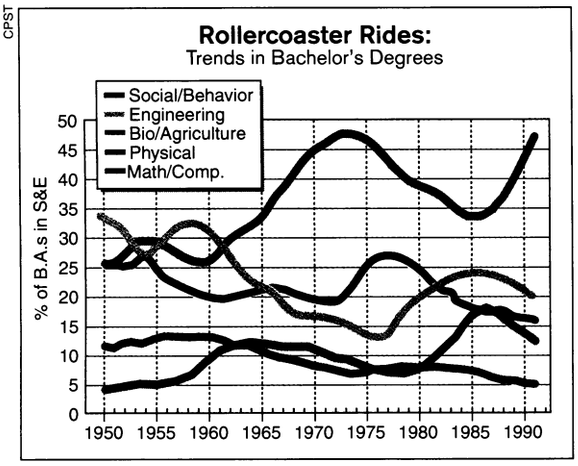


Mirror image. Since the mid-1980s, engineering enrollments have sunk while social sciences benefitted. Overall, S&E fields hold steady with about 30% of all bachelor's degrees.

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

1970s when some anthropologists began applying W.D. Hamilton and E.O. Wilson's theory of sociobiology to human behavior. They suggested that many cultural patterns could be explained in terms of broad biological principles, such as the drive to pass on one's genes to the next generation.

"The last chapter of Wilson's book [*Sociobiology: The New Synthesis*]—where he suggested that anthropology would be subsumed when a real biology of behavior was developed—raised hackles throughout the social sciences," says Peter Rodman, a biological anthropologist at the University of California, Davis. The concern was that sociobiologists might interpret all of human behavior in terms of genes and environmental adaptations, ignoring peoples' history, traditions, and cognitive processes. Bradd Shore, a cultural anthropologist at Emory University, relates one such instance: "We once had in our department a biological anthropologist who said that the diverse belief systems in cultures could all be explained by endocrinology."

Some cultural anthropologists have meanwhile widened the gap from their side by moving away from traditional ethnography, and embracing ideas from Michel Foucault's deconstructionism—which preaches that truth is relative, that all perceptions are mediated by an individual's cultural and sexual identity, and that science is only one of many ways of knowing the world. Cultural anthropologists have never been blind to these concerns, but Foucault's thinking further undermined their faith in the existence of objective reality and led to a "major crisis," says James Fernandez of the University of Chicago, incoming president of the Society of Humanistic Anthropologists. Adds Jane Collier, a Stanford cultural anthropologist, "Anthropologists had to recognize that even though they thought they were doing objective research, their studies were colored by their race, gender, culture, and socioeconomic class." To offset these biases, they have developed new techniques such as co-writing ethnographic studies with their subjects.

In the effort to embrace multiple viewpoints, some cultural anthropologists choose to view science as just one way to tell a "story" about the world around us. Human evolution, for example, says Collier, has been the subject of a "sexist and racist storyline created by Western white men... There is a great deal of wild theorizing about men hunting and women gathering, when it's hard to tell the male [hominid] bones from the female to begin with."

Dirty words. At the University of California, Berkeley, the chasm is so great that "you can dismiss someone's argument simply by calling them a 'scientist,'" says Vince Sarich, a pioneer in bringing the techniques of biochemistry to anthropology. That's because some view scientific methods as tools used by the privileged to oppress the weak. "Even 'evolution' is a term of opprobrium," says Sarich—not only because Western men thought it up but because it implies a hierarchy in which some cultures are "primitive." Little wonder that Fox of Rutgers says: "I'm afraid anthropology has become like a lunatic asylum where the patients have taken over."

