Editorial

On 14 May 1969 Warren McCulloch suggested that I take over the presidency of this Society which, through his eyes, had grown from a glimmer to a gleam. We have now held three successful symposia and are publishing our third book. We have established a journal and these Newsletters bring you information concerning activities of the Society and other matters of interest. We have chapters in Chicago, Toronto, Washington, D.C., and incipient chapters in Boston and San Francisco. We are growing.

As an initial step in 1967 we addressed "Purposive Systems...The Edge of Knowledge," it being important to examine where we stood in the art of automata which replicated intellectual performance of autonomous man and men. Then for the fall 1968 meeting we focused attention on "Cybernetics and the Management of Large Systems" in view of the difficulty in finding appropriate representations of the manifold feedback mechanisms within such systems. This brought us to considering the unfortunate behavior of large systems which can easily misuse technology.

Looking toward the future at last fall's meeting we considered "Cybernetics in the Seventies and Conflict Resolution." In this regard the avoidance of unnecessary violence is taken as an ethical precept. Within this frame of reference the problem is reduced to constructing suitable policy in the light of given goals of the participants in the "game." This hinges upon the ability of these players to forecast each other's moves and the kind of environment in which the game will take place. Such prediction must be based upon adequate modeling of the players by each participant, including the representation of the self. This modeling requires an adequate data base of prior observations. Here we have an example of the scientific method being applied in hierarchical form within each participant. Rational play of the game presumes that a sufficiently well-developed model of the game itself is held by each of the players. Needless to say, this is a goal yet to be achieved in many real world situations.

(continued on page 2)

Warren S. McCulloch

It is said that Warren Sturgis McCulloch, the poet, philosopher, logician, engineer, physician, neuropsychiatrist and cybernetician was born on 16 November 1898, and on 24 September 1969, working at his farm in Old Lyme, Connecticut, on one of his papers into the early morning hours, went to bed never to wake up again. A heart failure was the cause.

Of course these dates are meaningless, for Warren McCulloch—a mythical figure extends into the remote past and into the future as long as there will be men who delight in the physical pleasures of a lively mind that desires, perceives and thinks. He was there when Aristotle put his hand down to write the opening sentence to Metaphysics, "All men by nature desire to know;" when Shakespeare began to write the one hundred eighth sonnet, "What's in the brain that ink may character? Which hath not figure'd to thee my true spirit?"; when Leibnitz noted "I have here a number system to write all numbers that is only of 'zeros' and 'ones'; moreover, I found, this system contains the whole logic of dichotomies;" and he will be there and awake when Friars Bacon and Bungay's brass head speaks.

Warren McCulloch is a principle. It is the principle of doubting the apparently obvious, and of sensing relations amongst apparent heterogeneous. It asks: "What is a number, that a man may know, that he may know a number?" Or "Where is fancy bred?" and answers, "How we know universals" or "Why the mind is in the head." It is the principle that does not know of disciplinary boundaries; it is the principle that brings about the coincidentia oppositorum. This Society is a brainchild of this principle. Hence, Warren McCulloch, the man, was our first president. When he left us Warren McCulloch, the mythical figure, the principle, will be our guide.

Heinz Von Foerster

Warren S. McCulloch turns over the ASC gavel to Lawrence J. Fogel, Toronto, 14 May 1969. Looking on, from left to right, are: Van Douglass, Alex Fraser, and B.B. Goodfellow.
Editorial from page 1

With this much as background it appears appropriate to consider the next generation of non-computer cybernetic machines, thus focusing attention on particular artifacts which embody communication and control in replication of the natural machines. This new decade should reveal surprises ranging from animated microstructures to new degrees of control within large-scale technological systems. Our new officers hold a close awareness of this emerging reality. I feel certain that they will direct this Society toward making a meaningful contribution to the unification of science and technology in the service of society at large. I am particularly pleased to welcome Dr. Carl Hammer as our new president. His knowledge and experience qualify him for this post.

