Canadian Chemist Takes On Working Women

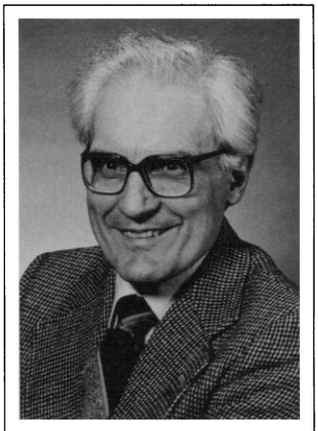
An article that criticizes working mothers slipped into a Canadian journal—and many scientists are hopping mad

WHAT'S AN ARTICLE BLAMING THE DECLINE of civilization on working mothers doing in the pages of Canada's premier physics journal? That's the question subscribers to the *Canadian Journal of Physics (CJP)* were asking themselves when they opened the September 1990 issue to find just such an article sandwiched among the proceedings of a conference on chaos theory. And despite an apology in the journal, the question is still echoing through Canada's scientific community—in the form of angry feelings and a petition signed by more than 500 researchers to the National Research Council (NRC) of Canada, which publishes the journal, asking the agency to republish the issue without the offending article. Several Canadian scientific organizations have already announced support for the petition; others have it on the agenda for spring meetings.

The article, written by Gordon Freeman, a respected chemist at the University of Alberta, stood out like a sore thumb in the *CJP*. That issue of the journal was devoted to the proceedings of a conference on the kinetics of nonhomogeneous processes (KNP—shorthand for chaos theory). Freeman was the conference organizer, and among the scholarly papers on chemistry presented at the meeting was an article by him, labeled "sociology" and titled "Kinetics of nonhomogeneous processes in human society: Unethical behaviour and societal chaos" (*CJP, 68:794-798*).

Freeman's article describes his inquiry into "KNP in human society" on which he says he spent "about 1000 h of study during a 7-year period." The data include personal observations, anecdotes, and conversations with students on cheating, which Freeman says has increased in recent years. He blames the increase on a state of mind inculcated in children by working mothers, and he blames the same state of mind for drug use, insider trading, infidelity, embezzlement, teenage sex, and corrupt political practices. Women with children, he argues, don't belong in the workforce, because "the majority of women were equipped by nature to be nurturers, and most men were not." As a result, he claims, half the children of working mothers suffer "serious psychological damage."

The article also says Freeman has uncovered the reasons why women inflict such damage on children. Women work, he writes, because they distrust males' capacity to make a commitment to marriage. Men, in turn, he argues, fear commitment because of the threat of nuclear holocaust, the availability of birth control, and the socialist leanings of feminists. Freeman thinks he has some solutions to the problem, however, and the paper ends with his proposals, which include revamping TV ads to encourage "male and female virginity until marriage."



Gordon Freeman

Freeman arrived at his conclusions using methods that are unconventional, to say the least. In fact, he disdains conventional social-science methods. "Information gained by 'surveys and experiments with controls,'" he writes, "is likely to be distorted by the artificiality of the gathering situation, so I do not use that method." Freeman claims the true method of the social sciences should be the application of "wisdom"—a form of understanding that is less important in the physical and biological sciences.

The article was received with outrage by women, by social scientists, and by members of the Canadian scientific community generally. The reaction is particularly strong at York University in Ontario, where Ralph Nicholls, editor of the *CJP*, is a physics professor and director of the Center for Research in Earth and Space Science. "It's an opinion piece passing as science," says Selma Zimmerman, a York cell biologist, "part of a backlash against gains women have made in recent years. The fact that the article was in the *CJP*, an eminent peer-reviewed journal, appears to give that backlash some credibility."

"The article is an insult [to sociology], with no relation to the field," says York sociologist Janice Newson. "We've got an extensive literature, ignored by Freeman, on the complex interaction between family units and the larger social context." (Freeman's article had two references: one to Funk & Wagnall's *Standard College Dictionary*—to the definition of "society"—the second to an unrelated work of Freeman's.) Says Lee Lorch, a York professor emeritus of mathematics: "This article, which is now in the permanent collection of libraries all over the world, makes Canadian science a laughingstock. Colleagues halfway around the globe kid me about it."

The angry reactions had an effect. Nine issues after the article appeared, in June 1991, the *CJP* published a note from Bruce P. Dancik, editor in chief of the NRC's research journals, saying Freeman's "article does not comprise science and has no place in a scientific journal. The National Research Council research journals and the editor of the *CJP* regret that this article was published." But the critics weren't mollified. For one thing, the apology was only three sentences long and was printed on an unnumbered page, making it difficult to tie it to the original article in electronic databases. What's more, although the note said Freeman's article wasn't science, it didn't repudiate the paper's contents.

