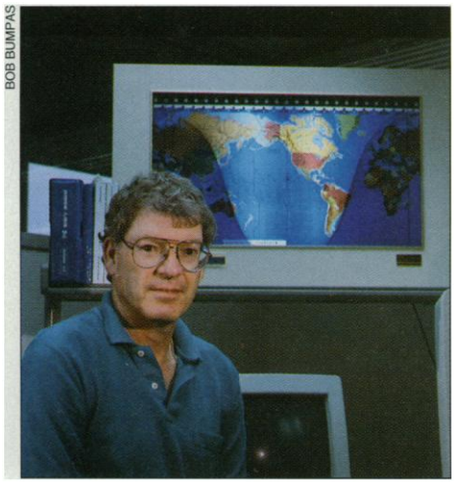
JOBS IN SOCIAL SCIENCE I

New Life Ahead For Social Sciences

In our last two special sections on careers we passed by the social and behavioral sciences, but this year their turn has come. What disciplines fall in the category? The Social Science Research Council lists seven core areas: statistics, economics, political science, history, anthropology, sociology, and psychology. And within these domains are innumerable subfields and cross-disciplinary pursuits, including demography, criminology, management science, gender and ethnic studies, social policy studies, and obscurely named pursuits like environmental psychology. Faced with such diversity, we have opted to concentrate on five major disciplines, providing in this article an overview of social science research, primarily sociology, political science, and economics. Following this is an article looking at the sharply divided landscape of anthropology and, after that, an exploration of one of the hottest spots in the huge and sprawling field of psychology: cognitive neuroscience.

People are recognizing "the centrality of social and behavioral research to much of the nation's science agenda."
—Cora Marrett, NSF

Social scientists have long been miffed when their research is characterized as "soft." That's why it was at least a symbolic triumph when last year, after more than a decade of talk, the National Science Foundation (NSF) finally moved to pull the social sciences out of the home they shared with biology and create a separate Directorate for the Social, Behavioral, and Economic Sciences. Interestingly, though, it may be in large part through linkages with the natural sciences—in tackling problems that require multidisciplinary research—that social science research will gain full legitimacy in the eyes of the world.


BOB BUMPAS

At work in a "sea of physical scientists." Political scientist Michael Glantz at NCAR.

The social sciences had a rough time of it in the 1970s and 1980s. After getting a shot in the arm in the 1960s from all the legislation attendant on the Great Society, federal support for much social science research dwindled in the 1970s. Then came the first Reagan Administration—when even venerable statistics-gathering programs were cut back as the Office of Management and Budget attempted to stomp out social science research throughout the government. Although Congress stepped in to prevent wholesale slaughter, most government-supported research underwent shrinkage. And at the same time, as universities have been saddled with increasingly severe budgetary constraints, many cut back on weaker departments. That often meant targeting sociology, which in the boom times of the 1960s "admitted and certified a lot of people who were not as strong as they should have been" says UCLA sociologist Richard Burke.

A brighter day? But in the past few years, starting with the Bush Administration, things have begun to look up, as policy makers realize that most human problems—from lung cancer to the fighting in Bosnia, from crack babies to global warming—are problems of human behavior.

It's too early to say the funding situation is improving markedly. Money is tight everywhere. The NSF social science budget is still recuperating from the blows of the Reagan years, and much of the increases that might once have been earmarked for social science are going instead to NSF's growing education directorate.

But if college freshmen are the antennae of future directions in science, prospects for social science are good. Actually, they were never bad for economics, says sociologist Christopher Jencks of Northwestern University, who notes that "when national income goes down the demand for economists goes up." But sociology enrollments nationwide have gone up 10% to15%, according to Ken Land, chair of the sociology department at Duke University (at Duke, they've gone from 400 students to 1200). And political science, which with the collapse of the former Soviet Union has a whole new menu of issues relating to democratization and ethnic strife, is now the most popular liberal arts major after psychology, according to the American Council on Education.

Social scientists say growing enrollments don't necessarily portend a vast crop of new social sciences Ph.D.s down the road. A major in political science is a favorite precursor to law school, and sociology, traditionally the route to social work, is often chosen by people who want to get business degrees.

