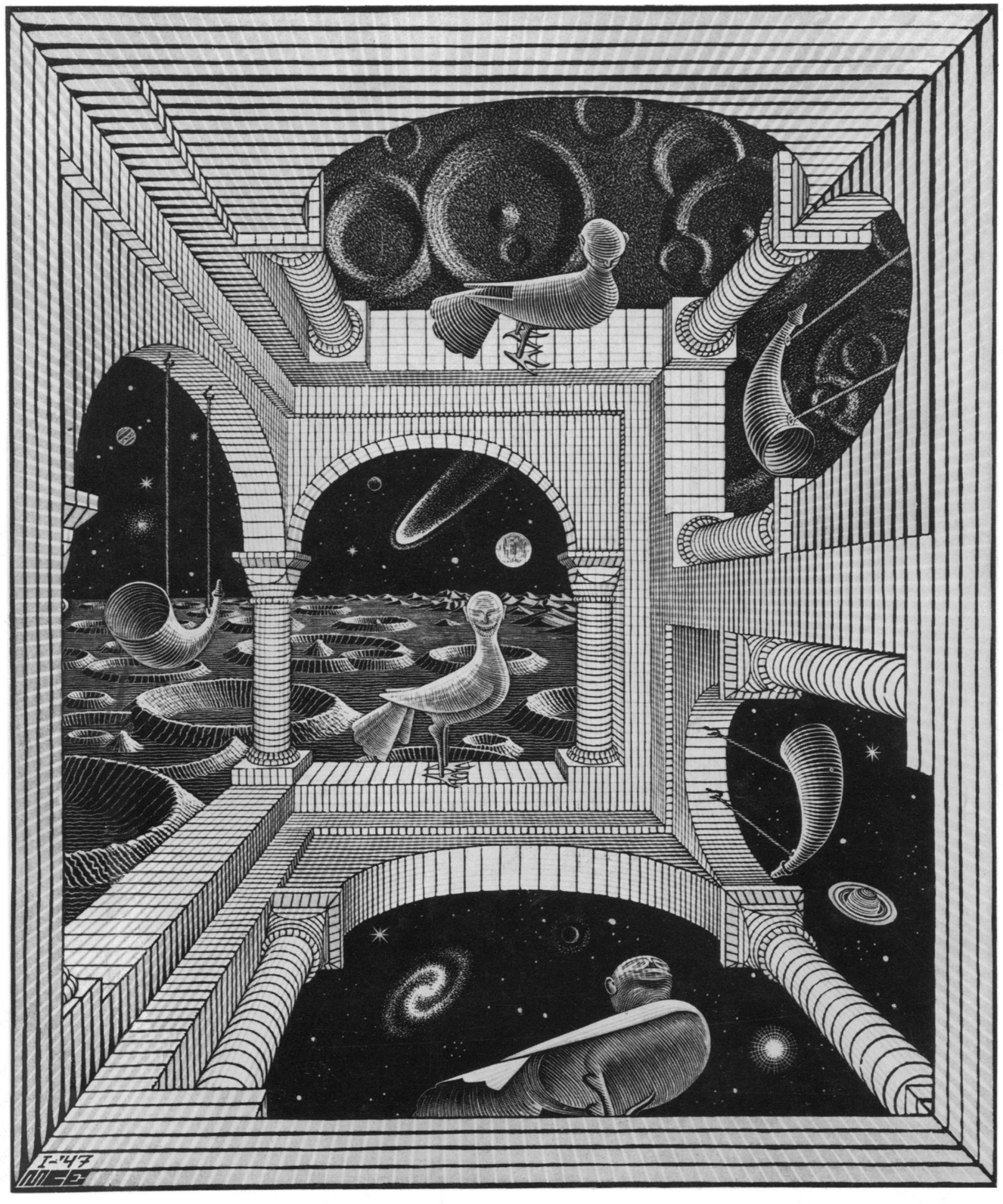
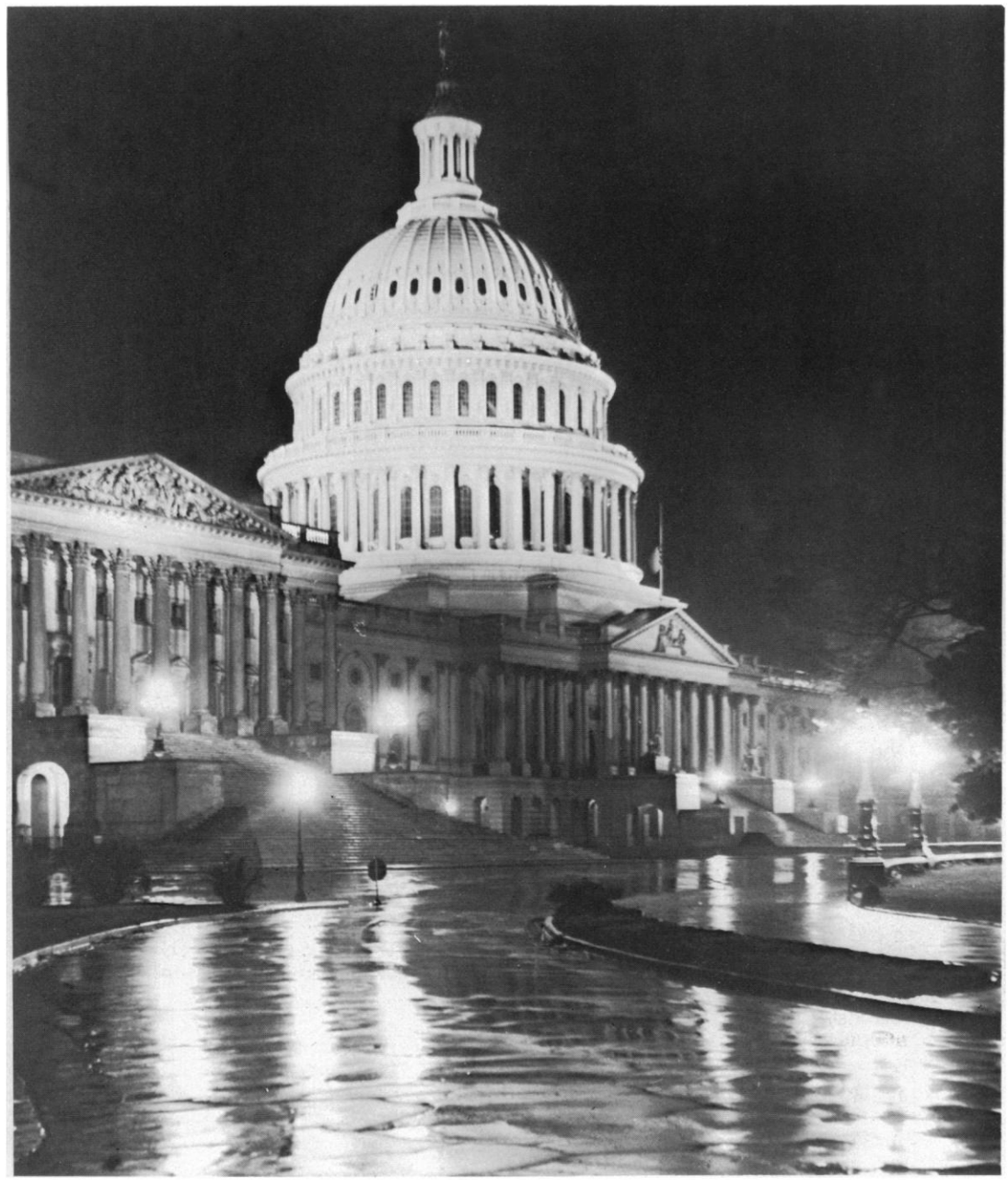
3 February 1978 • Vol. 199 • No. 4328 $1.50

