

VISIBLE LANGUAGE

*the
quarterly
journal
concerned
with
all
that
is
involved
with
our
being
literate*

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Sharon Helmer Poggenpohl

Knowledge workers—in essence that is who populates the scholarly journal. The knowledge worker ferrets out new information and refutes or substantiates it, uses it to alter artifacts or procedures or repackages it into some more finely tuned form for a specific audience or need. These activities bring anxiety—*anxiety concerning the authenticity of the information, its truth or interpreted value, its attribution and even its voice.* When do we have enough information? Never. So anxiety attaches to the always arbitrary way in which we say “enough.”

Separating good information from bad, new from old and establishing and maintaining standards all take time and thought—*human time and human thought.* We are caught by both our limitations and our excesses. Our limitations are measured by personal energy and productive life span in relation to competing demands for our attention. Our excesses are more and more measured by our tools which outstrip us. The speed at which we think, the number of patterns and relationships that we can handle simultaneously—our ability to deal with complexity in the short term seem not to be the operative measure. The dimensions of a database and the speed of a computer diminish our confidence as we confront our finite information processing limits.

It is worthwhile to pause for a moment to consider the word “information.” The word is used loosely. We could say that never before has there been so much information. In this instance the meaning is broad—*all the media stuff that is printed or signalled into our environment.* This is a popular and vague notion of information in its thingfulness. If this is what we mean by information, then yes, we do suffer from overload.

But are we considering information as a statistical or semantic construct? We could, for example, consider information as a measure of the originality of a message. Then much of what we previously perceived as information overload evaporates as most messages we receive are expected and lack originality.

Donald MacKay, in *Information, Mechanism and Meaning*, asks what happens when we receive information. His answer is that the recipient is “conditionally ready to react differently.” Much information we receive has little impact because it is redundant. The media chew endlessly over the same information fragments; even in academia, a successful research study is emulated by another with a slightly different focus: the information prayerwheel keeps turning.

Theodore Roszak, in the *Cult of Information*, addresses confusion concerning the relative importance of information and ideas:

“The mind thinks with ideas, not with information. Information may helpfully illustrate or decorate an idea; it may, where it works under the guidance of a contrasting idea, help to call other ideas into question. But information does not create ideas; by itself it does not validate or invalidate them. An idea can only be generated, revised, or unseated by another idea. A culture survives by the power, plasticity, and fertility of its ideas.”

Ideas help us to create information by guiding our attention and stimulating the formulation of questions. What ideas we wish to pursue with what questions is a more fundamental issue than what is the latest data. Roszak goes on to question our “information economy” by suggesting that we are mistakenly spending more and more of our resources accumulating and processing facts:

“. . . we bury even deeper the substructures of ideas on which information stands, placing them further from critical reflection. For example, we begin to pay more attention to ‘economic indicators’—which are always convenient, simple-looking numbers—than to the assumptions about work, wealth, and well-being which underlie economic policy. Indeed, our orthodox economic science is awash in a flood of statistical figments that serve mainly to obfuscate basic questions of value, purpose, and justice. What contribution has the computer made to this situation? It has raised the flood level, pouring out misleading and distracting information . . . But even more ironically, the hard focus on information which the computer encourages

must in time have the effect of crowding out new ideas, which are the intellectual source that generates facts. . . In the long run, no ideas, no information."

It is clear that in an interdisciplinary journal, we are dealing with different conceptions of information; from the research-oriented statistical report whose information and value are expressed in replicable quantitative terms, to humanistic research whose information is couched in more fuzzy qualitative insights. The breadth of this orientation to information provides a challenge to singular views and isolated contexts. Building a context for visible language that is inclusive, that presents ideas and information from both the scientific and humanistic perspective, is a legitimate goal.

Interestingly, a model exists for inclusion of both quantitative and qualitative information—this is a model used by the design professions in addressing complex problems. Christopher Alexander, in his seminal *Notes on the Synthesis of Form*, demonstrates an algorithmic method with which to synthesize diverse information. In contrast to Roszak's approach to ideas and information which is more of a top-down relationship, Alexander's method develops form ideas (one of the goals of design) from diverse information that can include measurable physical parameters as well as notions of aesthetic response—it is a synthetic process that moves from the bottom-up. Using a bottom-up procedure may be more inclusive in that we entertain many more possible kinds of information; we ask more questions; we tend to search more broadly. It may also be that we are more likely to side-step perceptual defenses that prohibit reception of ideas and information that run counter to expectation. This information intensive approach to design has evolved into various computer-assisted methodologies in which the computer is used to help synthesize related information.

Visible language is an instrument for the presentation of information. It is based on a set of ideas concerning how people process information. This set of ideas is extensive, and while it varies somewhat among cultures and languages, there is much similarity and a long history of evolution and change. Certainly technology, the materials of visible language, whether clay or computer, alter form and accessibility.

Likewise, organizational expectations and form alter the usefulness of information. Text has been the dominant method for developing and exchanging information, but if we address our information-processing limitations, we quickly see that traditional ideas of text presentation are often too dense, too time consuming for our level of access and interest. Neil Postman, in *Amusing Ourselves to Death: Discourse in an Age of Show Business*, laments our shortened attention span and our impatience with complex textual arguments. Some ideas cannot be grasped without an expenditure of attention and thought, conversely, some simple ideas are embellished and made complicated in order to conform to academic norms of erudition. Recognition of the former from the later is essential. Developing textual organization and formal conventions that are efficient and appropriate is of importance now and perhaps even more so in the future.

This issue of the journal is a general one—the articles were offered under no special framework—but collectively they speak to the current information environment by raising questions directly or indirectly. Albert Kapr, in his article on Gutenberg, reviews the historic record in an attempt to cut through mythology and local hubris, to put Gutenberg into a social context which makes him less of a pasteboard icon. Certainly, in marking the milestones of the information evolution, the invention of writing, the invention of multiples—stamping and block printing in the East and Gutenberg with movable type in the West—the invention of the camera and the mechanized press, radio, film and television have all altered the information landscape and the social fabric of our species. But it is with the advent of the computer that information takes a quantum leap.

The computer is in sharp contrast to the book which has been the concrete paradigm for organization of information. Electronic screens are far different from the surface of papers bound together in space. Gui Bonsiepe discusses paradigms for interface design. The problem of wayfinding in interactive electronic media requires a concept and configuration different than the codex. The ability to imagine the user, his needs and the logic he brings to his task are important design functions. Much interface information is invisible until needed; a serendipitous strategy of browsing through a physically present structure doesn't work. When organization changes, we suffer disorientation.

Not only organizational but physical forms are changing. The channel options and characteristics Chris Nemeth discusses in his article concerning the beginnings of a design research channel resonate within this journal as it looks to the future. What physical form might the journal take in years to come? Might the subscriber scan abstracts on his computer, select those he wishes to read and then print out a paper rendition to examine at his leisure? Perhaps the output is also variable as the individual selects the journal's typographic design or a text translation to a customized set of typographic specifications tailored to the user's individual reading habits. Maybe the screen version of the article is presented with links that open to other references, that provide access to in-depth information, or that stimulate alternative paths through the material. It is only a short step to considering electronic feedback to articles as the barriers to easy feedback in the form of paper and the mail system fade into the background. Who selects to read an article also becomes a matter of record, as the community of interest is identified with more precision. How does the journal protect its authors and itself from the casual piracy of saved files edited to some new purpose?

Respect for intellectual property is a formidable problem; there are always pirates among us. Plagiarism and copying are discussed by Hermann Zapf in his examination of type design. Protection of intellectual or creative property is complicated by the ease with which original materials, whether type fonts, dissertations on arcane subjects, or images are replicated and manipulated. Replication and standardization were driving forces in the development of visible language, but now the ease with which we accomplish the first of these confounds us. It is a question of ethics, but it is also a question of mission. Are type designers addressing the important questions of form, legibility and technology, or are they feeding the need for novelty by providing a momentary visual diversion?

The theoretical and practical typographic work of Herbert Bayer are no pursuit of novelty for its own sake. Kathleen Burnett carefully examines the development of Bayer's typographic principles. His focus on a typographic unity of form-sound-technology breaks with the imitative arena in which Zapf finds many of today's typographic designers

working. Language traditions are perhaps among the most resistant to change. Breaking with tradition marks a challenger, such as Bayer, as either a crackpot or a visionary. Within the cultural goal of universal literacy, his call for one form-one sound, appears to be commonsense, but commonsense is tempered by recognition of the gluelike pace with which the United States is moving toward another logical and practical communication goal: use of the metric system.

Designers need to pay more attention to the practical systems which allow the user to efficiently move through daily life. Paul Stiff, in his demonstration of typographic indifference, suggests exactly this. Are the designer's values inclusive or exclusive. He shares a concern for the end user of communication design with Bonsiepe, who calls for attention to both aesthetics and function for the user, with Nemeth, who is concerned with providing the user with choice and with Burnett, who reminds us of Bayer's logical understanding of visible language as a system. Stiff puts his typographic demonstration into another context, that of design education; his demonstration is emblematic of a larger failing—failure to locate design in its complete context of user concerns.

These papers expose some contemporary problems with information. Ideas about originality, efficiency, replication, ethics, and interface are here. Each paper benefits from being seen in a larger context of shared concerns. The table to the left reveals relationships and shared concerns; it is a simple way to open the linear sequence of the journal and read it using multiple paths through the material according to one's own interest. It is a gesture to the end user.

The authors in relation to larger communication ideas:

Originality

Burnett
Kapf
Zapf

Efficiency

Bonsiepe
Burnett
Nemeth
Stiff

Replication

Kapf
Nemeth
Zapf

Ethics

Stiff
Zapf

Interface

Bonsiepe
Nemeth
Stiff



ON CONCERNING THE BEGINNING OF PRINTING IN 15TH-CENTURY STRASSBURG.

Albert Kapr

ON THE OCCASION OF THE 550TH YEAR CELEBRATION OF THE INVENTION OF PRINTING, THE AUTHOR HAS TRIED TO FIND NEW ARGUMENTS CONCERNING TIME AND PLACE. GUTENBERG COULD NOT HAVE MADE HIS INVENTION IN MAINZ IN 1440, AS IS WIDELY MAINTAINED, BECAUSE HE LIVED DEMONSTRABLY IN STRASSBURG FROM 1434 TO 1444. HERE, IN 1439 THERE WAS A LARGE LAWSUIT IN WHOSE RECORDS IS NOTED THAT GUTENBERG, AS THE HEAD OF A GROUP, HAD WORKED

ON "AVENTUR UND KUNST." THIS TERM WAS QUITE LIKELY THE FIRST COVER-UP DESIGNATION FOR THE FIRST PRINTING. ADDITIONAL HISTORIC EVIDENCE AND POLITICAL RELATIONSHIPS LEAD TO THE CONVICTION THAT THE FIRST RESULTS OF PRINTING TOOK PLACE IN STRASSBURG AROUND 1440, THAT, HOWEVER, THE MASTER BROUGHT THE INVENTION TO PERFECTION IN THE 42-LINE BIBLE THAT HE PRINTED AFTER HIS RETURN TO HIS BIRTHPLACE, MAINZ.