But there are other forces at work too. One is the whole area of political consciousness-raising known as "diversity" and "multiculturalism." Nowadays, says Howard Silver of the Consortium of Social Science Associations (COSSA), "every discipline has a feminist perspective and an ethnic perspective." Then, too, says sociologist James Coleman of the University of Chicago, domestic social problems have "become sufficiently more pressing that the interest has kind of rekindled." What's more, says Roberta Balstad Miller, former head of NSF's old social and economic sciences division, there are "new types of problems" that are "intellectually challenging and very exciting"—such as "the interaction between human activities and the environment, [and] dealing with the information revolution."

All these new questions are being raised in the context of a disciplinary structure that is no longer very well suited to them. The social science disciplines were defined a century ago, and despite the rash of multidisciplinary centers and programs in academia, departments are still divided along those traditional lines. And, notes sociologist David Featherman, head of the Social Science Research Council, it's still true that the safest way to carve out an academic career is to publish in the traditional mainline concerns of your discipline.

Shifting grounds. Trouble is, traditional disciplinary boundaries are nowadays being blurred and bent almost out of recognition to accommodate torrents of new knowledge, to respond to the demand for socially relevant research by funding agencies, and to reflect the fact that the problems of greatest moment today have to be tackled by multiple approaches. Thus, says Featherman, there is no longer a distinct "core" that

defines the disciplines in social science. Other factors—such as subject matter or methodology—have become more relevant. Thus, a new research area involving application of Darwinian theory to human behavior is bringing together people from all branches of the social sciences. Similarly, decision theory, a theoretical approach born in economics, has become a field of its own as it comes to be applied to political and social processes as well as economic ones.

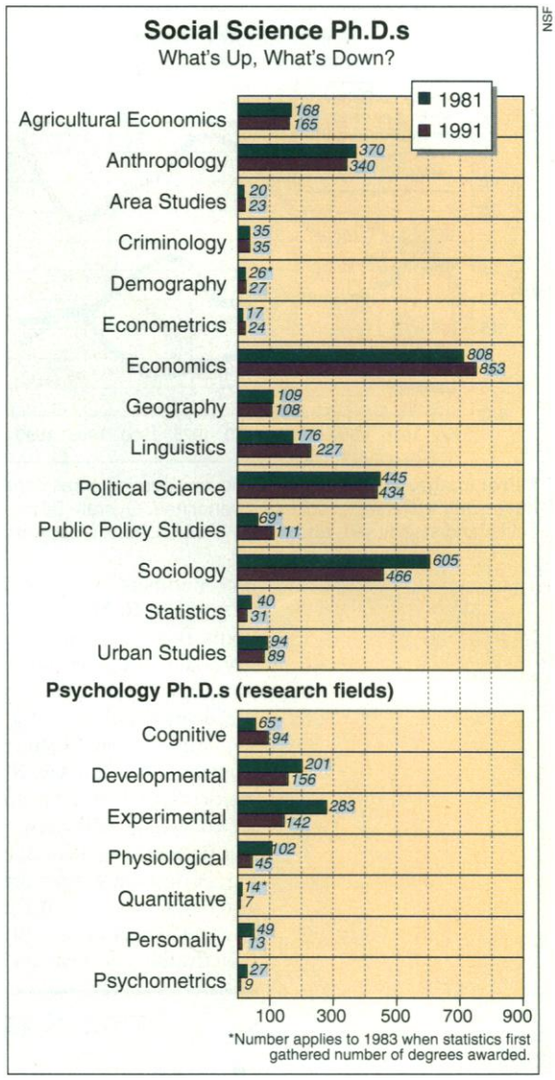
Economics, in fact, which occupies a huge outpost in the most mathematical, quantified region of the social sciences, is making inroads all over the scientific map. "Almost everybody is importing economists into their subjects," says Princeton economist Orly Ashenfelter, editor of the *American Economic Review*. Economic theory is even invading biology, providing new ways of looking at evolutionary adaptations. New fields such as "behavioral economics" and "ecological economics" are also growth areas. Ironically, economics itself is the one discipline that seems immune from this cross-fertilization, says Ashenfelter. It is a discipline with a reigning paradigm supported by all its members, namely that individuals operate to optimize gain. Within the field, he says, the mainline concerns are "same as always...nobody's doing interdisciplinary work."

But for nearly everyone else, "cross-disciplinary" has become the watchword of the day. How is the NSF, the nation's chief funder of basic social science research, responding to these changes? Cora Marrett, head of the new social science directorate, says people are coming to recognize "the centrality of the social and behavioral sciences to so much of... [the nation's] science agenda." And vice versa. Hence, she's put an engineer, Dale Compton from Purdue University, on the social and economic advisory committee, and has persuaded the engineering directorate to put a cognitive psychologist, Mary C. Potter of the Massachusetts Institute of Technology, on its advisory committee.

