

IEEE Professional Communication Society

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Conference Record IPCC 92 – Santa Fe

IEEE Catalog Number 92CH3200-3

ISBN: 0-7803-0788-7 Softbound Edition
0-7803-0789-5 Casebound Edition
0-7803-0790-9 Microfiche Edition

Library of Congress Number: 92-56488

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IPCC 92 Conference Record

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This paper, written from the perspectives of the writer, graphic designer, and the communication manager, shows how parallel constructs relieve not only production but also human factor conflicts inherent in the communication process. These conflicts usually originate in individual psychological differences (conceptual or perceptual), and become exacerbated by a lack of interactive education and training.

Parallel Multivariate Media Complexes: Codirectionality in Verbal and Visible Communication

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Whether communicators function as writer, graphic designer, or communication manager, they have a commonality of purpose—to communicate information to an audience comprehensively. Therefore, it becomes imperative to create an environment of mutual understanding of not only the media, by their nature noncreative tools, but also the different creative processes. Such a codirectional and interactive understanding, in turn, creates a working relationship between communication arts and crafts. Communicators need to understand the total composition, or gestalt, as a reference base for the present and primary concern with comprehension of visible statements and also need to understand human factors concatenation by the metastasis (rapid transition) of typographic art, through typesetting craft, to audience comprehension (Figure 1).

At this moment of retrospection and projection on the communication arts, after 45 years of personal experience and transition through all three phases of the development of modern technical and graphic communication, I propose a return to the traditional art/craft connection that has become virtually nonexistent in modern technical and graphic communication.

Art and Craft Concatenation

Media planning, significant as a foundation in the creation of mutual understanding, influences the design of mediated collateral and serves as a principal tool in disseminating information to multivariate audiences. Additionally, these plans apply, from a human factors perspective, to the interpersonal relationship between the members of a communication team and to the relationship of the team to its clients (Trummel 1991).

Efficient communication, therefore, results from creative interaction between authors (chirographers—verbal language), graphic designers (typographers—visible language), and programmers (facilitators—computer language), all of whom use parallel electronic processing techniques and tools to produce comprehensible mediated information. Most communication specialists involved with technical and graphic communication acknowledge the need to

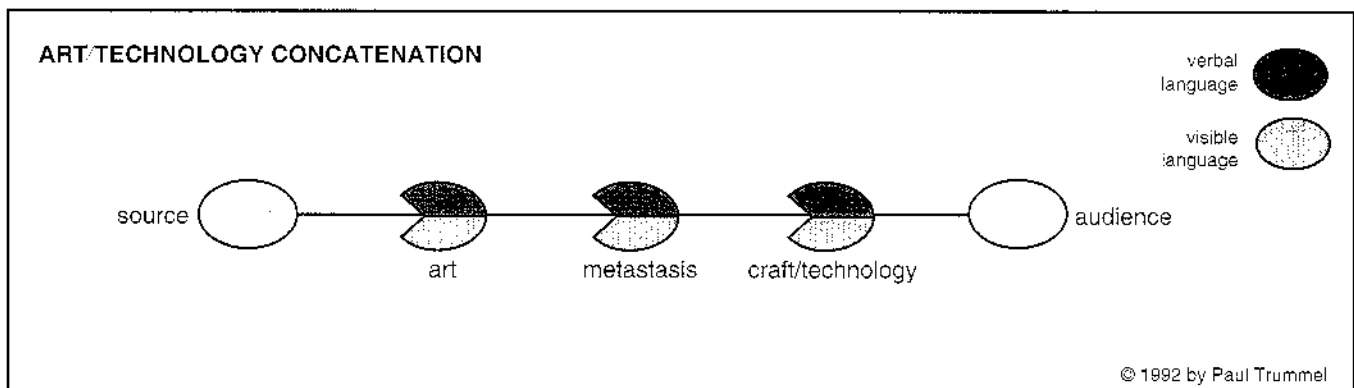


Figure 1

follow a consistent style in manuscript preparation and design visibly appealing communication collateral along a systematic graphic plan. Few, however, know how to use communication constructs, in both perceptual and conceptual contexts, to implement their plans.

