

INS  
EL24  
T  
PC

IEEE TRANSACTIONS ON

# PROFESSIONAL COMMUNICATION

MARCH 1987 VOLUME PC-30 NUMBER 1 (ISSN 0361-1434)

A PUBLICATION OF THE IEEE PROFESSIONAL COMMUNICATION SOCIETY

KURT F. WENDT LIBRARY  
COLLEGE OF ENGINEERING

MAR 13 1987

LW-MADISON, WI 53706

Helping Engineers Share Their Knowledge .....	L. K. Moore	1
The State of Communication Arts .....	J. G. Nagle	2

## PAPERS

Expanding Concepts of the Writer's Purpose, Audience, and Task:		
<i>The IEEE Transactions on Professional Communication</i> , 1981-86 .....	R. Fry	4
Readability Formulas: Useful or Useless .....	G. M. McClure	12
The Emerging Role of the Forensic Engineer .....	R. L. Boyell	16
How Engineers Can Find and Use Federal Scientific and Technical Data .....	C. Bloch	19
The Readers Forum .....		28
To See or Not to See: The Other Rhetoric .....	P. Trummel	30
Information Design: Maximizing the Power and Potential of Electronic Publishing Equipment .....	E. Keyes	32
The Spoken Word .....	S. Dressel	38
Effective Presentations: A Bibliography .....	S. Prasad	39
Engineering Effective Software .....	T. M. Duffy	41
In Just the Last 10 Years .....	D. Farkas, M. Haselkorn, and J. Ramey	43
What Is Communication Education and Training? .....	S. P. Sanders	45
Systems Integration: The Technical Writer as Data Manager .....	B. D. Meyer	47
Recall of Flashed Capitalized Video Print: A Study of Prelingually Deaf Science and Engineering College Students .....	A. Malcolm	50

## BOOK REVIEWS

Electronics Dictionaries: A Survey .....	E. A. Lacy	54
Information for Authors .....		57
IEEE Copyright Form .....		59

## To See or Not to See ... The Other Rhetoric

PAUL TRUMMEL

Verbal and written language has become so dominant that it virtually excludes the perceptual languages from the thought process. However, Musil [1], in keeping with his thesis on the "other condition," posits that visual and verbal statements must be kept in mind in a kind of complementary condition, if valid communication is to occur. But is visible language currently being used properly as an integral part of communication? Is it a means for addressing falling literacy levels? Can it be used as a tool to assist the programming function? To see, or not to see: that is the question.



Cognitively, we perceive the world through the intellect, through the emotions, or through some useful combination of these extremes, either by logical analysis or by metaphorical synthesis. In the field of technical communication, that theoretical construct has been largely ignored. The result is incredible confusion about how people navigate, both intuitively and intellectually, when confronted with large amounts of technical information in, for instance, a computerized environment.

A new set of rules for document creation, based in traditional practice, would eliminate the need for operators to rummage intuitively when using computerized devices, and restore order in the design function. Such a set of rules can be relevant if they have been established in consideration of contemporary culture, environment, and three primary levels of communication:

- Representation: environmental and cultural cognition
- Abstraction: reduction to basic elements which refer to recognizable objects and appeal to the emotions
- Symbolism: arbitrary code systems and icons which represent segments of information by resemblance or by analogy to them

These levels are not exclusive. But they lend themselves to the effective analysis of specific communicative functions. The brain has two analytic modes, each with its own special capabilities. They work in concert, yet each retains its own individual attributes and each evaluates

reality in its own way. Edwards defines the two hemispheres of the human brain in terms of L-mode and R-mode, and contrasts their attributes: verbal-nonverbal; syntactical-perceptual; linear-global; sequential-simultaneous; analytic-synthetic; logical-intuitive; symbolic-concrete; temporal-nontemporal; digital-spatial [2]. These divisions are inconclusive, and it is not important for communicators to remember which brain hemisphere controls which function. But they do reinforce the belief that communication must use visual as well as verbal language to communicate dynamically.

The use of visual language is not new. Coleridge, for example, develops perception as a rhetorical concept [3]:

*Taste* (cultural experience) is the intermediate faculty which connects the active with the passive powers of our nature, the intellect with the senses; and its appointed function is to elevate the *images* of the latter, while it realizes the *ideas* of the former.

Sperry [4], among others, finds that cognitive processes which combine modes improves recall and comprehension; he suggests that a combination of visual and verbal languages offers real advantages in communication.