SCIENCE

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE



WASHINGTON TAPES



Annual Meeting
Washington
12-17 February 1978

aaas

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IF YOU THINK IT DOESN'T MAKE MUCH DIFFERENCE
WHERE YOU BUY YOUR LIFE INSURANCE...

please look at this cost comparison for $50,000 5-Year Renewable Term Policies issued by TIAA and the ten largest U.S. life insurance companies!

20-Year Average Annual Costs* for $50,000 5-Year Renewable Term Policies

	Policies Issued To Men			Policies Issued To Women		
	Issue age 25	Issue age 35	Issue age 45	Issue age 25	Issue age 35	Issue age 45
TIAA	**$102.50**	**$213.50**	**$497.00**	**$ 81.50**	**$142.50**	**$316.50**
10 Largest U.S. Companies:						
Aetna	216.00	352.00	814.00	210.00	301.00	644.50
Connecticut General	223.00	378.50	816.50	204.00	313.00	673.00
Equitable	187.00	343.50	754.00	163.50	297.50	677.50
John Hancock	200.50	344.00	750.00	192.00	307.50	659.00
Massachusetts Mutual	196.00	337.50	737.00	184.50	313.00	683.00
Metropolitan	188.50	347.00	779.50	162.50	267.00	565.00
New York Life	189.00	337.50	751.00	171.00	281.00	602.00
Northwestern Mutual	163.00	300.00	684.00	147.00	264.00	592.00
Prudential	164.00	300.00	592.00	146.00	242.00	462.00
Travelers	200.50	360.50	820.00	182.00	281.00	603.00
Mean Cost for 10 Companies	**192.75**	**340.05**	**749.80**	**176.25**	**286.70**	**616.10**

*Based on 1977 premium rates and dividend scales, adjusted for interest (4%) to recognize the time value of money; dividends not guaranteed.

You can see from these figures that owners of TIAA policies enjoy substantial cost advantages over persons insured by the country's largest commercial life insurance companies—companies that sell one in every three policies purchased by Americans each year. As a staff member (either full-time or part-time) of a nonprofit educational institution you are one of the limited group that qualifies for TIAA and the big savings this eligibility can bring.

To give you an idea of savings possible, the figures show that, as compared to TIAA:

the mean cost for $50,000 5-Year Renewable Term policies issued to 35-year old men by the ten largest companies is 59% higher, a dollar difference favoring TIAA, adding up to more than $2,500 over the next 20 years; even the company in the group that appears to offer the best bargain demands a cost 40% higher than TIAA's;

the mean cost for $50,000 policies issued to 35-year old women by the ten companies is double that of TIAA, indicating savings close to $2,900 for the person choosing TIAA; for the most attractive commercial policy shown, women will pay 70% more over the years than for a TIAA policy giving them the same benefits.

You can get all the facts about a TIAA 5-Year Renewable Term policy that can help secure the future for your family by contacting the TIAA LIFE INSURANCE ADVISORY CENTER. Either telephone collect 212-490-9000 and ask for one of the Insurance Counselors

Alan L. Fox, C.L.U. Joan Scott, C.L.U. Kenneth Sawyer Robert Cassidy

Or mail this coupon. In either case there are no strings attached and no one will call on you.

Life Insurance Advisory Center
TEACHERS INSURANCE & ANNUITY ASSOCIATION
730 Third Avenue, New York, N.Y. 10017

Li

Yes—I'd like to know more about TIAA 5-Year Renewable Term Insurance policies. Please send personal illustrations for my age.

Name and Title _____ Date of Birth _____

Address _____

City, State, Zip _____

Nonprofit Employer (College, University, Private School, Etc.) _____

If your spouse is also eligible according to the rules described, please provide:

Spouse's Name _____ Date of Birth _____

Eligibility for TIAA is extended to employees of colleges, universities, private schools, and certain other nonprofit educational or scientific institutions, and to the employee's spouse when more than half of their earned income is from an eligible institution.

TIAA *The College World's Insurance Association*

ISSN 0036-8075

3 February 1978

Volume 199, No. 4328

SCIENCE

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AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

REPORTS

COVER

The wood engraving, *Other World*, by M. C. Escher, serves to stimulate the imagination to the possibilities of extra-terrestrial life. See page 485. [Courtesy of the Escher Foundation—Haags Gemeentemuseum—The Hague]


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Ever wonder about * and

With * and #, new telephone services will soon be at your fingertips. These services will be possible because technological innovations from Bell Laboratories and Western Electric are transforming the nation's telecommunications network.

For example, with * and #, you may be able to arrange distinctive ringing for incoming calls from telephones you designate.

You'll be able to protect your privacy by having callers get a "do not disturb" signal when they dial your number; or, when you dial a call and reach a busy signal, you'll be able to set up a callback system that will wait until the line is free, then ring your phone and the one you're calling automatically.

A New Kind of Network.

