PRINTING THE NEWSLETTER
by Roger Conant

I was embarrassed at the low quality of the last newsletter, which was run off on a ditto machine to save money (the cost of putting out the issue and mailing it came to $23.04 altogether, a stingy job) and also a little horrified at the amount of time it takes to do the mechanical work. Fortunately Stuart has discovered a person who seems willing to take on the publication aspects of the Newsletter - Virginia Holt. Consequently I will continue on as the editor, putting things together and producing the final copy, but she will do all the dirty work. Isn't that a fine arrangement? Thanks, Virginia!

If you are not getting this newsletter please notify Stuart Umpleby who in the absence of a membership chairman (see notice in this issue) is keeping the records.

Please, you readers out there, come on into the newsletter with your comments, guiding question, puzzles, jokes, problems to solve ... And to do that kindly address your entries to me at the above address.

NEWS PAGE IN CYBERNETICS FORUM
by Stuart Umpleby

Jean Weir, a former student of mine, has agreed to edit a one page news feature in Cybernetics Forum. It will contain short items of long-term interest, somewhat in the manner of the Periscope page in Newsweek. Look for it!

SOCRATIC SYMPOSIA SERIES
Barry Clemson

Heinz von Foerster, Stafford Beer and Seymour Sarason are the featured guests for the 1980-81 Socratic Symposia Series at the University of Maine. The Symposia are designed to provide extended, indepth dialog among scholars and practitioners.

The Symposia with von Foerster and Beer will be January 12 to 15 in Orono, Maine. The schedule is:

Jan. 12; evening, von Foerster speaks; topic to be selected.
Jan. 13; all day, seminar on self-organizing systems; von Foerster and Beer.
Jan. 14; all day, seminar on self-organizing systems; von Foerster and Beer.
Jan. 15; morning, research consultation with Beer.

The all day seminars will be limited to a maximum of thirty and to those familiar with at least some of the relevant literature.

The Symposium with Seymour Sarason does not yet have a firm date, but will occur sometime during spring semester. Sarason will deliver a speech one evening and will hold an all day seminar the following day.

We can provide a free (or nearly so) place for ASC members to sleep and restaurants are very cheap in Orono - so come join the festivities!

I will gladly provide further information: tel. 207-581-2792.

College of Education
University of Maine
Orono, Maine 04469
GLOSSING OVER CYBERNETICS
by Stuart Umpleby

Two glossaries on cybernetics are now available, one through Paul Henshaw and one through Stuart Umpleby. Henshaw's glossary contains 203 terms in 19 pages. Each term has one short definition. There are two appendices.

The second glossary contains 198 definitions and is 47 pages long. It was developed between 1977 and 1980 by cyberneticians and system theorists in the US, Canada and Europe using the Electronic Information Exchange System (EIES) at New Jersey Institute of Technology. The glossary developed at the International Institute for Applied Systems Analysis in Austria is included within this glossary. Since it is being developed on line, the glossary can easily be updated, and anyone with access to EIES can participate in the discussions that produce the definitions and examples. Henshaw's terms will be added to the EIES glossary as soon as I get a chance to do so.

For a copy of Henshaw's glossary, write to Paul Henshaw, 6050 Camino Esquina, Tucson AZ 85718. For a copy of the EIES glossary, send $4 to cover duplicating and mailing expenses to ASC, 2131 G Street NW, Washington DC 20052. To find out how to get access to EIES, see Newsletter #3.

TIE CLASPS AND PINS
by Stuart Umpleby

The archives of the Society include some jewelry! We have forty tie clasps, seven tie tacks and fifteen pins. The design consists of the ASC symbol in blue enamel letters and the word "cybernetics" in three-dimensional letters down the right hand side. The finish is 22K gold. The tie tacks and pins are almost a square, 3/8" x 7/16". The tie clasps have this same square mounted on a gold bar. They are quite attractive. Six designs were submitted and the final choice was made at a Board of Directors meeting in 1970. The tie clasps are $12 and the tie tacks and pins are $9. Make checks payable to the American Society for Cybernetics and send your order to 2131 G Street NW, Washington, DC 20052. Don't wait! They may not last long.

MODEL BUILDING LAWS
by Barry Clemson

The following statement is slightly adapted from A. Dexter Chapin's formulation of his vocation:

"Model building is part science, part art, part magic.