I wish to express my appreciation to all of you who have cooperated with me during this past year. It was my privilege to join you in this activity. I look forward to watching the spirit of Norbert Wiener and Warren McCulloch continue to inspire the kind of activity they would have found most meaningful. This will only be the case if we take an active interest in exploring the future of cybernetics together.

Lawrence J. Fogel

ASC HAS NEW COMMITTEE ON CHAPTERS

The appointment of William E. Hanna, Jr., Director of the Bureau of Data Processing and Accounting, Social Security Administration, as Chairman of ASC’s new Committee on Chapters, has just been announced by Carl Hammer, president of the Society. “The principal function of this committee,” said Hammer, “will be to provide service to the chapters which now exist and to spur the formation of new ones.” Hanna’s address is: 6401 Security Boulevard, Baltimore, Maryland 21235.

ASSOCIATION INTERNATIONALE DE CYBERNETIQUE

Founded in 1957, the Association has organized five international congresses and publishes a quarterly review, “Cybernetica” with articles in either French or English. Persons interested in joining may address the managing director, J. Lemaire, at Palais des Expositions, Place Andre Rijckmans, Namur, Belgium.

CONTRASTING VIEWS OF THE ULTRAINTelligent MACHINE

The UIM will be able to perform any intelligent act of man but better and faster. It can then design a still better machine and so the UIM is the last needed invention by man. UIM’s are the next species, making man redundant and so eventually extinct.

(Paraphrased from I.J. Good, Virginia Polytechnic Institute, speaking at American Society for Cybernetics Symposium, 16 October 1969.)

Those who advise the indiscriminate imitation of nature, seeing in it a capacity outside the reach of technology, are wrong. Nature, for instance, did not invent the wheel...

But the machine will never supplant man. The complexity of arising problems grow in proportion to the development of capabilities for their solution.

Viktor Glushkov

ARTIFICIAL INTELLIGENCE SYMPOSIUM

Under the joint auspices of the American Society for Cybernetics and the University of Tennessee Institute, there will be a two-day symposium on “The State-of-the-Art of Artificial Intelligence” on 10-11 April 1970. For further information write to Dr. T. Charles Helvey at the Space Institute, Tullahoma, Tennessee 37388.

Article on McCulloch Available

The magazine INNOVATION, published by the Innovation Group in New York, has a story on Warren S. McCulloch in a recent issue. The story covers his career and influence, especially in his relation to the founding of the field of cybernetics. It includes a five-page portfolio of photographs taken over the period of his career, and includes some recent photographs taken by Mrs. Heka Davis of INNOVATION just two weeks before his death. Author of the story is Nilo Lindgren.

Those members of the ASC who would like to receive a free copy of INNOVATION with the McCulloch story should send a note to: Mr. Nilo Lindgren, INNOVATION, Technology Communication Inc., 265 Madison Avenue, New York, New York 10016.

OFFICERS

Carl Hammer — President
Edmond M. Dewan — Vice President, Awards Program
Roy Herrmann — Vice President, Symposium and Programs
Douglas E. Knight — Vice President, Publications and Public Affairs
Charles P. Lecht — Vice President, International Relations
William C. Moore — Vice President, Project Development
A. Brickman Brown — Treasurer
Lewey G. Gilstrap, Jr. — Secretary

DIRECTORS

Heinz von Foerster — Chairman
John J. Ford — Executive Director
Lawrence J. Fogel — Immediate Past President
Saul Amarel —
Alexander Fraser —
Harold K. Hughes —
George T. Jacoby —
Robert Pos
Herbert W. Robinson —
Stephen L. Sherwood —

EDITOR

Harold K. Hughes — State University of New York, Potsdam, New York 13676

The ASC NEWSLETTER is published six times a year by the American Society for Cybernetics, c/o Dr. Carl Hammer, 2121 Wisconsin Ave., N.W., Washington, D.C. 20007, for ASC members. Single copies free. Annual dues are $15 for members and $5 for student members.
Canadians Form Chapter of ASC

Sparked by Dr. Roberts Pos, Psychiatrist-in-Chief of the Toronto General Hospital, the Canadian chapter of the ASC was formally recognized by Dr. Warren S. McCulloch on 14 May 1969 at a dinner ceremony in Toronto’s historic Granite Club. The officers of the new chapter are: Dr. Robert Pos, Chairman; Dr. John Ertle, Vice Chairman; Mr. B.B. Goodfellow, Secretary; Dr. K.C. Smith, Treasurer; Dr. Bruce Buchanan, Membership Chairman; Mr. Van Douglass, Liaison Officer.