WHENEVER the question comes up concerning when and where Gutenberg invented the art of printing, the discussion turns homeric with a maze of conflicting opinions and an uncertain source situation. There are reasons to reconsider the question and to judge whether any new arguments for or against the date and location of Gutenberg's invention have been found. The general notion that Johannes Gutenberg invented the printing art in Mainz, in 1440, persists. But something in this contention is false, because Gutenberg resided in Strassburg from March 14, 1434 to March 12, 1444. This is proved through fifteenth-century documents; he could not, therefore, have worked out his invention in Mainz in the middle of the Strassburg period. Either the place of invention must be moved to Strassburg or the date must be moved at least eight years ahead, for only in 1448 did Gutenberg return to his native city. Centennial celebrations have taken place in 1540, 1640, 1740, 1840 and 1940, but it is possible that the celebrants were mistaken. How did the plainly unscientific notion that printing was invented in Mainz in 1440 happen? After a bit of search, I found a possible hint in Dietmar Debes' interesting book, *Gepriessenes Andenken von Erfindung der Buchdruckery* (Praiseworthy Memory of the Invention of Bookprinting).¹ Here there is a reference to a 1643 manual, *Orthotypographia*, by a Leipzig proofreader named Hornschuch; to which a sermon by doctor of theology, Daniel Kramer, was added, who bases the invention on the Bible, but also gives some traditional information. He cites the Italian historians, Polydorus Vergilius and Antonius Sabellicus, who report about Johannes Gutenberg's 1440 invention in Mainz. This might be the source and the incentive for the Leipzig

printer's journey to Wittenberg in 1540 and there, under the chairmanship of the Luther printer, Hans Lufft, to honor the inventor and his art. The following centennials repeated this tradition. Other evidence is contradictory; scientific clarity is not to be found in the earliest sources. In the compilation issued by Hans Widmann, concerning the current state of Gutenberg research, Alfred Swierk² has put together the evidence up to 1507 in which the name of Gutenberg is given as the inventor. He found twenty-one sources, but in only six were the place and date given:

- 1** Jacob Wimpheling, already cited by Daniel Kramer, must be named as a witness. He wrote his 1505 *Epithoma Germanorum*: "In the year 1440 there was a great and almost godly benefit given to the entire earth, by Johannes Gutenberg, a Strassburger, with his invention of a new way to write. For he was the first to invent the printing art in the city of Strassburg; afterward he went to Mainz and continued it successfully."
- 2** In a catalog of the Strassburg bishops in 1508, Wimpheling repeats that the printing art was invented by a Strassburger, who, under the direction of a certain Johannes Gensfleisch completed it in Mainz.
- 3** Matteo Palmiero reported in his 1483 chronicle: the noble Johannes Gutenberg zum Jungen invented book printing in 1440 in Mainz.
- 4** Probably the most important evidence is in the 1499 *Chronicle of the City of Cologne*. There we read that the ingenious art was invented in Mainz on the Rhine in 1440 and so improved by 1450 that in this golden year was begun the printing of a Bible in Latin. The first inventor was a nobleman, "Johan Gudenburch," born in Strassburg and a citizen of Mainz. The first preparatory work of this art, however, took place in Holland, where someone had already printed the Latin Donatus. The reporter of this notice was presumably Ulrich Zell, the first printer in Cologne, who possibly knew Gutenberg personally and may even have worked with him.
- 5** Baptista Fulgosus wrote in 1494: Gutenberg of Strassburg has surpassed by the invention of book printing all previous accomplishments in the mechanized arts.

6 In the 1509 *Sponheimer Chronicle* of Johannes Trithemius, it is recorded that Johannes Gutenberg invented the art of printing in Mainz and completed it with the advice and help of Johannes Fust and others.

THE other fifteen reports and songs of praise testify basically that Gutenberg was the inventor. Of the five sources that present an opinion about the time of the invention, the year is uniformly given as 1440. This seems remarkable. But concerning the place of invention, three sources give Mainz and only two speak for Strassburg; we know already that Gutenberg resided in Strassburg in the year of invention. That Gutenberg printed in Mainz from 1449 or 1450 is proved by contracts and records. The lever for further research must, therefore, be applied first to the Strassburg time. What was there about that “Aventur und Kunst” (Adventure and Art) that was spoken of in the large Strassburg lawsuit of 1439?³ The goldsmith, Hans Dünne, gave witness that he had earned over 100 gulden from Gutenberg for work that had to do with printing. Then, there was the information that the cabinetmaker, Anton Saspach, had built the press. Further, we learn that Gutenberg sent his servant to the home of the deceased, Andreas Dritzehn, to undo two screws so that the four pieces that were in the press would fall apart; one would not be able to see what it was. At Christmas, 1438, Gutenberg took back forms from his business associates and had them melted down. “Implements and finished work” were mentioned, also “forms and all sorts of tools, lead and whatever else belonged.” All this is characteristic and indicative that the secretive “Aventur und Kunst,” about which Gutenberg spoke during the hearings, really had to do with the printing of books; and that there already had been business successes—for without such success, the surviving brothers Jörg and Claus Dritzehn, would not have tried so intensively to get into the company in place of their deceased brother Andreas.

IN THE Strassburg city archives, an official document dated 1446 was found, that deals once again with the events of December, 1436:

“Item, Jörg Dritzehn demanded what his brother Claus had taken to himself after the death of their brother Andreas in unshared property, namely thirty and a half pounds of pennies, as well as precious small things, large and small books, etc.”

WHAT were these large and small books that Jörg Dritzehn was arguing about with his brother? Were they part of the results of the “Aventur und Kunst”? Claus Dritzehn, for his part, demanded that his brother give some account of what he had secretly taken for himself, namely, besides valuable utensils, the “Snytzel-Gezug” and the press that had been at Andreas’ home.

THE “Snytzel-Gezug” was possibly type; perhaps the small books had been printed on the press. The evidence accumulates, but there is no really definitive proof. Then the happenings in Avignon in 1444, where a certain Prokop Waldvogel taught an “ars artificialter,” an art of artificial writing, leads us to suspect that what Jörg stole was given a wider circulation for Waldvogel is said to have brought letters made of iron, pewter, brass and lead with him—things that possibly came from Strassburg and had to do with printing.

HOWEVER, there are objections to all this that must be mentioned and that point out that such trade terminology as “formen,” “gezuge,” “drucken,” etc., was used in other occupations, such as cloth printing, stamping, for title and ornament stamps in binding, etc. Lead and pewter had possibly been used for the earlier production of mirror frames—for the so-called “holy mirrors.” These suggestions must be kept in mind, but the dimensions of the Strassburg lawsuit, at which fourteen witnesses appeared for Gutenberg and twenty-two for Jörg Dritzehn, and where even the renowned banker, Friedel von Seckingen, took part, tell us that it concerned weightier things than the stamps on individual leather bindings.

AT ANY rate, the judgment of the high court of the city of Strassburg was in favor of Gutenberg and his business associates. Jörg Dritzehn was turned down, he was not admitted to the association, which all those taking part in the process, especially the suing brothers, looked upon as profitable. One can think of Martin Brechter, who later gave surety for Gutenberg, also Johann Mentelin of Schlettstadt, and the keeper of the bishop’s seals, the cleric Heinrich Eggestein; the latter two starting a press in 1458-59, during Gutenberg’s lifetime; both of whom obviously possessed the know-how to print books. The question still remains: what enterprise occupied Gutenberg after the lawsuit—from 1439 to 1444 in Strassburg?

I AM of the opinion that he worked step-by-step on the improvement of his invention. The “Aventur und Kunst” must have brought in revenues, since respected citizens gave them their confidence. After all, the pages of the oldest examples of the twelve editions of the 27-line Donatus were recovered out of bindings of Strassburg books.

OUT of this comes the assumption that the suspected Strassburg books concerned mostly the small but important schoolbook, the Latin grammar of Aelius Donatus. Before Gutenberg’s invention, it was almost always copied because, as a work book, it was subject to much wear and tear. The type of this little volume was the so-called Donat or Kalendar type, DK for short, a Gothic or Textura, whose peculiarities may not be investigated further here. It was clearly Gutenberg’s first type, with which he also printed later in Mainz. Gottfried Zedler gives us a conscientious scholarly examination of this DK type under the title, *Gutenberg’s Oldest Type and the Books Printed in It* (Mainz, 1934). In it the changes and improvements of this type are recorded in their historical sequence, but there are no definite, dated recognition signs. This type, improved in between, was used later in Mainz for calendars and other small jobs, for example, for the text of the Türkenkalendar, printed in 1454, and as the titling type for the 31-line Indulgence for Cyprus, 1454 and 1455. But, through typographic analysis, it has been proved that many editions of the Donatus were printed a good bit earlier.

IF A DATED piece of work in this type could be found, the question of when printing was done in Strassburg might possibly be answered. The first printing trials were apparently single pages, such as primers, Lord’s Prayer sheets and other prayers. After these, the printers took up the Donatus. Gottfried Zedler, the best authority on the problems of the DK type, found that the 27-line Donatus page preserved in Darmstadt was the oldest impression of this type yet found, followed by the Berlin-Heiligenstadt example a, the Berlin-Heiligenstadt copy b and finally, the 27-line Paris fragment (*see figure 1*). This sequence is pretty well certain; but when will there be dates?

IN 1898, under the leather binding of an old account book belonging to the university in Mainz, a 9 by 12.5 centimeter

cū docerem̄ docerū docerēt p̄rito p̄fco cū docet? Sim̄ l fueri
 sis l fuis sit l fuit aplē cū docti sim? l fuerim? Cū sis l fueri-
 ris sic l fuerit p̄rito p̄fco p̄fco cū docet? esse l fuisse res ul
 fuisse cēt l fuisset aplē cū docti eēm? l fuisset? eētis l fuisset
 fecis eētis l fuisset Furo cū docet? ero l fuerō eis l fuis erit l fu-
 rit aplē cū docti eim? l fuerim? eētis l fueritis erit ul fuerit
 Infructō mō sū nūis 3 p̄fcois tpe p̄nti 3 p̄nto ip̄fco docet
 p̄rito p̄fco 3 p̄fco p̄fco doctū ēē l fuisse fūto doctū in Duo
 utidpla ihūe a obo passio p̄ntū ut doct? fut: ut docēd?
 Ego legis legit aplē legim? legitis legūt p̄rito ip̄
 fco legabā legebas legebat aplē legebam? legeba-
 tis legebat p̄rito p̄fco legi legisti legit 3 p̄it legim? legi-
 tis legentē ul legere p̄rito p̄fco p̄fco legentē legentē lege-
 rat aplē legam? legatis legentē futūo legam leges le-
 get aplē legemus legentē legentē Inp̄ntio modo tēpōe
 p̄nti ad secundā 3 terciā p̄ntam lege legat aplē lega-
 mus legite legant futūo legito tu legito ille aplē lega-
 mus legitote legunto ul leguntote Optatio modo tē
 pōe p̄nti 3 p̄nto ip̄fco ul legentē legentes legentē aplē
 ul legentē legentē legentē p̄rito p̄fco 3 p̄fco p̄fco
 ul legissent legissent legisset aplē ul legissent legissent
 legissent futūo ul legat legas legat aplē ul legamus le-
 gatis legant 3 om̄ibus nō tēpōe p̄nti cū legam legas
 legat aplē cū legam? legatis legant p̄rito ip̄fco cū le-
 gerē legeres legeret aplē cū legentē legentē legentē
 p̄rito p̄fco cū legentē legentē legentē aplē cū legentē
 legentē legentē p̄ntis legentē p̄ntis p̄ntis p̄ntis legentē

Figure 1. Fragment from the Paris Donatus.

page, printed on both sides with the oldest Gutenberg type was found. It was immediately apparent that this was a very early impression. Gottfried Zedler and Aloys Ruppel were immediately in agreement that it was one of the oldest impressions of the master to be found. Zedler placed it in time after the Darmstadt Donatus. The text, in German, deals with the last judgment, and the page was given the designation, "Fragment of the World Judgment." Later the little page was recognized as a part of a sibylline prophecy composed in Thuringia. The whole poem, consisting of 750 verses, is not, however, set in poetic style but is unjustified. One can estimate that the brochure had about twenty-eight pages. It was, therefore, similar in length to the first Donatus editions. From the fact that the capitals W, X, Y and Z are missing, it is clear that the type had been designed for printing in Latin. Why, however, did Gutenberg interrupt his Donatus production to print the Sibylline Legend?

IN MY judgment, the Gutenberg research in the past has thought too little about the motivation of the master for his life's work and about the sociological connections. One suspects that profit and ambition were his driving forces because one attributes to a pious man of the middle ages, the characteristics of the twentieth century. An ambitious inventor, however, would have put his name in the colophon for posterity as Johannes Fust and Peter Schöffer did later. And a promoter interested only in profit would not have put his personal income as well as all profit into the development of this new technique. Finally, the master was a poor man in his final years; he was dependent on the pension of his archbishop.