New telecommunications technology designed by Bell Labs and manufactured by Western Electric is bringing you this versatile network. Its main elements are an array of electronic switching systems (ESS) interconnected by high-capacity transmission links, and a new "signaling" system to carry call-handling information.

Stored-Program Control.

At the heart of each ESS is something called stored-program control. With it, the system's calls are controlled by coded instructions, stored in a memory and executed by a central processor. New features can be added by updating the stored instructions rather than rewiring or making complex equipment changes.

The new signaling system that will connect these switching systems operates like a high-speed private intercom. It carries all the information needed to handle each call and frees time on the voice circuits that previously carried such information.

Over 1000 local and long-distance ESS's are already in service, and twenty regional centers for the new signaling network are in place.

These innovations are possible largely because of advances in solid-state electronics. Because of their decreasing cost, low power consumption and speed of operation, today's integrated circuits are enabling engineers to design more capability into communications systems at lower cost.

Building on Bell System accomplishments such as Direct Distance Dialing, digital communications and high-capacity transmission systems, modern electronics permits the new network to handle a wide variety of communications needs.

Continuing Innovation.

All these technical achievements, and their integration into the telecommunications network, result from the close collaboration of Bell Labs, Western Electric and Bell System telephone companies.

Because of this teamwork, Bell telephone companies will give you the innovative services represented by * and # and continue to provide the world's most reliable telephone service for the least $ and ¢.

Bell Laboratories

The Sinclair Cambridge Programmable with library of 290 programs. A mere $34.95.

How pocket calculators grew up

A couple of years ago, calculators took a step forward. Programmability transformed the slick slide-rule calculator into an advance scientific machine.

Sadly, it also transformed an inexpensive aid into a $100–$200 capital investment.

Now the Sinclair Cambridge Programmable puts programmability where it belongs; in the palm of your hand, for less than $35.

The features of the Sinclair Cambridge Programmable

The Cambridge Programmable is genuinely pocketable. A mere 4-1/2" x 2", it weighs about 2 oz. and operates on a 9 volt battery (available anywhere).

Yet there is absolutely no compromise in the package of functions it offers.

Because the Cambridge Programmable is both a scientific calculator with memory, algebraic logic and brackets (which means you enter a calculation exactly as you write it), and a programmable calculator which offers simple, flexible through-the-keyboard program entry and operation.

The Cambridge Programmable has a 36-step program memory, and features conditional and unconditional branching (go to and go if negative).

There is also a step facility, which allows you to step through the program to check that it has been entered correctly. If there is any programming error, the learn key allows you to correct single steps without destroying any of the remainder of the program.

To achieve this, each program keystroke has an identifying code, or 'check symbol'. (The symbols for the digit keys are the digits themselves, while the symbols for the operator keys are letters printed beside the keys.)

The check symbol for ⊟, for example, is F. So if, as you step through the program, the display shows

it means that ⊟ is programmed as step 26. If step 26 should have been ⊞, all you have to do is press

puts machine into 'learn' mode. **the correct step**

It's as simple as that!

These facilities make the Cambridge Programmable exceptionally powerful, whether it's running programs you devise or programs already available to you through the 290 Program Library included when you purchase the calculator.

You can use the 290-program library to tailor the machine to your own specialty

Like a full-size computer – and unlike far more expensive specialist calculators – the Sinclair Cambridge Programmable can be programmed to handle calculations concerned with any specialty. In fact, once it's programmed, figures can be produced by an operator who need not understand the program!

To save you time, and to help inexperienced programmers, Sinclair has produced a library of 290 programs ready to be entered straight into the calculator.

Using these standard programs, the Cambridge Programmable solves problems from quadratic equations (where the program gives both real and imaginary roots) to twin-T filter design, and from linear regression to bond yields. It even plays a lunar landing game!

Why the Cambridge Programmable costs so little

The Sinclair Cambridge Programmable uses the Sinclair talent for miniaturization to the fullest – as you'd expect from the company that pioneered the truly pocketable pocket calculator, and recently introduced the world's first pocket TV.

Chip and circuitry design are unique to Sinclair. Shipped direct, and sold to you direct, the Cambridge Programmable accumulates no middleman's profits on the way.

The result is a pocket programmable calculator of advanced design, sold by Sinclair with a Sinclair 1-year complete guarantee, at a price unmatched by any comparable calculator.

