IEEE PROFESSIONAL COMMUNICATION SOCIETY NEWSLETTER

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Patterson Speaks to ASEE Section

The following remarks were made by Tom Patterson, PC's President, at the Mid-Atlantic Section Meeting of the American Society for Engineering Education held at General Electric Company's Management Development Institute, Croton-on-Hudson, New York, May 6, 1978. Tom was then Manager of Technical Communication at GTE Laboratories, Waltham, Massachusetts. He took part in the ASEE meeting as one of four panelists, two from industry and two from academia, in a session called "Communication Skills: Is the Recent Engineering Graduate Sufficiently Skilled?" Other panel members were: R. Jacks, Union Carbide Corporation; J. Holahan, Pennsylvania State University; D. C. Andrews, Drexel University.

I am a professional communicator in industry. My main function is editing. I manage a group which types, illustrates, and publishes company reports, but part of my assignment is to read everything that leaves GTE Laboratories--articles, papers, reports, etc. These are prepared by engineers or scientists on a wide variety of subjects. In general, the writing swings from very good to very bad, and in general, the scientists write better than the engineers.

The reason for this difference may be that scientists tend to be more concerned with ideas and to explain their ideas in writing, whereas engineers tend to work with hardware and drawings and have less incentive and opportunity to write.

At GTE Labs, scientists and engineers are encouraged to write by receiving a $50 honorarium for each paper published. As far as I know, we are the only major laboratory that pays honorariums. At Sylvania, a GTE subsidiary which employs mostly engineers, the honorarium has just been raised from $100 to $200, but still very few Sylvania engineers submit papers.

Together, the 50 engineers and 150 scientists of GTE Labs publish approximately 100 papers a year. The scientists' writing, on the whole, is good, the engineers' only fair, but all improve with practice and coaching. In my experience, recent engineering graduates in general write poorly. The scientists who come to GTE with advanced degrees, and also some writing experience, write better.

What of instruction in writing at colleges and universities? At the University of Virginia in the 1940's, an electrical engineer was required to have 152 course-credits to graduate. Of those 152 credits, 24 were in English. There were no electives. English consisted of one 3-hour course for each of eight semesters covering writing, literature, and speaking. Virginia now specifies only 12 hours of English for the same engineering degree. Even though a senior thesis is still required, the English department does not review it. And even though Virginia has elective courses in English, I doubt if those engineers who need the most help with writing choose to take such courses.

Many of our colleges and engineering schools have "bonehead" courses in writing--that is, all entering students take a writing aptitude test, and those who score low must take and pass a remedial writing course. This seems to be one solution to the undergraduate writing problem, but more satisfactory results could be obtained by paying attention to the "lower" education of far younger students.

A recent article in the New York Times (April 30, 1978; Education) explored the writing dilemma in depth, concluding in part that today's young people are audio/visual oriented--to radio and TV; they do not read nearly enough of the classics which would expose them to good writing and thought. Part of this prob-

lem of reading and writing could be solved at elementary and secondary school levels.

In the late 1960's, the school costs of my town were under 50% of my local taxes. Now they are considerably more than 50%. And all over the country, the question is being asked, "Are we getting our money's worth?"

Recently on NBC's Nightly News (May 1, 1978), John Chancellor pointed out that more and more states are testing high school seniors for basic reading and writing skills. One reason given is sagging SAT scores (for college entrance). The new tests are being ordered by politicians, not educators. Thirty-three states now have some form of minimum-competency laws, and the reason John Chancellor was reporting was that the U.S. Congress is considering a national minimum-competency law. There is little chance that such a law will be passed, as control of education is one of the last bastions of states' rights; but the possibility at least alerts us to the national character of the problem.

Tests now being given to high school seniors cover basic reading and writing skills. They include how to read a bus schedule, how to fill out a job application, how to apply for a social security card, how to balance a check book, how to make change.

Eighteen percent of high school seniors are failing these tests. In Florida, if they fail, they don't graduate; in Maine, they graduate whether they fail or not. You, members of ASEE, are expected to educate these people who can't read. I, a member of industry, am expected to hire these people who can't write.

The costs to industry are becoming excessively high--for errors, for misunderstandings, for correcting faults in reading and deficiencies in writing. Remedial measures are expensive too:

* I am organizing a technical writing course, in-house, administered by Northeastern University; our company will pay to improve employee writing skills.

* I have organized a Toastmasters Club. The company pays all expenses, supplies a room, and gives time off to help employees improve speaking skills.

The employees who need this help aren't the 18% that John Chancellor was talking about. These are scientists and engineers with bachelor's, master's and doctor's degrees. They have good ideas but often cannot express them very well.

Managers often spend extra personal time to help these scientists and engineers improve their writing and speaking skills. But here again industry is paying for instruction that should have been given years before.

Incidently there is a high correlation between being elevated to manager and having communication skills. I have observed it--and it is logical.

This conference was called primarily to define problems. When you meet in the fall to explore solutions, I hope you won't waste time by allowing industry and academia to point fingers at each other. That has already been done many times.

The basic difficulty is that we have let our elementary and secondary school systems fail--they are providing inadequate education. We must insist that they teach basic reading and writing.

My two sons are now in college, and I haven't paid much attention lately to elementary and secondary education, but my lack of attention has perhaps already hurt me and my employer. I have come to feel that we should all be continuously concerned about basic education, as citizens and taxpayers, whether or not we are parents, however old our children are, whether or not we are professional educators, whatever the level or subject of our teaching. It will take a long time to improve reading and writing skills in this country--perhaps more than a generation.

Our tests of about-to-graduate high school seniors show that we should have applied our concern for their education much earlier. If we work to ensure that our children learn and practice basic skills of reading and writing in the lower schools, you will have better students in college, I will have more productive employees in industry, and the U.S. will have better citizens--who might even be interested in seeing that fundamentals are taught to their children from the very first day in the classroom.

Letter from the Editor

While PC's Transactions concerns itself with big problems like copyright, phonetic spelling, graphics, and satellite-assisted publication, this Newsletter has begun to consider more intimate questions:

* What are the personal communication interests of PC-ers?

* Can we do anything specific to help engineers for whom English is a second language?

* How can we better understand the technical activities of other IEEE Societies?

* Who else, beside PC-ers, cares about quality in communication?

These questions are raised here, and some responses appear on the following pages. If individual PC-ers have similar--or different--concerns related to communication, or ideas to share about communication --why not communicate with other PC-ers through an Area Representative or this Newsletter?

The Newsletter of the IEEE Professional Communication Society is published quarterly by the Professional Communication Society of the Institute of Electrical and Electronics Engineers, Inc., 345 East 47th Street, New York, NY 10017. Sent automatically and without additional cost to each member of the Professional Communication Society. Printed in U.S.A. Second-class postage paid at New York, NY, and at additional mailing offices.

Persons and organizations receiving this Newsletter are welcome to circulate and reprint material from it. Please acknowledge the IEEE Professional Communication Society and the original sources cited.

Ad Com Meeting

PC's Advisory Committee met on June 16 at IEEE Headquarters in New York City. Highlights of business transacted and announcements made are as follows:

1. Appointments--John Phillips as chairman of Nominating Committee, Pat McBride as liaison to Society for Technical Communication, George McClure as head of Editorial Advisory Board, Dan Rosich as AdCom member to fill 1978-80 term left vacant by resignation of Jane Swanson.

2. Resignations have opened two positions on PC's AdCom--one for a term which expires next year and one for a term which expires in 1980. Nominations for these two positions and for the six that must be filled for the 1979-81 term will be welcomed by John Phillips, RCA Bldg. 204-2, Cherry Hill, NJ, 08101.

3. Six members who have agreed to be Area Representatives were sent the names and addresses of "local" PC-ers. See separate article.

4. PC membership brochures have been sent to about 3000 IEEE members whose Technical Interest Profiles indicate that they are interested in PC but are not now PC members.

5. Ron Blicq's presentation of the two-day workshop, Technical Communication and Report Writing, was so successful at E-Systems, Inc. (Greenville, TX) last March that the company is planning to have another session.

6. PC's AdCom will meet next on Friday, September 15, 1978, at IEEE Headquarters, in the United Engineering Center, 345 E. 47th Street, New York, NY. Friends of PC and PC members-at-large will be welcome.

PC's Transactions

The Transactions on Professional Communication will continue to feature audiovisual and graphic techniques in 1978 and 1978. For example, forthcoming papers will discuss slide making, preparation of visual presentations, a color graphics program, and the scope of multimedia work.

In issue number one or two next year we will be looking at the concept of creativity and inventiveness, the requirements for claiming invention, the documentation of inventions, and patent application writing.

Patent protection for inventions is analogous to copyright protection for literary and artistic works. However, in contrast with an application for copyright registration, which consists of a typical form accompanied by a copy of the work to be registered, a patent application is a literary work in itself--technical writing at its most demanding level. From the inventor's notes, drawings, and verbal descriptions a technical disclosure document must be developed that satisfies the letter and the spirit of the law as well as the rules, regulations, and practices of the U.S. Patent and Trademark Office.

The Editor welcomes individual, original contributions, as well as recommendations of useful articles to be reprinted from specialized or limited distribution publications. Topics may come from any discipline that can aid in the development of communication skills. Our twofold aim is to provide pragmatic material on communicating technical information from originator to user, whatever the medium or mode, and also to take note of some of the newer ideas, methods, etc., in wide-ranging aspects of communication.

Papers need not fit special categories, and authors need not be IEEE members. Work in many non-engineering disciplines, e.g., art, management, medicine, psychology, and social sciences, may be of interest and value to communicators of technical information. Manuscripts should be submitted to the Editor in an original (including artwork) and two complete copies.

Suggestions for topical issues and, especially, proposals from volunteer coordinators for the contents of such issues will be warmly received by the Editor. The external perspective that can be provided by a guest editor often enhances the value of topical issues.

As an experiment in graphics, the submittal of ideas or artwork for the covers of future PC Transactions will also be welcome. To be used, graphics must be compatible with the title lines and production of the cover and must be relevant to Transactions content.

R. J. Joenk, Editor
Transactions on Professional Communication
IBM Corporation
Boulder, CO 80302

Area Representatives

Six PC-ers have agreed to be Area Representatives, as listed below. If an appointment has not been made for your area, why not volunteer? If an Area Representative writes to you, why not answer?

K. Bramham	- France and Holland
E. Giovanetti	- Italy
A. Ledbetter	- Alabama and Louisiana
D. Rosich	- Long Island, Westchester County, and New York City, New York
P. Welch	- Oakland, East Bay, San Francisco, and Santa Clara Valley, California
R. Woelfle	- Arizona, New Mexico, Oklahoma, and Texas

OOPS !

In our last issue (April 1978), an incorrect price was given for Barbara A. Simmons' Typing Guide for Mathematical Expressions. Correct instructions for ordering are as follows: STC members send $4, others send $6, to Society for Technical Communication, 1010 Vermont Avenue, NW, Washington, DC 20005. PC regrets the error but hopes the correction will call more attention to this very helpful publication.

Welcome To PC!

New members of PC who joined us in April, May, and June came from 15 countries and 15 of the United States. Welcome to all! How many will be active PC-ers? Remember that we get more benefits by doing more work.

Australia
J. N. Tylor
M. G. Duncan

Brazil
M. D. A. Eilho

Canada
A. R. Lunan
Z. L. Szaplonczay
J. S. Pataky
E. Psarras

El Salvador
N. Taboada-Rodriguez

England
B. R. Harrington

Finland
J. O. Luoma
T. Kari
F. Ahlbach
S. J. Haara

Iceland
A. Bjarnason

Italy
S. Rotella
P. A. Peiser
M. Carosi

Japan
S. Kawata
J. Togashi

Korea
B. Jeiin
S-M. Ryu

Mexico
T. A. Martinez
E. R. Martinez-Garzo

Nicaragua
J. A. Ley

Nigeria
A. A. Ayeni

Saudi Arabia
Y. S. Balaghaniam

United States

California
G. O. Young
B. A. Fasbender
C. J. Scott
H. A. Calvin
A. M. Allen

Connecticut
J. C. Miller

Florida
K. N. Schuettpelz

Georgia
D. A. Beatty
C. O. Davis
J. L. Montalvo
J. G. Pritchett

Illinois
J. L. Moore
M. B. Norris
B. E. Goers

Maryland
L. H. Hill
C. B. Hofmann

Massachusetts
S. J. Rodowicz, Jr.
J. P. Ladds

Michigan
E. H. Schlaps
C. L. Roche

New Jersey
J. Mera
D. A. Silver

New York
J. S. Machuzak
R. L. Barnard
T. Barlam

Oregon
A. M. Abed

Pennsylvania
E. J. Podell
B. H. Chauhan

Texas
F. J. Sawicki

Virginia
K. J. Dodd

Virgin Islands
C. J. Davidson, Jr.