WHAT do we know about Gutenberg's motives? He was politically oriented and had grown up amid the rivalries between patricians and guilds in his birthplace. His years in Strassburg could be considered as asylum, a kind of forced emigration. Gutenberg was aware of his nationality, which should not be confused with a conservative viewpoint. He occupied himself with the printing of the *Türkenkalendat* and the *Türkenbulle* to help the planned expedition against the Turks. In the archbishop's quarrel, he, along with his supposed partner in printing the *Catholicon*, Dr. Konrad Humery, were supporters of the archbishop of Ysenburg, who wanted to establish greater independence from the pope.

IEDEN EN NULZE DO NIEN DO GOT ORREN WIL
 GEBE SIE GENE MIT SCHRECKE DOBIEN DIE
 GOT NIE ERKANTE NOCH FORCHTE EN NIEMAN
 MAG SICH ÜBERGEBE NICHT DOR DE GOTLICHE
 ANGESICHT KRISTUS WIL DO URTEL SPEZCHEN.
 UN WIL ALLE BOSSHEIT RECHEN DIE NIE GE-
 DADEN WILLE SIN DEN WIL ER GEBE EWIGE
 PIN UN WIL DEN GUDEN GEBE BYRM SCULDE
 UN EWIG LEBE Sijt die werlt un alle ding
 Die in d werlt geschaffe sint Ezu gne
 un werde auch zu nicht als man wol

Figure 2.
 Fragment of the
 Sibyllene Legend,
 Strassburg 1440-1444.

GUTENBERG was also a religious man, as this was clearly understood by a citizen of his time. However, during the period he was in Strassburg, the schism prevailed. The ashes of Jan Hus had awakened new heretical movements and reform efforts in Thuringia. At the Council of Basel, an anti-pope was elected; and the Roman pope declared the Council of Basel dissolved. However, the Council continued to meet. Within the Catholic Church there were two factions: the supporters of the Roman pope and the supporters of the Council. The papal party wanted the unconditional priority claims of the Roman pope fulfilled. The Council supporters, who were backed by the nationalistic lower nobility, demanded a reform of the church, of the service, and the right of the clergy to have a say in the election of bishops and archbishops. The city fathers of Strassburg had decided to support the politics of the Council.

IN THESE disturbed times, the Hapsburg, Friedrich III, was elected as the German king on February 2, 1440, in Frankfurt am Main. Nicholas of Cues had supported the election of Friedrich at the behest of the Roman pope. I have written about my conjectures that Nicholas of Cues and Johannes Gutenberg knew each other since their early years and were actually good friends.⁴ Cues, in his “De Concordantia Catholica” had, along with other reform suggestions, demanded a missal reform with error-free and identical copies of the newly edited missals; and

at least one person understood that concern of the future cardinal. It is altogether possible and even believable that the two met often in Strassburg during the many journeys that Nicholas made from Rome to Germany, and that Gutenberg knew of the preparations for the king's election and had been inspired to print the sibylline prophecy (*see figure 2*).

ALSO, the majority of the German people had great expectations of the successful candidate. King Friedrich III, later the emperor, had it in his power to keep the peace, to further the reform of the state and church, and to ward off the Turkish threat. What, then, had the election of Friedrich III to do with the printing of the sibylline prophecy?

IT WAS the late Soviet scholar, Natalja Warbanetz,⁵ who again indicated a connection, for Gottfried Zedler had discovered earlier that the Kaiser Friedrich Legend was woven into the text of the sibylline prophecy. Zedler wrote,

"The Gutenberg booklet is an indication that Gutenberg was close to the life of the people and knew how to satisfy the interests of the majority."

IN THIS booklet, in the DK type, the Sibylle presaged a return of Kaiser Friedrich who, according to folk belief, was locked into the Kyffhäuser mountain. Then Friedrich would unite the Christian people, retake the Holy Land, and provide justice and peace. Zedler felt that Gutenberg had speculated on a sure profit for the Sibyllenbuch, but I would say that a political or a religious motivation is just as likely. Natalja Warbanetz thought that there might have been the purpose of disseminating heretical ideas—with which I cannot agree. However, she points out that the text had been compiled by the secret flagellant, Konrad Schmidt, who was burned at the stake with six of his companions in 1369 in Nordhausen. I don't believe that Gutenberg had any notion that the author might have been a heretic, but looked upon the prophecy as a legend or a folk tale. In any case, the Kaiser Friedrich expectation fell together with the newly elected king and prospective kaiser in the eyes of the people. And it is close to certainty that this was the reason Gutenberg interrupted his production of the Donatus to print the Sibyllenbuch.

KING Friedrich, however, disappointed his political backers. He didn't bother himself about the affairs of empire and was nicknamed the "Sleepyhead of the Empire." His government was a reversal for the cities and their aspirations, for he regarded them as property of the crown; and he damaged the empire in that he tried to use it for his dynastic, Hapsburg interests.

THE expectations that had been aroused in 1440 with the election of Friedrich III, died off in Strassburg in autumn 1444 at the latest, when it became known that Friedrich had brought in the Armagnaken hordes against the free Swiss and against the Council at Basel. These wild bands terrorized Alsace. A later printing of the Sibyllene Legend would have been impossible from the standpoint of the Strassburg citizens; therefore, the publication must have taken place between 1440 and 1444. I believe that conclusion is pertinent and justified, although it is not shared by the Gutenberg Research in Mainz. Just because the printing of the Sibyllene Legend must have been preceded by the Donatus and other single-page publications, the invention must have taken place about 1440 in Strassburg.

THE arguments against such a direct connection between the election of Friedrich III and the printing of the Sibyllene Legend point out that it appeared in variants in the fourteenth and in the first half of the fifteenth centuries dozens of times, in writing, and after the Gutenberg edition, in repeated printings, without any relation to the election of Friedrich III. All this is correct. For that reason I would like to present a few arguments for my thesis, which, it must be said, were presented by Gottfried Zedler and Natalja Warbanecz earlier.

1 The Sibyllene Legend was the first printing in the German language. Since the DK type was clearly planned for the Latin language, there must have been a previously unknown actual event that provided the incentive for this printing.

2 One cannot rule out that the Sibyllene Legend may not have been printed for the election but for the coronation of Friedrich III on the 17th of June, 1442. Any other actual event at that time is unknown. After the raids of the Armagnaken, who were called in by Friedrich, and had created terror in the

area from Basel to Mainz, it would not have been possible to print an expectation of the Kaiser Friedrich text for decades. The next such printing took place a half century later with a clearly altered text.

3 The printing of the Sibyllene Legend must not be isolated from the historic environment nor from the population of Strassburg that was oriented toward the Council of Basel. I suspect that this printing could not have taken place in Mainz, under the eyes of the inquisition, because of its heretical content in this reading.

HOW does the invention of printing look from the Mainz point of view? Gutenberg, who was last mentioned in Strassburg in connection with the levy against the Armagnacs, could hardly have gone back to Mainz before 1448. This was a period in which the council of the guilds proceeded drastically against his patrician friends. At some point in 1448, during the year of the city's bankruptcy and the end of guild dominance, Gutenberg returned to his native city. On the 17th of October, he received a loan of 150 gulden that his brother-in-law, Arnold Gelthus, had arranged for him. He clearly needed capital for the installation of a press in the Gutenberghof where his brother-in-law and supporter, Claus Vitzthum, lived. Claus Vitzthum and Arnold Gelthus were convinced of Gutenberg's credit-worthiness. Evidence to support their conviction probably consisted of finished books, especially the *Donatus*; the type mold, as well as punches, matrices and the DK type. According to the Cologne Chronicle, 1450 was the "golden year" in which the printing of the Latin Bible was begun. The experienced merchant, Johannes Fust, the money lender for the "work of books" and Bible printing, had no doubt been convinced of the practical value of the invention in 1449. Evidence to support investment could only have been brought from Strassburg as finished books—perhaps there were even some small items produced in the Gutenberghof.

IT IS absolute idiocy to suggest that Gutenberg's first work was the 42-line Bible (*see figure 3*), one of the most beautiful productions in the history of printing. The Bible was decidedly not Gutenberg's first book. It must have been preceded by many

egipti de manu ymaheditay: a q̄bz
p̄duus erat. fuitq; dñs cū eo: et erat
uir i cūdis proſp̄e agens. Habitauitq;
in domo dñi ſui: qui optime nouerat
dñm eſſe cū eo: et oīa que gereret ab eo
dirigi i manu illi⁹. In uenitq; ioſeph
graciā coram dño ſuo: ⁊ miniſtrabat
ei. A quo p̄poſitus omnibz gubernaba-
bat credita ſibi domū: ⁊ uniuersa que
ei tradita fuerāt. Benedixitq; dñs do-
mū egiptij p̄pter ioſeph: ⁊ multiplicauit
uir tam i edibus q̄ in agris cundam
e⁹ ſubſtanciā. Nec quicq; aliud noue-
rat: niſi panē quo utebatur. Erat autē
ioſeph pulchra facie: et decorus aſpectu.
Poſt multos itaq; dies - iniecit dñs
oculos ſuos in ioſeph: et ait. Domni
mecū. Qui nequaſq; acquieſcens op̄i
nepharic⁹ dixit ad eā. Ecce dñs meus
omnibz michi traditus - ignorat q̄d
habeat in domo ſua: nec quicq; e⁹ q̄d
non ſit in mea poteſtate - uel nō tradi-
derit michi: preter te que uxor eius es.
Quō ergo poſſū hęc malū facē: et pecca-
re i dñm meū? Qui uulſemodi uōbis per
ſingulos dies loquebat: et mulier mo-
leſta erat adoleſcenti: et ille reſulabat
ſuprū. Accidit autē quadā die ut in-
traret ioſeph domū: ⁊ op̄cis quippiā
abſq; arbitris faceret: ⁊ illa app̄hēſa
lacrima veſtimenti eius dicit. Domni
mecū. Qui relido i manu eius pallio
fugit: et egreſſus ē foras. Cūq; uidiſſet
mulier veſtam in manibz ſuis: ⁊ ſe eſſe
deſtamp̄am: uocauit ad ſe hoīes dom⁹
ſue: et ait ad eos. Eū introduxit uirū
hebreū: ut illuderet nobis. Ingreſſus
eſt ad me: ut uideret meū. Cumq; ego
ſuclamaſſem: ⁊ audiſſet uocem meā:
reliquit palliū q̄d tenebam: ⁊ fugit fo-
ras. In argumentū ergo ſidi⁹ - reſentū
palliū oſtendit marito reuertenti domū.

et ait. Ingreſſus ē ad me ſeu⁹ hebreū.
quē adduxiſti: ut illuderet michi. Cūq;
audiſſet me clamare: reliquit palliū
q̄d tenebam: ⁊ fugit foras. Miſe audi-
tis dñs: ⁊ nimii credulus uerbis con-
iugis: iratus eſt ualde: tradiditq; io-
ſeph in carcerem ubi uindi regis custo-
debant: ⁊ erat ibi clauſus. Fuit autē
dñs cū ioſeph et miſeratus eſt illi⁹: ⁊ de-
dit ei gradiā in cōſpectu principis car-
ceris. Qui tradidit in manu illi⁹ uni-
uerſos uindos qui i custodia tenebāt:
et quid q̄d ſebat - ſub ipō erat: nec no-
uerat aliquid - cūdis ei creditis. Dñs
enī erat cū illo: ⁊ oīa op̄a ei⁹ dirigebat.

