

# science

## The group mind: communication in science

*Attendees ranging from doctors and students to the makers of scientific tools and supplies were present at the 23rd Annual Meeting of the Society for Neuroscience last November 6-12. Many new ideas were communicated at this conference but how many others were held back?*

For a neophyte like me, the first day was overwhelming. The dynamics of the whole meeting were exhilarating. Every moment, there were hundreds of poster presentations to visit, a couple of symposia lectures, a few dozen slide talks, company exhibits — the amount of information percolating there was astounding.

And I was in the current too — I chatted on projects I had known nothing about, I had serious discussions with people in my field, I threw silly ideas around, I tried to interpolate new results from other labs with my own project to see what new perspectives this might yield. Through the week, all who attended the conference exchanged not just data, but personalities, theories, methods of approach, and the mindsets that gave us particular results.

For despite the universality of the logocentric scientific method of research, there is a great deal of variation in styles of science. To those who can expand beyond their single point of view, this variation provides a much broader picture of a research problem.

Give a particular question to a group of neuroscientists and they will all generally attack it in their own way, depending on their training: an anatomist will often approach the problem in quite a different way from a biochemist, who in turn will not plan quite the same experiments as a physi-

ologist or a pharmacologist. Interdisciplinary communication enables those with good synthetic ability to take the results obtained in these different studies and come up with a well-rounded answer that can make predictions about a wide variety of situations and is more likely to be the right one.

It's been joked that most advances in science actually happen over beer on Fridays, and there's a grain of truth to that. Communication speeds up science, both by stimulating more people to think out new concepts and results and build upon them, and by preventing the scenario of a hundred people spending their lives unknowingly working on the same thing.

Electronics has improved wide-ranging communication a great deal. A couple of weeks ago I needed some information that was not detailed in a paper I was reading. By doing a search on Internet, I managed to find electronic mail addresses for both the main author of the paper and the head of the lab that did the work — plus addresses and phone numbers for them both. It didn't take long to contact the head of the project, and she kindly agreed to fax me the sequence they had used. Labs on opposite sides of the world can now collaborate on projects, thanks to easy and rapid communication, while the Internet permits interaction and discussion with hundreds of people you may never meet.

There is a limit, however, beyond which communication will not continue no matter how easy it becomes. The lab I contacted wanted to know why I wanted the sequence, and made quite sure that my project did not overlap with theirs.

There is always a balance between free, open communication, and the need to stake out your turf and stay competitive. It's fine to communicate new results once you have a paper waiting to be published, otherwise beware! There are scientific legends of people presenting their latest data at a scientific meeting, going home and finishing up the experiments, writing a paper, and finally sending it off — only to learn that another researcher, one who was coincidentally at the conference, has done the same experiments and beaten them to the punch. Of course, the people who come to see your talk are naturally those who are already working in your field, and some of them were quite possibly spurred into publishing what they had already done, simply because you were hard on their heels. On the other hand, there are surely as many somewhat unscrupulous people in science as in any other occupation, and such things can happen. Most researchers are at least a little worried about this, not being willing to help anyone scoop them, and are hence careful of their communication.

It's not just a question of coming up with new answers and ideas, though. Frequent communication about previously published ideas is equally stimulating and beneficial. The exchange of results and opinions helps to refine all of our thinking, enabling us to winnow more quickly through the ideas we've heard and decide which to keep and which to throw out. It is fascinating to look back and see which ideas presented at past conferences took hold,

which ones blazed up and died out, which ones kept getting kicked around only half-seriously. Science can be fickle.

I've laid my bets as to which ideas I heard this year will take off and attract a band-wagon following, and which

will crash. I may not be right. With so many more people now talking and thinking about them, though, they will quickly be put to the test. I'll see what the verdict is next year!

Gwynedd Morgan

### POINTLESS PONDERABLES

Answer:

Oops! We goofed! Last week's question actually has no answer as stated. We apologize for the mix-up, the question was not supposed to indicate that there was six coconuts remaining in the morning. Rather, you were not supposed to know at all how many remained. Further our general solution for how many coconuts could remain (there are multiple answers) was flawed and hence while we suspect one exists, we don't know it. For anyone who can come up with a general solution for the answer, submit it to the Gazette c/o Garth Sweet and if it's the first correct answer we receive we'll print your name in the first Gazette of the new year. The actual answer for the smallest initial number of coconuts in the original pile is 117,643 (that's a lot of coconuts!).

Question:

This week's question is in keeping with the holidays and shouldn't be too difficult to figure out, so have a go at it. On the first day of Christmas your true love gives to you a partridge in a pear tree, on the second day of Christmas your true love gives to you 2 turtle doves and an additional partridge in a pear tree (can you ever have too many partridges in a pear tree?). On the third day of Christmas your true love gives to you 3 french hens, 2 more turtle doves and yet another damn bird in a tree. The pattern continues along with 4 calling birds, 5 golden rings, 6 geese a laying, 7 swans a swimming, 8 maids a milking (what kind of gift is this anyway!), 9 pipers piping (Hey is this a slavery ring or something!), 10 drummers drumming (That does it, I'm revising the rest of this song!), 11 kraftdiners cooking and 12 popcorn poppers popping. After you receive all these gifts you decide to return them all one per day at starting on boxing day (December 26). On what day will you finish returning all the gifts? The first correct answer received to the Gazette will get the solver's name in the paper.

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