10-day no-obligation offer

There's a lot more to this remarkable calculator than a brief written description can cover.

You need to see it and handle it . . . to program it yourself in a few seconds to save you hours . . . to check its performance against tables and graphs . . . to test the full range of programs available . . . to evaluate. An excellent engineering tool. Also can be used as an educational aid in developing a student's computer understanding.

Send your check or money order with the order form below, and you'll receive a calculator direct. Use it for 10 days, and if you don't feel it's the finest $34.95 you've ever invested, send it back for refund.

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Mail your order today.

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SC 2

To: Sinclair Radionics Inc., Galleria, 115 East 57th Street, New York, N.Y. 10022, USA.

Enclosed is check/MO payable to Sinclair Radionics Inc.

Please send me _____ (qty) Sinclair Cambridge Programmable(s) at $34.95 each, including full instructions, and complete library of 290 programs. $_____

_____ (qty) AC line adaptor(s) at $4.95 $_____

Sales tax (NY resident) $_____

Post and packing $ 2.50

Total $_____

Name _____

Address _____

City _____

State _____

Zip _____

(PLEASE PRINT)

I understand that you will refund purchase price in full if I return calculator(s) and accessories in same condition as received within 10 days of receipt.

Signature _____

Now, Lois, about who will be wanting these two new photography works . . .

The key word in the one title is **theory;** in the other title it's **practical.** Both are encyclopedic, though the one on theory is all in a single 714-page volume organized not alphabetically but like the Kodak Research Laboratories, whose people wrote it.

For a sample of the kind of folks who might want that one, one might visit the photographic science department of the University of Moscow. In the department's conference room with its portraits of distinguished photographic scientists, one notes that a prominent place is occupied by portraits of S. E. Sheppard and C. E. K. Mees. To these scientists without beards the present volume owes its origin. They were both 21 in 1903 when they published their first papers. On the strength of eleven subsequent papers published as "Investigations on the Theory of the Photographic Process," they were jointly awarded the degree of Doctor of Science by University College, London in 1906. After a few years they settled in Rochester, N.Y., where Mees founded and directed the Kodak Research Laboratories.

By 1942 he felt that the Laboratories' progress with the theory, quite walled off from all that had been accomplished on the proprietary side, justified knocking off the first two words of the old title for the title of a new book. Now, with 36 more years of sophistication in chemistry, solid-state physics, and related disciplines, succeeding generations of Kodak scientists share their deepened understanding with colleagues everywhere for whom photography is more than a way to get pictures. The completely rewritten Fourth Edition of *The Theory of the Photographic Process* issues from Macmillan Publishing Company's College and Professional Division.

It is equally appropriate to have American Photographic Book Publishing Company (AMPHOTO) as our partner on the 14 volumes that will have appeared by the end of this year for people who want to keep within arm's reach relatively brief explanations of just about anything that comes up in talking photography and doing it—explanations that can be followed without anything like the background of study expected in the orals toward a doctorate. The whole comes to some 2800 pages splashed with many an exemplary photograph in color or b&w. To help judge scope, here are the topics in the first volume:

Contents
Volume 1

To help decide whether to order the whole set, photo stores and book stores have information on which topics are in the other volumes.

This is for people deeply committed to photography as a profession, an art, a business, or an engrossing hobby rather than as an interdisciplinary science.

Kodak

3 February 1978, Volume 199, Number 4328 **SCIENCE**

Being Practical About Space

Explorer I, America's first satellite, went into orbit 31 January 1958, just 20 years ago. The American space program, scientific and commercial, has followed at an unprecedented rate. Our record in space has been upbeat all along. Perhaps space shines the brighter when we contrast our success there with the way we founder in a slough of dollars in education, health care, welfare, and other government activities. But space has been remarkably rewarding by any standards, private or public. Why is this? It is because we—the people and our government—have been willing to try new and promising things without any guarantee of success.

In a strictly practical way, this has created and is creating useful things which have never existed before. It is an American technology of building and launching communication satellites that has put remote and undeveloped nations in instant touch with the rest of the world, and that can provide internal communication among the sparsely settled provinces of Canada and the many islands of Indonesia. It is an American technology of surveillance that in part makes SALT agreements meaningful and therefore possible. American satellites easily provide navigational and positional data of hitherto unprecedented accuracy. They show at a glance the paths of hurricanes, the course of the Gulf Stream, the growth of crops, the quality of water in lakes, and the evolution of urbanization. And they will show more.