Nis itaq; geſtis: accidit ut
peccatū duo eunuchi - pincerna
regis egipti et piſtor - dño ſuo. Iratū
q; contra eos pharao - nam aler pin-
cernis peccat - aler piſtoris: miſit eos
in carcerem principis militiū - in quo
erat uindus ⁊ ioſeph. Et cuſtos carce-
ris tradidit eos ioſeph: q̄ et miniſtra-
bat eis. Miſericordiā ipis fluxerat: et illi
in custodia tenebant. Viderūtq; ambo
ſomniū nocte una: iuxta interpretatio-
nem congruā ſibi. Ad quos cū intro-
iſſet ioſeph mane ⁊ uidiſſet eos cūſtes:
ſaiſiſerat⁹ ē dicens. Sur triſtor ē hodie
ſolito facies ueſtra? Qui reſpondit.
Somniū uidiu⁹: et non eſt qui inter-
pretur nobis. Dixitq; ad eos ioſeph.
Nūquid nō dei ē interpretatio? Reſerte
michi quid uideritis. Narrauit prior
p̄poſitus pincernay - ſomniū ſuū. Vi-
debam coram me uitem in qua erant
tres pagines reſerte paulatim i gam-
mas: ⁊ poſt flores uuas matureſcere:
calicant; pharaonis in manu mea.
Tuli ergo uuas ⁊ repreſſi i calicem quē
tenebam: ⁊ tradidi poculū pharaoni.
Reſpondit ioſeph. Hęc eſt interpretaō

experiments, failures, trials, small books; the accumulation of experience and the training of craftsmen. Such experience and separate inventions could not possibly have been assembled in the few years after his return to his home city. Finished, small books, beyond all the Donatus editions, must have been already produced in Strassburg.

DESPITE all this, Gutenberg researchers doubt the early date for the invention. Aloys Ruppel wrote in the *Festschrift für A. Kolb*⁶ in 1969: “. . . one may conclude that the Strassburg printing trials had not produced usable results.” And in the foundation document of the Mainz Gutenberg University, that was publicly read on May 22, 1946, he wrote, “Five hundred years ago in Mainz an historic event took place. The highly gifted son of our city, Johannes Gutenberg, invented the art of printing in 1446, which from Mainz started its conquering journey throughout the world.” (The citation is taken from Friedrich Schütz, 1982, *Aloys Ruppel*. Mainz, 102.) However, Ruppel, in his foundation document was silent about the fact that Gutenberg was not in Mainz in 1446, at least no proof was available to support his presence there. Is it not possible that pro-Mainz motives play a role here? The French historian, François Ritter, does not go along with the formula that the art of printing may have been conceived in Strassburg but was revealed to the world first in Mainz.⁷ He names Gutenberg, in his 1955 *History of Alsatian Book Printing*, as the first printer in Strassburg; he believes, also, that Gutenberg remained in Strassburg after 1444 and that the Sibyllenbuch was printed in 1446. However, when one considers the Armagnaken terror and the vanished respect for Friedrich III, the printing date for the Sibyllene Legend must be set earlier.

TO SUM UP:

- 1** In the historical sources the date of 1440 is uniformly given for the invention of printing. The place is given three times as Mainz and twice as Strassburg.
- 2** The testimony of the witnesses at the Strassburg trial of 1439 lead one to suspect that the “Aventur und Kunst” refers to well developed basic printing operations or already successful printing.

3 The printing of the Sibyllene Legend is connected with the beginning of the reign of Friedrich III and, accordingly, must have taken place in 1440 or a few years later.

4 The printing of the superb 42-line Bible must have been preceded by small editions and by years of experiment. The credit-worthiness of the master, returning to his native city, could only have been established by his show of printed specimens out of the Strassburg period.

Thus, my conclusion: The indications contained in these four points show with greatest certainty that the invention of printing took place about the year 1440 in Strassburg, but this must be modified somewhat because exact proofs are not available. However, Mainz is the birthplace of the inventor and in Mainz the new art bore its most lovely fruits and from Mainz the book art reached out to conquer the world

ENDNOTES

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3. Albert Kapr. 1988. *Johannes Gutenberg. Persönlichkeit und Leistung*. Leipzig: Urania-Verlag, 71.
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5. Natalja Wassiljewna Warbanez. 1980. *Johannes Gutenberg und der Anfang des Buchdrucks in Europa*. (Johannes Gutenberg and the Beginning of Printing in Europe.) Moscow, (in Russian).
6. Aloys Ruppel. 1969. "Gutenberg in Strassburg und die Uranfänge der Buchdruckerkunst." In *Refugium Animae Bibliotheca*. Wiesbaden: Festschrift für Kolb, 451
7. François Ritter. 1955. *Histoire de l'Imprimerie Alsacienne aux XV et XVI Siecles*. Strassburg and Paris.

Translated from German by Alexander Nesbitt.

Albert Kapr is a German Gutenberg scholar who has taught at the Hochschule für Grafik und Buchkunst in Leipzig. He is a former advisory board member for this journal and has recently published *Johannes Gutenberg: Persönlichkeit und Leistung* (Urania Verlag, 1988).

*is
creativity
in*

alphabet

design

Hermann Zapf

*still
wanted?*

Current computer technology and professional attitudes about design in general and typeface design in particular are examined with reference to design ethics, visual sensibility and the marketplace.

Zapf answers the question posed in the title and recommends the organization of a practical reference tool, a central international typeface registry.

Some people may wonder why they should attend an art school or university in order to become designer. Why should they fill their heads with art history and typographic terms or learn to draw nudes and other three-dimensional objects if they can get everything they need as a graphic designer by using clip art? More than 10,000 copyright-free illustrations are offered. Why train your hand if it is so easy to make money with prefabricated artwork or by pirating images and type from magazines and keeping the scanner on your desk busy. This is easy and in no time you can see your smart creation. No question about it—you have a new design. You need only to manipulate other people's work a little on your screen and sell it as your own creative work. Yet another argument is economic: the investment in clip-art manuals are only a small fraction of what you would have to invest for your university education.

This is the situation today. Perhaps these thoughts are nothing new. Everything can be done in two ways. You can earn quick money—a lot of money—by dealing in drugs which will catapult you immediately into a position from which you can drive a Rolls Royce. But this is not the right way—it will not give you the satisfaction and self-confidence that you want. If you prefer to go the way of the good people, you will find a more stoney road. In the first years, you will park in front of your small studio only an old-time Rabbit. But—no question—you will be happier about yourself at the end than the other guy who makes his quick money around the corner.

Let's enter the world of typography—of alphabet design. In the past, a lot of time was necessary to produce a single alphabet. To draw with a pointed pen or brush an ellipse for a capital O or a complicated star required many hours and much experience. Today you can make such designs in seconds. The help that electronic tools now offer is absolutely great. And what they offer! You can alter any shape quickly in all directions until it completely fits your imagination. Wonderful indeed! We save so much time today, but what are we doing with the extra time we receive day-by-day from our electronic slave, from the personal computer on our desk? You may watch baseball games or other television entertainment. That is alright. But a part of this extra bonus of time from your computer can also be used to become more professional, to expand your knowledge about the history of typefaces

by reading books, trade publications or even scholarly journals such as this one. Your goal may be to better inform yourself about the rules of legibility in letterforms, to get technical details and information or to take advantage of the full capacity for which sophisticated personal computers are developed.

Take a look at Updike's *Printing Types. Their History, Forms and Use*.¹ You will be astonished at how large the production of typefaces has been in the first 500 years after Gutenberg's invention. But only some of them are still in use today as good recuts or in redesigns for photocomposition. The same will happen with the inflated number of type designs available at the moment. It is fine to have such a large variety at our disposal, to have them on hand for all kinds of jobs, particularly in comparison with the days of metal type when there was a more limited selection in the typical type shop. But you will see that not many of these new type designs will survive. Only the best and most useful designs will stand up to the natural process of selection in the typographic marketplace.

The type designer has new tools in his hand besides the graver, the pen or the brush. We have in our hands an unexpected power—the personal computer. Programs help in many ways as in the automatic transformation of shapes or turning a circle by various steps into a perfect square. We can alter outlines of letters or parts of them as well as many other features. We can achieve new effects undreamed of in the past—in the years of metal type and photocomposition. The personal computer saves time, allows the designer to test letter fit in his own studio within minutes, provides for more precision in his artwork and saves on production costs. Designers can use these aspects of their electronic assistant to support creative innovation. These are the positive aspects of the digital revolution. However, you can buy programs to make out of an existing alphabet hundreds of variations which can be developed by everybody or anybody. There is nothing regulated by law to tell the user what is wrong in playing with alphabets, in playing with other people's creative property. Many of the new alphabets prepared with those programs are often designed more for the ego of the designer than for the needs of the trade. Such alphabets are prepared without any historic studies, sometimes without any knowledge of the optical laws in letterform design. While the huge market for

printed communication material will absorb everything at least initially, only good design will endure.

Some software programs are created for the manipulation of existing alphabets; to make a personal creation from the work of others. There is absolutely no creativity connected with this sort of design. When it is so easy to get a complete alphabet in a short time, we must ask ourselves, why all the designers in the past spent so much time in study and research in order to get the best possible shape for letterforms and to get the best technical solution. Take a look at the artwork of Ed Benguiat.² See how carefully he executes every small detail of a letter. Some of the new designers avoid the hard work and perhaps don't even think about what they are doing. There is nothing creative at all in this. For what is left if you make a poor copy from an authentic design—from an original alphabet—from this copy another copy and then later another. This is a process of decay. This method promotes no respect for original art in general.

Substantial designs are wanted, not bastards of already existing alphabets. There is no progress in the art of type design if one adds only a few changed characters to old forms; to cut a tail here and there or add a fancy swash. New concepts are needed by today's industry and also for future technological systems. Type faces are a tool like other industrial or product designs. These new type designs should be in the spirit of today; in the style of contemporary attitudes. We should make no concession to whimsical distortion or to the production of cheap warm-ups of old alphabets. Cosmetic retouching of existing type faces, executed by more or less incompetent computer freaks, are not wanted or needed despite their appearance everywhere. There is a lapse of ethical thinking in the design world; there is no respect for the creation of previous generations of designers. The great names from our hall of fame in type design are invoked casually to legitimize unworthy design. Time, energy and imagination should be spent on new creations.

"Everyone his own alphabet" is a big slogan now. Is there a need for this? Does the ordinary reader really see the minor differences in small sizes of manipulated type faces? Even if they are announced as new or especially fashionable? A type-face is a medium of communication—it has a serving function only—it should not call the reader's attention to its attractive

letterforms. This was the criteria for a text face in the past. But in recent years, more people than ever have gotten interested in and know something about type faces, about type designers and about typographic arrangements.

A wide field of activity has been opened up by the personal computer and by good software programs. But we have no influence upon the attitude of new designers working on this kind of design—who don't know anything, for example, about copy-right infringements. They should be motivated to work for the future rather than looking to the past for something existing to copy. Copying the past is not creative at all. I am certain that many of this new generation of type designers want to do real creative work but limitations are necessary. Freedom is not doing everything that you like; freedom requires a voluntary decision of self-discipline; with it comes a burden of responsibility. If you buy matches, you purchase at the same time a dangerous product, for it is so easy to burn your neighbor's house. Would you do this? You buy a personal computer to expand your creativity, to broaden your skill and to make better designs in a shorter time. But to use these amazing electronic tools only for the manipulation of other designers' work is not right. Fairness and creativity are called for even in the present day situation of mass communication and the concession to a lesser quality. We are losing more and more the sensibility for appropriate type design and type arrangement. This is the impression we get looking at some of the printed material produced these days. Why don't we develop a more critical eye for good proportions and for good letterforms? Here the schools are needed to provide an education in the computer design area. Our goal should not be quantity, but quality in the new designs. If we look around, there are firms which support quality. They spend a lot of time on research and development for new designs, for design tailored to help them keep a competitive edge by aiming at advanced technology for the market of the future. These companies represent positive developments in creative design work and they are against the deformation of letters; they are against the simple copies of type designs which we find so depressing.

