

from the reputations of the earnest chemists who were willing to go public with their beliefs, *Science* asked the U.S. Census Bureau if the agency might be able to extract telling numbers from its databases. Maybe, was the response, but the search fee would be hefty, and the wait would be at least a year. How about the American Chemical Society? Unfortunately, it doesn't keep track of the gender of its members' offspring. Princeton University's Office of Population Research? No dice.

Science's own sex survey. So *Science* boldly ventured where no group has gone before: A totally nonscientific questionnaire was sent to about 250 chemists at eight small and large chemistry departments, yielding 140 usable responses. Thanks to the tireless efforts of Gayla Bradfield, a secretary in the chemistry department of the Indiana University, Bloomington, who was well aware of the importance of the survey, all 45 members of that department complied. That rules out statistical biases that might arise through self-selection if, say, chemists with more daughters were especially apt to respond. Of the Indiana chemists, 34 had children in a collective ratio of 53 girls to 41 boys, or a 56% to 44% split, respectively. But when these numbers are pooled with those from the other hundred or so returned questionnaires, the apparent preponderance of female offspring virtually disappears—out of 326 children, 158 or about 51.5% were reported to be girls.

Too shaky a sample for you? *Science* plunged on by combing the 1985 edition of *Who's Who in Frontiers of Science and Technology* for information. Of the 151 chemists found in a random search amounting to 10% of the volume, 29 listings had no information about children and six proved unusable because the children's names (for example, Leslie or Jody) didn't reveal gender. Of the remaining 116 listings, the gender tally came to a near dead heat—144 boys to 147 girls.

And there's more: A random sampling of 10% of the nearly 1400 listings of chemists in the more general and up-to-date *Who's Who* database indicated a slight and insignificant preponderance (51.5%) of boys.

So pending better data, the verdict looks to be, in chemistry anyway, "myth." Who's to blame for the tall tale? John D. Roberts, a long-time physical organic chemist at Caltech, affectionately points to Robert B. Woodward, a giant in the history of organic chemistry who won a Nobel Prize for his work in 1965 and died in 1979. Woodward had three daughters in a row. That "caused the legend to grow, and he fostered it," notes Roberts (father of three boys and a girl). Evidently, sample sizes of three are perfect for starting a myth. Oh, and you'll want to know that Woodward's fourth and last child was a boy.

—Ivan Amato

HIGH-ENERGY PHYSICS

CERN Reacts Cautiously to SSC's Woes

LONDON—When the U.S. House of Representatives dealt a severe blow to the Superconducting Super Collider (SSC) on 17 June, it wasn't just the U.S. high-energy physics community that was sent reeling. Across the Atlantic, members of the CERN Council—the governing body of Europe's showpiece laboratory—meeting on 25–26 June at their Geneva headquarters, suddenly found themselves face-to-face with an unanticipated question: What if Europe's rival machine—the \$1.4 billion Large Hadron Collider (LHC)—becomes the only game in town?

Many council members consider that if the SSC is canceled, CERN will be forced to rethink its role, and they are talking openly about possible changes in CERN's status. Instead of remaining a European center, they say, CERN could make positive moves to become a true "world laboratory." But others say the House decision could set a frightening precedent for European governments, perhaps tempting the Germans to slow the pace of investment in the LHC while they struggle to pay the costs of reunification.

For once, the usually outspoken Carlo Rubbia, director general of CERN, is choosing his words very carefully. He refuses to comment on the likelihood of the SSC being canceled and says that until the U.S. Senate has decided its fate, it would be counterproductive for CERN to start making "demagogical offers" to the U.S. high-energy physics community. And Rubbia is being just as diplomatic in describing what impact canceling the SSC might have on Europe. If that were to happen, "it's not conceivable that [the LHC] will be a hunting ground for Europeans only," he says. But then he adds: "Neither is it conceivable that our member states would then be prepared to pick up the complete tab." Or to put it another way, Americans would be welcome at LHC, but Europe would not want to pay all the bills.

Other scientists are expressing their hopes more bluntly. "There would really be a good opportunity to build at CERN a machine which could be the opportunity for world cooperation—as we are doing for ITER [the international tokamak fusion reactor]," says Pierre Petiau, a former high-energy physicist and a senior official in the French research ministry. And the possibility that if the SSC fails to survive the Senate, the United States might make a major financial contribution to the LHC brings a gleam to the eyes of some senior European science policymakers. "It might be seen as a way of easing the financial problems,"

says Mark Richmond, chairman of the U.K. Science and Engineering Research Council (SERC) and a CERN council member.

Some physicists are even talking about the more radical possibility of admitting the United States and Japan to full CERN membership. If so, they would be expected, like other members, to pay CERN's bills in proportion to their gross national products (GNPs). But don't hold your breath—Rubbia says that such a move is only likely if U.S. and Japanese involvement at CERN became so great that they were already de facto members.

The final outcome could, in any case, be the second and far more depressing possibility—that delays to the SSC will have a knock-on effect in Europe. Germany, in particular, is "not in a hurry" to build the LHC, given the tight squeeze on public spending forced by unification, says Klaus Tittel, a University of Heidelberg high-energy physicist and CERN council member. Although Tittel denies that the SSC question is influencing the German position, many physicists believe that if the SSC is seriously delayed or canceled, the LHC's start-up date will slip back from today's optimistic target of 1999.



No demagoguery. CERN director Carlo Rubbia.

Ugo Amaldi, who heads the Delphi experiment at CERN's existing centerpiece, the Large Electron Positron collider, says that small delays won't matter much, naming 2004 as the latest date by which the LHC, complete with detectors, should be on line. If it's any later than that, he says, Europe's brightest young physicists will lose interest in the project. "If you tell people: 'Your physics will come out 15 years from now,' it will be difficult to recruit," he says.

If the SSC is not canceled outright, but instead limps along with a reduced budget, the impact on the LHC would be hard to estimate. A wounded SSC, one school argues, will encourage nonmember nations—read Japan—to put their financial clout behind the LHC rather than the U.S. project. But that's far from certain. "In Japan, we have a long way to go," says CERN's Rubbia, acknowledging that SSC officials have been making the most headway in wooing the Japanese. And if the SSC does get back into the race with Europe on full funding, the Europeans' confidence in their own machine will not be shaken. "The feeling [always] was at CERN, that in any race with the SSC, they were going to win," says SERC's Richmond. "I think they are probably right."

—Peter Aldhous