Communication satellites have had an unqualified technical and *economic* success. Intelsat, the International Telecommunications Satellite Consortium, has a membership of 101 nations, assets of around $400 million, and an annual revenue of around $155 million. It provides about 20,000 half-circuits (one-way) worldwide. Comsat, the manager and American participant, derives over $150 million in annual gross revenues. Other American companies or groups have launched six satellites for domestic communication service, and more will follow. In other satellite applications, economic success may have to wait on the development of a community of users large enough and skilled enough to cash in on new sorts of data.

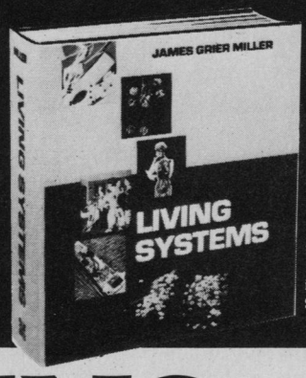
In all experience, users and needs follow rather than precede innovation. No one is born needing the telephone, and society before 1876 got along very well without it. Once invented and promoted, the telephone became addictive to individuals and nations. A user community grew up. So it was with railroads, automobiles, and airplanes. There was no widespread economic impact until a long course of technological endeavor had demonstrated an addictive capability. With that came economic success.

When new things become as successful as communication satellites have, government funding can be turned to promising new space endeavors. But not everything we try can or should succeed in economic or social terms. The point is, nothing new will succeed unless we try new things, and keep at them long enough to give them a fair chance to change the world.

Some areas of space appear to be reserved perpetually for our government or competing governments. We must continually spend government money to ensure that our launch capabilities keep ahead of those of the rest of the world. Without this, even the most lucrative uses of space will pass into other hands. Adequate government support will also be needed to continue and extend planetary exploration and other radically new space *science*. In stretching so far, it may be a long time before we see a financial return. There are other considerations. Our successes in space science and exploration shine in the world and will shine in history.

If space science, including planetary exploration, is not adequately funded, we will lose an art which, having led us to glory, may lead us much farther. A future without adequate support in this area of great national success would be dismal indeed.—JOHN R. PIERCE, *Department of Electrical Engineering, California Institute of Technology, Pasadena 91125*

Announcing an important new scientific integration... in a monumental new book... written by a pioneer behavioral scientist...



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LIVING SYSTEMS

by James Grier Miller, M.D., Ph.D.

A book that brings order out of complexity

The literature of science is growing exponentially. The number of scientists is increasing rapidly. And their scientific discoveries pour out in such volume that many important findings go unnoticed. Often their full meaning is not appreciated.

In this massive, worldwide production of scientific knowledge—is there any hope of one specialty learning from another—or even relating to another?

The answer now is YES—with the advent of James Grier Miller's significant new book.

Dr. Miller analyzes current knowledge about seven levels of living systems that are normally studied in isolation by dozens of scientific specialties—the cell . . . the organ . . . the organism . . . the group . . . the organization . . . the society . . . and the supranational system.

He demonstrates that *all these systems* have *fascinating similarities.* He describes the 19 subsystems that are vital to the survival of *every* living system—from a heart cell to the European Economic Community. And he shows how each living system has "shredded out" to create the next higher system—over billions of years of *evolution.*

As you read Dr. Miller's theory—and the hundreds of empirical examples he provides to support it—you'll see that the differences between scientific specialties and their technical jargons mask important similarities in their subject matters. You'll discover amazing but very real *continuity* between all the biological and social life sciences. And this insight will give you a whole new view on *your own* special field of knowledge.

Practical applications suggested

Dr. Miller examines the normal processes as well as *pathologies* at the seven levels of living systems. For example, his work suggests that—

- *schizophrenics* may be victims of a narrower-than-normal channel capacity for processing information
- *inefficient executives* are often plagued by an overload of information inputs. (Dr. Miller's research on this topic was discussed in Toffler's *Future Shock.)*
- ineffective organizations can function better when distorted communications in them are corrected

This far-ranging general theory has potential, very specific applications to engineering . . . medicine . . . management science . . . the law . . . energy systems . . . environmental systems . . . health delivery systems . . . urban systems . . . industrial systems . . . communication systems . . . computer systems . . . and other types of living or technological systems.