What help can we give young type designers who want to join us in the design of authentic type faces? Let me give one concrete suggestion: except for publications about the history of alphabets

and about legibility, there is no updated source to get information about what names are still available for new typefaces. This is not only important for designers but also for computer manufacturers and laserprinter firms. Perhaps the RIT Laboratory for Typeface Studies can provide such information by means of an international register of existing typeface names. It must be an international register including names from Europe and Japan, computerized for quick reference. A small fee would be enough to cover the costs of this registration and design entries would always be updated. This would be welcomed by many people in the graphic arts. The first basic list of several thousand names can be taken from the following old publications; from the German publications *Handbuch der Schriftarten*³ and *Verzeichnis der Schriftnamen*⁴, from the *Alphabet Thesaurus Volumes 1, 2 and 3*,⁵ and ATypI's *Index of Typefaces*⁶ as well as material in the St. Bride Printing Library in London. This central register in The School of Printing Management and Sciences at RIT should include only the names of faces which have been really executed and used. Not names, as in the German typefounders' register, which have been reserved for a probable use. This has blocked the use of many names in Germany for years and does not work. Establishing these criteria would help to keep the number of names down to a realistic figure and create a valuable resource. Such a register would be an enormous help in the naming of new alphabets. No organization except RIT is capable of establishing such a list for nobody has both the qualified staff and the necessary computer facilities. It would not be in a printed form as in the past, as each list was immediately outdated at its printing. Such a register would be computerized and as such it would be up-to-date with the latest information on new designs. But the register would assume no copyright or priority functions in order to avoid additional correspondence and cost. It would include of course also the names of unauthorized typefaces used by firms to get around the original names. All existing names would be registered in the files—even copies; registration would imply no judgment or evaluation.

I know from my own experience of fifty years in type design how difficult it is to find a proper name for a new design. It takes a lot of time and one is often disappointed to find at the last minute that a name has already been used. All my type designer friends have this problem of getting a pretty name for their type children.

If we want to support creativity and to encourage young people to develop new alphabet designs, then they must have a place to get information and practical help to avoid trademark infringements. In a broader sense, they need to be encouraged that an appreciation for original work exists, that there is protection for their creative property and that an ethical typographic culture is possible.

Is creativity in alphabet design still wanted? Yes!

This article is based on a presentation given at the typographic symposium titled *Letterforms: Reformation or Deformation* at the Rochester Institute of Technology, School of Printing Management and Sciences, Rochester, New York, in December 1990.

ENDNOTES

1. Daniel Updike. 1922. *Printing Types. Their History, Forms and Use*. Cambridge: Harvard University Press.
2. The type designer Ed Benguiat was the twenty-second recipient of the Frederic W. Goudy Award at RIT in December, 1990.
3. Albrecht Seeman. 1926-1939. *Handbuch der Schriftarten*. Leipzig: Albrecht Seeman Verlag.
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5. Edward Rondthaler. 1960-1971. *Alphabet Thesaurus*. Volumes 1, 2 and 3. New York: Photo-Lettering, Inc.
6. Wolfgang Hartmann. 1975. *Index of Typefaces*. Basel: Association Typographique Internationale.

BIOGRAPHY

Hermann Zapf is an internationally known type designer as well as a calligrapher, book designer and teacher. He has written many articles about technical developments in typography. He is a prolific type designer whose typographic designs span decades of technological development.

Sales Project

Interpretations of human user interface

• Language

Gui Bonsiepe

Several interpretations of human user interface are reviewed and a proposal is developed for understanding the new category of tools in the form of computer programs. The advantages of a graphical user interface is compared to that of a character based interface. The contribution of the designer to the articulation of the retinal space in which these tools appear is outlined. The theoretical part is accompanied by a detailed case history of the design of an electronic mail application. The relationship between an interface science and an interface design is commented on but the proper domain of interface design is distinct from both science and art.

The interface design of computer programs and applications constitutes a new field for graphic design. The prevailing computer-science approach to the role of interface design is often dismissed as cosmetic. This is comparable to other engineering conceptions of design in which the domain of users and aesthetics with its many intangibles is fuzzy at best. It is not difficult to measure how many seconds it takes to transmit an electronic message in a local area network; but it is not so easy to find out why an application is assessed as elegant or practical or easy to learn, i.e., to handle those domains that are not accessible to the methodology of counting. Interface design is particularly challenging because of the interaction of dynamic graphics and language, and because it is the domain where programs are assessed by users and buyers of applications. It is, indeed, a fuzzy area—and in that aspect it does not differ fundamentally from other areas of design—both in practical and theoretical aspects.

Though in recent years the issue of interface design under the headings of “look and feel” has turned into an area of dispute between companies in the courts, the question of what constitutes an interface has not been answered convincingly. There is no consensus about what interfaces are, what constitutes an interface, and what makes an interface a good one.

According to the dominant paradigm, the human user interface is a:

“means by which people and computers communicate with each other.”¹

This widely shared communication paradigm appears also in the following definition:

“A human interface is the sum of all communication between the computer and the user. It’s what presents information to the user and accepts information from the user.”²

Though one can understand the penchant for looking at the relation between user and computer in terms of a communication process, where, as it is maintained, information is exchanged, it shifts the focus from perceiving computer programs in terms of tools and *action*, and sets them apart as a distinct class of immaterial tools.

In addition to the communication paradigm, there are those who maintain that the key issue of interface design consists in helping the user to build a mental model in his brain; a model that replicates the knowledge of the programmer, who has an intimate insight into the working details of the program, which is hidden from the user's view. The user, thus, would have learned a program once he has constructed a private counterpart to the programmer's model. Difficulty with learning and using an application is explained as either lack of a model or an erroneous model to which the user adheres. The quality of an interface design, consequently, would show up in the speed and correctness of a replica constructed by the user. This model-building paradigm is based on assumptions of how learning occurs and makes use of underlying philosophical assumptions that should not be taken for granted. One can say that the user has learned to use an application when it becomes transparent so that he no longer has "to think of it," i.e., when it disappears into the background so that he can focus on accomplishing the task at hand; when it does not get in his way.

Possibly the immaterial character of the new tool has fostered both the communication and mental-model-building paradigm, because the user has no direct access to the program; it is completely unlike entering a car and handling the steering wheel. But one can speculate that the user might be less concerned with communicating with an object called computer or building an isomorphic model in his brain, than in getting certain tasks achieved effectively. Only for this reason are tools invented, produced, learned and used. In this respect applications are not different from chairs, lathes or coffee grinders.

Yet another technical guide defines the graphical user interface as:

“. . . a specification of the ‘look and feel’ of a computer system. This includes what types of objects the user sees and the basic conventions for how the user interacts with those objects.”³

This proposal captures more adequately the character of the interface and interface design by mentioning specifications, i.e. design of graphical components (what the user sees) and rules for dealing with these components on a screen via keyboard,

mouse, tablet or simply by touching the screen. These rules or conventions are established through language revealing the *linguistic base* of applications and their interfaces. The Macintosh operating system with its graphical components—the widely accepted desktop metaphor—has achieved the status of a proper visual culture. The graphical components in the form of *windows*, *icons*, *menus* and *push-buttons* are understood as metaphorical representations of a reality with which users in today’s offices are familiar. However, these graphical objects rather than picturing a reality, are *constituting* a reality. Instead of using metaphors the designers of human user interfaces make use of *recurrence*. For the user the distinction between a metaphorical world and a “real” world is of remote interest. The user lives and works in *one* world, acting with tools, not with metaphors. Therefore, it might be more appropriate to say that the pictorial elements on a computer monitor don’t picture anything, rather they *bring forth an action space*. This action space is articulated by graphical distinctions with which the retinal space of the users is structured.

The central concern that the use of communication paradigms and desktop metaphors address has to do with *ready-to-handness* and with the already mentioned idea of recurrence. Using this Heideggerian notion, the interface of applications can be characterized as the domain where the ready-to-handness of the tool (program) shows up. This notion of a domain offers richer distinctions than the assessment “user-centered” insofar as it incorporates the intrinsic possible breakdown of any tool and the different modalities in which ready-to-handness appears.

Using the notion of *structural coupling* of Maturana and Varela,⁴ one can say that the *interface is the domain in which the structural coupling between body and program occurs and in which the tool is brought forth*. In the same way as the handle of the hammer couples structurally the human body to the tool, the interface works as the “handle” for the program. The coupling occurs primarily through the retinal space, with minor participation of the aural space. The notion of “look and feel” refers to this process of structural coupling between body and tool through visual perception. A user has learned an application when he/she has got it into his body, when he knows which keys to press and when to click the mouse.

The retinal space is structured through graphical distinctions with which the graphic designer is familiar:

- **shape**
- **color**
- **size**
- **position**
- **orientation**
- **texture**
- **transitions or transformations in time similar to what happens in movies and TV.**

Of particular importance for the design of interfaces are *action or event triggers* such as buttons or command options listed in a pull-down menu. The selection of commands, their naming, their organization in groups, their distribution over different levels and their visual treatment is a fundamental part of interface design which requires a linguistic competence of the graphic designer not provided by established graphic design study programs. This might help to explain why graphic designers generally encounter difficulties in getting access to this new field of design. It exceeds the frontiers of what graphic designers traditionally do and are taught to do. (*Table 1 begins to define the knowledge base designers need to approach interface design while Table 2 defines the designer's role on an interface team.*)

Table 1

List of desirable competencies that the designer should have when working in the field of interface design.

- know interface standards
- know basic distinctions of computer science and programming
- know prototyping programs
- know animation programs
- know scripting language (Hypertalk, Supercard)
- know basics of graphic design in a computational medium
- know techniques of usability testing
- have linguistic competence
- know learning theories
- know basics of expert systems

Table 2

List of contributions that can be made by the designer to the development of interfaces.

- observe, analyze and interpret tasks and work processes
- formulate user functionality (services that the program should offer)
- organize commands (action triggers)
- define possible flow charts of action sequences—story boards
- design layout of the action space (screens)
- design tool palettes, e.g., color
- design templates
- design technical documentation
- design tutorials

Sometimes it has been claimed that from the point of view of the user, the interface *is* the application. This is a strong claim, because the application is assessed in many ways: in terms of speed, reliability (absence of “bugs”), mail programs (security against loss of mail) and “power” (list of features or what the user can do with the application). These distinctions go beyond what is the core of interface and interface design, though certainly the power and speed of an application shows up through the interface. This strong claim can, however, be backed by the fact that today the design of computer programs starts with the simulation of the interface; there is an explicit concern for the end user—how he can learn and use the application and how it opens up new possibilities of action for him. This signals a considerable shift from the first generation of program development where interface design generally tended to be dealt with as a nuisance and bottleneck *after* the questions of functionality and program architecture had been resolved. The historical merit and uniqueness of the inventors of the seminal STAR interface resides in the fact that they spent many man/years of work on the interface before focusing on other aspects or even hardware questions.

Today human user interface design is recognized as a legitimate area of specialization because programs do not simply have to function in strictly computational terms, but also have to be learned and used by a large community of users, who are not necessarily conversant or even minimally competent with programming. Moreover, the products have to be marketed—a very difficult task when dealing with applications permeated with a blindness for the issues of interface design. In the academic community, one can perceive a shift to attending to the user, for example, the last SIGCHI (Special Interest Group of Computer Human Interaction) conference of the ACM (American Computing Machinery) in April, 1990 is an indication with its title, “Empowering People.”

Table 3

List of different program types which reveals the variety of different interface requirements.

- text editors
- spreadsheets
- presentation (slides)
- layout
- illustration, rendering (2 and 3D)
- databases (relational and flat)
- drawing (CAD)
- animation
- communication (electronic mail)
- coordination of work groups
- games
- prototyping tools
- accessories and utilities

DESIGN RULES AND USABILITY

Various publications on the subject of interface reveal the emergence of a new area of design. Possibly the most widely known efforts in this field are the *Guidelines for the Apple Desktop*.⁵ The arguments in favor of consistency both within and between applications are simple: consistency in and between interfaces permits faster learning and easier use. At least, this is a generally accepted claim of graphical interfaces.

The design rules deal with the components or visual building blocks with which the action space on the monitor screen is constructed. Furthermore they refer to the operational sequences (action chunks) that the user needs to perform in order to achieve certain tasks. And ultimately the acoustical signals often used as feedback for certain operations, e.g., a beep to indicate that the user hit a wrong key. Developed on the base of the pioneering work of the STAR interface designed at Xerox PARC, the exemplary value of these efforts becomes evident when looking at similar attempts of SUN Microsystems,⁶ IBM⁷ and OSF (Open Software Foundation).⁸ They signal a trend away from character-based interfaces that are typical for MS-DOS programs to graphical user interfaces that are said to be more user-friendly. Specialists prefer to speak of user-centered design. This implies that right from the beginning the user with his incompetence and standard practices is taken into consideration. In other words: user-centered design implies the same orientation as ready-to-hand design. It developed in opposition to program-centered development. However, the notion of ready-to-handness with its different modalities has greater analytical power. It is not a positive attribute that

some programs might have and others might lack, but a name for a domain that contains different modalities like conspicuousness, obstinateness and obtrusiveness— notions that capture and throw light onto the tool-character of tools. The elaboration of these terms goes beyond the scope of the present article; they indicate the possibility to understand applications within a framework of a general theory of tools, their design and their use.