Self-Interest

PC needs

1. AdCom members.

2. Area Representatives.

3. Instructor/markers for home-study course, Technically--Write!

4. Artwork for Transactions cover.

5. Articles for Transactions.

6. Panelists for conferences in May and June, 1979.

By helping to fill one of these needs, YOU can benefit in four ways, regardless of your technical specialty. Call or write to a PC officer or chairman and learn how to

obtain personal satisfaction
add to personal accomplishments
increase professional competence
improve professional image

Working actively for PC will help YOU, on the job and off the job, as it has helped others.

Education Committee

Ron Blicq, Education Chairman, reports that 60 persons have enrolled this year in PC's home-study course, "Technically--Write!" Twenty have completed all course requirements. Information about the course is available from IEEE headquarters and PC officers, or write to Ronald S. Blicq, Box 181, Postal Station C, Winnipeg, Manitoba, Canada, R3M 3S7.

Ron will hold a half-day seminar, "Communication Guidelines for Managers," as part of the Joint Engineering Management Conference in Denver, October 16-18. This course is being given as a complimentary service to the Engineering Management Society.

Ron will also chair a program session, "Teaching Technical Writing/Communication to Engineers," at the Frontiers in Education Conference at Lake Buena Vista, Florida, October 23-25. The FIE Conference is a joint effort of the IEEE Education Group and the ASEE (American Society for Engineering Education).

As a speaker in Ron's FIE session, Dan Rosich, PC's Secretary, will discuss the role of professional societies in developing engineers' communication skills and the work of PC in engineers' continuing education.

Immediately after the FIE Conference--that is, October 26-27--Ron and Dan will give the two day workshop, Technical Communication and Report Writing, which is sponsored by PC and IEEE's Educational Activities Board.

Information About P C

The following documents are now available from PC's Area Representative in southwestern US:

PC's Constitution and Bylaws
Job Descriptions for Members
of PC's AdCom

For copies, write to Robert M. Woelfle, E-Systems, Inc., P.O. Box 1056, Greenville, TX, 75401.

Personal

George McClure, a member of PC's AdCom, recently received an Outstanding Service Award from the Vehicular Technology Society as editor of VT's Transactions. Congratulations, George!

Communicate, PC-ers!

Wanted: A member of PC who is also a member of the IEEE Computer Society--or vice versa--to review or summarize articles from Computer for PC's Newsletter.

Much of the material in Computer is of great general interest, but as published is too detailed and specialized to be appreciated by the majority of PC-ers. Subjects like

The Architecture and Selection of Military Computer Families,
Comparison of Computer Communication Networks,
Shaded Computer Graphics,
Need for a Common Programming Language
Computer Program Testing

could be represented simply, in layman's language, by someone knowledgeable about computers.

Indeed, PC-ers in all branches of engineering could perform a most valuable service by writing brief reviews of articles from IEEE Transactions, even from other technical journals, for publication in this Newsletter. In most cases, the abstract, introduction and conclusion, with perhaps some background information or short explanation, would make a communication of great general interest.

How about it, PC-ers? What is happening and being written about in other IEEE Societies?

When the grass looks greener on the other side of the fence, it may be that they take better care of it over there.

Science Film Symposium

Sci/Com 78, third biennial symposium of the American Science Film Association, will be held at the Museum of Science & Industry in Chicago next November 7-10. Major program blocks will be devoted to energy, preventive medicine, computer animation, films in the university, and emerging technology. The sixth program block will honor someone whose individual contribution to the field of science and communication deserves national and even international recognition.

Sci/Com will begin at 6:30 on Tuesday evening with a reception and the first of two evening shows of scientific films; it will end on Friday, with optional tours lasting until 4 PM.

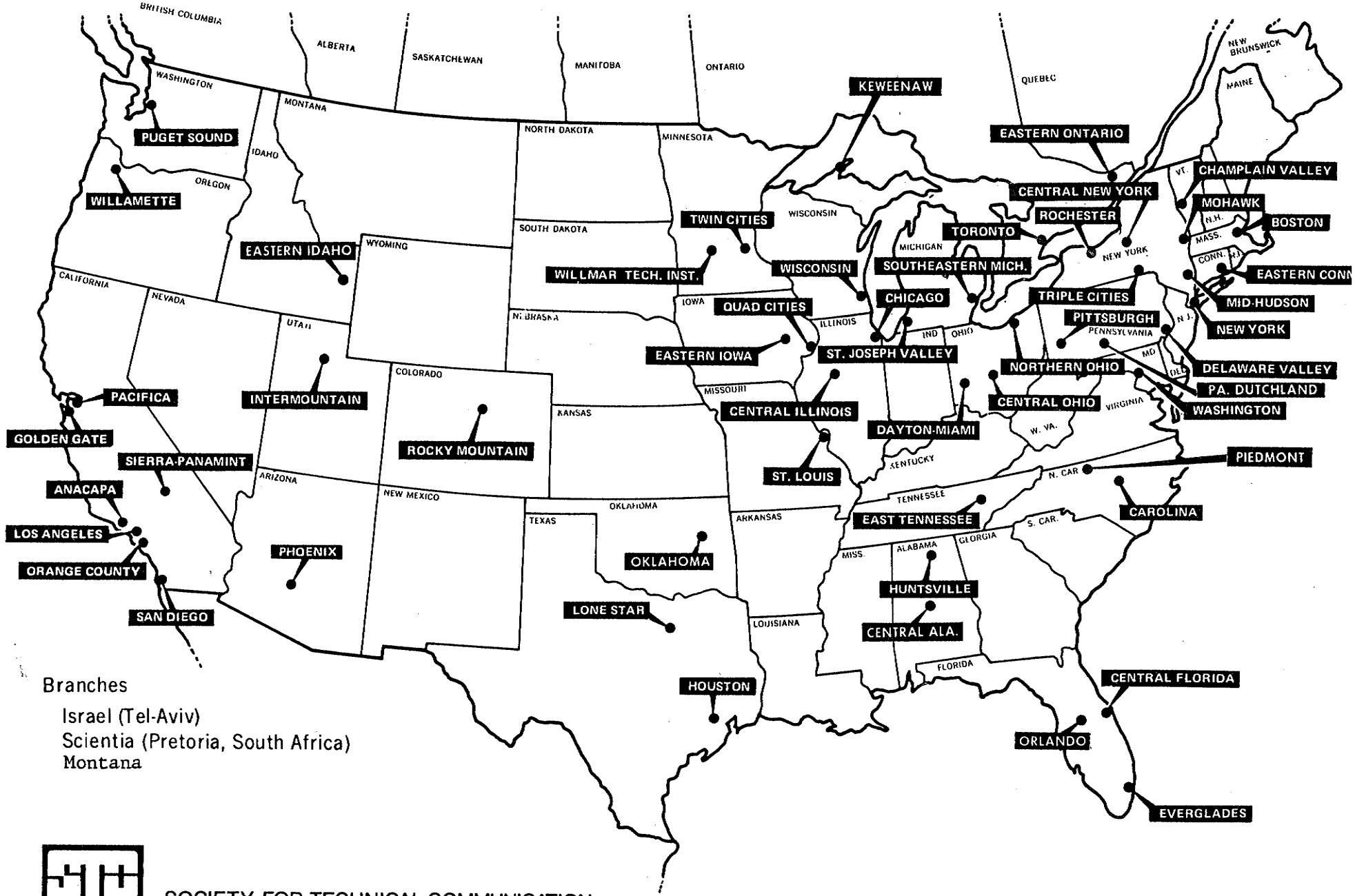
One of the special attractions will be the film/video showcase running throughout the three days. At least 30 subjects will be chosen for the program blocks and evening screenings, and more than 100 others will be available in a library/screening room set up for individual viewing.

Sci/Com is open to everyone interested in science and communication via television, motion pictures, slides, and other media. Obtain more information from ASFA headquarters, 3624 Market Street, Philadelphia, Pennsylvania 19104, telephone (215) 387-2255.

For the previous Sci/Com, held in 1976, the International Scientific Film Association brough delegates to Philadelphia from 23 nations; US and Canadian groups jointly sponsored the first Sci/Com in Rochester (NY) in 1974.

Of course we would not rule out the use of common sense in solving the problem, but first we must exhaust every other possibility.

STC CHAPTERS



Branches

Israel (Tel-Aviv)
Scientia (Pretoria, South Africa)
Montana

SOCIETY FOR TECHNICAL COMMUNICATION

May 1978

Roots

To make possible more direct and personal contact among PC-ers, or among PC-ers and other communicators, two projects have been suggested.

The first is to identify individual PC-ers as Area Representatives in as many geographical areas as possible, and through them to encourage the meeting of small groups of PC-ers and others interested in communication. Bert Pearlman, PC's Vice President, is coordinating this activity. Write to him if you are interested.

The second is to take advantage of an invitation recently extended by the Society for Technical Communication through Dave Dobson, STC's liaison to PC and a member of PC's AdCom.

STC has about fifty active Chapters; most are in the U.S., but there are two in Canada (Toronto and Eastern Ontario), one in Tel Aviv, and one in Pretoria. PC-ers need only mention their IEEE affiliation to be welcomed cordially by any of these groups, not as a potential member but as a colleague and associate.

The map which accompanies this article shows the location of STC Chapters. Names and addresses of Chapter Chairman are available from the editor of this Newsletter or from STC headquarters, 1010 Vermont Avenue, N.W., Washington, DC, 20005.

Communication Notes

Because PC is an organizational member of the Council of Communication Societies, members of PC may subscribe to the CCS's monthly newsletter, Communication Notes, at reduced rates.

This "digest of news for communication professionals" summarizes articles about all aspects of message sending and receiving--legal, written, graphic, aural, technical, broadcasted, televised, commercial, political, international, personal, organizational, academic, etc.

It also prints a running 6-month calendar of coming communication seminars and conferences.

Communication Notes is an excellent newsletter. Send your name, address, and IEEE member number with check to CCS, P.O. Box 1074, Silver Spring, MD, 20910. Annual subscription prices:

	To Members of CCS Member Organizations	To Others
Within U.S.	$6.00	$12.00
In Canada or Mexico	$10.00	$16.00
Elsewhere (air mail)	$18.00	$24.00

I know what's wrong with this organization, but I won't quit!

Notes from Communication Notes

The May, 1978 issue of Communication Notes contains brief discussions of the following (among other things):

* The U.S. Department of Commerce has recently established a new policy-research-regulation group, the National Telecommunications and Information Administration.

* Placards of pictures and poetry are being displayed along with advertising spreads on transit systems in eight major U.S. metropolitan areas.

* A three-year-old magazine, Famille et Developpment is circulating in 35,000 copies in the French-speaking countries of Africa. It deals with the basics of life, economics, and technology from the African point of view for Africans.

* The Modern Language Association and the American Council of Learned Societies are working together to promote the teaching of foreign languages in the U.S.

* For $1.50 anyone can visit the Museum of Broadcasting in New York City and hear or view in privacy any of about 2000 radio and television programs.

* Several books on the art, craft, and technique of interviewing are available from U.S. publishers.

Elsewhere in IEEE

In the April, 1978 issue of Systems, Man, and Cybernetics Review, newsletter of IEEE's Systems, Man, and Cybernetics Society, William B. Rouse reviewed The Rise of Systems Theory by Robert Lilienfeld. PC-ers interested in learning about the methods and usefulness of systems engineering may find the review and the book good points of departure.

* * * * * * * *

In the June, 1978 issue of Circuits and Systems, newsletter of IEEE's Circuits and Systems Society, an article by Edwin R. Lewis discussed the application of network theory to biological processes. Professor Lewis gave particular attention to the 3-step process of phototransduction which underlies vision in the animal kingdom. His paper is highly specialized and may be incomprehensible to many PC-ers, but the idea of vision (i.e., retinal function) as a network suggests that we take much for granted when we speak of "receiving" a written message.