The model builder is subject to the following immutable laws of nature:

1 - the data you want is not what you need; the data you need is not readily available; the data readily available is not reliable; all remaining data is proscribed by the privacy code!

2 - any model that is readily acceptable to your client(s) is trivial.

3 - building a model that is not trivial is a grimly expensive business.

4 - a well-built, profound model always looks trivial.

5 - finding employment as a model builder is exceeded in difficulty only by remaining employed as such.

A. Dexter Chapin, when last sighted, was busily applying his laws of model building to large scale health systems for the federal government.

LIBRARY SUBSCRIPTIONS
by Stuart Umpleby

Please check the list of schools on page 9 to see whether your library currently subscribes to Cybernetics Forum or the Journal of Cybernetics and Information Science. Library subscriptions are an important source of income for every academic society. Remember, the few minutes it takes to ask a library to subscribe will generate income for the Society for years to come and make the work of leading cyberneticians available to future generations. To find out how to ask your library to order the ASC publications, see page 9.
LEVELS AND BOUNDARIES
from Prof. Dr. G. de Zeeuw

Notice has come for a conference to be held in Amsterdam on April 21-23, 1981, under the aegis of the Systeemgroep Nederland. The emphasis at the conference will be on clarifying problems of levels and boundaries, using experience gained by participants in various disciplines. Rather than reproduce the conference blurb here:- if you are interested contact Stuart Umpleby or Roger Conant who have copies. Hurry though - the deadline for submission of abstracts is December 15, 1980.

SOME THOUGHTS ON DIRECTION
by BRUCE ABELE

I would like to use the newsletter to solicit views on an aspect of cybernetics about which there seems to be a lack of awareness and much misunderstanding. In an attempt to keep this aspect separate from many other subjects using the label "cybernetics", I refer to it as Ashby's cybernetics or the discipline of cybernetics. It is a clear cut body of knowledge well defined in Ashby's classic "Introduction to Cybernetics".

Ashby's cybernetics is a "math" or discipline consisting of a vocabulary (of about 90 words) and a set of associated generalities. It is similar to geometry except that the vocabulary relates to a world of change and complexity instead of to a world of shapes and space. In addition Ashby's emphasis is on the careful development of a vocabulary in contrast to the emphasis on formal proofs found in geometry. Because of this "development" process the vocabulary has an unusual combination of attributes, namely broad generality combined with concreteness, and it is this combination that brings much of the value to the discipline. Like geometry the truths are logical and do not require empirical verification, and like geometry the limitation in its value is not in whether the generalities are true but whether the vocabulary and generalities relate to real world situations in a practical and useful way.

During a career in business which now exceeds 20 years I have found the discipline consistently valuable, almost essential, in helping to understand, improve and solve business (and personal) situations. Reflecting on my formal engineering and business education I would judge Ashby's cybernetics to be as valuable to a business and management career as any subject learned (self-taught) during my educational experience. I have used it to consistently get agreement among members of a group, to succinctly but precisely define complex manufacturing (and other) processes, to define the nucleus of a new form of administration that deals realistically with the bureaucratic problems of the large organization, and to fix everything from difficulties caused by municipal bureaucratic bungling to a motorcycle.

For there to be any significant social benefits from the discipline there are two important conditions which must be met:

1. The discipline must be clearly distinguished from other bodies of knowledge also labeled "cybernetics" (Upgraded Technology, Information Technology, Computer Technology, Goal-seeking Behavior, and Communication in the Animal and Machine to name a few). The important attributes of the discipline, in particular the careful use of a developed vocabulary, become diluted and forgotten when the discipline is confused with other bodies of knowledge with the same label.

2. There must be broad public education in the subject. In contrast to most of the other types of cybernetics it is unlikely that a small body of experts armed solely with Ashby's discipline will discover truths or make predictions of much value to society. On the other hand if taught in high school it would speed up and improve education in the sciences. If the discipline were part of a business and/or government administration curriculum the students would find on entering a working environment that they were able to exert far more influence, and we would see the start
of a number of totally new, practical and realistic ways to deal with the administrative problems that plague us today. Taught to the middle management of large business it would not only have a very positive effect on the bottom line, but would make the organization more socially responsive, getting away from bureaucratic type behavior and getting closer to the responsiveness of the small organization. If taught in medical schools students would find that it opens doors to new ways of understanding and controlling physiological or psychological behavior. Law students would find it close to a math of law and would find that it helps in a broad range of areas ranging from rules of evidence to developing contracts without loopholes.

