17 July 1983 by Nels Winkless

REFERENCE NOTES ON THE
FIRST INTERNATIONAL PERSONAL ROBOTICS CONGRESS----IPRC'84

The Computer Precedent

Back when personal computers were a new phenomenon, there was a lot of headscratching about the definition of "personal." Could personal computers be used by companies and still be personal? Was a timesharing terminal on which an individual did personal stuff a personal computer?

...and if a computer is not personal...what is it?

None of this has been clearly defined and articulated, but matters have boiled down to a set of fairly consistent views.

A personal computer seems to be a stand-alone system under the control of some individual who does not have to go through an organizational structure to use the system. He just hauls off, and uses the computer at home, at the office, wherever it's available. The instrument is personal the way a pencil is personal, or a typewriter, or a pocket calculator. It's part of the personal paraphernalia of some individual, and its use is not institutionalized.

The user doesn't sign up for time on the personal computer, doesn't meet with the keeper of the machine to discuss its application, doesn't call upon some department for cooperation in putting the thing to work. Further, the individual is responsible for the work produced by the personal computer. The work is something the individual does, using the computer as an aid. No hiding behind a corporate organization; what the computer produces is the baby of the individual using it.

One may doodle with a pencil, or sketch out important ideas.

One may doodle with a computer, or model important concepts.

Immediate personal control over the tool, and responsibility for its product makes the computer personal, instead of institutional.

The Industrial Robotics Precedent

Industrial robots have been around for some years, doing precise work in measurement and assembly for laboratories and factories. They are different from conventional automatic machine tools in their flexibility. They can do different kinds of work over some range if people change the instructions to the machine without in all cases changing the physical structure of the machines.

These robots have virtually all been institutional, not personal. They have not been associated with individual people, and have not been looked upon as essentially expendable. They are typically not mobile, and not very flexible.

Several industrial robotics conferences have been organized, at which exhibitors concentrated on selling better and better industrial robots to manufacturers.

Notably, the industrial roboticists have not vigorously personified the robots themselves. There's a certain amount of tentative reference to the machines as "he" or "she," and occasionally personal names are applied to the machines, but the developers of industrial robots are appropriately slightly nervous about appearing too cute, and improperly attributing volition and intelligence to their machinery.

IPRC'84

In the last few years, hundreds, perhaps thousands, of individuals have built robots whose purpose is largely to display the attributes of volition and intelligence. These devices are artificial animals--or as close to animals as their developers are able to come.

Many of these developers are the traditional garage experimenters who are applying their new knowledge of microprocessors to robotics. Many others are employees in the industrial robotics companies, who are familiar with the mechanics of the industrial systems, and who are itching to get their companies into the personal robotics area.

And there are now several companies actually delivering personal robots as such--notably Zenith/Heath Co., RB Robot, and Androbot. Other companies such as Robotics International have announced products, and in fact, there must be a dozen other firms in the field that have not yet received much publicity.

These devices have some of the traits of animals, and are able to "care for themselves" to some degree. For example, some "get hungry" when their batteries begin to run down, and they begin to seek food. They find their own battery chargers, and plug in, to eat until they are restored to full energy levels. Some have sensors that tell them when they are close to obstacles that should be avoided. Given this information, they are able to turn aside, even working themselves out of corners on their way to some destination--or just strolling around. Some accept spoken commands. Some play games, keep books, type letters, fetch objects, sing songs...

Whether they are handcrafted by hobbyists or manufactured by corporations, these robots are designed for association with individual human beings, who tend them, train them, and take responsibility for them.

IPRC'84, the First International Personal Robotics Congress, will concentrate on personal robots, unabashedly recognizing the popular desire for, and fascination with, machines that appear to have volition, intelligence, and the mechanical capability of doing things that are overt and interesting.

Personification of the machines is inevitable. Unlike the industrial folks, the personal robotics enthusiasts can relax and enjoy it.

IPRC'84 should attract everybody who is charmed by the notion of machines that act like animals, that can be trained, that seem to care how things come out.

An Outline of IPRC'84

The Congress will be a three-day affair (Friday, Saturday, Sunday) in Albuquerque in April 1984. There will be two days of technical sessions--papers, seminars, panel discussions, on matters of concern to the personal robotics field--such as new technology, control languages, definitions and terminology, legal aspects of robots, directions, opportunities, hazards, social implications, marketing, training...

A commercial exhibit will operate during the three days, open to the public (for an admission fee). Exhibitors will include robot manufacturers, computer manufacturers with special applications in robotics, software developers, publishers of books and magazines, retailers, suppliers of motors, gears, batteries, wheels, pulleys, etc...

The non-corporate developers of robots will engage in a running series of competitions and performances in which their many robots show what they can do. These robots will be displayed and serviced in the Robot Pits in the center of the exhibit hall--well equipped service shops in which the machines can rest and recuperate after their journeys and labors. Their operators can maintain, repair, and modify their systems in these shops, in view and within speaking distance of interested exhibit attendees.

It's expected that local roboticists around the country (perhaps the world) will receive sponsorship from schools, businesses, and civic groups interested in sending the local roboticists off to the international meeting to represent the community. We must assume that many individual roboticists will find it difficult financially to attend the Congress with their equipment. Sponsorship by interested backers will be encouraged by the Congress, and special efforts will be made to assure the usefulness and availability of the Robot Shops of Albuquerque.

The Congress will open with a major ceremony--an event complete with dignitaries, the limelight, the media, robots, and fanfare.

The Congress will close with an awards breakfast recognizing the achievements of the individual roboticists in their exhibitions and competitions.