A CASE HISTORY:

interface for an electronic mail application

The foregoing considerations serve as a framework for a report on the development of an electronic mail application that permits “talk” from PCs to Macintosh computers and between Macintosh computers. (Visual documentation of this project follows the main text.) Certain boundary conditions were accepted right from the start, e.g., the maximum length of eight characters for the names of addressees (*see figures 13 and 16*). This inheritance from the MS-DOS world is generally considered an inadmissible breach of the MAC conventions. In orthodox MAC circles the slightest concession to the PC universe comes close to an act that deserves reprobation.

The development team⁹ started with preliminary (pencil) sketches of the interface after the general specifications had been agreed upon. These specifications derive to a great extent from what users expect from an electronic mail program. Apart from the decisive technical questions of connectivity (what types of different networks can be accessed), data protection (avoiding the loss of or damage to the mail), program architecture and the questions of how electronic mail is delivered (store-and-forward, and node delivery systems), the following, sometimes obvious, user functions are considered desirable:

- write and read notes
- select single and multiple addressees
- organize mail automatically in a private database (incoming and outgoing mail is stored without obliging the user to handle individual files
- retrieve mail from the data base

- according to different criteria (by date, by person, by topic)
- create groups of addressees for easier addressing
 - send in different delivery modes (regular, urgent, registered/return receipt)
 - maintain the data base (efficient and simple deleting of outdated notes)
 - attach a document to a note
 - forward a note with a comment
 - get a visual and aural notification when new mail arrives (optional feature)
 - guarantee privacy of the data base (password protection)
 - copy address books into the personal address book (optional feature that can save the tedious work of typing large lists of names when working in a big company)
 - offer different forms (in this case only a special telephone slip has been implemented).

In the first sketches vertical and horizontal palettes were used which contain the various “tools” for writing, reading, addressing, posting mail etc. (*see figure 1*). The argument for this approach was that the user should have all the tools in the form of commands immediately available around his main working area (reading/writing space), instead of accessing them through a list of commands hidden in a menu. However, this approach was discarded when more functions were added resulting at one point at what is sometimes called creeping featurism or the temptation to add features simply because they can be added from a programming point of view. The palettes became overcrowded. The dimensions of the relatively small Macintosh SE screen imposed restrictions on the number of buttons that can be arranged on a palette without impairing usability and sacrificing too much space. At some point the designer must evaluate the trade-off between direct access to the commands in the form of buttons and space that is occupied by these graphical objects. Two or three level deep dialogue boxes proved to be counter-intuitive: the procedures for getting certain results were so buried that the user might be puzzled.

The *HyperCard* principle was adopted according to which every point on a monitor screen can become an action trigger; buttons (commands) can be everywhere, not only in predetermined areas like menu bars or palettes. This principle opens new possibilities for the screen layout and offers the advantage that the tool can be brought near to the working space without interfering with it and without jeopardizing clarity. A design evolved in which standard operations like “Send” were located near the writing space, whereas other commands were grouped in one pull-down menu (*see figure 6*). Several action triggers were hidden; they appear only when the user passes the cursor over the sensitive area (*see figure 4*).

The reading-writing space was divided into two panes, because operationally reading and writing belong together as complementary actions (*see figure 6*). A horizontal pane divider is used to separate the two different areas. An arriving message is opened with an appended answer space. In that respect, the metaphorical approach of imitating real world paper procedures was deliberately left behind.

When writing a new message, the header area functions as an action space from which various actions can be triggered when the cursor is moved over the respective items. These virtual buttons are shown as push button outlines which remain visible as long as the cursor touches the sensitive area (*see figure 4*).

Clicking on the “To” button brings a dialogue box to the screen with a scroll window that shows names of individual addressees and group names, differentiated by normal and bold style (*see figure 5*). Clicking on a name puts an icon in front of it according to the type of addressee. After clicking the OK button the dialogue box disappears and the names are copied into the message header.

A major problem of electronic mail programs consists in organizing the data base and permitting fast and practical access to the records. To address this problem a list window was designed with several filters accessed through radio buttons (*see figure 7*). New incoming messages are listed in the “New Mail” listed in reverse order with the oldest unopened messages located at the top. Once opened, messages are listed in the “Old Mail

List” with the most recent message on top. Messages can be retrieved also by date range, person or topic (*see figure 8*).

A particular feature of this mail program is the possibility to group messages according to a topic. The user can browse through a set of messages which are linked to a message chain. This possibility of going forward and backward is indicated by two horizontal arrows at the bottom of the window (*see figure 6*). In the “New Mail” an arrow in front of the topic of a message shows that it deals with an ongoing matter (*see figure 7*). Such messages form part of a message chain.

In order to simplify the maintenance of the hard disk a special button “Send and Trash” has been added (*see figure 6*). In that case a message is sent, but without a copy remaining in the data base. Another feature of mail applications is the possibility to create groups of addressees, e.g. members of a work group. For this function, a standard procedure of the MAC environment was used, i.e., copying fonts or desk accessories (*see figure 9*). It is desirable that the major functions of a mail application be accessed through the keyboard; particularly when using long lists, a shortcut in the form of a selection bar jumping to the name after the first letters have been typed in adds convenience for the user. In the first version, only some of the shortcuts were implemented.

All components correspond to the visual framework of the MAC environment and in part are predetermined by certain routine items, e.g., type of borderlines and shape of buttons. The work of what might be labeled traditional graphic design referred then to:

- layout of the screen
- location and sizes of typographical and pictorial components (distances from border lines, distances between components)
- design of icons (*see figure 3*)
- design of the “language” boxes with alerts and process messages (*see figure 15*).

These items can be accessed and defined through a particular device in the form of a subapplication (Resource Editor).

TEXT SUPPORT—the merging of language and graphics

Generally the user manuals are treated as a separate item—a necessary evil. According to a maximalist approach, programs should be so simple that user manuals can be dismissed. However, more complex programs require support in the form of printed user manuals. With an integrative design approach user manuals should be treated as part of the interface design, because learning the use of a tool is part of the design of the tool. This has a direct implication for the composition of application design teams in which the manual writer should be included from the beginning.

When designing a user manual the first step is to establish the different voices or text types. Thus, an action text tells the user the steps he has to perform, and should be typographically distinguished from a narrative text that talks about the program. Notes or hints, too, can be treated distinctly in order to facilitate understanding and orientation in the manual (*see figure 16*). The work on user manuals signals a merger between text writing and graphic design, and one might speculate that, in the future a new field of expertise will emerge: a specialist competent both in the domain of graphic design and writing. Personal computers make it possible for writers to become sufficiently competent to bring forth typographically the text distinctions with which they write their texts.

For the future one can anticipate that the development of applications will shift more and more from a programming-driven approach to a design-driven approach. In that respect, application design will experience a shift similar to that which occurred earlier in other branches of manufacturing like the automobile industry.

Research work needs to be done in the field of human user interfaces, with full awareness of the possibilities and simultaneous attention to the limits of scientific approaches to design. Interfaces can become objects of scientific research, but it should be kept in mind that science and design are constitutively different domains. There is no necessary link between a science of human user interfaces and the design of human user interfaces, nor is there a push or pull relation between

these two areas. Science is the domain of discourse based on the production of evidence (facts), whereas design is the domain of production of new realities subject to assessments. A future science of interfaces—as it has been claimed by representatives of scientific disciplines, particularly engineering—might eventually lead to a better understanding of interfaces, but only if it reflects on its often hidden assumptions. It is misleading to want to capture the nonscientific aspects of interfaces and particularly the design aspects of interface as “art.” That notion evokes an aura of mystery and inexplicability that might be avoided by simply talking about interface design. Design is an autonomous domain not explained by categories of art. For reasons of clarity these two domains should be kept separate.

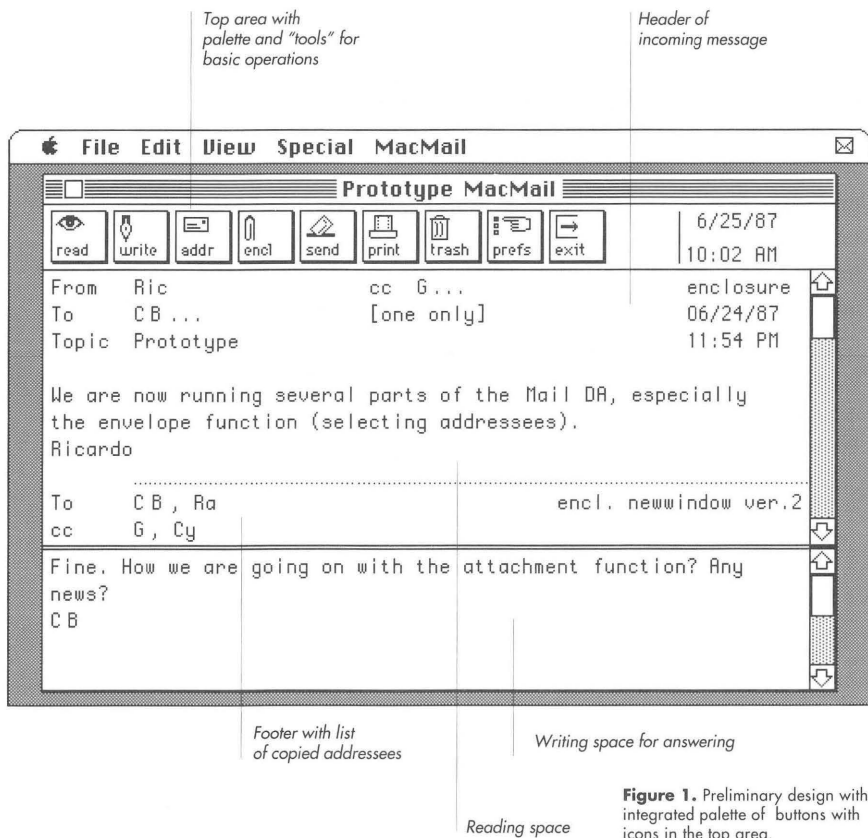


Figure 1. Preliminary design with integrated palette of buttons with icons in the top area.

Mail	
Create Message	⌘N
Phone Message	⌘F
<hr/>	
List Mail ...	⌘L
Previous in List	⌘[
Next in List	⌘]
Delete	⌘D
<hr/>	
Address Book ...	
Print...	⌘P
Save Draft ...	
<hr/>	
Preferences ...	
About MacAccess ...	
<hr/>	
Quit	⌘Q

- Brings empty memo to the screen*
- Brings telephone message to the screen.*
-
- Brings list window to the screen.*
- Opens the previous message when reading a message chain.*
- Opens next message when reading a message chain.*
- Deletes an open message or a group of messages.*
-
- Brings dialog box with list of names.*
- Print option of upper/lower pane or both panes.*
- Brings standard file save dialog box to the screen.*
-
- Allows for selection of font sizes.*
- Shows version and registration number with animated icon.*

Figure 2. Pull down menu of the final design implemented as a desk accessory. Commands are ordered in groups according to functional affinities.