What is remarkable and exciting about Ashby's discipline are two things: the broad range of direct everyday uses, and the fact that it opens doors to areas of research which have remained untouched almost since their inception.

Most of the direct, everyday type benefits start by translating a problem, question, or situation into Ashby's language (a process that sometimes takes months). The results are twofold:

- The translation simplifies one's perspective of a complex situation, and it does this in a way that preserves the important. The result is that a complex situation becomes manageable. The process is similar to what one does when one puts one's office in order. In the messy state there are close to an infinite number of piles of paper and conscious selection is difficult. In the neat one there are only three or four piles and conscious and reasoned choice is possible. Because the vocabulary is only 90 words the translation per se essentially limits the piles. It is the frequency with which this simplification process can be used, rather than the magnitude of any particular solution that makes it important.

- It makes it possible to take questions, problems, policies, hypotheses and make them actionable and testable. Stated another way, it helps answer the classic "What is the real problem?". I would argue that by going through this process that some of the "guiding questions" that have been presented in the Newsletter would be changed into either non-valid "What is the universal solvent?" type questions or translated into more actionable questions where answers can be directly researched.

Most of the doors that have been opened for research during the last several centuries have come from technological breakthroughs that provide new eyes to the scientist. With the notable exception of statistics, new disciplines have rarely been responsible for these breakthroughs, and as a result we tend to forget the important part disciplines play in the development of a science. Geometry, for example, is essential for the existence of optics, and in a manner similar to the way geometry's language of space supports optics, Ashby's language of change supports empirical sciences dealing with the management of complex change. Some exciting possibilities:

- Science of Administration: Administration is the subject dealing with how people in an organization are best guided toward a common goal, and it is a field where the wheel has barely been invented. Most of the work being done deals with the communicative and coordinative aspects of the task (computer systems for example). The assumption is that the individuals being guided have perfect organizational rationality or in some more extreme cases they behave like simple machines or computers! Both assumptions, of course, are far from
correct and the result is the bureau-
cracy and ineffectiveness that we see
in so many large government and
business organizations.

Science of repair or analysis of
complex mechanisms (A better label
will probably emerge in time): This
science deals with the practical
application of certain common con-
cepts that should be applied in
fixing a complex machine, a large
system or even a medical problem.
These concepts apply over a broad
range of subjects ranging from get-
ting the hostages freed to fixing
your automobile or oil burner, or
eliminating the pain in a sore elbow.

Science of changing behavior through
interpersonal communication (Better
labeling is also expected): Inter-
personal communication is an extre-
mely complex subject, and over the
years many rather astute seat-of-the-
pants type guidelines have been
developed to deal with the subject.
Unfortunately, communicating these
ideas to the inexperienced is diffi-
cult because of the lack of a lan-
guage that is concrete but still
general enough to cover the broad
array of situations that must be
addressed. In addition these guide-
lines are similar to common sense in
that they are sort of local generali-
ties, not broadly applicable, and the
result is that they are often mis-
applied. Ashby's language portends
that by reexpressing the existing
guidelines into this language,
understanding and misapplication
could be minimized.

In summary: Ashby's cybernetics (or the
discipline of cybernetics), if kept seman-
tically separate from other subjects
called "cybernetics" and if given reason-
able publicity, could provide broad and, in
some cases, significant direct and indirect
social benefits.

The purpose of this explanation has been
to present what is fundamentally a set of
hypotheses for testing against the expe-
riences of ASC members. I hope that each
of you will provide me with at least an
informal response. The imposition in
generating this response is, I think,
offset by the benefits that may derive to
both members and the Society if this
subject can be brought to the surface. One
learns more from criticism than from
compliments, so do not hold back. Responses
could be either written or by phone and
might be directed toward any or all of the
following questions:

- Have you, or anyone you know, had
  experiences, either educationally or
  in actual practice, which tend to
  disprove or support the above hypo-
theses?

- Generalizing about generalities is a
difficult communication task. Any
comments on how I could improve the
clarity of the above explanation
would be valuable.

- Are the hypotheses contradictory with
  your experiences? In what way?

I can be reached at (617) 527-6875 or by
writing to Bruce Abele, 23 Russell Ct.,
Newtonville, MA 02160. If there is sig-
nificant interest I will try to respond to
your comments in future issues of the
Newsletter.