Generally, effective organization and implementation plans result from precise technical and graphic configurations of personnel and equipment. The existence of these configurations depends, almost entirely, upon concatenation of art, craft, and technology and relates especially to a creative interaction between writers, designers, and programmers. Interpersonal relationships normally develop among team members. These teams inevitably require considerable nurturing to balance the differing conceptual and perceptual (attentive and preattentive) dispositions of individual members, who may severally represent very different professions. These criteria seem to determine, quite explicitly, the goal: efficient technical and graphic communication through improved audience comprehension and the means: coordination of different communication complexes in a way that creates multivariate human and media unity (Figures 2 and 3).

Multivariate media configurations make verbal and visible language both readable and legible. These configurations consist of a number of codirectional and parallel communication constructs that consider a variety of human and media factors. The design of these constructs depends upon a concatenation of art, craft, and technology and the use of codirectional, parallel algorithms. From the human factors perspective, this organizational and creative chain of writers, designers, and programmers naturally gives rise to interpersonal relationships and conduct that relates not only to a specific public through media use but also, at a more personal level, among themselves and with their clients. It follows that *codirectionality, or parallelism, coordinates communication complexes of very different kinds in a way that creates multivariate human and media unity and improves audience comprehension.*

Verbal and Visible Language

Historically, parallel communication devices have existed in both verbal and visible environments for the identification of social

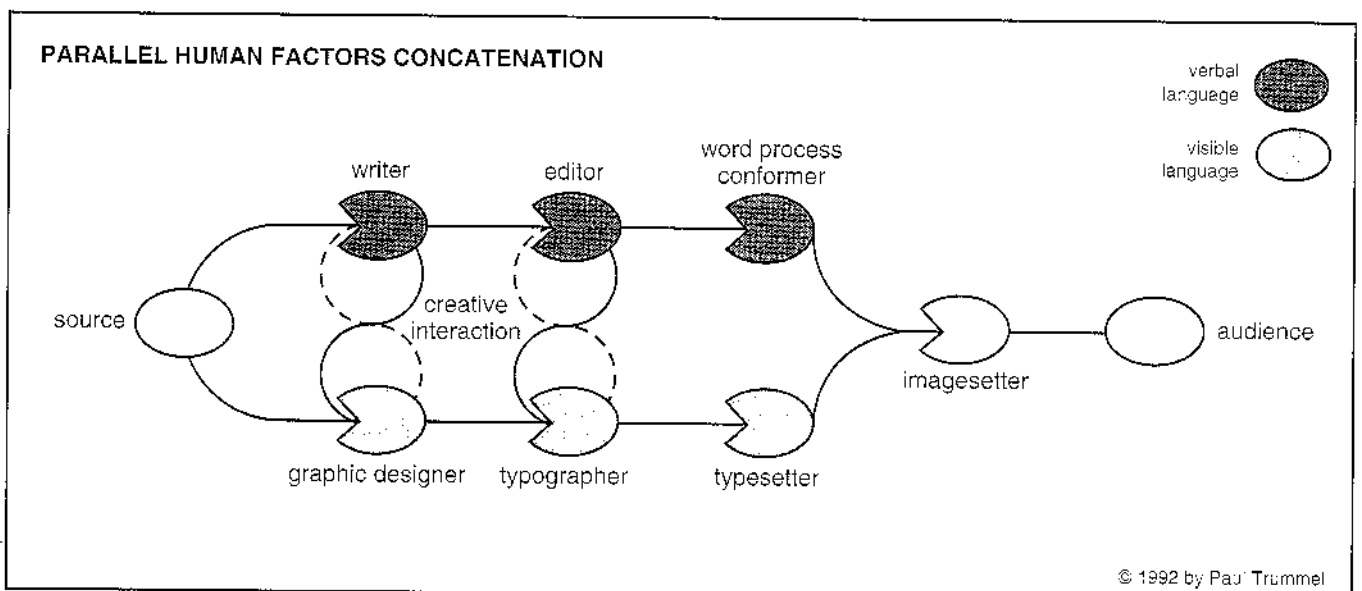


Figure 2

strata, symbolic terminology, mythology, and religion. These communication devices have both verbal and visible attributes: verbal language—conceptual, expressive, and readable; and, visible language—perceptible, allusive, and legible; both of which become necessary for comprehensive composition (Figure 4).