How do others evaluate this book? Read what one scientist says . . .

"This is a book for *mature scientists* who have had many years of experience as scientists, for they will find much of their knowledge newly organized and illuminated in new contexts, and pointed toward unsolved new questions.

"But it is also a book for active *research workers* and *research leaders* who are carrying on the work of science today and who are pressing toward the next imminent advances, for these people will find here dozens, perhaps hundreds, of research ideas that can be fruitfully developed now."

Karl W. Deutsch, *political scientist*
Stanford Professor of International Peace, Harvard University

Leading scientists talk about *Living Systems*

"enormously illuminating"–Margaret Mead

"Scientists, from anthropologists to political scientists, and all students of living systems will find here a way of looking at changing scales, but comparable problems, which will enormously illuminate and simplify their attempts to relate one level of living system to another."

Margaret Mead, *anthropologist*
former President, American Association for the Advancement of Science

"magnificent"–Bentley Glass

"In these days of such tremendous increase in the amount of scientific knowledge, the need for a critical synthesis is imperative. This is what James Grier Miller has done. . . . There lies here a magnificent, pregnant view of the complexities of life."

Bentley Glass, *biologist*
Distinguished Professor Emeritus of Biology, the State University of New York at Stony Brook, and former President, American Association for the Advancement of Science

"brilliant"–J. C. R. Licklider

"This book is the magnum opus of a brilliant, far-ranging, and comprehending mind."

J. C. R. Licklider, *psychologist and computer scientist*
Professor of Electrical Engineering and Computer Science, MIT

"epochal" and "elegant"–Warren Bennis

"*Living Systems* is an epochal book. It is elegant in style and approach and possesses a conceptual and integrative lust that manages to revive in the reader a sense of what the behavioral sciences are all about. This is . . . a classic that will influence the behavioral sciences far longer than the lifetime it took Miller to write it."

Warren Bennis, *social scientist*
former President of the University of Cincinnati

The man behind the theory

James Grier Miller, a founder of systems science, is President of the University of Louisville. He was educated at Harvard University and has served on the faculties at Harvard, the University of Chicago, the University of Michigan, and Johns Hopkins University. At Chicago he was Chairman of the Committee on Behavioral Sciences and the Department of Psychology. At Michigan he founded and directed the Mental Health Research Institute.

The man who first used the phrase "behavioral science" in its modern sense, Dr. Miller has written or coauthored eight books and published over 100 scientific and scholarly articles.

Table of Contents

1. The need for a general theory of living systems. 2. Basic concepts. 3. Structure and process. 4. Hypotheses concerning living systems. 5. Information input overload. 6. The cell. 7. The organ. 8. The organism. 9. The group. 10. The organization. 11. The society. 12. The supranational system. 13. Conclusions.

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Annual Meeting Washington

12-17 February 1978

An Invitation

Come and join your colleagues from across the nation and around the world to share in *the* scientific experience of this year. We have arranged a truly fine scientific and cultural event for your edification and enjoyment. For details about the Program, see the Preconvention Issue of *Science*, 6 January 1978, pages 45–57; for information about tours, see the 20 January issue of *Science*, pages 286 and 287.

Your place is waiting, come to the Sheraton-Park and Shoream Americana hotels in Washington. You may register for the Meeting when you arrive and check at the Tour Desk for additional activities. If you can get to only one meeting this year, make sure that this is the one; it is unparalleled for its breadth of coverage and attention to the key issues of our time.

Science and Technology: New Tools, New Dimensions

1. General Interest

. . . frontiers of science . . . recombinant DNA . . . sociobiology . . . stress . . . blacks and women in science . . . science fiction . . . awards.

2. Energy

. . . critical resources . . . comfort conditioning . . . socioeconomic effects . . . batteries . . . economic growth . . . renewable resources . . . alternative systems . . . R&D investment . . . life-cycle costing . . . federal policies.

3. Tools of Science

. . . photography and imaging . . . computers . . . viewing the universe . . . invention . . . ion microscopy . . . mathematics . . . TV and computer graphics.