ASC TABLE IN TORONTO
by Stuart Umpleby

ASC has purchased a table in the exhibit
hall during the AAAS meeting in Toronto.
We shall pass out brochures and back issue
forms and display copies of journals and
proceedings. No doubt the table would be
more effective if someone were there to
engage curious passers-by in conversation.
This is a great opportunity to practice
your charm and sales technique and to help
ASC grow at the same time. The exhibit
hall will probably be busiest during the
opening days of the January 3-8 confer-
ce. To sign up for an hour or two, send
a note to Virginia Holt, 4520 King Street,
Alexandria, VA 22302.
At the ASC workshop in Washington DC, April 1980, one of the subjects recognized as in need of attention was ethics in the field of science. Feeling appeared to be that ASC action on this matter would be in keeping with goals and principles of cybernetics, and thus desirable. The question, however, was left for people to pick up as they were inclined to do.

When the science and ethics problem, opportunity or need (as the case may be) is examined closely, it becomes evident that that action by any individual, society or publisher risks appearing audacious, bold and presumptuous.

It happens though that during the spring semester, 1980, at the University of Arizona, the writer conducted a colloquium of Honors Students on the subject of Science and Ethics. This culminated in a Science Manifesto intended as a guide useful to young people entering the field of science. Since this document is hard-hitting, and was prepared mainly by students for use by students, it contains needed subject matter and does not involve the element of presumptuousness so far as other kinds of groups are concerned. It thus can be used generally without impunity, and accordingly has been submitted for publication in the CYBERNETICS FORUM.

It is believed that real benefit would come to science, and to cybernetics in particular, if readers will offer comments pro and con to the ASC NEWSLETTER and elsewhere - perhaps suggesting publication of the article in other journals and magazines. Surely science itself will benefit to the extent that this is done.

(P.H.'s address is 6050 Camino Esquina, Tuscon, AZ 85718.)

Discussion of how to improve academic conferences has been going on at least as long as I have been attending them and I am sure much longer. In the last newsletter Barry Clemson noted that the plans for the August 1981 conference in Mexico City call for circulating the papers beforehand and devoting the conference to discussion of the papers. Later the same day I came across the following statement by John Kemeny (who was chairman of the Three Mile Island Commission) in the ASC Forum, November 1968:

I would first like to dismiss the suggested proposal that speeches be written out ahead of time and read before the conference, because I was co-organizer of a conference where we tried that brilliant idea and I can tell you the result. Quite simply, 90 percent of the participants had not read a single one of the papers before they appeared. This, of course, did not stop them from showing their ignorance in front of the entire audience.

He goes on to discuss some uses of videotape. In fact, ASC, through Larry Fogel, received a $6900 grant from NSF in 1968 to do an experiment with a videotaped meeting. See ASC Forum June 1968 and November 1968.

For our meeting in November 1981 I suggest we videotape the tutorials and presentations that look most promising. The best videotapes can be replayed at future conferences, and we shall have a more interesting historical record.

THE MACY FOUNDATION PROCEEDINGS

by Stuart Umpleby

The volumes on Cybernetics, records of the famous conferences which were so important in the beginnings of cybernetics, are out of print. The proceedings of the 6th, 7th, 8th, 9th, and 10th conferences are available on microfilm at a cost of $8.30, $10.25, $12.40, $8.25, and $4.00 respectively (designated symbol OP26,037) from University Microfilms, 200 North Zeeb Road, Ann Arbor, Michigan 48106.
KEY PUBLICATIONS IN CYBERNETICS
by Stuart Umpleby and Heinz Von Foerster

1943 Warren McCulloch, "A Logical Calculus of the Ideas Immanent in Nervous Activity"

1944 John Von Neumann and Oskar Morgenstern, Theory of Games and Economic Behavior, Wiley


1948 Norbert Wiener, The Human Use of Human Beings, Doubleday Anchor
Gert Sommerhoff, Analytical Biology, Oxford University Press

1952 W. Ross Ashby, Design for a Brain, Chapman & Hall


1960 W. Ross Ashby, An Introduction to Cybernetics, Chapman & Hall

1961 Jay Forrester, Industrial Dynamics, MIT Press
Norbert Wiener, God and Colem, Inc., MIT Press

1962 Thomas S. Kuhn, The Structure of Scientific Revolutions, University of Chicago Press


1965 Warren McCulloch, Embodiments of Mind, MIT Press

1966 Stafford Beer, Decision and Control, Wiley

1968 Walter Buckley (ed.), Modern Systems Research for the Behavioral Scientist, Aldine

1969 G. Spencer-Brown, Laws of Form, Allen & Unwin

1971 Jürgen Habermas, Knowledge and Human Interests, Beacon Press
Nigel Howard, Paradoxes of Rationality, MIT Press
W.R. Fuchs, Cybernetics for the Modern Mind, McMillan