For more than five hundred years, the print medium has reigned omnipotent as virtually the only effective means by which authors could convey their ideas to large numbers of readers. The introduction of new electronic media, many evolved from printing, necessitates the examination of conventional printing as an efficient and economical principal means of disseminating information. Therefore, communicators need to understand the communication arts in an historical printing context and also the communications media in

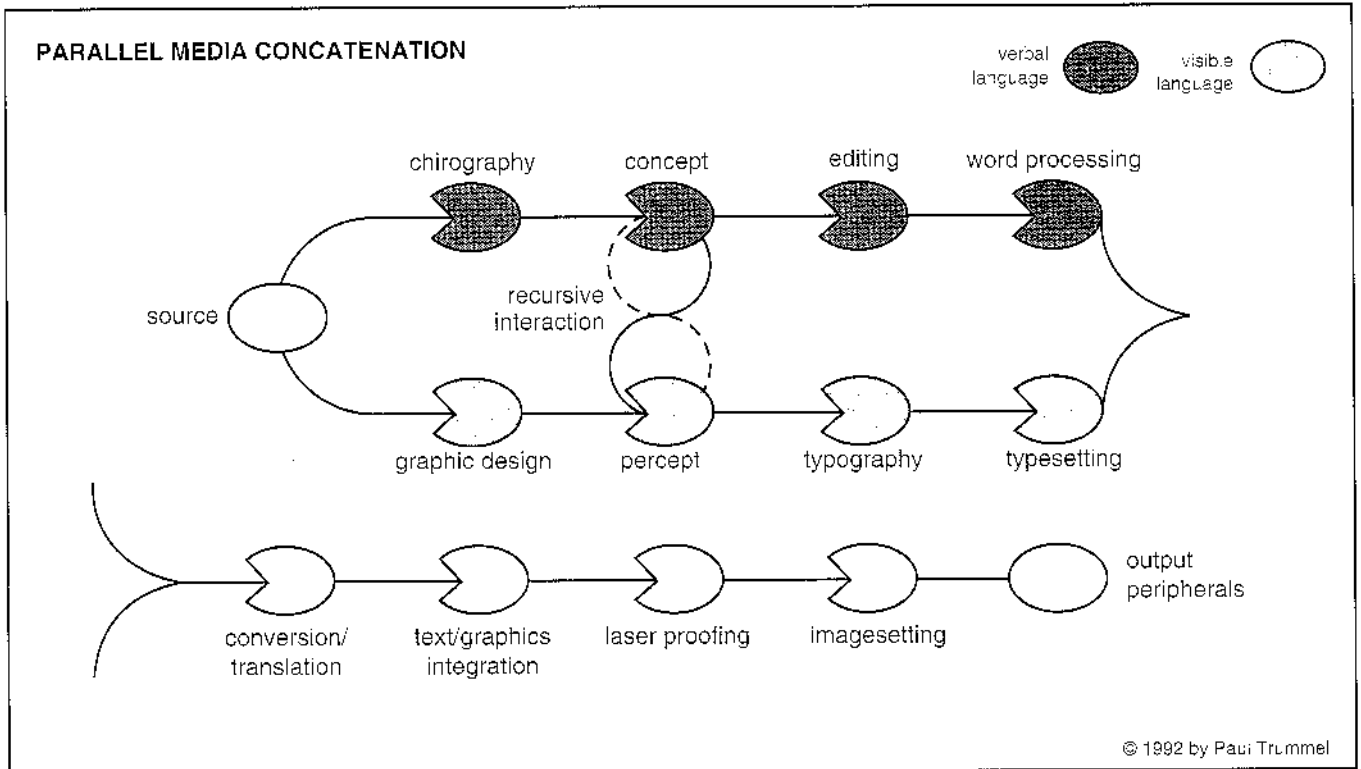


Figure 3

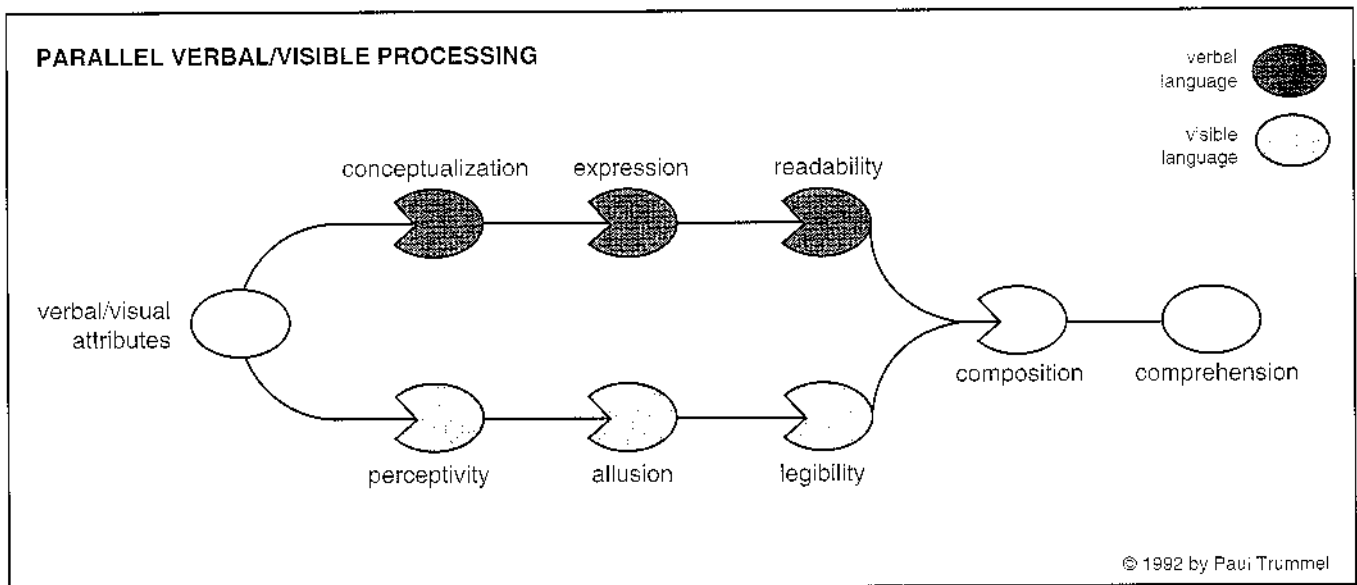


Figure 4

a multivariate context to enable them to establish and maintain general quality assurance, especially readability and legibility, for all modes of communication.

Visible language, a graphic art constituent and a communication channel or medium, the counterpart of verbal language, relates to a system of arbitrary orthographic signs or rebuses that correspond to phonetic sound or have specific meaning and also other paragraphic signs (punctuation), diacritical signs (accent), and extraneous signs (mathematical and ornamental). It embraces typography, iconography, and kinetography (a secondary orality or dynamic multivariate form of rhetoric, pertinent to online documentation and broadcast media). *Visible language* adds emphasis to, and assists the interpretation of meaning in, chirographic or rebus statements, interacts with verbal language, and parallels verbal dissemination of information. In contrast, *visual language*—cultural, edificatory, erudite, subjective, and fine-art related—concerns cultural enlightenment, moral and spiritual uplift, scholarship, and depiction of objects and concepts. Both visible and visual language communicate through perception, both embrace arts, both involve crafts, and both adopt similar techniques. However, visible language depends for clarity and purpose on verbal language and requires a literate comprehension, whereas visual language does not (Figure 5).