* * * * * * * *

Did you know that in 1862--just 18 years after Morse built the first telegraph line (between Baltimore and Washington)--a picture was sent by wire from Amiens to Paris? Or that electric television systems were being developed in the U.S. during the 1870's? Do you understand the accomplishments--or have you only, perhaps, heard the names--of Nipkow, Ives, Sworykin, Sarnoff, Farnsworth, and Goldmark? Do you know how television "works," through camera, control, and viewing?

Send $3 to the IEEE Service Center, 445 Hoes Lane, Piscataway, NY 08854, and ask for the May, 1978 issue of the IEEE Communications Society Magazine. It contains Part I of "The History of Television," 14 pages of well-presented facts, clear diagrams, delightful portraits, pictures of old equipment, and impressive citations.

Identification

The IEEE's double-arrow emblem is available as gold-and-enamel jewelry--lapel pins, tie tacs, tie bars, and bracelet charms. Colors and designs distinguish Institute grade and function.

Gold arrows on a green ground signify a Student Member; gold on red, an Associate; gold on light blue, a Member; gold on dark blue, a Senior Member; white gold on gold, a Fellow.

For officers, the small square emblems are mounted on not-much-larger gold discs, with light blue borders for Society officers and white borders for Institute officers.

Prices range from $3 to $8 for pins and tie tacs, from $4 to $10 for tie bars. Charms are $25--the emblem is mounted on a considerably larger plain gold disc.

Also available are fabrikoid binders for IEEE Spectrum, Proceedings, and Transactions; each holds a year's issues and is labeled on the spine ($6).

IEEE necties ($8) are dark blue with an overall pattern of light blue emblems.

IEEE T-shirts--"Love on EnginIEEEr"--cost $3.75 for either "his" or "her" circuit design in small, medium, large, and extra large sizes. For further information, write to IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854.

Dues

Each of us wonders from time to time what various organizations, including the government, do with our money. In fact, we usually feel that our decisions on how the money should be spent would be an improvement. The attached chart shows the flow of all IEEE funds, but I will limit my discussion to the basic $35.00 dues.

The Institute has 183,000 members in ten regions throughout the free world. For these members, they maintain records, process mail, publish magazines and papers, sponsor conferences, and promote educational activities. The actual breakdown of each member's dues for these activities is as follows:

Publishing		
Spectrum	$4.69	
Annuals	.16	
Directory	.17	$5.02
Technical Activities		
Standards Support	$ .64	
Cash transfers to groups & societies	2.79	
Special technical projects	.65	$4.08
Field Activities		
Direct cash transfer to regions and sections	$3.48	
Administrative support	2.01	$5.49
Education Activities		
Support of accreditation	$1.23	
New member education products	.21	$1.44
Membership Communication		
Correspondence	$ .99	
New member promotion	.31	
Member accessories	.02	
Record maintenance	2.24	$3.56
General Administration		
General accounting	$2.70	
B of D - Executive Committee, etc.	2.77	
General office support	1.55	
Committee support	2.99	$10.01
Surplus Yielding Activities		
Interest, services sold, etc.	$(3.25)	$(3.25)
Support of Special Dues Categories		
Retired members Student members		$8.65
		$35.00

Each of us might, if given the decision, change the allocations to some of these categories, but your $35.00 buys a lot. You will notice that none of the activities classified as "Professional" appear on this list; they are funded from the regional assessment of $10 voted by the U.S. members. Over the years, the effective value of IEEE dues has shrunk because of inflation. In fact, today's dues would have to be $44 to equal the $25 paid in 1962. Despite this, IEEE services have increased because of increased efficiency and the Surplus Yielding Activities. I think that my dues are well spent.

--B. W. Masland, Chairman of IEEE Baltimore Section, in the Section Newsletter, March/April 1978.

This job is helping me develop a more even temperament--always miserable.

Words Around the World

F. A. Sowan, editor of The Communicator of Scientific and Technical Information, has graciously given permission for PC's Newsletter to reprint, from time to time, articles and summaries of articles from his quarterly. He also called attention to a transposition of letters in the acronym of his organization (p. 7, column 2 of PC Newsletter for April): in the article on the French ACT, the English Institute of Scientific and Technical Communicators should have been referred to as ISTC.

Two articles and one summary from The Communicator appear elsewhere in this Newsletter. The articles are full of "local color": they refer to £s, to British companies, addresses, and Standards, to things that people of the UK are thinking and doing in relation to communication.

Are there other articles, from other countries, with different kinds of local color, that PC-ers would enjoy also? Send them, or let us know about them. Communicators of IEEE, communicate!

Effectiveness

Two articles in The Communicator of Scientific and Technical Information (ISTC) for April 1978 concern bases for judging communicative effectiveness:

Maurice Ryan, in "How Do We Judge a Speaker's Competence?" rates speeches on a five-point scale for each of the following:

1. Content--extent and accuracy of information and vocabulary
2. Grammar--suitability and correctness of usage
3. Speaker's voice--range and tone
4. Presentation--speaker's manner and posture; visual aids
5. Effectiveness--suitability for audience and for achievement of purpose

Marilyn McMenemy, in "Testing Engineers' Writing Ability," tells of plans for determining if there is any correlation between the performance of candidates in two types of editing test:

1. Subjective.

   A verbose, confusing passage is given, with instructions to rewrite by improving style, format, and organization as needed.

2. Objective.

   Sets of possible "corrections" for various types or sub-types of grammatical usage (e.g., punctuation of a complex sentence, particular use of the comma or apostrophe, subject-verb agreement, dangling phrases or clauses, word usage or meaning) are given in context, with instructions to choose the "best" version in each set.

Examinations of both kinds might be prepared and used together in examining the writing ability of individuals in any group or any subject.

Oops!

F. A. Sowan, editor of The Communicator of Scientific and Technical Information and its News Supplement (ISTC in Great Britain) has a keen eye and ear for the ridiculous. Recent issues of his Supplement have offered the following examples of what oft was thought but never so poorly expressed:

From the Supplement of Nov./Dec. 1977:

--compact in terms of depth
  (The [London] Times)
--escalate into a confrontation
  ([British] Radio 3)
--basically, in a nut shell
  ([British] Radio 3)
--if your level of pay tails off
  ([British] Radio 3)
--ongoing recurring costs
  (computer salesman)
--major de-bottlenecking project
  (marketing report)
--ball-park costing
  (marketing report)

From the Supplement of Feb. 1978:

--refacilitization
  (Chrysler Record via The Times)
--facility for being able to
  (advertisement)
--a basis flow on which we can build
  (Radio 3)
--a vast urban conurbation
  (chairman of one)
--bugs could be ironed out of regulations
  (government report)

From the Supplement of March 1978:

--choosing to live at an elevated life-style
  (letter in The Times)
--not trying to preserve anything as such
  (Radio 3)
--nothing wrong, as such, with the book
  (The Listener)
--by far the best playing as such
  (The Listener)

Thank you, Mr. Sowan. We hope to borrow, from future issues of your News Supplement, other bad examples as such, I mean, that you have found, usagewise.

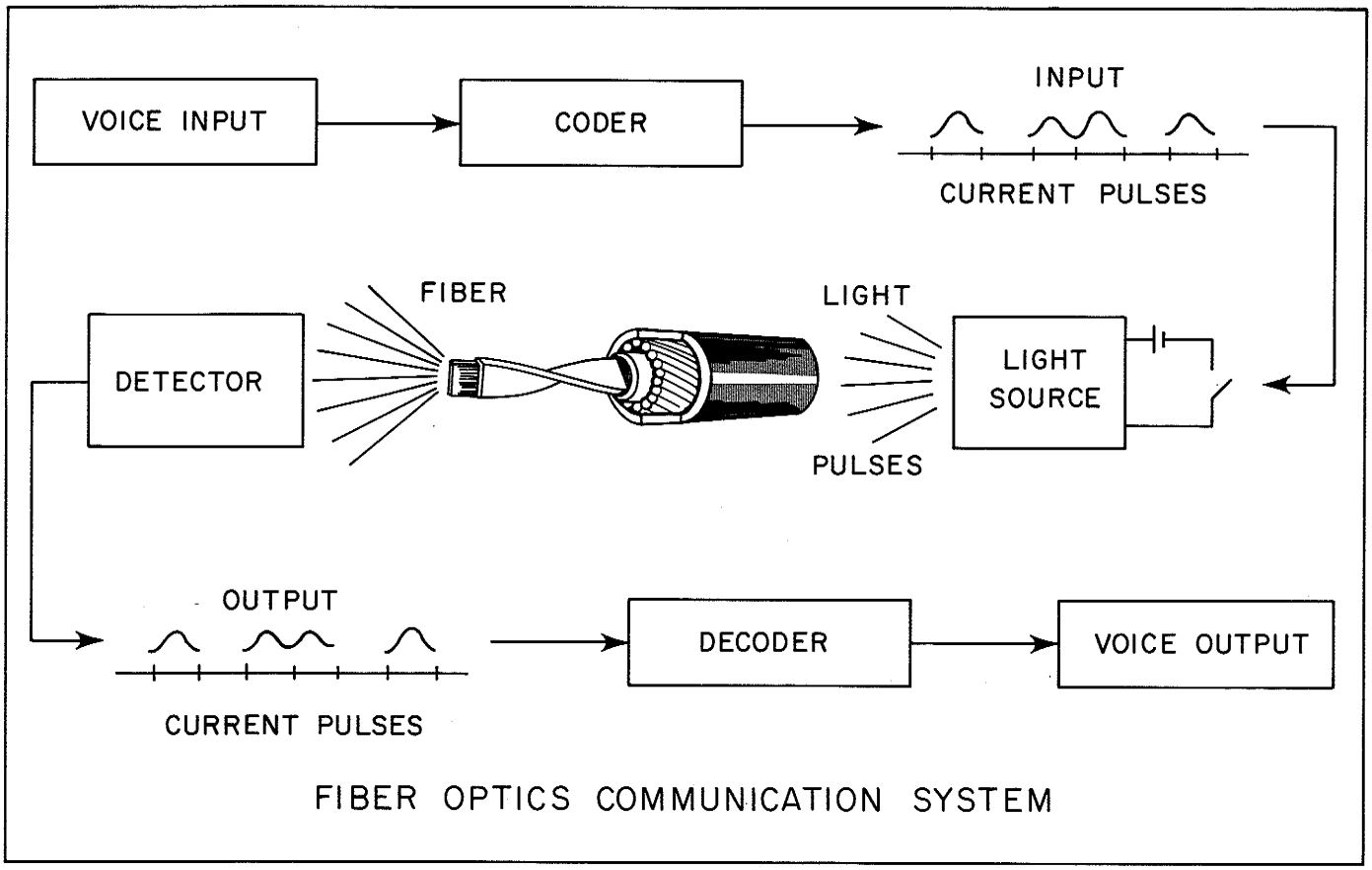
A Number is .....?

A number of men is setting out for the Matterhorn early this morning, but it will not all reach the summit. A lot of words is wrongly used.