4. Engineering and Technology

. . . macroengineering . . . hypergraphics . . . corrosion . . . appropriate technology . . . social priorities . . . international economics . . . developing countries.

5. Physical Sciences

. . . gravitational physics . . . x-ray astronomy . . . extraterrestrial intelligence . . . humans in cosmos . . . life in universe . . . picosecond chemistry . . . naked eye.

6. Climate and Land Use

. . . weather extremes . . . weather forecasting . . . hail suppression . . . remote sensing . . . LANDSAT . . . desertification . . . natural resources . . . climatic futures.

7. Biological Sciences

. . . ions in muscles . . . mathematical questions . . . gene manipulation . . . genes and gender . . . dinosaurs . . . inorganic nitrogen . . . endangered species.

8. Agriculture and Food

. . . Latin America . . . food and energy . . . meat . . . new crops . . . agricultural research . . . pesticides.

9. Medicine and Health

. . . genetic disease . . . preventive dentistry . . . pharmacology . . . social sciences and health . . . environmental factors . . . cancer.

10. Behavioral Science

. . . health care and behavior . . . aphasia . . . brain and behavior . . . leadership process . . . executive development . . . mental health . . . psychoanalysis . . . cocaine.

11. Human Development and Habitation

. . . aging . . . development of infants . . . the middle years . . . extended household . . . families in metropolis . . . aged in families.

12. Anthropology

. . . the village . . . fertility decline . . . culture patterns through films . . . emergence of language . . . auditory mode . . . public anthropology . . . eastern U.S. Indians.

13. Methodology of Science

. . . role of models . . . mathematics applied to social science . . . information systems . . . limits on scientific progress . . . unconventional ideas . . . experimenter influence . . . language of science.

14. Scientific Freedom and Responsibility

. . . religious movements . . . peer review . . . expertise in democratic society . . . "isms" in 20th century . . . whistle blowing . . . regulation of inquiry . . . human rights.

15. Education and Opportunities

. . . issues in science education . . . interpreting science to public . . . broadcasting satellites . . . science's publics . . . early intervention . . . culturally-based education . . . rights and needs of handicapped . . . post HS youth . . . education for deaf . . . models of learning.

16. Policy Development

. . . technological risk and decision making . . . bureaucracies . . . academic science . . . regulations: technological change and ethical issues . . . operations research . . . OMB, OSTP, OTA . . . energy, technology, communications and society . . . general systems.

17. Policy Issues

. . . solar-system exploration . . . population, resources, and environment . . . drug crops . . . international activities . . . U.S.–U.S.S.R. exchange . . . extended marine jurisdiction . . . federal vs. state energy policies . . . advising at state level . . . views from Congress . . . governing urban space.

Annual Meeting
Washington
12-17 February 1978

For further details, see the 4 November issue of *Science*.

Chicago Meeting in 1979

It is not early to begin thinking about the next following Annual Meeting in Chicago (3–8 January 1979). Since this Meeting will be some 6 weeks earlier in the year than the forthcoming Meeting in Washington, it is particularly important that the Meeting preparation deadlines are adhered to. The new dates will be the official Meeting dates from 1979 on.

If you have a suggestion for a symposium for the Chicago Meeting, please submit the following information to us **no later than 31 March 1978**:

a. Name, address, affiliation, and phone number of person who will arrange the symposium.

b. Title of symposium.

c. Brief (200-word) statement of the purpose of the symposium.

d. List of probable speakers (do not confirm until the suggestion is accepted), their affiliations, and probable topics.

We are particularly interested in symposia which deal with the latest developments in science and technology and the implication of these developments for society. All suggestions for symposia are reviewed during the month of April and arrangers will be informed about acceptances, requests for modification or merging with other suggested symposia, or nonacceptance in early May. The preliminary program (the symposium as it is likely to take place at the Meeting) for those which have been accepted is due at the Meetings Office by the end of June.

Final program copy with all speakers and topics fully confirmed, typed to the format of the Meeting Program, is due at the end of August. Although this schedule is tight, it does not differ substantially from the old schedule we used to live by when the Annual Meeting took place over the Christmas–New Year's week.

Send your suggestions to:

Dr. Arthur Herschman
AAAS Meeting Office
1776 Massachusetts Ave., NW
Washington, D.C. 20036