

## Curtains for human chess players?

It's getting harder to tell the difference between a computer and a human being — at least when it comes to playing chess. That was the result of an informal test at last month's Association for Computing Machinery meeting in Denver.

In the test, Alex Fishbein, a computer science student at the University of Colorado in Boulder and that state's chess champion, played simultaneous games against eight mystery players hidden behind screens. Three of his opponents were computer programs and five were human players. By the end of the evening, Fishbein had won five games, lost two and drawn one. But he was much less successful in identifying whether his opponent was a computer or a human player. He made the wrong choice five times.

The audience, made up largely of chess and computer experts, did somewhat better. Two people, including the author of a computer chess program not involved in the test, managed to make the right choice seven out of eight times. Many managed to spot two of the three computers.

"To tell the difference," says Monroe Newborn of McGill University in Montreal, "you've got to be a real expert at both chess and computers." Newborn's own computer chess program, OSTRICH, "turned out to play most like a computer," he says. OSTRICH also finished ninth among 10 competitors in the North American computer chess championship (SN: 10/26/85, p. 260).

## Making 'Big Brother' obsolete

As computer systems proliferate, more and more organizations routinely exchange information about individuals. People are losing the ability to control the way information about them is used. Moreover, they have no way of knowing if the information is inaccurate, obsolete or inappropriate. "The foundation is being laid for a dossier society, in which computers could be used to infer individuals' life-styles, habits, whereabouts and associations from data collected in ordinary consumer transactions," says David Chaum of Amsterdam's Center for Mathematics and Computer Science in the Netherlands.

In the October COMMUNICATIONS OF THE ACM, Chaum outlines a scheme that he says effectively solves the problem by protecting privacy and maintaining security for both individuals and organizations. In Chaum's novel approach, an individual uses a different account number or "digital pseudonym" with each organization — a credit card company, retail store, the government, or whatever. Although pseudonyms, created by a special random process, can't be linked, businesses like banks would still be able to ensure that transactions are legitimate.

Present systems also emphasize the one-sided security of organizations attempting to protect themselves from individuals, says Chaum. His scheme allows all parties to protect their own interests. It relies on individuals keeping secret, cryptographic keys from organizations and organizations devising other secret keys that are kept from individuals. During transactions, parties use these keys to provide each other with specially coded confirmation of transaction details—but no further information that could be used for other purposes.

Unlike current systems, in which organizations issue and usually control the use of "tokens" like plastic cards with magnetic strips or embedded microcomputers, individuals would have their own "personal card computers." Such a credit card-sized computer would keep the necessary records and provide the needed pseudonyms and secret keys. "These card computers," says Chaum, "are already technically feasible."

Individuals stand to gain increased convenience and reliability and improved protection against abuses by individuals and organizations—a kind of parity with organizations, says Chaum, "and, of course, monitorability and control over how information about them is used."

NOVEMBER 2, 1985

## New animal welfare rules

To prevent the type of animal care deficiencies that led to the recent shutdown of a University of Pennsylvania head injury study (SN: 10/12/85, p. 230), the Public Health Service (PHS) is instituting a revised animal welfare accreditation policy. By Dec. 31, all researchers funded by the National Institutes of Health (NIH) or any other PHS agency must either establish that their animal programs have been formally approved by the American Association for Accreditation of Laboratory Animal Care (AAALAC) or submit a detailed report of their animal research programs. That report must include the numbers and species of vertebrates involved, how they're fed and housed, how many facilities are involved, the role of veterinarians and the makeup of the committee that reviews the animal research studies.

"In the past we gave an institution [seeking PHS funds for animal studies] three options," says William Dommel, assistant director of NIH's Office of Protection From Research Risks, which manages animal care oversight for PHS. He says, "They could be accredited by AAALAC, describe themselves as accreditable by AAALAC or say that they're moving toward this goal." And except when an institution came under scrutiny for some complaint, Dommel says, "all plans were accepted."

Now any program lacking formal AAALAC accreditation will be carefully examined to see whether it complies with revised NIH guidelines, published in June. Those that don't, or whose timetable for complying isn't acceptable, will either have to undergo changes or lose PHS funds, Dommel says.

His office expects to be swamped by the estimated 800 submissions due to arrive by year-end, he says, because many grants — like the University of Pennsylvania — will lack bona fide AAALAC accreditation.

## Call for population control

"We believe that the time has come now to recognize the worldwide necessity to stop population growth within the near future and for each country to adopt the necessary policies and programs to do so" — provided that those programs are "voluntary" and "maintain individual human rights and beliefs." These ideas serve as the cornerstone of a call for population stabilization that has been signed by parliamentary heads of state representing more than half of the world's population. The statement was handed to the United Nations Secretary General, Javier Perez de Cuellar, on Oct. 24 during the UN's 40th anniversary celebration in New York City.

Among its 40 signatories are the leaders of the People's Republic of China, India, Indonesia, Japan, Bangladesh, Nigeria, the Philippines, Thailand, Egypt, South Korea, Morocco and Kenya. The statement urges national leaders to take an active, personal role in promoting effective population control strategies in order to limit the environmental degradation, income inequalities and potential for conflict that overpopulation so often breeds.

The United States was among the majority of developed nations that did not sign the statement. Comments Peggy Pizzo, deputy director of the Washington, D.C.-based Population Crisis Committee, "I only wish that our administration had the same wisdom and understanding of the real problems posed by overpopulation that these world leaders have who are living with it every day." Not only has the Reagan administration downplayed the value of contraceptives as an aid to family planning in developing countries, Pizzo says, but it has also "denied funds to the two largest voluntary family-planning associations in the world, including the UN's agency" (SN: 7/27/85, p. 55). Moreover, in contrast to what is being advocated by most resource economists, the concept guiding formal U.S. policies since 1984, she says, is that rapid population growth is not necessarily a bad thing.

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