Most important, the disavowal left unanswered the critical question of how the offending article sneaked into a reputable physics journal in the first place. Nicholls told *Science* his journal has several criteria for including a paper in the proceedings of a conference. Two of these criteria are that the paper must have been presented at the conference and that it be peer-reviewed. Nicholls says Freeman told the *CJP* staff that the article had been presented at the conference. So Nicholls had the paper reviewed—and the review came back positive. (As is standard journal procedure, Nicholls would not identify the reviewer, or the reviewer's field of expertise, or produce the review.)

Under the circumstances, Nicholls says, he considered himself contractually obligated to publish the paper. There was only one problem. "In early 1991," says Nicholls, "we discovered that the paper had in fact not been presented at the conference....To that extent we had been misled." Freeman, for his part, denies that he ever misled the staff of the journal about the article.

For some critics, however, that isn't the point. Whether Nicholls believed the Freeman article was presented at the conference or not, cell biologist Zimmerman thinks the editor could—and should—have exercised his authority to prevent it from being

published. "Nicholls acts as though his hands were tied. I believe that the editor makes the final decision, and Nicholls abrogated his responsibility. There seem to be gross procedural errors here. We need an investigation to find out the process whereby this article got published to make sure this kind of thing doesn't happen again."

Zimmerman isn't the only one who thinks further action is in order. Last fall, several Canadian professional organizations condemned publication of the article, including the Canadian Association of Physicists, the Women in Scholarship Committee of the Royal Society of Canada, and the Canadian Mathematical Society; others are scheduled to debate the issue this spring. In mid-January, a petition from the York community with 547 signatures was conveyed to the NRC requesting it to republish Volume 68:9 without Freeman's article—a request Nicholls denounces as "Orwellian" and a recourse members of the NRC are reported to favor only in cases of fraud.

But the hubbub brewing around him hasn't changed Gordon Freeman's opinions. Far from being something he wants to put behind him, he says his paper is "probably the first article in a new era of sociology." And he has continued to cite the article even after the journal's apology—for example, in a letter published in the January 1992 issue of *Physics in Canada*. Nor has Freeman limited himself to the pages of scientific journals. He has promoted his views on working mothers on TV in Canada and on the radio throughout that country and the United States, as well as in an Ann Landers' column. He describes his critics as shrill, pro-feminist, and probably married to working mothers.

Nicholls, meanwhile, argues that the protest against Freeman's article is motivated by "political correctness." He calls the "whole affair" a "most interesting and complex mixture of scientific publishing, political correctness, vulgar politics of protest, poor journalism, media manipulation, and government agency damage control." "If C.P. Snow were still alive," Nicholls concludes, "he could make a great novel out of all of this." ■ ROBERT P. CREASE

Engineering Academy Elects New Members

The National Academy of Engineering has elected 79 new members and seven foreign associates. Total U.S. membership is now 1628 and there are 136 foreign associates.

New U.S. members are:

John L. Anderson, Carnegie-Mellon University; **Irving L. Ashkenas**, Systems Technology Inc., Hawthorne, California; **Stanley Backer**, Massachusetts Institute of Technology; **Peter Beardmore**, Ford Motor Co., Dearborn, Michigan; **Ted B. Belytschko**, Northwestern University; **Arthur E. Bergles**, Rensselaer Polytechnic Institute; **David T. Blackstock**, University of Texas, Austin; **Peter R. Bridenbaugh**, Aluminum Co. of America, Alcoa Center, Pennsylvania; **Alan C. Brown**, Lockheed Corp., Calabasas, California; **William M. Brown**, Environmental Research Institute of Michigan, Ann Arbor; **Richard Conway**, Cornell University; **George E. Cooper**, aeronautical consultant, Saratoga, California; **Benjamin A. Cosgrove**, Boeing Commercial Airplane Group, Seattle, Washington; **Lance A. Davis**, Allied-Signal Inc., Morristown, New Jersey; **Steven D. Dorfman**, Hughes Aircraft Co., Los Angeles, California; **Elisabeth M. Drake**, Massachusetts Institute of Technology; **E. Linn Draper Jr.**, Gulf States Utilities Co., Beaumont, Texas; **Thomas Dixon Dudderar**, AT&T Bell Laboratories, Murray Hill, New Jersey; **David A. Duke**, Corning Inc., Corning, New York; **Frederic F. Ehrich**, GE Aircraft Engines Co., Lynn, Massachusetts; **Armand V. Feigenbaum**, General Systems Company Inc., Pittsfield, Massachusetts; **John D. Ferry**, University of Wisconsin, Madison; **Lee S. Gaumer Jr.**, Air Products and Chemical Inc., Allentown, Pennsylvania; **C. William Gear**, NEC Research Institute Inc., Princeton, New Jersey; **Thomas G. Giallorenzi**, Naval Research Laboratory, Washington, D.C.; **John E. Gray**, Atlantic Council of the United States, Washington, D.C.; **Delon Hampton**, Delon Hampton and Associates, Washington, D.C.; **Robert C. Hansen**, R.C. Hansen Inc., Tarzana, California; **John M. Hanson**, Wiss, Janney, Elstner Associates Inc., Northbrook, Illinois; **Henry J. Hatch**, U.S. Army Corps of Engineers, Washington, D.C.; **John L. Hennessy**, Stanford University; **John A. Herbst**, Control International Inc., Salt Lake City, Utah; **Clair A. Hill**, CH2M Hill Inc., Redding, California; **Roger P. Kambour**, GE Research and Development Center, Schenectady, New York; **Frederick J. Karol**, Union Carbide Corp., Bound Brook, New Jersey; **Richard M. Karp**, University of California, Berkeley; **Joseph F. Keithley**, Keithley Instruments Inc., Cleveland, Ohio; **Walter F. Kosonocky**, New Jersey Institute of Technology, Newark; **Frederick F. Lange**, University of California, Santa Barbara; **Robert S. Langer Jr.**, Massachusetts Institute of Technology; **Johanna M. H. Levelt Sengers**, National Institute of Standards and Technology, Gaithersburg, Maryland; **Robert H. Liebeck**, Douglas Aircraft Co., Long Beach, California; **Arthur S. Lodge**, University of Wisconsin, Madison; **Ralph A. Logan**, AT&T Bell Laboratories, Murray Hill, New Jersey; **Robert W. MacCormack**, Stanford University; **Alexander MacLachlan**, E.I. du Pont de Nemours & Co., Wilmington, Delaware; **Thomas J. Malone**, Milliken & Co., Spartanburg, South Carolina; **Karl E. Martersteck**, AT&T Bell Laboratories, Holmdel, New Jersey; **Bryant Mather**, U.S. Army Corps of Engineers, Vicksburg, Mississippi; **Albert A. Mathews**, Al Mathews Corp., Federal Way, Washington; **William C. Maurer**, Maurer Engineering Inc., Houston Texas; **William B. Morgan**, David W. Taylor Naval Ship Research and Development Center, Bethesda, Maryland; **Richard S. Muller**, University of California, Berkeley; **Venkatesh Narayanamurti**, University of California, Santa Barbara; **John Neerhout Jr.**, Bechtel Group Inc., San Francisco, California; **Shlomo P. Neuman**, University of Arizona, Tucson; **Robert M. Nowak**, Dow Chemical Co., Midland, Michigan; **John H. Nuckolls**, E.O. Lawrence Livermore National Laboratory, Livermore, California; **Gerald T. Orlob**, University of California, Davis; **Stewart D. Personick**, Bell Communications Research Inc., Morristown, New Jersey; **Cordell Reed**, Commonwealth Edison Co., Chicago, Illinois; **Jerome L. Sackman**, University of California, Berkeley; **Maxine L. Savitz**, Allied-Signal Aerospace Co., Torrance, California; **Robert J. Schultz**, General Motors Corp., Detroit, Michigan; **Mischa Schwartz**, Columbia University; **Charles L. Seitz**, California Institute of Technology; **Robert R. Shannon**, University of Arizona, Tucson; **Arnold H. Silver**, TRW Space and Technology Group, Redondo Beach, California; **Raymond S. Stata**, Analog Devices Inc., Norwood, Massachusetts; **Richard J. Stegemeier**, Unocal Corp., Los Angeles, California; **Warren E. Stewart**, University of Wisconsin, Madison; **Edward H. Sussenguth**, IBM Corp., Cary, North Carolina; **Richard A. Tapia**, Rice University; **Hardy W. Trolander**, The Yellow Springs Instrument Company Inc., Yellow Springs, Ohio; **Robert J. Weimer**, Colorado School of Mines, Golden; **Richard N. White**, Cornell University; **C. Grant Willson**, IBM Almaden Research Center, San Jose, California; **Edgar S. Woolard Jr.**, E.I. du Pont de Nemours & Co., Wilmington, Delaware; **A. Thomas Young**, Martin Marietta Corp., Bethesda, Maryland.

Foreign Associates:

Grygory I. Barenblatt, USSR Academy of Sciences, Moscow, Russia; **Roger H. Beteille**, Sud Aviation, Mandelieu, France; **Keith A. Browning**, Meteorological Office of the Government of the United Kingdom, Bracknell, England; **Per Gunnar Engström**, INCENTIVE AB, Västeras, Sweden; **Seiuemon Inaba**, FANUC Ltd., Oshinomura, Japan; **Anna M. Marabini**, Institute for Mineral Processing, National Research Council of Italy, Rome; **Norbert R. Morgenstern**, University of Alberta, Edmonton, Alberta, Canada.