Donella Meadows, et.al., The Limits to Growth, Universe Books
Heinz Von Foerster (ed.), Cybernetics of Cybernetics, Biological Computer Laboratory
Looking for a Job?

from Rammohan K. Ragade

The Systems Science Institute of the University of Louisville is presently conducting a search for a new director. The anticipated position will begin August 1, 1981.

We are searching for a person who can administer a diverse research and educational program which aims to solve interdisciplinary problems in decision, ecological, energy, health, psychological, social and urban systems. The University of Louisville has many faculty members who are involved in interdisciplinary studies. The director should be conversant in general systems theory as it applies to the above problem areas. Both theoretical and applied research in systems theory are presently being done at the Systems Science Institute. The director should have had successful administrative and publishing experience. Other requirements are a Ph.D. and an established reputation in a field related to systems science. Responsibilities will include teaching, conducting personal research, interacting with university and community leaders and obtaining grants. Please send applications and nominations, or request further information, by writing to the Chairman of the Search for the Director Committee, Systems Science Institute, University of Louisville, Louisville, Kentucky 40292.

Membership Chairperson Needed

by Stuart Umpleby

Phyllis Carr has had to step down as membership chairperson due to her husband's serious illness. We need someone to take over this job. Calls to several people have not located a successor. This is a society of very busy people.

The membership chairperson would keep the membership list current, send out announcements for each year's membership dues, and coordinate the membership drive which is already well underway in terms of planning. This position has been vacant for several weeks and I have been filling in. But I do not have the time to continue doing this job. At the present time no one is keeping the membership list up to date. This is a very important function. We need to fill this post as soon as possible. If you would be willing to serve as membership chairperson or would like to recommend someone, please call or write to me at 202/676-7530, 2131 G Street NW, Washington DC 20052.

We also need a publicity chairman and someone to encourage, organize and coordinate local chapters.
HELP NEEDED ON LIBRARY SUBSCRIPTIONS

Below is a list of U.S. libraries that subscribe either to the Journal (J) or the Forum (F) or both. If any library in your area does not now subscribe, please call or write to the serials librarian. Ask that the library subscribe to Cybernetics Forum and that all back publications of the ASC be purchased. Every back issue order that we get is worth $350 to the Society. We need these back issue orders right away in order to deal with a short term cash flow problem. This is very important. Please act right away.

1. Argonne National Laboratory J 23. Tufts University J
4. Florida State University J 26. U. of California-Santa Cruz J
5. George Washington University JF 27. Univac J
7. Harvard University F 29. University of Arizona F
8. Illinois Institute of Technology J 30. University of Calgary J
11. McGill University J 33. University of Houston J
12. McMaster University J 34. University of Iowa J
13. Michigan State University J 35. University of Maryland F
14. MIT J 36. University of Rochester J
16. Naval Research Laboratory J 38. University of Texas J
17. Princeton University J 39. University of Utah F
18. Purdue University J 40. University of Washington JF
19. San Jose State University J 41. University of Wisconsin JF
20. Southern Illinois University J 42. Virginia Polytech University J
21. SUNY - Albany J 43. Yale University J
22. Texas A&M J

If we get our membership up the way we hope to in the next few years, our few back copies (about 100 to 150) will become rare. We would like to place them in major university libraries.

The proceedings and journals contain articles by the founders of cybernetics including Warren McCulloch, Ross Ashby, Heinz Von Foerster, Gordon Pask, Larry Fogel, and many more. These publications are a fascinating record of the thinking going on at the time the ASC was being born.

Please make copies of the attached materials for friends in your area. Ask them to have their institutions subscribe. Then send the forms to your library.

To the Serials Librarian:

Attached is a list of the back copies of the publications of the American Society for Cybernetics. I would like for our library to have these publications so that they will be available to my students and colleagues. Would you please order these back copies and enter a subscription to Cybernetics Forum.

Sincerely,
ORDER FORM FOR BACK ISSUES
50% Discount for Members

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