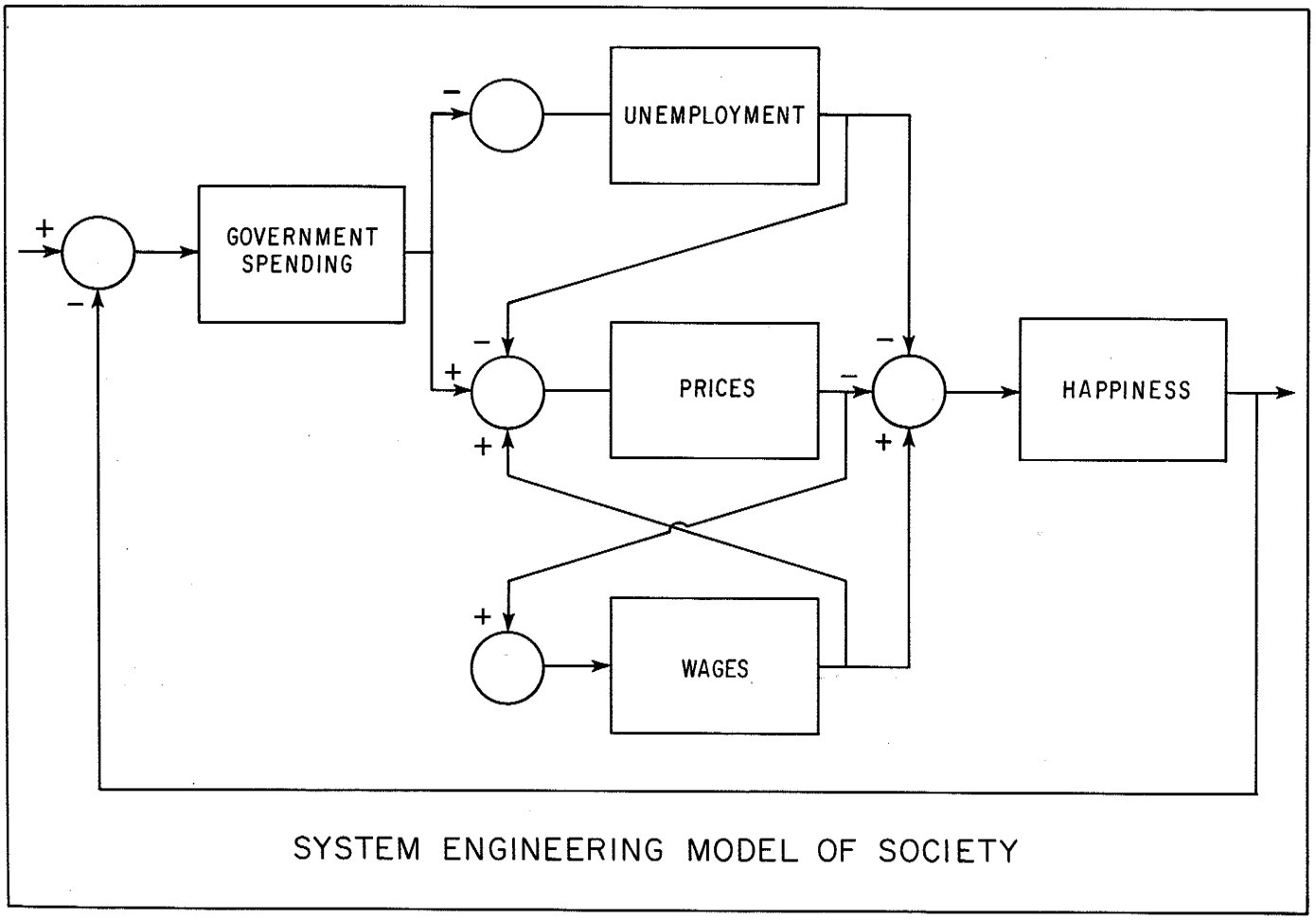
If you find such sentences uncomfortable, you are right. 'A number' and 'a lot' mean six, or about a hundred, or nearly five thousand, or very many, or whatever the number is, even if the number isn't exactly known or is unknowable. Therefore 'A number... are...' is better, despite the apparent logic and alleged grammatical correctness of the 'number is' construction. Some logic is better than other logic. Some commonsense usage is better than grammar by rule.

But 'a crowd' and 'a host' and the like are true collective nouns, and should usually be followed by 'is'. A crowd is a crowd because it acts as a unity.

--F. A. Sowan in Nov./Dec. News Supplement of ISTC's Communicator



FIBER OPTICS COMMUNICATION SYSTEM



SYSTEM ENGINEERING MODEL OF SOCIETY

Fiber Optics

The IEEE Communications Society Magazine for March 1978 features "Fiber Optic Communication: A Technology Coming of Age," by S. D. Personick.

This tutorial article points out that within about ten years, communication via optical fibers has advanced from laboratory proposal to near-commercial reality. In other words, we will soon be making everyday long-distance telephone calls via laser beams (light rays of a single wave-length) in glass "conductors."

The new technology involves cables containing hundreds of fibers, multiple fiber splices, single-fiber connectors, and lasers with million-hour extrapolated lifetimes. Prototype systems carrying voice, data, and video services are already used in military and commercial telephone applications, and widespread routine use of optical fibers in the early 1980's is anticipated. A simplified system is shown opposite.

Basically, in an optical-fiber transmission system, information originating as analog voice input is converted to digital bits by conventional terminal equipment. The signals emitted by this coder modulate the current of an injection laser or light-emitting diode, and the pulses of light are transmitted through an optical fiber.

The fiber terminates on a detector which converts the message-bearing light into current pulses, and finally, as these are amplified, the original voice is re-generated.

Problems involving fiber characteristics, optical sources, cabling and splicing, detector materials, and electrical/optical interfaces are being solved, and the solutions are becoming standardized. As the technology improves and demand increases, costs will decrease and demand will increase further.

The fiber-optics revolution in communication has almost reached our home hand-sets!

Model of Society

The February, 1978 issue of the Systems, Man, and Cybernetics Review, Newsletter of IEEE's SMC Society, features five articles concerned with analyzing societal systems by using techniques of systems engineering.

To illustrate this use of the "systems approach," the Newsletter presents the diagram reproduced opposite. Circles in the drawing represent connection, collection, or interaction of inputs; rectangles represent processing or conditions. Note the + and - relationships.

"Classic" Technical Writing

Michael Austin, advocating a change in perspective, points out that the reasons for teaching English are to

1. enable people to communicate effectively in speech and writing;

2. introduce the literature of our cultural heritage;

3. encourage and help people to generate works that add to the culture of society.

But why, he asks, is the study of novels, poems, plays, essays, and short stories thought to be of great value in achieving these objectives, while the virtues of factual literature are generally ignored? "In the educational system of a cultured society there should be a proper balance between fact and fiction, not an exclusion of one by the other." Why not study the techniques of communication used by Galileo as well as those used by Chaucer? those of Einstein as well as those of Joyce?

This point of view is discussed at length in Austin's article, "Teaching English--A New Approach," which first appeared in ILEA Contact (3 June, 1977) and was reprinted in The Communicator of Scientific and Technical Information (Institute of Scientific and Technical Communicators, September 1977).

Plan Before Rapping

Judy Osgood writes in The Toastmaster (April 1978) about "Grappling with the Gavel (or How to Conduct a Business Meeting)."

"For years," she points out, "the gavel has been a symbol of the power wielded by organizational leaders." But in practice, the president or chairman who plans carefully rarely has to pound for order, whereas the one who fails to plan usually finds pounding ineffective.

"The truth is," the article continues, "gavels are devoid of mystical powers, and no amount of rubbing or rapping will result in a successful meeting unless careful preparation precedes that opening crack of wood on wood."

To have a good meeting, begin by outlining a game plan or program--the agenda. Then reserve a playing field or concert hall--your conference room. Notify the players--your team or committee members; and arrange "plays" or roles--presentations. Provide equipment; direct and encourage record-keeping, understanding, cooperative thinking and speaking, achievement of purpose, and follow-up.

To keep yourself calm and successful, use or adapt Judy Osgood's checklist as an adjunct to your gavel:

Meeting Leader's Checklist

__ Prepare agenda
__ Mail agenda to arrive a week in advance
__ Prepare a personal copy of agenda showing time allocated for each segment and plan for guiding discussion
__ Ask individuals to make special presentations
__ Reserve room
__ Confirm reservation
__ Check room for heating and ventilation
__ Arrange for refreshments
__ Purchase name tags or name cards
__ Contact members giving special presentations to determine special equipment needs
__ Arrange for additional copies of agenda, resource materials, and paper and pencils for all group members
__ Arrange for a chalkboard or easel
__ Take a tape recorder, or arrange for a secretary or group members to take minutes
__ Explain purpose and importance of meeting
__ Present each problem
__ Look for the causes of problems
__ Brainstorm for solutions

__ Evaluate suggested solutions
__ Select one or more solutions
__ Plan for implementation of solution
__ Keep track of time
__ Watch for non-verbal cues from quiet members who want to speak
__ Divert attention from monopolizer
__ Defuse arguments
__ Convince jokers it's time to be serious
__ Keep discussion on the track
__ Acknowledge contributions with a nod
__ Summarize when necessary

--Adapted with permission of Judy Osgood. Any further reproduction without written permission is prohibited.

Think

There is a mistaken assumption that all it takes to make good English is the absence of things like comma faults and failures of agreement. On the contrary--it is also necessary to say something and make sense.

Consider the following statements from a Memorandum which a group of educators recently issued about their profession:

"Teaching is the application of a systematic series of actions directed toward specific ends." [So are vacuum-cleaner repair, ditch-digging, and fraudulent conversion.]

"Within the general system of teaching acts are many subsets of actions and processes." [Try replacing "teaching" with "hydraulic engineering" or "open-heart surgery." Sounds neat, doesn't it?]

"Teaching and learning are now seen as reciprocal relations within a special system of information processing." [Not until now? Seen by whom? Relations? Special system?]

If these declarations (and others equally "learned") were used as topic sentences and amplified by statements less foolish or deceitful, we might be able to forgive the teacher-trainers who wrote them --a committee of 13. But, alas!

Commonplaces, generalizations, inanities, and false representations proliferate in pseudo-psychological jargon, like clotting, contagion, or cancer.

Before we can spearhead our thrusts (ha!) against such empty phraseology, we must recognize it as a perversion of language. And we must be aware that it lurks all around us--in academia, business, government, industry, advertising, research, teaching, newspapers, magazines, television. It threatens to infect every one of us--all who speak, write, learn, read, or listen.

Learn to know--and avoid--such "demonstrated excellence." Beware--and fight--the purveyance of socio-cultural-ethno-economic junk.

--Adapted from The Underground Grammarian, Vol. 2, No. 5, May 1978.

How to Sharpen a Pencil (Government Style)

INTRODUCTION

This document describes the art and manifestations of applying an ever-diminishing slope tapering to a finite point upon the scribing end of the common ordinary writing utensil.

SYSTEMS DESCRIPTION

There are many varied types of common ordinary writing utensils. Care must be taken so as not to select a writing utensil that has its scribing end encased in steel or ceramic as these materials would inflict injury upon the tapering machine used in the process described herein. Therefore, a writing utensil must be selected with its exterior covered with a semi-organic cellular substance such as wood, and the scribing portion within should be composed of a semipermable spallation-prone igneous rock composite such as graphite. Note that it is not advisable to attempt to taper to a finite point the eradicating end of the common writing utensil.

PRINCIPLES OF OPERATION

Now that the proper selection has been made, the next step is the operation of the tapering machine. The operator should take up a position facing the tapering machine in such a manner that the entrance orifice of the tapering compartment is level with and on the same side as the operator's left binocular viewing sensor. Thus the operator's nasal orifice pair will be pointing at the tapering machine's waste compartment. Then the operator should take hold of the operational lever of the tapering machine with the primary digits of the right dexterous unit, raise the common ordinary writing utensil to the correct altitude and propel it horizontally inside the entrance portal of the tapering compartment until its motion is impeded. The operational lever can now be moved along its free axis of rotation in either direction. It is advisable to maintain a firm pressure inward upon the eradicating end.

INSPECTION PROCEDURES

At regular intervals the common ordinary writing utensil should be removed from the tapering machine for optical inspection of the scribing end for degree of tapering. It is a judgement decision to determine a satisfactory degree of tapering. However, if severe over- or under-tapering is consistently accomplished, a report (Form 368-H19A) must be filed with the Conservation Department within 10 days of the last incident.

--Edward J. Hallinan, Bethel Park, PA; reprinted from Nuclear News, July 1976.

Stereotypes — Their Use and Misuse by Philip H. Rhinelander

This article adapts a talk written by Professor Philip H. Rhinelander of the Department of Philosophy, Stanford University, and presented in June 1977 at initiation ceremonies for the new chapter of Phi Beta Kappa (honorary scholastic fraternity) at Santa Clara University. The full text appeared in The Key Reporter (Winter 1977-78); this version is printed through the courtesy of Professor Rhinelander and Phi Beta Kappa.

Stereotype, figuratively, means a firmly held, "standardized mental picture that represents an oversimplified opinion, affective attitude, or uncritical judgment."

It is generally agreed that of all human capacities and accomplishments, the most significant and distinctive is the capacity to make and use symbolic systems, notably languages. However, like all human capacities--or at least most of them--this one is ambivalent. Language provides a vehicle for communication which is not otherwise available, but in so doing, it provides also an occasion for confusion and misunderstanding. Incomplete communication can be more misleading than an outright failure, just as half-truths are often more dangerous than outright falsehoods. In both cases, the partial error is less obvious and surface plausibility lends it weight.

Where both parties know that they cannot understand, or have not understood, each other, neither is deceived, and, if they wish to proceed, new channels will be sought. But where there is an appearance of understanding, resting upon a merely verbal concurrence without any deeper comprehension, the misapprehension goes unnoticed, and uncorrected.

Thus, the more we tend to rely in our thinking and talking upon catch-words, slogans, and popular jargon, the harder it becomes to deal thoughtfully, intelligently, and critically with our pressing problems.