The rhetorical, typographic, and objective attributes of visible language place it firmly within the purview of technical and graphic communication. These attributes also indicate specific disseminative and perceptual/cognitive functions that relate to the manifest transmission, recognizable imagery, and persuasive content of communication collateral. No sharp division exists between the disseminative power of verbal and visible language. Both constitute forms of representation because the writer and the designer express similar information through actual description and subjective emotion. They also function in the wide area between these extremes, where everyday language conveys both the facts and the emotive tone of an experience (Gombrich 1969). Consequently, graphic designers need

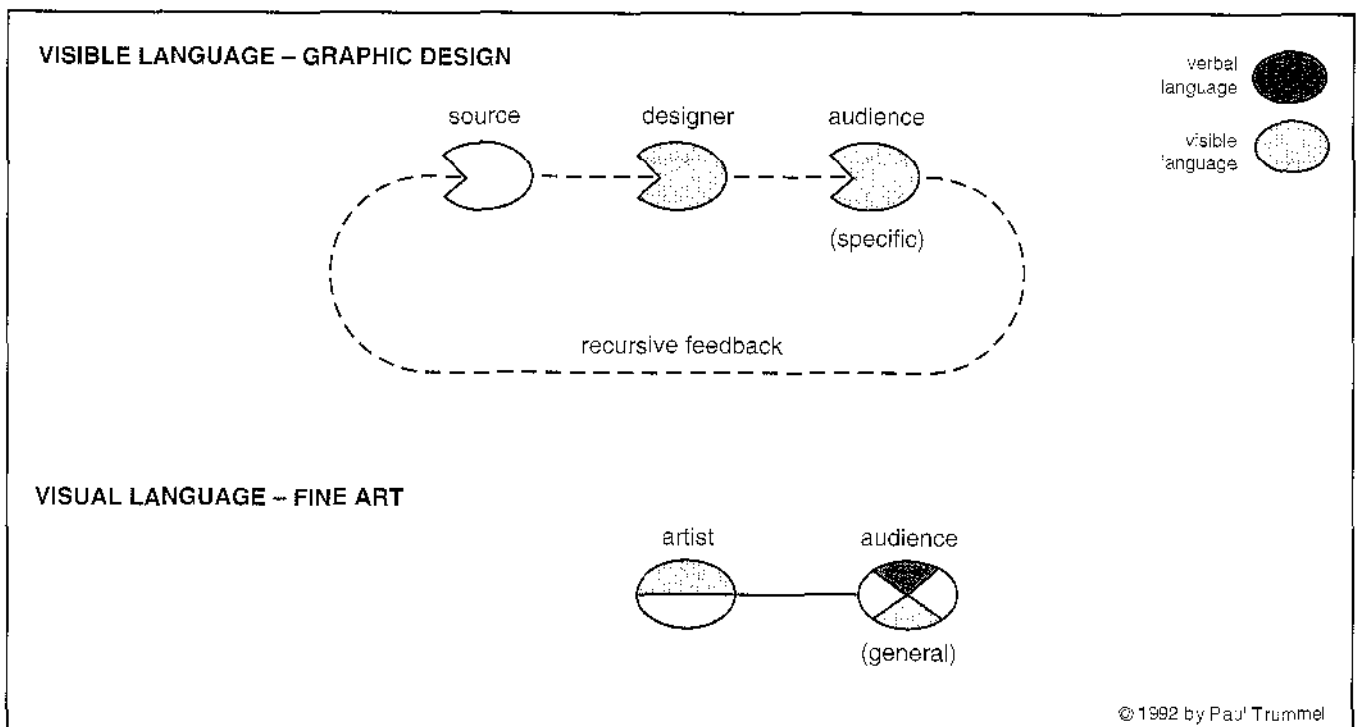


Figure 5

an intimate understanding of verbal language to enable them to emphasize and emulate verbal expression and also need the ability to competently interpret orthographic constructs. Therefore, only literate designers may construct visible language, in distinct contrast to nonliterate artists who may render visual language (Swann 1991).

