agree that the key to American inventiveness—particularly in California's silicon valley—is inventors' access to money. The relaxation of capital gains taxes under Carter in 1978 and again under Reagan in 1981 opened up a trickle that has now become a flood of speculative investment. William Perry, the former chief of R&D in Carter's Defense Department, now an officer of the investment firm of Hambrecht and Quist, said that high-risk capital invested in 1984 amounted to $4 billion.

Foreign manufacturers of high technology are clearly catching up with the Americans, perhaps at an alarming rate for the companies that will feel the heat. But there is every reason to think that new companies are being born in the United States at an equally impressive rate, and that they will bring with them unanticipated technological revolutions.—ELIOT MARSHALL

Tales of Chemists:

The Amino Acid Story

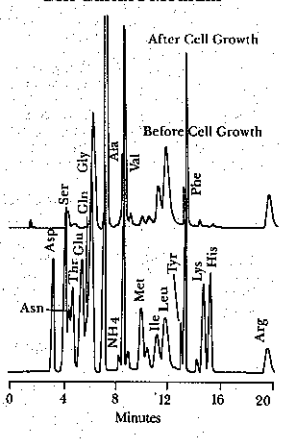


"I needed the specificity of ion exchange with the speed of prederivatization HPLC methods."

"Ion exchange is really specific for analyzing amino acids in complex samples like cell culture media. The problem is that it's just too slow. So I investigated prederivatization HPLC. It was faster, but now I had interferences to contend with. Not to mention all the time I ended up spending on sample preparation.

"The other day I finally discovered the best of both worlds. It's called Dionex. Now I get fast analysis, excellent specificity *and* reproducibility, with precious little sample prep. Most of the time I just dilute, filter, and inject.

"Also, with column switching I can use my Dionex to analyze organic acids, carbohydrates, organic amines, and inorganic ions."



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