Some thirty years ago, in an essay called Politics and the English Language, George Orwell pointed out that the devaluation of language in our day, the increasing tendency in public discourse to substitute familiar but threadbare catch-words for critical inquiry, signifies a similar devaluation of our basic political understanding.

After arguing that "the present political chaos is connected with the decay of language," Orwell asserted broadly that

> Political language--and with variations this is true of all political parties from Conservatives to Anarchists--is designed to make lies sound truthful and murder respectable, and to give an appearance of solidity to pure wind.

In the three decades since Orwell wrote, the situation has got considerably worse, and the infection has spread from the political realm to virtually all other sectors, including ethics and morals.

Most philosophers [and communicators] today are aware of the difficulties caused by the vaguenesses and ambiguities of language and the need for clarification, and this brings me to the matter of stereotypes--including stereotypes about stereotypes. Because the point has been drummed into us by repetition, we have come to accept the view that stereotypes are bad things; but very few of us have stopped to inquire why they are bad or what the remedy is.

This lack of comprehension is shown clearly in the fact that most of the people who complain with the greatest justification that they have been victimized by stereotypes do not seek to eliminate stereotyping but set about creating new stereotypes of their own to deploy against the old ones. This process clarifies nothing; it merely confronts one set of misconceptions with an opposite set, thus increasing the confusion, while obscuring the issues.

What is a stereotype? Why are stereotypes bad? The simple answer, I think, is that stereotypes are half-truths which (as I noted earlier) are often more dangerous than outright falsehoods because they have an aura of plausibility concealing their untruth. This is why they are persistent.

They commonly reflect prejudice. They involve over-generalizations which have the effect of reducing all individuals to pre-conceived types. Such over-generalizations (attached usually to some sort of model) are false in some degree, and are immune to evidence, criticism, and correction.

There are several points to notice. First, a prejudiced over-generalization can be positive as well as negative. That is to say, there can be blind and irrational prejudice in favor of some group or cause as well as against it. In fact, positive and negative prejudice often go together. Hitler's belief in the superiority of the Aryan race, for example, involved a complementary belief in the inferiority of all other races. These were, in effect, two sides of the same coin. But this need not always be true. One can have a disposition to favor or trust certain kinds of people without necessarily being hostile to others.

Second, the most serious practical effect of a prejudiced stereotype is that the individual person or the individual cause is not judged on his, her, or its individual merits but is categorized on a general basis without regard to the actual, particular circumstances.

It is chiefly for this reason that stereotypes have worked injustice to minorities and women. If you assume, for example, that members of minority groups or women generally are unqualified for the higher positions in industry or the professions, the result is either to prevent those individuals who are qualified from obtaining entry and advancement or to put such obstacles in their way that it takes superhuman ability to surmound them.

It must be remembered, however, that this situation can occur on both sides of any issue. Thus the radical activist or the rhetorician who believes that all white males are 'sexist' or that all white Americans are 'racist' is engaged in prejudiced stereotyping just as much as the male chauvinist who proclaims the inferiority of women, or the Mississippi redneck who believes that all blacks are lazy. In either case, the particularity of the individual is ignored: all members of a class are typed indiscrimi-

nately according to a model which might, perhaps, hold good in a few cases but which is false for many or most.

Third, and most important, what characterizes the prejudiced mind is a refusal to look at contrary evidence or to admit contrary argument, in short, a refusal to admit the possibility of error. Thus prejudice is not merely a matter of belief but of the way beliefs are held. It involves an attitude characterized by arbitrary blindness which may be willful or may be a matter of habit. But in either case, there is irrationality here.

I make this point because it seems to me crucial, yet it is often overlooked. If you believe that basic moral and political values are wholly irrational in any case--that our attitudes are shaped entirely by emotions, desires, or interests which are produced for us and in us by forces beyond our control and that they are immune to any kind of rational direction--then you should have no objection to prejudiced or stereotyped thinking.

On the contrary, you should accept it and expect it. You should, if you wish to be consistent, argue that justice is nothing but the interest of the stronger. You should accept without qualms the view that, in the last analysis, only force counts in the real world--either physical force, or economic force, or the force of individual or class interest, or perhaps the force of history.

You should conclude that all talk about justice or human rights or the intrinsic worth of the individual is merely a pious smoke screen--a kind of intellectual charade engaged in by academic types as a game played simply for their own amusement.

If you believed that, you would then reject the belief that rationality counts in the world, not merely in the form of technological inventiveness but more importantly as casting light on the meaning and goals of human existence.

I am not saying that rationality is everything, but only that it is a vital element, that the life of the mind is something that must be pursued and encouraged not as a mere cultural adornment but for the good of mankind.

It is this faith in the value of rationality that most clearly distinguishes what we call the Western tradition from other cultural traditions, many of which do not share it. Moreover, it is intimately tied to our belief in the intrinsic value of the individual human being--which many other cultures do not subscribe to either. The connection lies in the fact that, just as it is the concrete human individual who is born, lives, breathes, struggles, loves, aspires, encounters triumph and tragedy, and finally dies, so it is the individual mind that thinks.

I think it is correct to say that the whole long tradition of natural law and natural rights, upon which our own constitutional democracy is founded, reflects a persistent faith that there is--or that there can be found or devised--a system of laws which will commend themselves to thoughtful persons everywhere by their inherent reasonableness rather than by force. This faith presupposes that above and beyond immediate passions and interests, individual human beings also have a capacity for rational understanding.

Thus the vice of slogans and stereotypes lies chiefly in the fact that they are intrinsically irrational, regardless of the issues to which they relate or the particular causes which they may be designed to support. Of course, all of us are fallible, and all of us employ stereotypes on occasion. But the truly educated mind ought to oppose them resolutely and should be ready to amend its own thinking whenever it finds itself employing them for serious purposes.

My point is that we are quite ready to condemn slogans and stereotypes as prejudiced and irrational if and when they are used against us, or against causes we support, but we have got in the habit of tolerating them when they are invoked on our own side of the issue. Such conduct is plainly inconsistent. If we oppose blind irrationality as dangerous, we should oppose it everywhere. On the other hand, if we really suppose that all thinking on moral, political, or religious issues is always prejudiced and irrational, then we should accept it everywhere and give up attacking prejudice or irrationality altogether.

It may be argued that since human beings are not wholly rational, and indeed could never become so, and since feelings, emotions, desires, and aspirations determine most of our attitudes, too much preoccupation with rationality would be self-defeating. It could very easily inhibit action and become an excuse for apathy in the face of evil.

As Bertrand Russell once observed, there is no way to demonstrate logically or scientifically that it is wrong to enjoy the infliction of cruelty. Thus, if we were to wait for this kind of demonstration, we should wait forever and allow manifest evils to go unchallenged for want of a fully rational proof that they were truly evil.

The answer here is in two parts. First, the canons of scientific demonstration are not the sole measure of human rationality. As Aristotle pointed out long ago, it is a mistake to take the standards of proof appropriate to one particular field and to apply them as a universal standard for all other fields as well.

Secondly, although the ideal of rationality in practical affairs requires that we maintain open minds, an open mind need not be open at both ends. It is possible to commit oneself fully and whole-heartedly to a cause on the strength of one's present knowledge and convictions while still retaining the consciousness of fallibility.

I agree with psychologists like Gordon Allport, who believe that the mature mind is perfectly able, psychologically, to combine tentativeness of outlook with firm commitment to chosen values--that we are free to commit ourselves to great causes with courage, even though we lack certainty, that we can be at one and the same time half-sure and whole-hearted.

Moreover, where the attitudes of tentativeness and commitment are found together, one also finds another important attribute, namely a sense of humor. A sense of humor implies a sense of proportion, together with the ability to laugh at things you love while still loving them--including, of course, oneself.

If this relationship is true, it points, I think, to an important difference between a rational commitment and the kind of commitment we associate with fanaticism. The fanatic is humorless; he cannot laugh either at his cause or at himself. To do so might imply uncertainty, and the "true believer" cannot admit to himself any possibility of error. A rational conviction, religious or otherwise, is one which can admit uncertainty without being paralyzed by the admission.

I turn now to consider briefly some specific il-

lustrations of the way in which popular slogans and stereotypes can become substitutes for understanding. They appear, because of vague associations, to have meaning--at least what is called emotive meaning--but in fact even this turns out to be elusive.

1. 'Liberation'

We hear a great deal today about 'liberation' in a variety of contexts. There is talk about the 'liberated' female, the 'liberated' male, the 'liberated' worker, the 'liberated' artist, the 'liberated' writer and, of course, the 'liberated' homosexual. Obviously liberation is taken to be a Good Thing, and, of course, in many contexts it is.

But liberation is not a quality, like happiness or peace of mind. Liberation is a relational term. It has meaning only if you specify (a) who is liberated, (b) in what respect, (c) from what, and (d) for what.

Now in some contexts, these factors are quite clear, as when we talk about the abolition of slavery or freeing nations or peoples from colonialism. But as the term gets extended metaphorically, the meaning gets increasingly vague until, like Lewis Carroll's smiling Cheshire cat, the face has vanished leaving behind only the fading aura of the original expression. In this situation, 'liberation' can be invoked equally well on both sides of many issues, thus cancelling itself out.

The question of sexual freedom is a case in point. Sexual freedom--including freedom for homosexuals--is seen by its advocates as required in the interests of personal 'liberation'--in this case liberation from restrictions imposed by the culture and especially by the Church. Yet the argument upon which these supposedly "repressive" views were founded was itself based on the need for personal 'liberation'--in this case, a liberation of the higher powers of personality from the automatism of bodily drives.

I shall not stop to argue here which view is right. My point is simply that talking abstractly about liberation proves nothing either way, since the concept can be (and has been) invoked on both sides.

So also when the philosopher Spinoza talked of "human bondage," he referred to men's bondage to their own passions, from which he believed rational men should always endeavor to free themselves. Today what Spinoza condemned as bondage is praised as the true measure of personal autonomy. As the context shifts, the concepts of 'liberation' and 'bondage' reverse their polarity.

I am not suggesting, of course, that liberation or being liberated is bad. I am saying only that if such terms are to have any ascertainable significance, one needs to look beyond them. Otherwise they function simply as ritual incantations, employed to avoid the need for addressing the underlying problems.

In this connection, I might note a further assumption which can add to confusions on this point. Many writers today either assert or assume that all socially imposed rules or norms are essentially repressive. This view leads to the belief that the essential function of law is to impose restrictions upon individual conduct, supported by penalties forcibly imposed by government agents.

Given the increasing spread of government operations, coupled with a serious distrust of governmental authority generally, it has come to be assumed that the law is not merely restrictive but seriously oppressive. This view is reinforced by the position of existentialist philosophers like Sartre, who claim that it is a breach of personal authenticity--a kind of 'bad faith'--for the individual to accept any general norms of conduct imposed externally by society.

Although this point of view has some plausibility because it can be justified in certain cases, it leaves out of account the fact that some norms and laws can be enabling rather than restrictive, and the more basic fact that no community can exist at all without norms and standards of some kind, distinguishing acceptable from unacceptable behavior. The reason is that in society people sometimes compete and sometimes cooperate, but that they can do neither effectively unless they can count to some extent on what others will do. These mutual expections can be fulfilled only when there are some generally accepted ways of behaving.

If these facts are borne in mind, it may help to off-set the current feeling that society as such, and perhaps our own society in particular, is essentially repressive and that problems of individual self-restraint and self-control are of only secondary importance.

In any case, where the older moralists and the Church stressed the primary importance for individuals of internal self-discipline as necessary to achieving personal integrity, many current writers equate integrity with autonomy and are thus led to suppose that personal integrity requires 'liberation' from externally imposed standards and rules.

This view, of course, devalues personal responsibility and considers society or government, if it endeavors to increase its control, both a source of injustices and an instrument of oppression.

2. 'Discrimination'

Because certain types of discrimination are unjust--notably discrimination against racial minorities --many people have come to speak and write as if all forms of discrimination were unjust. Thus the word 'discrimination' has come to be used, not only in the news media but by some serious writers, as if discrimination were wrong in itself. To call something 'discriminatory' is a way of condemning it.

This is a very serious and dangerous error, because all knowledge, all understanding, and all virtue, including justice itself, involve discrimination.