Modern communication has evolved through cultural changes in thought and expression facilitated by the introduction of new modes and new technologies. Typography both reinforces and transforms the effects of writing on thought and expression. Since a shift from oral to written speech becomes essentially a shift from sound to visible space, the effects of typography on the use of visible space becomes the central, though not the only, focus of attention. This focus brings out the relationship of typography to the orality still residual in chirography and early typographic culture (Ong 1982).

Consequently, the activity of typographers, those who create visible language, parallels that of chirographers, those who create verbal language. Like chirographers, typographers apply rules of conduct to their art, and as a result, persuade their audiences to see as they see. Like chirographers, typographers practice the principles of relative simplicity, in that they do not exceed the requirement of their purpose (Arnheim 1974). The form of visible language does not suffice alone; it requires the typographic transfer of expressive life and power to balance verbal expression in a comprehensive visible allusion. This contrasts with the primary concern of visual language, which relates to the use of the media for predominantly nonliterate individual expression.

Human Factors

Apparently, most communication specialists involved with technical and graphic communication acknowledge the need to follow a consistent style in manuscript preparation and to design visibly appealing communication collateral along a systematic graphic plan. Such a plan intuitively evolves from creative interaction between authors, graphic designers, and programmers, all of whom use parallel electronic processing techniques and tools to produce comprehensible mediated information.

Intuition varies with the communicator's temperament and disposition—a situation that, perhaps, requires consideration on a day-by-day basis and should frequently generate concern in the minds of managers, writers, designers, and programmers alike (Trummel 1991). The solution to this problem of differing perception/cognition, created by the need for conformed modular material produced by teams of communicators, may lie in the study of intuitive emphasis in technical writing.

The intellect, once appealed to, conceptually sustains that which has concrete validity and overrules subjective prejudice. Therefore, well-disciplined thinking as well as knowledge of rhetorical means of persuasion obviates the dissemination of misinformation and consequent misapprehension. Criteria for objective validation of imagery exist. They encourage active exploration, by promoting critical surveys of subjective predicaments. The knowledge gained, when applied to objective goals, releases communicators from their inherent subjectivity and encourages them to formulate a concatenation of new criteria, emergent through enlightened perspective. The writers, designers, and programmers then become jointly responsible for applying these modified criteria to support the design of information systems and to utilize a variety of electronic media.

Conclusion

Teams of communicators need to understand that if they totally absorb themselves in the functions and interaction of computers and peripheral devices, they become psychologically inhibited. They tend to conform to the expediency of engineering criteria rather than those of communication. At present, the design of the majority of text/graphics systems and programs tends toward satisfying engineering criteria, primarily derived from computer theory and technology. These criteria frequently lack aesthetic integrity. They place a preponderance on electronic data processing expediency, which makes them virtually devoid of the aesthetic components so essential to legible output. Redesign of these programs and systems involves consideration of not only the conceptual components of communications technology but also the perceptual values of communication art and its related human factors concatenation.

Codirectionality, or parallelism, coordinates communication complexes of very different kinds in a way that creates multivariate human and media unity and improves audience comprehension. The art of typography counterparts the art of chirography: typography involves not only the visual appearance of type but also the relation between the image seen and the statement it intends to convey. The craft of typesetting counterparts the craft of word processing: both constitute electronic functions controlled by alphanumeric parameters that combine through imagesetting to support multivariate production processes.

Writer/designer evaluation and judgment results in diminished engineering influence, through an increase in the use of user-oriented systems and programs, and allows the design of communication algorithms in ways that predicate upon pragmatic and aesthetic criteria. Empirical research data, an essential integrant, then becomes the referent relative to the design and development of these new algorithms and programs. These verbal/visible algorithms then become retrospective, theoretical validation of those effective communication techniques, evolved empirically over the centuries, based in human factors, understood and used continually, which, although apparently and consistently ignored today, remain relevant in high technology environments. Communication art, a human factor, has not changed very much and communications technology, a technological achievement, has yet to develop in a way that responds to its *raison d'être*—to establish and maintain mutual understanding between an individual or an organization and its public.

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