Cybernetic Serendipity, or The Computer and the Creative Process in London

By DAVID THOMPSON

LONDON.

FOR decades the Institute of Contemporary Arts has been London's most venerable club, gallery and general discussion center for the avant-garde. It had always been a small, intimate place, though great things had happened there. Then, with much aplomb and publicity, it moved earlier this year into new and unexpectedly grand premises in Carlton House Terrace on The Mall, just down the road from, of all addresses, Buckingham Palace. Now the proud possessor of one of the largest galleries in London, it has just launched its second major exhibition there, an eye-catching, mind-stretching experiment going under the title of "Cybernetic Serendipity."

*

"Cybernetic" has to do with mechanical systems of communication, such as computers, and "serendipity" is a word fancifully coined by Horace Walpole in 1754 to describe "the facility of making happy chance discoveries." What this extraordinary exhibition does is to examine and explore relationships between the arts and technology. It shows that happy chance discoveries are being made by artists with a scientific bent, and by not a few scientists with an esthetic bent. No one is rushing in to claim that the results are great art—not quite yet, anyway—but like children with a new toy, they are falling over themselves to demonstrate the possibilities that are opened up. The exhibition, on one level, is a glorious funfair of mechanical gadgets making unprecedented shapes, sights, sounds and word-structures. On another level, it is a profound inquiry into the mechanics of human creativity. When machines can duplicate certain mental processes, as computers can, more efficiently than the nimblest mind, it is legitimate to ask whether there are not areas of the creative process which they could similarly enlarge and facilitate. The question is not the science-fiction nightmare of whether art can be created by machines but the very real and present possibility that new kinds of art can be created with machines.

Many of the demonstrations in this exhibition are variations of techniques already becoming relatively familiar in avant-garde experiments. Electronic music, certain kinds of kinetic and optical art, computer-poetry, all are machine-aided, and in some cases machine-directed. What is a much less familiar experience is being invited to study not merely the result but the means, and often, in the case of spectator-activated machines, to manipulate the results oneself (this is the funfair aspect of the exhibition). There is a great deal of technical information available, and even some historical material, though the history is necessarily recent.

The layman can begin to grasp something of the fascination, even what one might call the mystery, of the computer-world, and one of the most significant revelations of the exhibition becomes apparent. It is not only that artists in various media are acquiring new instruments to do their bidding in ways unobtainable by any other means, but that scientists, intrigued by the unexpected permutations of their own invention, are exploring its nonpractical capabilities for their own sake; they are being lured into that kind of play-activity which is one of the roots of artistic creation. This is a totally new phenomenon: Artists in all ages have exploited the expressive potential of new media; there has never been a new medium which made technicians start expressing themselves as artists.

The computer lends itself to two kinds of utilization, into one or other of which all the less highly evolved machines to be found in the exhibition can also be divided. The more straightforward of the two depends on controlled programing to get a foreseen result, but a result of a complexity or degree of technical precision otherwise impossible to achieve. There is a dazzling variety, for example, of intricate and usually very beautiful pattern-making, both linear and in terms of color, movement and light. There is the kind of processing of images (by electronic scanning, for example) which reinterprets their physical texture, or completely transforms them (strange things are done to a Steinberg drawing, a photograph of President Kennedy, Leonardo's "Vitruvian Man"). There is the concrete realization of immaterial scientific phenomena and mathematical formulas as images of a curiously evocative and compelling nature.

*

But the other kind of machine-activated creation is the more intriguing, whereby a built-in element of chance defies prediction of the exact results and comes near to paralleling what an artist might call "inspiration"— that sudden incorporation into the work of art of the unforeseen accident which "works." The exploitation of chance is nothing new in art. Leonardo discussed it. In 1795 a certain Mr. Simrock advertised a system for composing acceptably Mozartian waltzes by the throwing of dice and "without the least knowledge of music." The computer can devise accidents that distort logic in ways which instantly stimulate and appeal to the imagination. What it does with words is surreal, often very funny (throughout this exhibition, the esthetic relevance of humor keeps cropping up) and sometimes undeniably "poetic." The same thing happens in innumerable, ingenious tamperings with the working of television systems and other electronic equipment capable of simulating images. Random number-generated patterns come out looking like a landscape of fir trees under snow.

Inevitably, people start evaluating the results of all this activity and raising the prejudice-ridden question, "But is it art?" The short answer to that has always been that art is what artists do when they are in that frame of mind. But that is not the point of this exhibition. Everyone concerned in it is at pains to make clear that possibilities are being demonstrated, not claims made in terms of ultimate values. It is an interim report on investigations in progress. But two significant, possibly very important, considerations emerge. One is that science is putting into the hands of artists a new range of equipment which artists feel can be exploited. What they make of it remains to be seen, and depends on their own creative talent. A Leonardo of the electronic age could at any time resolve the question of esthetic value. The other is that the computer is a tool to extend our intelligence, and that in its functioning we see some of the mechanism of mental processes objectified, as it were, and laid out for examination. How we see, hear and understand, how we process information, articulate and communicate it, becomes capable not merely of investigation but of being reformulated. And somewhere in there are some of the processes by which we create art.

*

"Cybernetic Serendipity" has taken its main organizer, Jasia Reichardt, three years to research, prepare for and assemble—much of that time spent on trying to convince people what it was and that it was feasible, and getting someone to back it. The result draws on resources from all over the world, packed into an exhibition which, with the help of brilliant display methods, can provide entertainment for an hour or study material for years. When it closes in London in October, it will go to the United States, where, under the auspices of the Smithsonian Institution, it will tour six main centers during 1969.