Imagine, if you can, a person lacking all ability to discriminate. Such a person could not distinguish anything from anything else; experience, if we could call it such, would be a mere blur. He could not tell light from dark, up from down, future from past, friend from foe, truth from falsity or good from bad. He would be worse off than most animals--even a dog distinguishes between being stumbled over and being kicked. Many distinctions can, of course, be questioned, but if we make none at all, we cannot discriminate between justice and injustice.

More specifically, the first requirement of any system of justice is that it should discriminate between the innocent and the guilty. To treat an innocent person like a guilty person is not to serve the interests of justice and equality, but to deny them.

Again, all laws and rules of any kind discriminate among different kinds of conduct. A law against stealing discriminates against thieves. A law against drunken driving discriminates in favor of those who are sober.

Thus it is obvious that the question in all cases of alleged 'discrimination' is whether the discrimination can be justified, i.e., whether there are reasonable and acceptable grounds for making it.

Consider, for example, the case of Bakke vs. Regents of the University of California decided last September by the Supreme Court of California and now pending before the U.S. Supreme Courst. That well known case involves what is called 'reverse discrimination.'

The issues are complex and extremely important, but I want to call attention only to one point. If a college or university has more applicants than it can accept--in the Bakke case there were more than 2000 applicants for 100 places--it is going to have to discriminate among them on some basis, since some will be taken while others are refused. So the question is not whether you will discriminate, but what grounds may properly be used in making the selection.

Notice that several grounds might be used. One might go on the principle of first come, first served, accepting applications in the order of receipt without any regard to qualifications. This would be normal and reasonable if one were, say, assigning hotel rooms or theatre tickets. But I think most of us would think this method unreasonable for university admissions.

Again, one might make the choice by lot, among all applications received by a certain date. Here every applicant would have an equal chance. And this method would be appropriate, for example, in administering a draft law for military service. But again, one would hesitate to think this method of discrimination suitable for university admissions. Why?

Most of us feel, I think, that academic qualifications ought to be relevant. Indeed, Bakke's claim seems to be that priorities should be determined solely on that basis. But this claim would, of course, result in discriminating against those with poorer academic qualifications regardless of other merits.

What emerges is the fact that discrimination is not wrong per se. It becomes wrong when, as, and if it is arbitrary, unreasonable, or unjust. And this depends upon the circumstances and the context. Decisions here may be difficult, and much depends on wise judgment. But this brings us back to the initial point: there is no substitute for careful and prayerful rational inquiry, weighing all relevant factors. Invoking slogans and stereotypes serves only to cloud the issues.

I could go on indefinitely, discussing other important words which have been so worn out or skewed by current usage that they have become substitutes for thinking rather than aids to inquiry. And there are many new verbal coinages, too, which are vague and evocative rather than helpful: terms like racism, sexism, elitism.

But I have said enough to suggest that the first task of rational inquiry is either to avoid such terms altogether, or to make sure that they are clarified. That is, we must look behind labels and stereotypes to the issues. The main difficulty is that the more complex our problems become, the more pressure there seems to be to find simplistic solutions. Let us do our best to avoid yielding to that pressure.

European Data Bank

E. Giovanetti, PC's Area Representative in Italy, sends information about the Space Documentation Service of the European Space Agency. SDS operates an online interactive information retrival system which enables users all over Europe to access within a few seconds nearly 20 data bases stored in a computer center near Rome.

The SDS telecommunication network is linked with the CYCLADES network in France and other European networks to provide access to bibliographic references and data on aerospace, agriculture, biology, chemistry, computers, electronics and engineering, environmental science, metallurgy, oceanography, and physics.

Searchable databases include some obtained from the U.S.--like those of the Chemical Abstracts Service, the National Aeronautics and Space Administration, the National Technical Information Service, and the American Society for Metals; two from the U.K.--those of the Commonwealth Agricultural Bureau and INSPEC; and sections of PASCAL, which contains multidisciplinary abstracts made available by the French National Center for Scientific Research.

In addition to these bibliographic bases, the SDS itself makes available a file called ELECOMPS and one called LEDA. ELECOMPS contains descriptions and product data, including physical and operational characteristics, of electronic components av ilable in Europe--capacitors, switches, relays, thyristors, diodes, connectors, triacs, and others; names and addresses of manufacturers and suppliers are given also.

LEDA contains basic information needed to identify scenes and images remotely sensed from space by LANDSAT satellites and acquired within the European Space Agency's EARTHNET program. The area covered is a rectangle roughly delineated by Namsos (Norway), Dongola (Sudan), Ha'il (Saudi Arabia), and Lisbon (Portugal).

SDS databases are updated monthly and used on a pay-as-you-go basis. They may be accessed from Stockholm, Copenhagen, Darmstadt, Brussels, The Hague, Paris, Lausanne, Madrid, London, and Dublin.

No More Than n Pages

In an article called "Write Less, Jane, But Write Better" (The Baltimore Sun, January 18, 1978), Michael W. Starks makes the following "modest proposal":

Writing assignments in grammar school, high school, and college should ask for no more than n pages instead of at least n pages.

Requirements of at least n pages, the former college teacher points out, encourage the more-is-better attitude and teaches students to mistake verbosity for writing skill.

Junior high school papers "bulge with overblown, flowery, cute, repetitive, and empty phrases" written to fill specified quotas of blank paper. Senior high school papers contain "tortured paraphrases, lengthy quotations, irrelevant digressions, gratuitous opinions, pompous summaries, self-indulgent asides, and rambling cosmic conclusions"--sentences expanded like hot air in a balloon. Seniors in high school have acquired enough bad writing habits to last all their lives.

College papers are bloated, additionally, with academic jargon. Business, education, journalistic, and government reports are similarly dense and swollen. "We should not underestimate the amount of resources wasted in writing, reproducing, and reading these heaps of verbal garbage."

Why force Jane to write twenty pages when she can honestly muster only five? Starks inquires. Don't insist that she produce more sentences. Teach her to "think before she writes, revise what she writes more carefully, and write only what her soul can sustain." Tell her to write no more than n pages.

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ILSAM

The following article by Dr. John Kirkman of the University of Wales Institute of Science and Technology (UWIST) is reprinted from the News Supplement (February 1978) of The Communicator of Scientific and Technical Information:

Extending the ILSAM concept

The L.M. Ericsson Company, Stockholm, Sweden, has given a grant of £21,325 to the Communication Studies Unit of the University of Wales Institute of Science and Technology, Cardiff, for a 12-month study of technical documentation. The Unit is to explore the feasibility of developing a 'controlled' form of English, using a limited vocabulary and a limited range of sentence structures, for use in Ericsson's international documentation.

Several international companies, notably Digital Equipment Corporation, Eastman Kodak, IBM, and Rank Xerox, are already using 'controlled' forms of English of this type.

The use of 'controlled' English enables a company to produce just one English version of much of its documentation. Many translations into other languages are unnecessary, because operators and service staff throughout the world can be trained to use controlled-English documentation without difficulty. The staff cannot be said to 'understand' English in the true sense: but they are able to recognize and interpret the limited range of words and structures and work without confusion.

Origins at Caterpillar

The first 'controlled' version of English for technical documentation was produced by the Caterpillar Tractor Company of Peoria, Illinois, USA. The Caterpillar company distributes tractors and heavy earth-moving equipment throughout the world. It supports its machinery with maintenance and repair documentation, and because this has to be done in many countries, the company used to provide the documentation in many languages. But duplication of documents in many languages is expensive, so the company sought alternative ways of presenting its information.

Caterpillar researchers decided that it ought to be possible to use an internationally understood set of symbols to convey much of the information that had to be transmitted, and they explored the possibility of using English words as this set of symbols. They produced a list of 784 words as a central core of symbols, plus a list (heavily illustrated) of names of parts of Caterpillar equipment.

The researchers found that they could express all their service and maintenance information using this vocabulary alone in a carefully controlled range of simple structures. They found, too, that in 30 to 60 hours they could train operators *who previously knew no English* to recognize the meaning of the documents written in this way. Though the operators did not 'understand' English, they could work efficiently on the basis of the information drawn from the controlled-English documents.

The Caterpillar company named its restricted version of English 'Caterpillar Fundamental English'. It is marketed now as ILSAM — International Language for Service and Maintenance — by M. and E. White Consultants (world-wide agents) and as BASIC 800 by Smart Communications Inc. (agents within the USA only).

Principles of controlled English

The principles of a controlled version of English such as ILSAM or BASIC 800 are easy to grasp. The variety of words used must be strictly limited, and each word must have one meaning only. For example: *right* is the opposite of *left, correct* is the opposite of *wrong. Drop* is a noun meaning 'a quantity of fluid that falls in one spherical mass'; it is not used as a verb meaning 'to fall' or 'to release'; and it is not used as a noun as in 'a drop in pressure' — that is a *decrease.* The word *over* is restricted to the single meaning 'above', as in 'placed over the valve'; it is not used to mean 'more than' as in 'produces over 10 watts', or 'during' as in 'over the three days', or 'finished' as in 'that the emergency was over'.

Synonyms are avoided: from several words that have approximately equal meaning, one only is chosen for use. For example: *below, under, beneath,* and *underneath* all have similar meaning. ILSAM uses only *under.* Also, wherever possible, the word with the widest international recognition is chosen for use: *assistance* is used, not *help.*

The number of verbs is kept to a minimum. This is achieved by use of verb-noun combinations as much as possible: *make an alignment* is preferred to *align.* This has the virtue of reducing the number of verbs to be learned and of reducing the number of irregular verb forms to be used.

Statements are made as short and positive as possible. Repetition replaces reference back, and explanations are carefully sequenced in steps. Sequences of statements plus words like *before, after, last, first, then* are used instead of past and future verb forms.

Writing is restricted to four types of sentence structure:

— statements, descriptions, or explanations;
— instructions or commands;
— combinations of conditions with either descriptions or instructions;
— questions.

The simplest form of statement consists of the sequence: article + subject + verb + object. If necessary, adjectives can precede both subject and object:

The washers prevent leaks.
The network uses reed switches.

The control system has two complete stages.

Twelve GV-I groups are normal in group selectors.

The structure of the sentence is always kept as simple as possible:

NOT The control unit, duplicated for safety, has a low resistance.

BUT The control unit has a low resistance. There are two units for safety.

In instructions or commands, each sentence contains just one instruction:

NOT After stopping the program, load the data into the buffer store.

BUT Stop the program. Load the data into the buffer store.

NOT Using program 6, send X to Y.

BUT Use program 6. Send X to Y.

Explanations, conditions, and indications of time can be combined with descriptive statements or instructions:

Because the loop is to be made first, the linkage is important.

When the XY program is finished, the message is sent back to A.

If the error is larger, increase input at X.

If the interval is less than three seconds, the sequence is wrong.

Questions are constructed as simply and directly as possible:

Can the punch jaw open freely?

Learning and acceptance of controlled English

Of course, non-English-speaking operators cannot just pick up and read documents in ILSAM or any other controlled version of English, however carefully the documents are written. A training programme is necessary, in which a bilingual instructor helps the operators to recognize and understand the significance of the limited vocabulary and range of patterns, giving definitions and explanations in the native language; but at no point is the learner required to speak or write English. Caterpillar have found that a course lasting 30 to 60 hours is normally enough to enable 'readers' to work competently from ILSAM documents.

An important feature of this type of controlled English is that it is not distorted or artificial. The vocabulary and structures it uses are selected from those used daily by native English speakers. Documents in this language are therefore entirely acceptable to native English readers. Indeed, when the Caterpillar company published the first service literature in its restricted language, the difference was not detected by native English readers!

Translation

Even if a company feels that it cannot use a single controlled-English version of its document(s) in *all* countries of the world — that is, that some translations are still wanted for diplomatic or technical reasons — the creation of controlled-English text(s) still has value. Since a controlled-English text has been written very clearly, with each word confined to just one meaning, it is ideal source material for translation. The translator can rely on the definitions of words, and finds the simple sentence structures relatively easy to convert into comparably simple structures in the target language. Indeed, a reasonably accurate 'base' translation can be produced easily by computer, leaving human translators to add the expert touches — to add balance and polish by making the adjustments of word order and style required by the target language.

The project at UWIST

The first task for the two research associates in UWIST's Communication Studies Unit will be to produce a 'core' vocabulary suited to L.M. Ericsson documentation, plus 'extension lists' of special terminology and parts nomenclature for special products or activities. This will be done by adapting and extending the copyright ILSAM vocabulary, with the cooperation of Mr E.N. White, world agent for ILSAM.