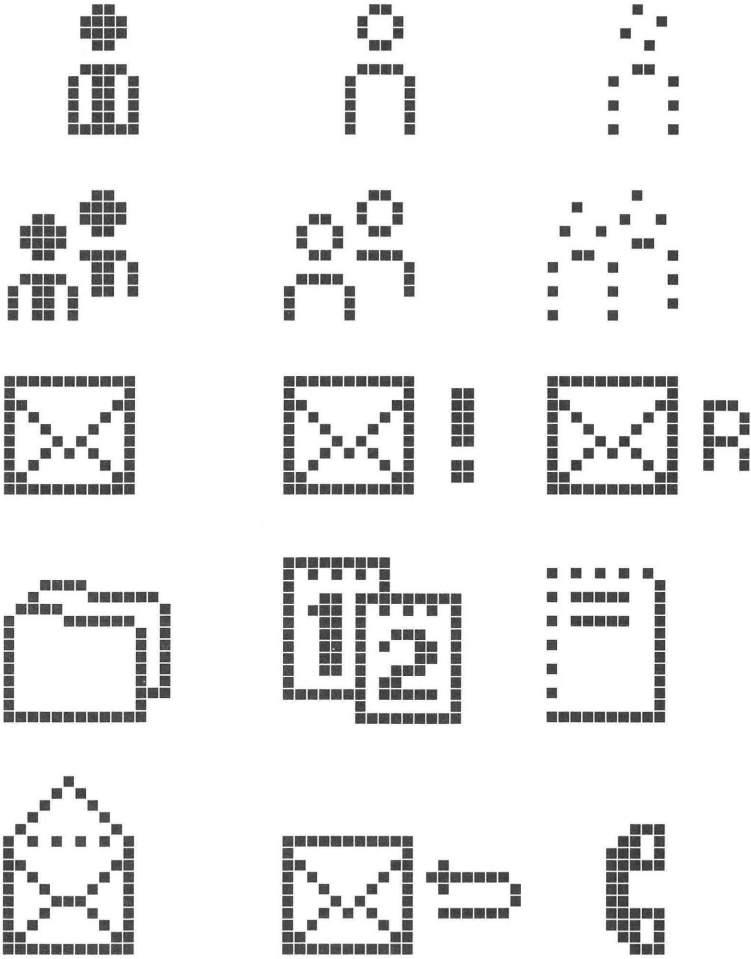


Figure 3.
Icon system shown in
fatbits and actual size.

Person	Copied (cc courtesy copy)	Blind copied (Bcc)
Group	Group copied	Group blind copy
New mail (unopened)	Urgent message	Registered
Filter by topic (folder)	Filter by date	Draft
Old mail (opened)	Return receipt	Phone message



(actual size)

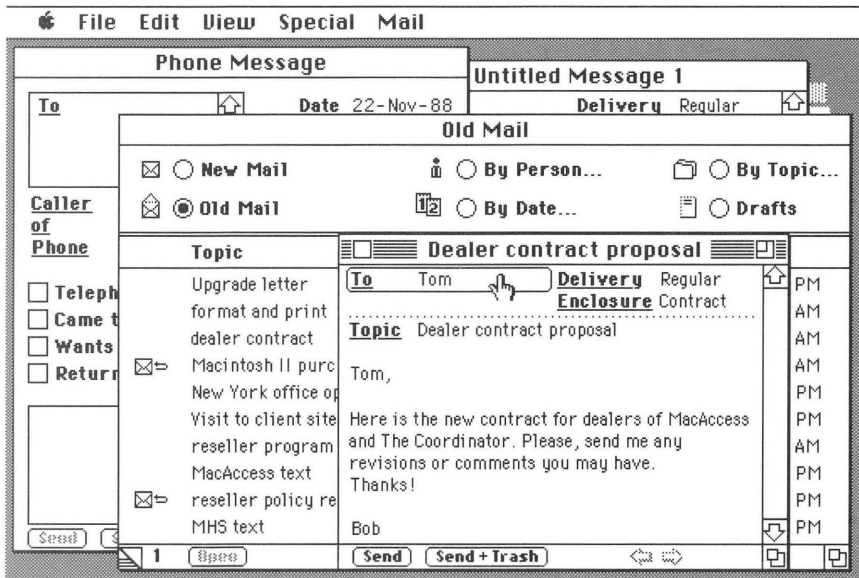


Figure 4. Various overlapping windows of the mail program. In the background a special phone message form like a pink slip. The writing pad can be resized. The pointer cursor changes to a hand-shaped cursor when moving over an invisible button, e.g., in the header area (To).

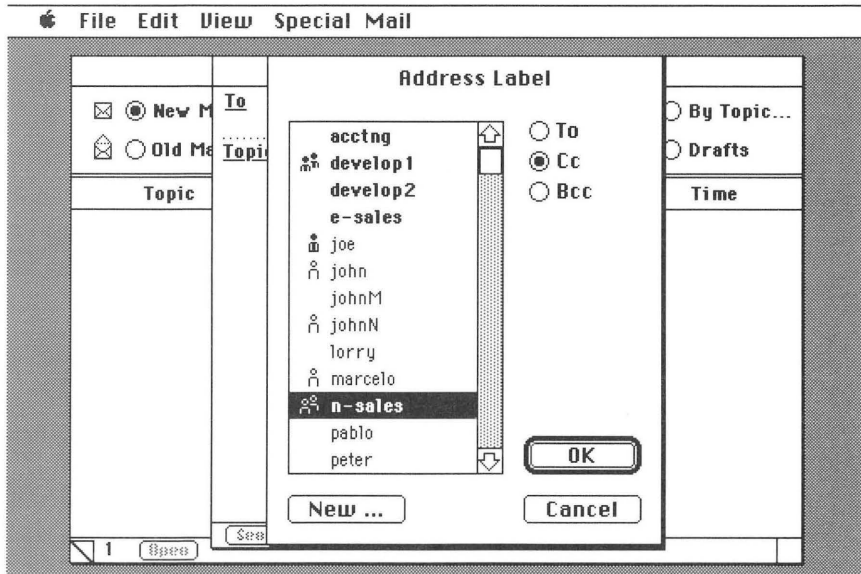


Figure 5. Address list with icons indicating primary addressee, secondary addressees (copies), and blind copies. The new button brings a dialog box to the screen that allows the entry of a new name.

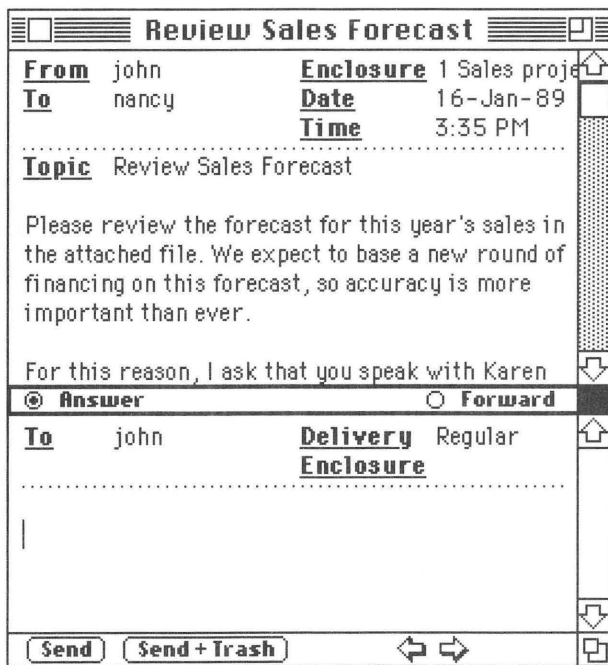


Figure 6. Writing pad with appended answer plane. The name of the addressee is automatically copied into the header of the answer.

Top area with radio buttons that act as filters to fill the list with the corresponding messages.

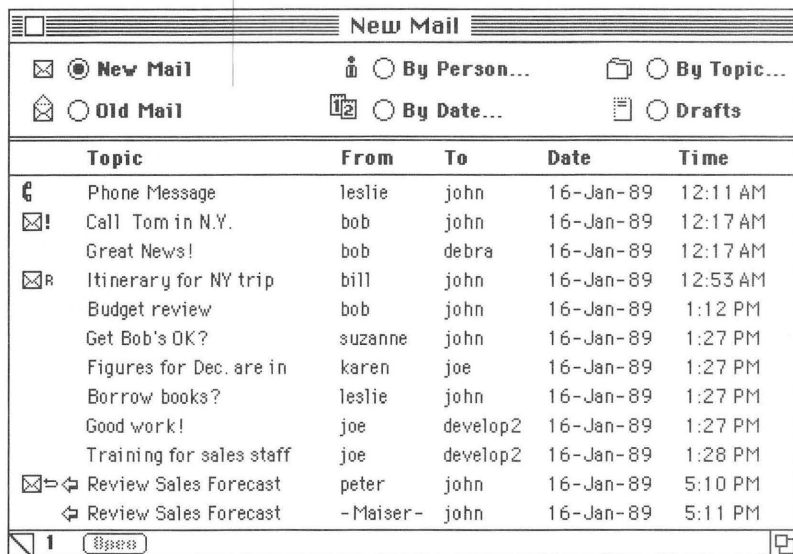


Figure 7. Mail list window with icons for message type (urgent, registered, ongoing matter, phone message)

Flip-over corner for opening "pages" of the mail list

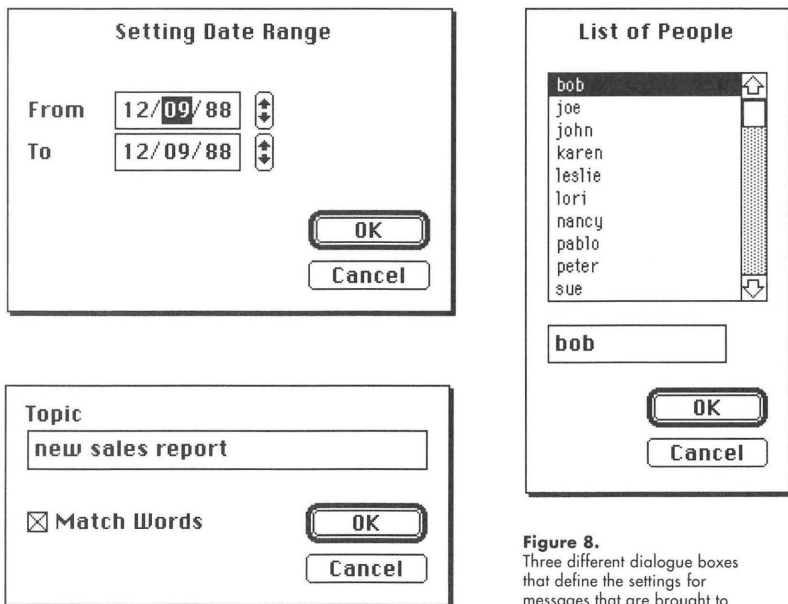


Figure 8. Three different dialogue boxes that define the settings for messages that are brought to the list window:

- messages between dates
- messages related to a topic
- messages from a person..

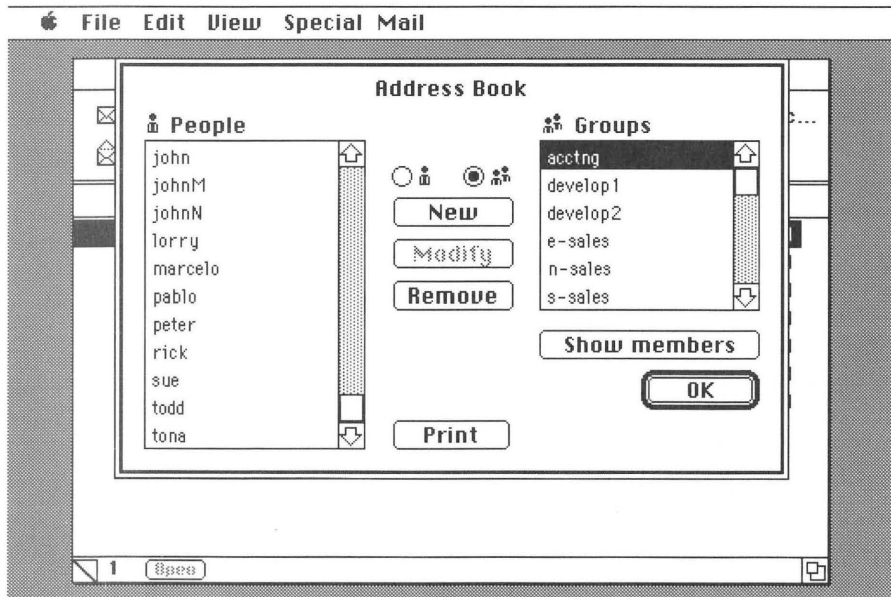


Figure 9. Address book that mimics the Font/DA mover. These three buttons under the single person and group icon bring corresponding dialog boxes to the screen for entering new names into the address book, modifying addresses, and removing names. Clicking on the button "Show members:" lists the members of a selected group.