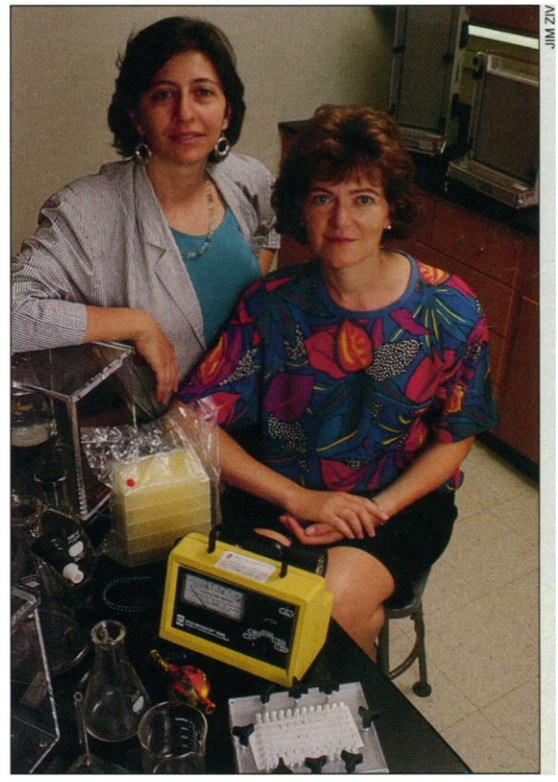
Indeed, since the early 1980s it has become nearly impossible at some schools for biological and cultural anthropologists to talk intelligibly to each other. "There isn't a dialog," says biological anthropologist Rodman. "You'd have to be committed to learning the other side's methodology, and I may be biased, but it doesn't seem to me they have one."

The split between biological and cultural anthropology is mirrored in a smaller chasm that has opened within cultural anthropology itself. Kim Hill, a cultural anthropologist at the University of New Mexico, uses evolutionary ecology theories (such as kin selection and parental investment) to study human behavior—an approach, he says that has left his more traditional cultural colleagues fuming. He relates that both while doing a postdoc at the University of Utah and later as a faculty member at the University of Michigan, many colleagues dismissed his research out of hand: "I was accused of being a biodeterminist." Why? "I was asking whether people behave adaptively, if they do different things because they live in different environments." Hill explains that those who see culture as the basis of human behavior reject the use of models that include biological goals—e.g. food or reproducton. "They assume it has to be wrong," he says, because "people aren't like animals—people have culture." The bottom line, says Hill, is "they think that all science wants to do is reduce humanity to numbers."

Napoleon A. Chagnon of the University of California, Santa Barbara, who calls himself a Darwinian cultural anthropologist, contends, that, in fact, "The split [in anthropology] is now really in cultural anthropology—between those who consider themselves scientists but are anti-biological, and those who are interested in human behavior in terms of reproductive survival." Chagnon himself drew a hail of criticism in 1988 for finding a positive connection between warlike behavior in Yanomamo men and their reproductive success. Chagnon's approach was pure sociobiology—but he says since that term has become a "red flag" he prefers to call his approach "neo-Darwinian."

"I'm afraid anthropology has become like a lunatic asylum where the patients have taken over."
–Robin Fox, Rutgers

Imbalance. Ironically, says Chagnon, "we're at the forefront of a biological revolution in our fields, and yet are condemned as heretics within our own disciplines." Indeed, cultural anthropologists still dominate universities. Since 1972, according to the AAA, 50% of its members are in the sociocultural realm, with only 12% in the physical/biological area (25% are archeologists; 2% linguists, and 11% are applied). But in recent years, with new tools from molecular biology and genetics, biological anthropologists have thrown new light on old questions relating to the origin of modern humans, the genetic diversity of a given population, how the Americas were settled, and how diet affects behavior.


JIM ZIV

Lab of luxury. Northwestern came through with a new biology lab for Anna DiRienzo and Gillian Bentley.

And their skills give them a leg up on many of their colleagues, since they can land positions in a range of departments from medicine to biology to demographics. Biological anthropologists also have an easier time obtaining grants from the National Science Foundation, which refers some grant-seeking cultural anthropologists to the National Endowment for the Humanities. "They think we're not doing hard science, while the NEH thinks we're too scientific," says Stanford's Collier, who nonetheless notes that four graduate students in cultural anthropology have landed NSF "dissertation improvement" grants.

The fiscal troubles at most universities have exacerbated the intellectual tensions, forcing most anthropology departments to scale back. For example, in the early 1980s, Stanford University employed 19 anthropologists; now there are 12. New positions rarely become available, and when they do, department members fight angrily over what kind of anthropologist should be hired. Economic woes also add to separatism since, because few anthropology departments are equipped with biology labs, biological anthropologists are often driven into the arms of biology departments.