Others from the U.S.A. in attendance at the seminar on 15 May, besides those pictured below, included Dr. Hail Kafafian, Director of Cybernetic Research Institute (Washington, D.C.) and Dr. Julian Bigelow, Institute for Advanced Studies (Princeton, N.J.).

Papers were presented by Dr. A.M. Albisser, Department of Medical Engineering and Computer Services, Hospital for Sick Children, Toronto; Dr. T. Kasvand, Control Systems Laboratory, National Research Council, Ottawa; Dr. G.R. Engel, Department of Psychology, University of Waterloo; Professor Ian Howard, Department of Psychology, York University; Mr. Douglas Seeley, Departments of Psychiatry and Industrial Engineering, University of Toronto; and Dr. Bruce Buchanan, Department of Educational Administration, Ontario Institute for Studies in Education, Toronto.

1969 SYMPOSIUM PROCEEDINGS TO BE PUBLISHED


Sparks will also publish the 1969 symposium. Pre-publication orders may be placed at a 20% discount from the list price (not yet set but probably between $10 and $12). The publication date is September 1970. With Douglas E. Knight as editor, it will include the papers on campus confrontation, large scale systems and conflict resolutions, and cybernetics in the seventies which were presented to the third annual meeting at the National Bureau of Standards, 14-16 October 1969.

ASC DIRECTOR SAUL AMAREL HEADS RUTGERS DEPARTMENT

After eleven years as head of computer theory research at the David Sarnoff Research Center of RCA Laboratories, Princeton, New Jersey, Dr. Saul Amarel has become Professor and Chairman of the Computer Science Department of Livingston College, the newest of Rutgers University’s three colleges. He plans to institute research in library science, bioengineering, medicine, urban planning, education, artificial intelligence and computer linguistics.

ASC congratulates Rutgers on obtaining such a fine addition to its faculty.
**OBSCURE YOUTH**

"I am convinced," says Bruno Bettelheim in the September 1969 issue of Encounter, "that Viet Nam and the bomb serve youth as a screen for what really ails them. I refer to their feeling that 'youth has no future' because modern technology has made them obsolete — that they have become socially irrelevant and, as persons, insignificant . . . because of their feeling that nobody needs them, that society can do nicely without them . . . That is why they insist that their mission is to build a 'wholly new and different' future . . . Their existential anxiety is that they have no future in a society that does not need them to go on existing."

---

**PROCTOR EDITS SYMPOSIUM VOLUME**


---

**THE EXISTENTIAL COMPUTER**

At the third annual meeting, Arnold Lesti displayed a booklet describing the Existential Computer. It is "made of hardware, has consciousness, free will, emotions, suffers; feels pleasure, pain, anxiety; is creative and engages in reasoning. It has these human qualities because the future is unpredictable, the same as the human brain which is an Existential Computer." If interested, write the author at Andromeda Inc., 10558 Metropolitan Avenue, Kensington, Maryland 20795.

---

**SPACE INSTITUTE COURSE IN ENGINEERING CYBERNETICS**

The University of Tennessee Space Institute at Tullahoma 37388, announces a short course in engineering cybernetics 6-10 April 1970. Address enquiries to Miles J. Maynard.
More Candids from the '69 Symposium

K. Samuelson of Sweden’s Royal Institute of Technology confers with Carl Hammer and John J. Ford.

I. J. Good, Ross Ashby and Lewey O. Gilstrap waiting for a session to start.

Robert Pos, Haig Kajafian, Gotthard Gunther, John Ford and Douglas Knight arguing during intermission.

University of New Hampshire graduate student commenting on one of the papers.

