A Genetic *Bounty*

Relatively isolated populations are gold mines for geneticists and epidemiologists. One such treasure trove is Norfolk Island, a small, rocky outpost 1600 kilometers off Australia's eastern coast. The English used it for a penal colony in the last century; now it's home to descendants of the crew who mutinied on Captain Bligh's *Bounty*, bound for Jamaica with a load of Tahitian breadfruit, in 1789.

Lyn Griffiths, director of the genomics research center at Griffith University in Queensland, discovered the pocket serendipitously a couple of years ago—she met a Norfolk islander in an Australian pub. Now Griffiths, who collects large pedigrees to hunt for genes implicated in complex diseases, is mining the islanders for genes involved in heart disease.

Norfolk Island woman may harbor clues to heart disease.

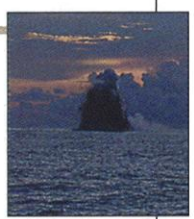
The original nine mutineers set up housekeeping with their Tahitian consorts on tiny Pitcairn Island in 1790. In 1856, the community, then numbering 194, moved to uninhabited Norfolk Island. There are now about 1500 permanent residents, and because resources are limited, the only way to move there is to be related to someone who's already there, says Griffiths. The most common surname on the island is that of Fletcher Christian, leader of the mutineers.

Griffiths and colleagues are collecting blood samples from 900 adult islanders, two-thirds of whom are direct descendants of the original group. Mixing the Polynesian vulnerability to obesity and heart disease with an Old English diet—they still "put cream on lots of things, including vegetables," says Griffiths—suggests a population rife with heart disease risk factors.

Griffiths hasn't analyzed her data yet, but she says there seems to be a good deal of hypertension, and she expects cholesterol levels to be pretty high.

For the next 6 months the researchers will do health screening and analyze data. As basically one big family, the sample has great statistical power, she notes, and thanks to active *Bounty* genealogy trackers (see btymutineer.terrashare.com/genealo.htm), "we know exactly how the family tree fits together."

Pop-Up Island

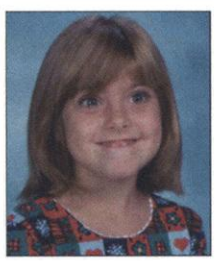


A new island was born in the Pacific last month, and scientists were there to see it. An Australian research vessel, returning to Darwin from the Solomon Islands with a huge "black smoker" retrieved from an undersea thermal vent, arrived at the so-called Kavachi seamount just as it began a series of violent eruptions, spitting lava 70 meters into the air and belching sulfurous steam plumes. The event gave scientists a chance to sample freshly formed rocks and monitor the effects of the outburst on the surrounding ocean.

Offbeat Twins

Now comes a twin study with a new twist—unrelated "twins."

Traditional twin and adoption studies have provided evidence for the influence of genes on many behavioral traits, from intelligence to phobias to TV watching. But the findings are still controversial among social scientists. An ingenious new study design may help overcome the objections, claims Nancy Segal, a psychologist at the University of California, Fullerton. Segal studies what she calls "virtual twins"—pairs of unrelated siblings of the same age, one or both adopted, who have been raised together from infancy. Virtual twins offer the negative image of the identical twins raised apart scenario, sharing a common family environment but no common genes.



Seven-year-old virtual twins Julie (*left*) and Sara.

In a study of 90 pairs of virtual twins to be published in the September issue of the *Journal of Educational Psychology*, Segal says she has confirmed one of the most surprising findings from behavioral genetics: the modest influence of shared environment (and hence the major influence of genes) on IQ scores. Segal gave standard IQ tests to the subjects, most aged 4 to 7 and no pair separated by more than 9 months. On average, each child's IQ correlated only loosely with that of its "twin": The correlation coefficient was 0.26, compared with 0.50 for siblings and 0.86 for identical twins.

Segal's results will "allow a 'cleaner' picture of shared environmental effects," says psychologist Tony Vernon of the University of Western Ontario. Those effects are typically greatest at very young ages, adds psychologist Robert Plomin of the Institute of Psychiatry in London. He says that, based on the results of adoption studies, IQ correlations between virtual twins are likely to drop to near zero as they reach adolescence.

Segal says her approach addresses two objections to behavioral genetics studies: that differences in ages and in times of placement obscure the results of adoption studies, and that "twinness"—being the same age and being treated the same—makes twins more alike. This study suggests that's not the case. Indeed, Segal quotes one father as saying that despite efforts to treat them equally, his pair of virtual twins are "like night and day."

Antidepression Economics

"The press has been preoccupied with possible explanations for the current extraordinary [economic] boom. ... Some attribute the difference to new information technology. Others credit changes in foreign trade, or the baby boomers' lack of experience with a real economic depression. But you never see a serious story about the possibility that this market is different because investors' brains are different. There is good reason to suspect that they are."

—Psychiatrist Randolph M. Nesse of the University of Michigan, Ann Arbor, speculating on the effects of booming antidepressant use in "Is the Market on Prozac?" at www.edge.org

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