A distinct parallel exists between analytic and visual language; they can be used equally well as information carriers. The more data processing becomes invisible, the greater the need for the information carrier, such as an algorithmic device, to be visible. We clearly understand complex procedures at our own comprehension levels, through the use of visible forms. Visual components, as a medium for understanding, provide variations in emphasis. The use of basic geometric elements organizes complex data. If literacy levels and comprehension factors in rapidly changing environments are considered, then perceptual skills must parallel verbal skills in modern communication.



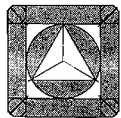
The current, pragmatic focus is on the sale of hardware and software, with an attendant plethora of misinformation. Thus there is a need to teach graphic designers and typographers to understand the structure of visible language and to use the tools of high technology. Equipment man-

ufacturers foster the illusion that users of graphics and desktop publishing equipment, with no knowledge of perceptual dynamics or communication theory, can intuitively develop technical information. This is clearly untrue. Just as manual tools must be in the hands of skilled craftspeople to be effective, communication tools need to be in the hands of thoroughly trained professionals.

Lack of consideration in program design for the user's basic visual and cultural cognitive skills makes the programs difficult, sometimes impossible, to use. Programmers are programming for other programmers, when designers should be preparing user-oriented visible algorithms as a basis for programming. These conceptual shortcomings are a challenge to design and technical writing educators, a challenge to investigate traditional and contemporary design practices and adapt them to the continually changing needs of the high-tech media. Computer-aided technical communication requires both the graphic designer and the writer/editor to have a strong background in the fundamentals of graphic design and an understanding of intellectual systems.

Can visible language improve basic comprehension in an increasingly semiliterate society? Is it the responsibility of those controlling the technology to inform the users in their own vernacular and at their own comprehension levels? Can technological procedures be utilized to compensate for and temporarily correct the educational imbalance that exists?

The answer to these questions may lie in a symbiotic relationship between technological development and pedagogical concepts. Such a relationship demands serious concentration, on the part of both academicians and communicators, on the connection between visual and linguistic practices. Graphic designers can choose to become tool producers by participating in the design of visual communication application programs, or by helping to develop computer-aided instruction. They must be identified with, and integrated into, the product design process, along with technical writers, to resolve the present confusion.



Is visible language a rhetorical device? Do we agree about the duality of communication techniques, or not? The forum for the development of old ideas and new concepts in this area is the department for Graphic and Visual Communication, *IEEE Transactions on Professional Communication*. The *Transactions* invites scholars, practitioners, commentators, and critics in all relevant fields to report on various aspects of graphic and visual communication. We welcome original and stimulating articles, particularly those of broad perspective and multidisciplinary content. The audience consists primarily of professional communicators, academics, and working engineers. All papers submitted are reviewed for publication.

The department of graphic and visual communication will be divided into three main classifications and a number of divisions, which are intended to be suggestions, not limitations:

### ● Printed Documentation

- Color transparencies
- Comprehensive visuals
- Copy and graphics
- Designs and plans
- Electronic composition
- Generic data codes
- Graphic image assemblies
- Process limitations
- Quality control
- Research
- Typesetting
- Typography

### ● Online Information

- Displays
- Documentation
- Edit and input
- Human factors
- Pattern generation
- Storyboarding
- Symbol and alphabet development
- Typography
- Visual systems and methods
- Visual variables

### ● Media

- Aesthetics
- Algorithms
- Audiovisual aids
- Cartoons
- Decoupage classique
- Dialectic montaging
- Educational curricula
- Elemental control
- Film
- Graphs and flow charts
- Metaphors
- Photography
- Slides and overhead transparencies
- Video

Contributors may submit completed papers or an abstract of 200 words or less to the associate editor:

Paul Trummel  
 Communication Research Laboratory  
 Sage 4702  
 Rensselaer Polytechnic Institute  
 Troy, NY 12180-3590

For additional information and/or answers to questions, call me at (518) 271-5636, between 7 AM and 9 PM.

### REFERENCES

1. Musil, R., "Ansätze zu neuer Aesthetik: Bemerkungen über eine Dramaturgie des Filmes," *Der neue Merkur* 1925:672-74 (March 1925).
2. Edwards, B., *Drawing on the Artist Within*, Simon and Schuster, New York, 1986.
3. Coleridge, S.T., *On the Principles of Genial Criticism*, D.C. Heath & Co., Boston, 1895.
4. Sperry, R.W., "Bridging Science and Values: A Unifying View of Mind and Science," *American Psychologist* 1977:237 (April 1977)