Marrett is bringing in political scientist Allan Kornberg of Duke University this fall to run the grants program. Kornberg aims to bring some "unity and coherence" to the social sciences, which, he observes, "have never had a single theory that everyone accepts." He says his first priority at NSF will be to try to demonstrate that "we are engaged in systematic study" of the forces that are now operating on societies around the world. And he believes that a unifying force can be supplied by that blossoming field called "human dimensions of global change." While that term ordinarily applies to climate and environment change, Kornberg extends it to social and technological change as well: migration, urbanization, industrialization, ethnic strife and—the biggest behavioral problem on the planet—population growth.

Jumping on the global bandwagon. As a result of this extension, biological and physical scientists are no longer the only players on the field of global change research. Many more social scientists are likely to be following the model of Michael Glantz of the National Center for Atmospheric Research (NCAR) in Boulder, Colorado. Glantz got his undergraduate degree in metallurgical engineering, and then got a Ph.D. in political science in 1970. "Back in the mid-1970s I made a decision: not to be disciplinarily correct but to solve real-world problems," says Glantz. For the past 10 years he has run the "environmental and societal impacts group" at NCAR—an eight-person cell working "in a sea of physical scientists." Currently he is at work on a "famine early warning system." Usually, he says, the earliest data come from satellite information on rainfall and vegetation. But even earlier warnings come via anecdotal evidence: a truck driver arriving in Nairobi from the east, for instance, telling of people on the move or women selling jewelry. Glantz says he wants to explore expert computer systems to try to quantify such anecdotal material and merge it with the climate and geographical data.

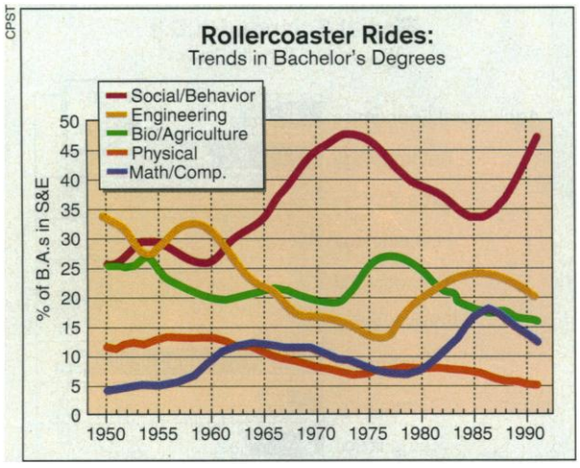
Sociologist Richard Burke of the Center for the Study of Environment and Society at the University of California, Los Angeles, is another social scientist who's moving in on the traditional preserves of natural science. He works with biologists and atmospheric scientists on problems such as water resources and air pollution in the Los Angeles basin. What is needed, he says, is "a kind of hybrid science that combines all the sciences." But the vast majority [of social scientists] are not tooled up." Burke himself says: "I'm the only sociologist I know who does work on water."



Decade doldrums. Doctoral awards reflect social science's fortunes in the 1980s—economics excepted. Note that cognitive science bucks the trend.

Health is another giant domain that's peopled by social and behavioral scientists of every stripe. This is especially so now that health reform hangs heavy in the air. Economist Joseph Newhouse of Harvard University, for example, is busy "marrying econometrics and clinical epidemiology" as he looks at the effect of different cost-sharing schemes on health services use. He's also ascertaining whether negligence is affected by malpractice liability, and comparing mortality with different treatment strategies for heart attacks. Newhouse is doing research for today in the disciplinary structure of yesterday, with the result that he's on four faculties: arts and sciences; the JFK School of Government, the medical school, and the school of public health.

Social research. Heightened interest in health, global change, and interdisciplinarity doesn't mean, however, that the social sciences are ignoring one of the most traditional—and most pressing—areas of research: the conglomeration of pathologies identified under urban problems. But the infrastructure for the study of those issues, which was created by money pumped in by Great Society legislation, has languished. The Center for Poverty Research at the University of Wisconsin, for



Mirror image. Since the mid-1980s, engineering enrollments have sunk while social sciences benefitted. Overall, S&E fields hold steady with about 30% of all bachelor's degrees.

example, has been scraping along on the same annual budget—about $1 million—since 1970, according to sociologist Jencks of Northwestern University. And, says Jencks, Northwestern's Center for Urban Affairs is the only one left of 20 such centers funded by the Ford Foundation in the late 1960s and early 1970s.