Kauffman and Grossberg Win Medals

The Norbert Wiener Gold Medal of 1969 for the most outstanding paper presented by an author under 35 years of age was awarded to Stuart A. Kauffman for his paper entitled “Cellular Homeostasis, Epigenesis and Replication in Randomly Aggregated Macromolecular Systems.” In presenting the medal, Past President Fogel cited Kauffman for “having achieved a breakthrough in an extremely difficult and highly relevant problem, and having presented with great clarity and lucidity the theoretical and epistemological consequences.” See page 4 for Kauffman’s picture.

The Norbert Wiener Silver Medal of 1969 for the most outstanding paper presented by an author irrespective of age was awarded to Stephen Grossberg for his paper entitled “Embedding Fields: Underlying Philosophy, Mathematics, and Applications to Psychology, Physiology, and Anatomy.” Dr. Fogel praised Grossberg for “having developed a rigorous mathematical framework with apparently sufficient richness to interpret some manifestations of mentation on the macroscopic and microscopic scale.”

WASHINGTON CHAPTER NEWS

Members of the ASC and others interested in cybernetics, close enough to commute to Washington, are invited to attend meetings of the Washington chapter. For dates and topics call or write Lewey O. Gilstrap Jr., Executive Vice President, Adaptronics, Inc., 7700 Old Springhouse Road, McLean, Va. 22101. Phone: 703+893-5450. Lewey’s special interest, by the way, is artificial intelligence.

Cybernetics is a science dealing, on the one hand, with the study of relatively closed systems from the viewpoint of their interchange of information with their environment, on the other hand with the study of the structures of these systems from the viewpoint of the information interchange between their elements.

Jiri Klir and Miroslav Valach
HAMMER ANNOUNCES FOURTH ANNUAL SYMPOSIUM, CALLS FOR PAPERS

“Our gaze will be on the future,” said ASC President Carl Hammer in announcing the society’s fourth annual symposium to take place 7-8 October 1970 at the Sheraton Hotel in Washington, D.C. “We have seen the development of theoretical cybernetics and of computers as parallel but often separate activities in the 60’s. Cybernetics is now coming of age in complex and sophisticated social systems which unite both,” he said.

How cybernetics and computers can interact to solve the great environment problems of our time will be featured under the general symposium title “Cybernetics and the Management of Ecological Systems.”

If you wish to contribute a paper, send its title and an abstract to Dr. Roy Herrmann, George Washington University, Washington, D.C., 20006, the ASC Vice President for Symposia and Programs.

NIXON APPOINTS NATIONAL GOALS RESEARCH STAFF

President Nixon has appointed a National Goals Research Staff under the direction of Leonard Garment. “This will be a small, highly technical staff, made up of experts in the collection, correlation and processing of data relating to social needs, and in the projection of social trends,” the president said.

The Society may take pride that its Executive Director, Dr. John J. Ford, is a member of the staff.

PROBLEMS! PROBLEMS! PROBLEMS! PROBLEMS!

Everyone has them...
And each technological success we enjoy as a result of overcoming problems and difficulties automatically engenders a new series of problems more complex than the ones faced originally.
The field of cybernetics offers mankind significant hope that we will not be overwhelmed by the sheer complexity of the problems which lie ahead.

PURPOSES SYSTMES

FIRST ANNUAL SYMPOSIUM OF THE AMERICAN SOCIETY FOR CYBERNETICS, Edited by Heinz von Foerster, J. D. White, L. J. Peterson, J. K. Russell

... contains 14 papers that discuss that structure and function of purposiveness in man, in machines and in man-machine systems ... and what else is there!

Presented by famous persons from all over the world who are leaders in their diverse fields: philosophy, anthropology, psychiatry, sociology, neurophysiology, behavioral psychology, electronics and microbiology ... they present new and adventurous lines of thought.

Solutions, anyone?

Order No. 9159 256 pp. $10.00

Available through your bookstore or direct from the publisher.

SPARTAN BOOKS A Subsidiary of Publishers Co. Inc.
432 Park Avenue South, New York, New York 10016

Members of the American Society for Cybernetics may purchase volumes at a 20% discount.