NEUROBIOLOGY

Neuroscientists Struggle to Achieve a Critical Mass

Where's the scientific center of Europe? For a high-energy physicist the answer is easy: CERN's particle accelerator at Geneva provides the place to meet friends and colleagues. For a molecular biologist, Heidelberg and the European Molecular Biology Laboratory would be the obvious answer. But for neurobiologists, the question is a little embarrassing.

Ask a group of top European neurobiologists—from places like Oxford University, the Max Planck Institute for Brain Research in Frankfurt, the Karolinska Institute in Stockholm, and the Pasteur Institute in Paris—where they'll meet up next and you'll get the answer: "Why, California. The American Society for Neuroscience is meeting in Anaheim this year, isn't it?"

It's a telling response. Despite growing numbers of cross-border collaborations and a rich pattern of personal connections between European laboratories, European neuroscientists have not been able to create successfully their own separate focus. "It's very odd," says Colin Blakemore, professor of physiology at the University of Oxford. "European neuroscience, judged by its output, certainly has a tremendous presence. It contains some real leaders in the field, but as a cohesive force it hasn't reached a critical size or time....It's an area where Europe could make an impact, but hasn't managed it yet."

It's not for want of trying. For the last 13 years, the European Neuroscience Association (ENA) has been struggling to build a multidisciplinary forum for European neuroscience, focused on an annual meeting to rival its U.S. equivalent. But so far it has failed. In 1976, when the neurosciences' explosive growth was beginning, ENA's meeting drew 600 attendees against the U.S. society's 4000. By 1990, attendance at the U.S. meeting had soared to 15,000; ENA's had just reached 1500. Almost twice as many Europeans now cross the Atlantic for the U.S. meeting as attend their own local meeting. Many of Europe's top neurobiologists are now calling for change at ENA; even ENA's own officers are considering that they might have to close down the society and start again.

Disunited though they may be, Europe's neuroscientists cannot complain they are doing badly. Diversity shows in a variety of national styles and strengths. "Technically, what you can find in America you can find here," says Giacomo Rizzolatti, professor of neurophysiology at the University of Parma. As examples, take Sweden's superb tradition in neuropharmacology, the still vibrant European school of neuroethology, the Nobel Prize that Erwin Neher and Bert Sackmann of Germany won last year for their studies of ion channels in nerves, and the fact that the University of Oxford has assembled the largest concentration of cognitive neuroscientists in the world.

Indeed, although European institutes cannot match the scale of the very best U.S. institutes, they stack up well against all the others (see chart). Citation scores may look a little lower in Europe, but Europeans might argue that these data just add weight to a persistent complaint: Americans continue to ignore European work.

European neuroscientists' lack of unity goes back nearly two decades. "Europe missed an important historical moment in the 1970s," says Jean-Pierre Changeux, head of the molecular neurobiology laboratory at the Pasteur Institute in Paris. He says a split occurred when the molecular biologists who created EMBO and neuroscientists went their separate ways. "A similar split happened again when ENA was created," says Changeux, as there is "a separate association of neurochemists." "In my view, it's absurd," he adds.

"It's a vicious circle," says Wolf Singer, head of the Max Planck Institute for Brain Research in Frankfurt. "Many important people don't go to the [European] meeting and many disciplines are not represented," so there's little incentive for most researchers to go. Singer wants to see a strong European association: "ENA should become a very important instrument to unify neuroscience in Europe," he says. "It's urgent now because it could help integrate people from east Europe who cannot go to the U.S. meeting."

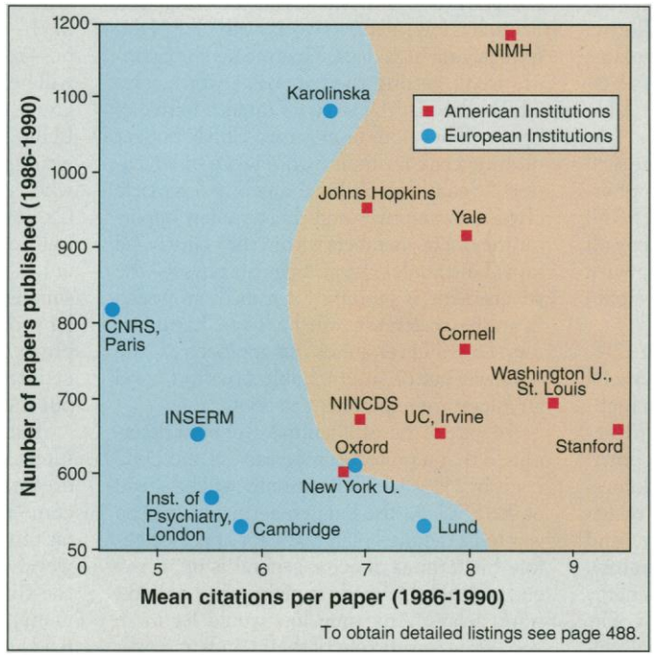
Try to break the vicious circle, however, and you run into all the drawbacks of a still disunited Europe. "It's nothing to do with the quality of the science," says Tom Sears, ENA president and professor at the Institute of Neurology in London. "The problem with the ENA meeting is the logistics."

Cheap fares. Strange though it may sound, explains Hugo Zwenk, ENA's secretary-general, it costs more to fly across Europe than across the Atlantic. That and high hotel costs, he says, are the biggest reasons why European neuroscientists don't get together. Add separate grant systems in each country, which means there is no incentive for researchers to go to a European meeting to look for jobs, plus the fact that ENA has to compete with each country's own national neuroscience meetings, and you'll understand why Zwenk says, "We may have to give up."

If ENA is due for rebirth, the popular solution is "a new body which is a European neuroscience federation," says Klaus-Peter Hoffmann, professor of neurobiology at the Ruhr University of Bochum. Singer has much the same idea: "a new umbrella meeting for all the national societies...if they were put together they should attract 4000-6000 people." And Singer sounds optimistic: "ENA is in crisis," he says, "but it should not be." On numbers alone, his optimism is justified. Data from the International Brain Research Organization suggest that there are probably 10,000-12,000 neuroscientists in Europe, compared with 15,000-18,000 in North America.

"I think things are changing," says Ray Guillery, professor of human anatomy at the University of Oxford and editor of the *European Journal of Neuroscience*. "America is a great place to go...but I think a lot of people see all sorts of promising openings in Europe that didn't exist 10 years ago." If Europe's politicians finally deliver on their promises to deregulate the airlines, maybe in the next decade Americans could be complaining about "those Europeans who never cite our papers."

—Alun Anderson



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