As the vocabulary develops, the researchers will produce service and maintenance documents in the new language, with regular checking from Ericsson staff to ensure that there is no distortion of technical content. This will be the major part of the project.

But there will be two other related tasks. One will be to develop the training programme necessary to introduce the new language to Ericsson staff and customers; the other will be to explore the prospects for using the language in other types of technical and commercial documentation.

In UWIST, we are excited by and grateful for this opportunity to cooperate with a major international company on a 'live' project. We hope for benefits on three fronts:

— benefits for the company from the production of documentation in the new, controlled language;

— benefits for ourselves from the opportunity to give practical tests to linguistic and educational theories;

— benefits for the world of technical documentation at large from new insights and principles that we hope will emerge as we explore the possibilities for using controlled language more widely in technical and commercial documentation.

John Kirkman

Acknowledgements

For information about Caterpillar Fundamental English and ILSAM I am indebted to the following articles:

von Glasenapp, B.W.
Caterpillar Fundamental English, Proceedings of the 19th International Technical Communication Conference, Society for Technical Communication, USA, 1972

Verbeke, C.A.
Caterpillar Fundamental English, Training and Development Journal, USA, February 1973

White, E.N.
International Language for Servicing and Maintenance, UWIST Lectures on Technical Communication, September 1974

White, E.N.
ILSAM — The International Language, The Communicator of Scientific and Technical Information, No 23, April 1975

White, E.N.
An International Language for Servicing and Maintenance, 'Technical Documentation '75', Proceedings of SERT Symposium, November 1975

We are presently progressing towards finalization of a report.

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If any need should occur to inquire further about this matter, please do not hesitate to contact me at your convenience on the following number for resolution: 123-456-7890.

* * *

Failure of Technology

Americans are perplexed by the failure of technology to supply us with a meaningful life or a decent environment to live in. For every wonderful achievement, technology seems to deal us an equivalent kick in the shins.

Travel has become more efficient and less civilized. Television has helped to raise a generation of unprecedentedly educated six-years-olds and increasingly illerate high school seniors.

We can enjoy completely enclosed and comfortable environments hundreds of feet above the sidewalk until, as witness the New York City blackout last summer, someone pulls the plug and the environments become inaccessible and uninhabitable. Only the most naive believe we can escape our increasingly technological environment.

Recognizing that the technologizing trend is irreversible, we fantasize [in science fiction and science-fiction cinema] about a world where all the machines work with us, rather than against us, where the computer does not obstinately mis-bill, and where jet planes disgorge our luggage intact at correct destinations.

-- © Saturday Review 1977 from "Our Love-Hate Affair with Technology" by Carll Tucker.

New Sociology

We must change all of our concepts of economic sociology. We must throw them urgently into the wastebasket. Keynesian economics will soon be a thing of the past. We have to switch, without delay, from our concept of expansion in quantity to the concept of expansion in quality. Would this mean the end of progress? On the contrary. We have a very good example in electronics. Electronics is improving by super-miniaturization. We are making better products smaller and cheaper, that require less resources to produce and less energy to function. This is the type of industry that should be encouraged, because it typifies the ideal kind of technological progress.

The characteristics of the stable society of tomorrow have been defined. First, there must be minimal disruption of ecological processes. Second, there must be maximum conservation of materials and energy. Third, there must be stable or controlled decreases in population without coercion. Fourth, there must be a social system in which individuals can enjoy, rather than feel constricted by, the first three conditions.

Governments in all countries see the world in fragments, not as a whole. We should realize that there is only one problem today, our survival as a species; there is only one environment, the environment of life. There can only be one attitude, as we face the eventuality of conflicts that could eradicate all life. We must unify to implement methods for rescuing our planet.

-- © 1977 The Cousteau Society, a non-profit environmental organization located at 777 Third Avenue, New York, NY 10017. Annual dues are $15. Excerpted from speech by Jacques-Yves Cousteau, May 14, 1977, Boston, MA.

Need to Prepare

In "How to Kill a College" (Saturday Review, February 4, 1978), Theodore L. Gross, Dean of Humanities, City College of New York, discusses CCNY's adoption of a policy of "open admissions":

> We had abolished requirements and prerequisites and had arranged elective courses in a cafeteria curriculum that made basic skills and basic knowledge seem irrelevant, structure obsolete, and sequential study unimportant. The historical perspective was already so suspect that the liberal arts college functioned primarily on the pleasure principle. Students enrolled in the courses they wanted....[and there was] a scramble for infinite options to satisfy every taste or lack of taste.

Furthermore,

> As each career program was established, the traditional disciplines in liberal arts and sciences were placed in a service relationship to vocationalism--as though the only way the disciplines could be made interesting or relevant was by attaching them to practical programs.

It appeared, however, that

> open admission students needed a vast amount of attention in their attempt to master the writing of English. One could find some comprehension among them during the discussion of a reading assignment, and class discussions were animated...but the students' writing barely made sense.

Thus, despite the fact that these students "brought to their work a motivation that was like hunger," the need for them to master English--a standard language--was clear to everyone.

Not so clear, perhaps, was their further "need to master, at the same time and in the same place, the separate language of biology or psychology."

But "clouding the issues of literacy and open admission....were the implications of racial tension... working across and into the mind of everyone who cared."

In the end, Dean Gross concludes, "Creating ongoing [ethnic] departments was wrong, and those with empty hands are the minorities for whom they were created."

The experience of CCNY with open admissions argues most dramatically, he believes, that adequate preparation, not creativity, anger, determination, or desire, is the essential criterion for entrance to college and success in academic endeavor.

Dean Gross points out that, for lack of funds, New York City no longer adheres to a policy of open admissions. But the urban conditions which prompted adoption of the policy, he notes, "remain to haunt us as memories of what we failed to achieve."

His article ends with these thoughts on undergraduate instruction as training in the ability "to see life clearly and see it whole":

> Inevitably, one returns in education to the basic questions of what the student knows upon graduation and especially of what skills of interpretation he possesses. If he does not know something of philosophy and history; if he has not developed the critical skills that enable him to distinguish the moral from the immoral, flatulent language from genuine, art from artifact--then he is not educated.
>
> Discrimination is essential: intellectual discrimination. That and lengthening the critical attention span, so atomized by television and radio and newspapers and a hundred forces colliding with the eye and the ear. And acquiring the understanding of a few great texts--a few will suffice--that have lived beyond their moment in time. And achieving the self-reliance that grows from the authority of knowing some things well.
>
> Knowledge is certainly not enough. It should lead to wisdom, which carries vision in its meaning. But without knowledge, wisdom is hard bought. And knowledge cannot be only the sociology and economics and political science of the moment, ever shifting, stimulating an anxiety that stems from uncertainty, fogged by statistics that carry with them apparent truth. Without a past, what future can we have?

Ed. Note: Violent student protests against "How to Kill a College" have caused Professor Gross to be deprived of his Deanship. Apparently those whose "empty hands" he regretted and whose aspirations he sympathized with took up weapons and were not prepared to understand what he was saying. The City College of New York continues to proclaim itself "An Equal Opportunity Employer."

Standards for Telecommunication

"The Federal Telecommunication Standards Program," by Dennis Bodson, in the IEEE Communications Society Magazine for March 1978, tells us, among other things, the following:

In 1963, partly because of problems experienced with internal communication during the Cuban missile crisis, President Kennedy directed the establishment of a National Communications System. The NCS was to be an interagency organization that would "provide necessary communications for the Federal Government under all conditions, ranging from a normal situation to national emergencies and international crises."

The President named the Secretary of Defense as Executive Agent for the NCS, and the Director of the Defense Communications Agency was later named NCS Manager.

Thus the Secretary and the Director each took on NCS work as an additional responsibility. They were charged with linking and improving the communication resources of the ten agencies chiefly involved in long-distance telecommunication activities of the Federal Government:

Departments of State and Defense
Federal Aviation and General Services Administrations
National Aeronautics and Space Administration
Central Intelligence Agency
Departments of Commerce and the Interior
Energy Research and Development Administration
U.S. Information Agency (now International Communication Agency)

The NCS is, accordingly, a confederation of telecommunication facilities which are funded and operated by their parent agencies. They respond to coordinated plans and procedures and are available as needed to satisfy transcending national requirements. The organization serves as both focus and catalyst for Federal telecommunication resources.

In 1972, in response to Executive request, the NCS Manager established the Federal Telecommunication Standards Committee (FTSC) to

* develop standards for achieving greater compatibility among NCS communication networks and providing network/computer interface, and
* improve the coordination of Federal, national, and international standards programs.

Fourteen Federal organizations--the ten NCS agencies and four others, including the National Bureau of Standards--are represented on the FTSC, which coordinates with standards programs of the

Electronic Industries Association
American National Standards Institute
International Telecommunication Union
International Standardization Organization

Two types of standard emerge from FTSC efforts: those which affect telecommunication systems only and those which affect both telecommunication systems and information processing systems.

To date, six Federal Telecommunication Standards have been published (on signaling rates, circuit characteristics, and various aspects of coding and modulation). Further information is available from the National Bureau of Standards, Washington, DC, 20234.

As FTSC work continues, five standards are awaiting publication and sixteen are being developed.

12-Hour Shifts

Working 12-hour shifts gives some Du Pont employees a lot of time off.

At six Du Pont Co. plants that operate round the clock, employees work an unusual four-week rotation. Du Pont doesn't want to do what many concerns do with continuously operating plants--assign workers permanently to work turns that many won't like. But rotating the turns on an eight-hour schedule left employees working long stretches with no weekends off.

Du Pont's solution: a complex schedule of 12-hour work turns. Employees work no more than four days in a row, and they're assured two full weekends off out of every four. They get seven straight days off every four weeks, and no employee works more than seven nights during the four-week cycle.

Begun in 1974, the experiment is considered a success by Du Pont, which adds that the employees like it too.

--From Newsletter of the Industrial Communication Council, April 1978.

Diamond Mine

English Grammar and Structure--N. A. Berkoff (New York: Arco, 1975, 142 pp., paperbound, $1.50).

This little book is a great treasure. Evolved in the course of teaching English as a second language to university students, it can also be used with profit by all who wish to improve their skill in reading and writing the language.

The author is Director of English Basic Studies at the Hebrew University of Jerusalem. He discusses the classes of words; basic syntactic structures and their combination in different types of sentences and paragraphs; verbal forms, tenses, and patterns; and how to summarize a paragraph. The analyses are clear, accurate, and logical. The step-by-step exercises very cleverly provide opportunities to practice the use of English structures in contexts that appeal equally to intellect and imagination. Each chapter deserves much praise for presenting its wealth of necessary detail briefly, clearly, and pleasantly.

Little praise, however, can be given to the practice of using a relative pronoun without a particular antecedent, as is done, for example, on p. 56 (item 29) and p. 66 (item 12) of this grammar. The construction is a fault or a false step, even though such fuzziness of reference can easily be pointed out, recognized, and corrected.

To be specific, instead of supplying which in the first case cited, "The floods destroyed several bridges, _____ made it impossible to get south by road," one would do better to re-phrase, as, "The floods destroyed several bridges, thus making it impossible to get south by road," or "The floods, by destroying several bridges, made it impossible to get south," or, "The floods, which destroyed several bridges, made it impossible to get south." Other possibilities exist also.

The usage in question, however, is far less difficult to understand than many of the other aspects of English which Berkoff illustrates so beautifully. Students who can correctly use all the structures so well explained in this book will have no trouble refining their knowledge of relative pronouns and antecedents.

Aside from this problem, Berkoff's English Grammar and Structure is an excellent, fog-dispelling presentation of a complex, often confusing subject. Those for whom English is a native language will find it enlightening. Those for whom English is a second language will find it extremely useful.

Gold Mine

Encyclopedia of English--ed. Arthur Zeiger (New York: Arco, rev. 1959, Fourth Printing 1973, 502 pp. incl. index, paperbound, $2.50).

Zeiger's Encyclopedia is advertised as "20 Books in One"--each "Book" is a long chapter. More conveniently, the volume may be thought to contain a discussion and a dictionary for each of nine aspects of the English language:

grammar	punctuation	rhetoric
usage	pronunciation	prosody
spelling	vocabulary	history

A tenth section, on literary forms, and an index complete the contents.

This book, of course, changes its subject often and is too detailed for continuous reading, but the many and varied "goodies" in its chapters provide an extensive array of material for reference and desultory reading.

The Dictionary of Grammar gives the derivation of all terms listed and explains the linguistic use of such words as stem and root, junction and nexus, tense, portmanteau, supine, and doublet, as well as explaining more particularly grammatical words like nominative, copula, gerund, and so on.