Sociological research has suffered over the years from divisions between the heavily quantitative types and the "very qualitative and ethnographic types who hate numbers," says sociologist and medical epidemiologist Lee Robins of Washington University in St. Louis. But she thinks new developments at the university could portend future directions. Three years ago, its sociology department had become so diminished that the dean decided to abolish it altogether—the four remaining tenured faculty were dispersed to other departments. Instead, says Robins, a new interdisciplinary major, "social thought and analysis," has been established, which will draw on all the social sciences in addition to law, medicine, social work, and engineering. A new Center for the Study of Social Processes is also being set up. As the name implies, it's not to study any one subject like poverty but to bring rigorous scientific thinking to bear on a variety of themes, such as social inequality. A lot of people interested in social questions "don't realize that they need more than a loving heart," says Robins.

Political shoals. In some fields, efforts to make progress are running up against stiff political head winds—witness the cancellation early this year of a conference on genetic factors in criminal behavior. Jencks asserts that no good will be served by avoiding discussion of biological roots of human behavior, since otherwise social scientists are never going to be able to understand that behavior. Yet, he says (echoing Burke), "I am the only sociologist I know who reads that stuff."

Even when social science inquiries into controversial areas have been carried out, it's been difficult to move from the academy to applications. That's not a new problem: Nobody heeded sociologist and U.S. Senator Daniel Moynihan's (D–NY) warnings when he wrote, in the mid-1960s, of the breakdown of black families; or the accurate prediction of sociologist James Coleman of the University of Chicago when he warned that busing to achieve integration would cause "white flight." And during the last presidential election, despite the consensus among social scientists that effects of Head Start programs "wash out" without rigorous follow-up, Bill Clinton could be heard extolling Head Start as the creator of law-abiding high school graduates.

Social scientists nonetheless see cause for optimism with the advent of a Democratic administration. When it comes to research funding, "Everybody's starving," says Burke of UCLA. "Much of social science is at least as capital intensive as physical sciences—a survey costs $200 an interview." But optimism is important—and that's straight from the horse's mouth: Research tells us that optimists, while less in touch with reality than pessimists, are more successful.

–Constance Holden

JOBS IN SOCIAL SCIENCE II

Anthropology: Nature-Culture Battleground

"There's a Chinese curse that says, 'May you live in interesting times,'" says Robin Fox, an evolutionary anthropologist at Rutgers University. "And, unfortunately, I'm afraid that's what's happening now in anthropology." What Fox means is that the field is in turmoil, no longer certain that it can, as it has in the past, straddle both the sciences and the humanities. Some contend that the longstanding schism—which is intensified by economic pressures—has never been as bitter as it is today. "There always was a certain amount of divisiveness," says Clifford R. Barnett, a Stanford University medical anthropologist, "but now it's like Yugoslavia."

Anthropology has always been divided among those who use biological theories to illuminate the behavior of human societies, and those who take a more interpretive and descriptive approach. But the divide has become much more pronounced as biological anthropologists have become deeply involved with the latest tools of molecular biology and theories of evolutionary ecology, while many cultural anthropologists have become caught up in the wave of deconstructionist thinking that has been sweeping the humanities. Resource shortages have intensified the strife—cultural anthropologists, in line with tradition, continue to rule the roost in academia as hiring of new faculty falls off, while those with a biological perspective, faced both with inadequate equipment and colleagues' opprobrium, are escaping into biology departments.

This is not the way it used to be. David Givens of the 15,000-member American Anthropological Association (AAA) explains that U.S. anthropology has always been defined by its "four-field approach," the fields being cultural anthropology, physical/biological anthropology, archeology, and linguistics. Now, some anthropology departments are breaking apart, while others are limiting themselves to two or three fields—the AAA calculates that only 28% of university departments currently have faculty in all four. That's disastrous for the profession, says Givens. "If you split it up...then you've lost that good, round understanding of what our species is all about." The AAA has grown so concerned that it plans to have a special session on anthropology's continuing fissions at its annual meeting in November.

The great rift. The roots of the divide go back to the 1920s. But the latest manifestation erupted in the late