

The Faculty

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Psychology Departments Are Changing Their Behavior

Neuroscience brings pricier laboratories and new collaborations

By DAVID GLENN

It is hard to open a newspaper without finding a story about how neuroscientists have linked some part of the human experience — fear, gambling, memory, hunger — to activity housed within our skulls. For many psychologists, these revolutionary discoveries about the brain have been thrilling.

But the neuroscience revolution has also brought a set of difficult, and not always comfortable, changes in university-based research psychology. The same technologies that allow scholars to probe the structures and functions of the human brain are also causing profound alterations in the structures and functions of psychology departments. Curricula, hiring patterns, budgets, and tenure-and-promotion expectations are all shifting rapidly.

A generation ago, most research psychologists worked in small teams and with small budgets. Today, large psychology departments typically include big laboratories. The neuroscientists there work and publish in teams with as many as eight members, and their equipment costs can run into the millions. Down the hall, their more traditionally oriented colleagues continue to work in smaller teams, with much smaller budgets, and sometimes at slower paces.

That is not to say that there is a bitter cultural divide within psychology. On the contrary: Most research psychologists say that this has been an exciting and fruitful era for combining neuroscientific and non-neuroscientific insights. (There are occasional flare-ups — often about access to federal research money or about breathless news-media accounts of brain-imaging studies — but in general, everyone gets along.) The challenge is not intellectual harmony but cross-disciplinary coherence.

"The individual investigator who has a great idea and can follow that idea with a couple of graduate students over a 10-year period — that era is probably gone," says Alan M. Kraut, executive director of the Association for Psychological Science.

In neuroscientific work, Mr. Kraut says, "you can't know enough on your own. If you're doing brain imaging, you have to have a methodologist on your team, and you might want to have a physicist."

Mr. Kraut points to his association's past president, John T. Cacioppo, a professor of psychology at the University of Chicago who recently co-wrote a well-received book about loneliness. Mr. Cacioppo himself is apparently far from lonely: As the director of Chicago's Center for Cognitive and Social Neuroscience, he oversees large federal grants, several laboratories, and a small army of graduate assistants. Mr. Cacioppo "is almost like the manager of a corporation," Mr. Kraut says. That sort of role is familiar in departments of

biology and physics. But for psychologists, it is something new under the sun.

Roughly half of the young scholars recently hired to tenure-track positions in Mr. Cacioppo's department had extensive graduate-level training in magnetic resonance imaging and other tools of neuroscience. "But that's not a requirement for us," says Mr. Cacioppo, who emphasizes that his department continues to hire people with more-traditional training. The important thing, he says, is that the two groups are encouraged to communicate and collaborate with each other.

"There used to be a strong tension between neuroscientifically and behaviorally oriented psychologists," Mr. Cacioppo says. "But no longer do those two groups seem to be spinning away from each other. That's a new and important development. They're working together. And the training we offer reflects that."

Bernadette M. Park, a professor of psychology at the University of Colorado at Boulder, agrees with Mr. Cacioppo that the two camps are no longer at odds.

"Neuroscience has played about the role it should in the social sciences," Ms. Park says in an e-mail message. "It would be silly for social psychologists to not make use of neuroscience techniques to learn what we can about the connection between mental processes and social behavior. At the same time, it would be silly of us to imagine we can just study patterns of brain activation devoid of measures of social behavior and hope to really learn about social beings."

One of Ms. Park's former students, Joshua Correll, is an assistant professor at Chicago. Mr. Cacioppo says that Mr. Correll is a good example of a young scholar who does not have intensive training in neuroscience but who is happy to try such techniques.

Mr. Correll studies how (possibly unconscious) racial prejudice can affect police officers' split-second decisions about whether to fire their guns. Most of his studies are simply done in front of computer screens. But recently he has been placing electrodes on his research subjects' heads to measure brain activity known as "event-related potentials" while they complete the experiments.

This technique, known as electroencephalography, is much cheaper and less cumbersome than functional magnetic imaging, but it yields less-detailed information about brain activity.

Like many other departments, Chicago has recently expanded its neuroscience course requirements for doctoral students. At the top-ranked programs, even students who intend to become clinical psychologists must take several courses in biological psychology. "At Indiana University, a student almost has to get two Ph.D.'s — a Ph.D. in clinical psychology and a Ph.D. in cognitive psychology," Mr. Kraut says. "And I think that's the future of the field. You can't simply be unidimensional in psychology anymore."

And today almost every young research psychologist, whether neuroscientifically inclined or not, completes a postdoc before entering the job market. People are entering tenure-track jobs with more publications under their belts than was the case two decades ago, according to Richard A. Carlson, a professor of psychology at Pennsylvania State University's main campus Park.

But Mr. Carlson adds that when some of those publications have five, six, or seven authors — which is often the case in neuroscientific work — it can be a chore to unthread how much credit each person deserves. "It is sometimes difficult to weigh the value of collaborative work with multiple authors, and this is a frequent subject of discussion in our promotion and tenure committee," he says.

Change in Research Priorities

Even as they collaborate more frequently with neuroscientists, many traditionally trained psychologists have the uneasy feeling that they no longer have much access to federal research support. In 2004 the National

Institute of Mental Health announced a sweeping reorganization of its research priorities. Since that year, a much higher proportion of its grants have gone to studies with neuroscientific or genetic components.

Jennifer Crocker, a professor of psychology at the University of Michigan at Ann Arbor, has received grant money from the institute since 1998 to support her studies on how people pursue a sense of self-worth (and the sometimes-destructive effects of that pursuit). But she has been told that her grant will not be renewed after it expires in March, because the institute no longer finances basic behavioral research.

In an e-mail message to *The Chronicle*, Ms. Crocker says that she respects the mental-health institute's right to set its own priorities. But she says that its recent overwhelmingly biological emphasis is a mistake.

"Genes, childhood environments, and their effects on the brain no doubt play a role," she says, "but this view is unlikely to ever account for much of the variance in mental illness, even for highly heritable illnesses such as bipolar disorder. And it neglects the role of current social motivations, cognitions, and experiences, which can lead to changes in symptoms in surprisingly brief periods of time."

A similar story is offered by Nancy Darling, an associate professor of psychology at Oberlin College who studies adolescent couples. Ms. Darling says that she gladly includes physiological measures when appropriate. But in the current climate, she feels compelled to add biological components to each and every grant proposal, even if they don't really fit the particular study.

Taking these measurements, she says, means that her studies are much more expensive, and also means that she works with smaller and less diverse population samples.

Mr. Kraut sees a serious problem here. "Everybody, I think, would recognize that behavior is ultimately the result of biological, environmental, and genetic processes," he says. "But that doesn't mean that every study needs to have a biological component. That's sometimes a hard message to get through to those who control funding."

Mr. Kraut would like to see new large-scale support for behavioral research, probably based in some other unit of the National Institutes of Health.

But despite his wish for more behavioral research, Mr. Kraut says that neuroscience has made this the most intellectually exciting period for psychology that he can recall.

"We're thriving together," he says. "It has been psychologists who have come in with more rigorous thinking and who have raised the level of the game for neuroscience. When you read about them in the newspaper, they might be called neuroscientists. But they got their Ph.D.'s in psychology, and usually they're teaching in psychology departments."

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