The Dictionary of Words Most Frequently Misspelled suggests causes for wrong spellings and ways to remember right spellings--as in

poison - Shun poisen.
cannot - One word.
address - Two d's and two s's (ad + dress).

The Dictionaries of Roots, Affixes, and Figures of Speech are also treasure-troves of useful information, and the chapters on rhetoric and poetry contain excellent brief discussions. The chapter on vocabulary describes, among other things, the structures and relationships which characterize the Indo-European family of languages.

Finally, and similarly, the chapters on the history of the English language and of English, American, and world literature tell all that anyone but a specialist needs or wants to know about each of the respective subjects--except for things that have happened since the 1930's.

This Encyclopedia contains the nuts and bolts of the English language, sorted and easily accessible. It has the fascination and usefulness of a hardware store, and can be purchased for only a very small outlay of capital.

Culture Communicates

The Silent Language--Edward T. Hall (New York, Doubleday, 1959; paperbound ed. (Anchor Book A948), 1973, 217 pp. incl. index, selected bibliography, and three appendixes, $1.95.

"Culture is communication," anthropologist Edward T. Hall teaches. But in supporting this generalization he contradicts to some extent his more significant thesis--that culture consists of many forms of communication, and that among these forms, speech and writing, aside from technological reinforcement, are only two out of many.

He also calls behavior "the silent language." And this generalization, again unfortunately, oversimplifies, or even possibly misrepresents, his analyses.

To be more specific, Hall discusses culture not only as the sum of all the characteristics of a society but also as a communicative structure which consists of ten silent languages. Each language, he points out, is primarily associated with one particular aspect of societal living but conveys information about all aspects.

The Silent Language presents these relationships in a 10-by-10 matrix (pp. 196-7). Aspects of culture --that is, types of social activity--label the rows. Societal "languages"--that is, types of bio-cultural information--head the columns. The one hundred matrix elements represent message systems--the informational aspects of society.

According to Hall, the activities and languages of culture are as follows:

Activities (Matrix Rows)	Languages (Matrix Columns)
0 Interaction	0 Interactional
1 Association	1 Organizational
2 Subsistence	2 Economic
3 Bisexuality	3 Sexual
4 Territoriality	4 Territorial
5 Temporality	5 Temporal
6 Learning	6 Instructional
7 Play	7 Recreational
8 Defense	8 Protective
9 Exploitation (use of materials)	9 Exploitational

Vocal and kinesic messages from individuals pervade all elements of the matrix, of course, but are considered separately as linguistic communication in the single element 0-0. The other 99 elements represent non-linguistic communication.

The diagonal elements 0-0, 1-1, etc., to 9-9 may be thought of as the primary message systems or chief sources of information about a society; that is, its

0-0 Language
1-1 Social and governmental organization
2-2 Occupations
3-3 Sexual customs
4-4 Treatment of space and boundaries
5-5 Attitude toward time
6-6 Patterns of formal and informal education
7-7 Games and recreation
8-8 Formal and informal methods of protection and defense
9-9 Technology, contact with environment, motor habits

The other set of ten diagonal elements (9-0, 8-1, 7-2, etc.) identify the following as more particular sources of information about a society:

9-0 Communication networks
8-1 Military, police, public health, and religious organizations
7-2 Professional sports and entertainment
6-3 What the sexes are taught
5-4 Territorially determined cycles
4-5 Scheduling of space
3-6 Education in sex roles
2-7 Pleasure obtained from working
1-8 Roles of doctors, clergy, soldiers, police
0-9 Use of telephones, signals, writing, etc.

Identification of these twenty sources of information suggests how the other eighty sources might be specified. In the language of organization, for example, come messages about status and role (1-1), occupational groupings (2-1), group territory (4-1), and educational institutions (6-1), etc. Messages about societal use of materials deal with building and urbanization (9-1), food and industrial equipment (9-2), property of all kinds (9-4), school buildings and training aids (9-6), manufacture and use of recreational equipment (9-7), etc.

All of these manifestations of society, as they exist and as they are varied and specific, provide information--not only to teach young members of the group but also to inform "foreigners."

What kind of games does a people play? Where and when do individuals eat? How close do they stand in conversation? What of family life, sexual division of labor, age-group roles, instructional play, economic patterns, or military and religious training? And how do one group's answers to these questions relate to our own answers, or to those of another group?

Hall emphasizes that when people of different cultures have contact or negotiations, it is not enough that they can speak and read each other's language, or that they have been instructed about each other's history and government. They must also be conscious of the elaborate patterning of behavior, organization, and ideas which in any society prescribes the handling of time, spatial relationships, and attitudes toward work, play, learning, and so on. They must be aware that even a small difference in an apparently minor aspect of culture can cause serious misunderstanding and lead to unproductive meetings, cross-purpose dialog, or hostile retaliation.

When we impatiently deplore the breakdown of relationships with "those foreigners," we tend to blame their stupidity, deceit, craziness, or perversity. But at such a time, members of both groups should recognize that the ordinarily acceptable behavior of each is being interpreted in a way that distorts true sentiments or intentions.

And the two "foreign" groups may be as related as Northerners and Southerners or Westerners and Easterners in the United States, as similar as Canadians and British, as different as Chinese and Africans, as separate as Arabs and Polynesians.

Hall further elaborates on this presentation of culture as a communicative structure by discussing its relativity and indeterminacy. These qualities become evident, he points out, when we understand that cultural messages are imparted on three different levels--formal, informal, and technical.

All three levels of presentation may be identified for each of the ten levels of culture. For example,

we receive information about a society's interactional structure formally through tone of voice, informally through gesture, and technically through language. Knowledge about a society's attitude toward learning comes from observing how it rears children (formal), gives informal instruction, and provides formal education (technical). A diagram on p. 95 of The Silent Language shows these and other methods of communicating.

Similarly, concepts of comfort, use of natural resources, and technology itself are seen as the formal, informal, and technical ways in which information about exploitation is revealed. And defense attitudes and practices are manifested formally, informally, and technically in a group's system of beliefs about such things as the supernatural, safety, and health, in the attitudes of individuals toward these matters, and in religious ceremonies, military defenses, and health practices.

Making a third analysis, Hall describes the messages of culture in terms conventionally applied to spoken and written language. That is, he discusses culture as the language of behavior, constructed of sets (cf. words), which can be broken down into isolates (cf. sounds) and organized into patterns (cf. phrases, clauses, and paragraphs--even chapters). It is helpful to keep the linguistic analogies well in mind.

Sets, Hall explains, are the first aspect of a message to be observed, but have significance according the patterns in which they are used. Sets may be large or small, consist of significant or interchangeable isolates, and occur within a variety of patterns. They may be perceived singly or in categories. Within categories, they are usually ranked--formally (according to traditional value), informally (according to individual taste or situation), or technically (as points in a pattern).

The same set may be classified differently in different cultures. Comparable sets may have different components in different cultures. For example, Eskimos recognize, and have separate words for, several kinds of snow; Americans have one word for snow but recognize "wet" and "dry" varieties. Bronze, silver, and gold form a ranked set which belongs to the larger set of metals. Colors form an unranked set in some cultures, may be "good" or "bad" in another.

Trees, horses, tableware, school subjects; kinds of automobile; rare, medium, and well-cooked steak; gestures, words, family groups, buildings, vegetables, divisions of time, rooms in a house--all these form sets differently and changeably.

Sets may be formal or informal, but when they are looked at technically they dissolve into isolates, and when they are grouped they merge into patterns. Logical, customary, or some other type of order may determine a pattern; selection according to one of many "rules" may also be a factor, as may congruence (what "fits" or is thought appropriate). Patterns are taught and learned formally by precept and warning, informally by copying, and technically by documented instruction.

Use of the metric system is a pattern; so are etiquette or "good" manners, what is eaten for breakfast, literary and architectural styles. "A pattern is a meaningful arrangement of sets shared by a [societal] group" (p. 125).

But what do these elaborate analyses mean for anyone who is not a linguist, sociologist, psychologist, or anthropologist?

They show, first of all, that even though two "foreigners" may open communication by agreeing to speak the native language of one of them, they will still stumble upon hidden barriers to full understanding.

They show that such barriers may be formal, informal, or technical, simple or complex, rigid or flexible, matters of preference, rule, or convention.

They show that such barriers can be identified as instances of failed communication.

And finally they show that by investigating these barriers as two sets of contradictory messages, sent but either not received or mistakenly interpreted, the "foreigners," together, may find and perhaps remove or circumvent the causes of reciprocal misunderstanding.

In The Silent Language, Hall speaks of the unrecognized rules and concealed guidelines which control human behavior (p. 120), and gives many specific examples to show how social messages have been unheeded, misunderstood, explained, or used to advantage.

In reading this book, we become more keenly aware of the many forces of culture, more alert to the sounds and more sensitive to the nuances of the ten silent languages which continuously broadcast vital information.

By tuning the consciousness of individuals to the many communication channels of social living, we can obtain better understanding, not only of "foreigners" but also of ourselves, as participants in culture.

Read This Book

On the Move--Ron Blicq (Englewood Cliffs, NJ: Prentice-Hall, 1976, 259 pp. incl. index, paperbound, $5.95).

Neither the title of On the Move nor its subtitle, Communication for Employees, adequately suggests that in this small volume Ron Blicq discusses with clear understanding and judicial attitude not only the general philosophy but also particular problems of sending and receiving business messages.

His rationale for the title and his reason for writing are (partly paraphrased) as follows:

> Today's employees tend to move around. They are more ready to experiment than persons of previous generations. They continually break ties, meet new people, and make new friends. Thus they need to communicate more and better than people who stand still and therefore I have written to help them.

The exercises at the end of each chapter and the occasional mention of "your instructor" identify On the Move as a textbook, but it may well be used for self-help. In either case, of course, performing the exercises will be far more beneficial than ignoring them. But they are such ingenious writing assignments and each is related to such a lively business situation that even reading them through as problems in communication is educational.

In Section I, Blicq first considers communication, traditionally, as a personal process involving a transmitter, written or illustrated "messages," and a receiver; he then discusses how both persons, in general, can improve the process.

Sections II through V, deal with problems of

Communicating with Prospective Employers
(finding where jobs are and selling yourself well)

Communicating as an Employee
(with other employees, your employer, customers)

Communicating as a Supervisor
(with employees and management, in reports about your work, for your company)

Communicating as Owner of a Business
(with customers, other companies, and employees)

Section VI, The Style and Shape of Written Communication, tells how to

personalize your writing
place the message up front
choose words that convey images
assemble words into sharp sentences
build strong paragraphs
use business-like formats

On the Move is not about report writing, job hunting, English grammar, advancement in business, or how to keep your shop or office peaceful and productive. It is about the communicative aspects of business--the various situations and relationships, problems and solutions involved in sending and receiving work-related information.

Much has been said in past issues of this Newsletter about Ron Blicq's other book, Technically--Write!, and about the PC-sponsored home-study course which is based on that book and uses its title. Technical writing, however, is only a sub-set of business communication. To get "the big picture," read On the Move.

As a matter of fact, everyone in business should read On the Move. It makes the reader aware that most work problems basically involve communication problems and it shows how difficulties can be avoided. Also, it is as pleasant to read as a notice of salary-increase, as diversified with sub-plot stories as a Victorian novel, and as instructive as a World Fair exhibition.

Job Ad Jargon

Travis Walton, editor of the Geoscience Electronics Society Newsletter, has compiled a glossary to help engineers understand want-ads for professional services. The following interpretations appeared with others in his March, 1978 issue:

Mid-winter vacation
Our business slacks off in December

Career growth opportunity
You start at the bottom

Our problems are challenging
Our problems are impossible

Prestigious manufacturer
High overhead rate hurts sales

State salary requirements
Give us a good laugh

Hands-on experience
Our designs need healing

Handle projects from conception to production
We have nobody to help you

Profit-sharing plan
Also loss-sharing plan

Our employees know of this ad
Nobody here will touch this job

Experienced in oral communications
Many of our people can't read

Shirt sleeve performer
We don't have air conditioning

Salary is open
Open to ridicule

Stimulating environment
Plant hot as sauna in summer

Offering excellent visibility
You don't get a private office

Ground-floor opportunity
We won't pay much

Heavy projects experience
Not prone to hernia

Complete compensation package
Pay comes in an envelope

Good track record
Faster than irate customers