"Please don't go." AAA's Weiner to biologists.

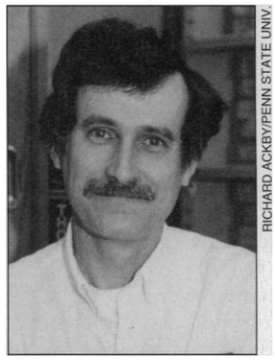
When an anthropology department splits apart that way, says the AAA's Annette Weiner, the remaining pieces are less fit to compete for resources. But that's what's been happening at some places. For example, in 1988, Duke University created two separate departments for cultural and biological anthropology. And at the University of California, Berkeley, the physical/biological anthropologists will soon be taking up offices and labs in the new Integrative Biology building. "Once that happens, it's probably only a matter of time before we make the switch [into the department of integrated biology] official," physical anthropologist Katharine Milton says sadly.

A fifth field, human evolutionary ecology, synthesizes ethnography and biology.

Anthropology of the future. Northwestern University is one place that may serve as a role model for anthropology departments in the future. After the last of its three biological anthropologists left the department in 1990 to take up more lucrative positions in the medical school, the university didn't know whether to replace them. Ken Weiss, head of Penn State University's anthropology department, advised Northwestern dean Larry Dumas that if he wanted to be at the cutting edge, he'd better make the place hospitable for work in genetics. "Sure, this research could be bootlegged onto another department, but then it loses its anthropological perspective," says Weiss. Dumas agreed, and now, in a highly unusual move in today's climate, Northwestern's anthropology department is completing two new labs for a newly hired biological anthropologist and a human geneticist.

Weiss' department at Penn State, one of the leading groups in biological anthropology, is already similarly equipped. Since it is a small group (16 faculty), Weiss is focusing his multidisciplinary team on population approaches to anthropology. For example, an archeologist is using molecular biology techniques to analyze blood samples on stone tools, while a cultural anthropologist is studying the fishing ecology of various tribal groups, and a biological anthropologist is researching the evolution of menopause to determine if it is peculiar to humans. The department is also putting together a postdoctoral program—a signal that this branch of anthropology is settling into the biological model of research.

At Emory University too, department head Bradd Shore is looking for ways to integrate cultural and biological factions. The department recently moved into a new building, and, rather than allowing like-minded folks to cluster together, Shore staggered the offices so "there's no longer that physical separation between the biological and cultural anthropologists." Shore also expects his faculty members to attend each other's seminars.



RICHARD ACKBY/PENN STATE UNIV.

Anthropologists need labs too. Duke's Ken Weiss.

While Penn State and Emory are attempting to integrate their faculty, the anthropology department at the University of New Mexico has created a fifth field, human evolutionary ecology, that synthesizes ethnography and biology. Thus, rather than shunning biology, an ethnographer studying a tribal culture may draw on its theories and field techniques to gather and analyze information on reproductive and foraging strategies. "Ethnographers used to mainly describe, but now we have tools that can help us explain the observations" says evolutionary anthropologist Jane Lancaster. "We can use computer models to test competing hypotheses and statistically examine complex relationships." Lancaster predicts this could lead to a re-integration of the whole field. "In the long run...the marketplace and government funding [are] determining the course of events. Students will respond to the market, and since the government wants quantitative, replicable results—things good science provides—that's what will be funded, and that's where the field will head." Indeed, student preferences may be shifting. At UC, Davis, in 1991, for exmaple, there were more than 200 students per quarter for each of the three biological anthropologists, while the six cultural anthropologists had approximately 75 students apiece.

This too shall pass. Older professors believe the current crisis will be resolved—if only to make way for a new one. "Anthropologists are always moaning about the field breaking up," says anthropologist Laura Nader, a veteran of 33 years at Berkeley. "The current argument is rather ridiculous, since we clearly need both the scientific and interpretive approaches." She predicts that biological anthropologists won't stay long alienated from anthropology departments. "There is no other field that does what we do—that tries to bring together the social, cultural, linguistic, and biological aspects of being human....the biological anthropologists won't be able to fulfill that in a biology department."

–Virginia Morell