New

Nickname

MHS Username

MHS Workgroup

Put in your address book?

Removing

Nickname

MHS Username

MHS Workgroup

Modifying

Nickname

MHS Username

MHS Workgroup

Figure 10. Various dialog boxes for changes in the address book.

Unpacking Incoming Messages into "New Mail"

Remaining messages to be unpacked: 1 / 3

Gathering: Review Sales Forecast

From: peter

Click mouse to interrupt

Figure 11. Message box that is shown when a new mail batch is delivered and loaded into the user's private "electronic mail box" on his local hard disc.

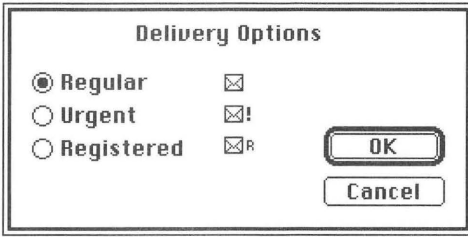


Figure 12. Dialog box for selecting types of delivery.

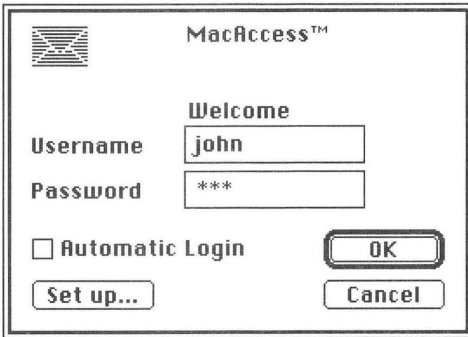


Figure 13. Welcome screen with text entry fields for password.



Figure 15. Samples of text dialog boxes.

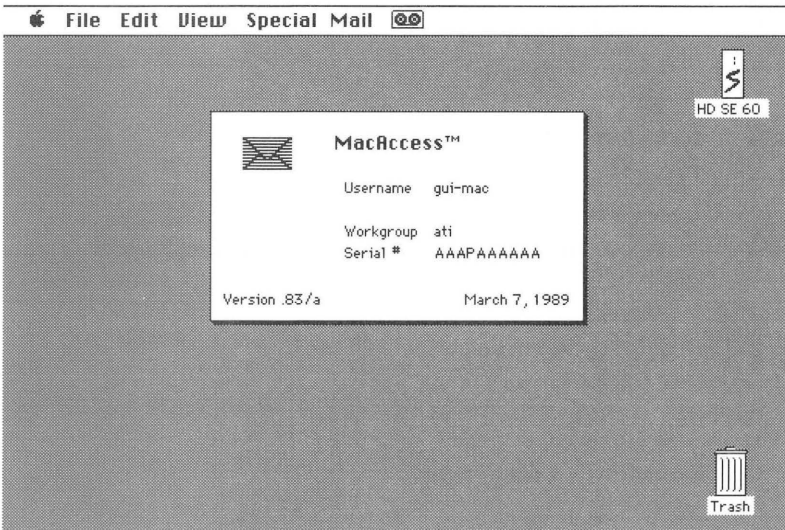


Figure 14. "About" screen with animated mail (envelope) icon..

Figure 16. Sample page of the user manual. Actions texts on gray shaded fields. Captions and secondary illustrations (for browsing) in a "fast track" column.

Addressing a Message

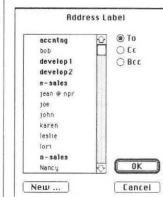
- To address the message you are working on, start by moving the pointer over the heading **To** at the upper left of your message.



- When the pointer becomes a hand, and you see a rounded rectangle appear around the word **To**, click.

You see the **Address Label** box, with a list of any nicknames now in your address book. (Group names are in **bold**.) You're going to create an address label to stick on the electronic envelope so that the mail carrier knows where to deliver the message.

Change of cursor with hidden button



NOTES

1. *SAA - Common User Access - Panel Design and User Interaction*. 1987. Boca Raton: IBM, 7.
2. *Human Interface Guidelines: The Apple Desktop Interface*. 1987. New York: Addison Wesley, XII.
3. *The Open Look UI (user interface) Style Guide*. 1989. Mountain View: SUN Microsystems, 1.
4. H. Maturana and F. Varela. *The Tree of Knowledge*. 1987. Shambala, 75.
5. *Human Interface Guidelines: The Apple Desktop Interface*. 1987. New York: Addison Wesley.
6. *Open Look - Graphical User Interface Specification*. 1988. Mountain View: SUN Microsystems.
7. *SAA - Common User Access - Panel Design and User Interaction*. 1987. Boca Raton: IBM.
8. *OSF/MOTIF Style Guide*. 1989. Cambridge: Open Software Foundation.
9. This program has been developed at Action Technologies, Inc. during 1988 and part of 1989. The first sketches were made in mid-1987. The principal computer scientist in the development team was Pablo Flores, under the general direction of Juan Ludlow. Various specialists for Macintosh applications contributed to the program during its different stages. The author is particularly grateful to Ricardo Salas for orientation in the Macintosh environment. The theoretical framework presented here owes a debt to the groundlaying work for a new theory of design by Terry Winograd and Fernando Flores in *Understanding Computers and Cognition* (Norwood: Ablex Publishing Company, 1986). The notion of retinal space was introduced by Fernando Flores in the Ontological Design Course of Logonet, Inc. (1988) and further detailed in a workshop "Graphic Design For Effective Action" organized by Logonet, Inc. (1988). At the same workshop the notion of "action trigger" has been presented.

BIOGRAPHY

Gui Bonsiepe, who studied and taught at the Ulm School for Design in Germany, is a senior researcher at the National Council for Scientific and Technological Development in Brazil. In the mid 80s, he founded the Brazilian Design Institute in Florianopolis. Among his publications are: *Theory and Practice of Industrial Design* (Italy, 1975), *Industrial Design, Technology and Dependency* (Mexico, 1978), *The Technology of Technology* (Brazil, 1983) as well as numerous articles on design.

World

Broadening the Bandwidth

Communication in the

Christopher Nemeth

Progress is increasingly defined as success in organizing, sharing, understanding and using information. Design-related project teams typically develop and pass complex information among many team members. Current communications media limit the amount and speed of information transfer. Increasingly sophisticated computing communications systems offer the potential to bridge long distances and cultural differences.

Design Boys

The design professions can take a cue from Cable News Network (CNN), which shows that live electronic communications do help to bridge cultures. By communicating in a broader bandwidth, live images convey information in a richer, more compelling fashion than simple audio or printed media. Design-related work can benefit from live computing/telecommunications media, by building stronger relationships among participants and improving the quality, depth, speed and facility with which information is shared. This paper discusses an image-intensive design communications network, its prospective benefits and possible pitfalls.

■ DESIGN COMMUNICATIONS

Verbal communication is only part of the broad range of vocal and nonvocal communication. Expanding communication beyond strictly verbal information to include gestures, nonverbal utterances, images, and motion enriches human interaction. Stults (1986) noted in his description of Xerox PARC's "Media Space" that "I have suspected for some time that the social processes internal to a design group rarely take symbolic form. Most of our communication is intimate, direct and pre-verbal." The two-year project was an experimental video and computing system prototype which Xerox PARC used to explore electronic systems support for collaborative work among design team members at remote locations.

Smith (1988) describes five levels of human communication, which parallel the least to most symbolic levels of information processing.

- **physical world** – hearing, seeing, touch, smell and taste for inputs.
- **symbols** – "group information transmission," behavior as outputs.
- **feelings** – "group relationships," care, power and attachment.
- **memory** – "group knowledge," history and culture.
- **cognition** – thinking together.
- **mission** – "what we're doing here."

Participants establish rules of exchange, or protocols, at each level. Results of the exchange are passed to a higher level (e.g., seeing input contributes to behavior, which contributes to feelings, etc.). Smith finds "effective human-to-human information conveys a maximum amount of information (meaningful data) with a minimum of critical human resource dedication." More specifically, text requires a reader to digest details before arriving at a conclusion. Images give an immediate impression and require less effort to be diverted from the actual idea into how it is communicated. In this sense, image-based communications are more efficient.

Enriching the exchange at each level also enriches the communication and, ultimately, the end product. At the physical level,

images, mock-ups, prototypes and the like are highly effective because “physical models broaden cognitive thinking’s bandwidth considerably, when compared to the information passed in abstractions.” For Smith “text (speech) and graphic presentations form duals of each other, since the former is serial and low bandwidth, the latter parallel and high.” The same holds true at higher levels. For example, enabling participants to enrich their text message with the nuance of emotions expressed through behavior (feeling level) can build a stronger bond between them (memory level).

Design-related work is unique in that “design includes the delivery of something, an artifact, that is different from the process of the designers.” (Stults, 1986) The better the quality and depth of the information which a design team shares, the better the artifact which they create can be. Media shouldn’t get in the way. Design energy is better spent on good ideas, rather than how to use various media to communicate them. Media which enable users to communicate most normally will free users from adapting ideas to media and allow more time to be spent on original thought.

■ CURRENT PRACTICE

At a minimum, communications media must be reliable. Text’s simplicity is a good fit with the need for reliability. As a result, the most widely used media — mails and telephone networks — require users to reduce thoughts to text. Yet text’s abstraction confines interaction to a small portion of the means users need to express ideas in all their richness. While mail conveys correspondence and periodicals, it is subject to loss, delays, damage and review by third parties (e.g., customs). Phone networks convey one-on-one and conference conversations, yet require synchronous use unless equipped with an answering device. Recently, facsimile transmission has been used to piggyback on phone transmission. Fax images are fixed and cannot be manipulated or enhanced. It is essentially fast, brief mail.

Physical shipment (e.g., face-to-face meetings and materials sent by courier and common carrier) is also used, but less frequently. Its cost and slow speed makes physical transport less preferable as a medium of communication.

Data bases are limited to countries with highly developed computing networks, such as the U.S. Verbal and numeric content, not images, are the medium of exchange. Most developed countries have libraries, but few have the means to retrieve and share information resources among countries.

■ DESIGN INFORMATION USERS

Any profession which creates images and products for people to use has a need to communicate design information. They include, but are not limited to:

- product design (or "industrial design")
- urban/regional planning
 - communications design (or "graphic design")
- environmental design
 - interior design
- software design
 - architecture
- design engineering
 - mechanical engineering

The information each of these disciplines needs to digest and share continues to expand. However, the media each uses to share that information have not evolved at the same rate.

What do they need? Chances are future use patterns will mimic current ones. The researcher collects, analyzes, reflects on data, develops large files and sends them in single bursts. The designer collects, reviews, derives patterns, develops alternatives, sifts for the optimal concept, models and evaluates. Designers and engineers depict, specify, verify, and confirm. During development and implementation, they interact frequently, in short, rapid bursts.

What should a design communications link provide? To be effective, it will need to meet a number of requirements near-term:

cost-effective – with billing rates and procedures suited to user means

reliable – operates when the user needs it, in a way that users expect

available – usable, regardless of physical location

piggyback – takes advantage of existing technology in communications. Requires little or no new equipment beyond off-the-shelf items.

versatile – provides a selection of different services according to user needs

relevant – current, of value to users

Longer-range needs will include:

image-intensive – accepts, conveys, displays, stores continuous tone and video images with minimal degradation in quality

live – supports visual and audio communication as it happens

responsive – meets user needs through network options monitored by managers

adaptable – meets user needs through its ability to be reconfigured

multi-sensory – handles text, images and audio

■ WORLD DESIGN CHANNEL

Computing alone will not meet user needs. Stults (1986) found it wasn't until Xerox PARC added video to their interactive design network that it truly became a "media space" suited to realistic exchange and collaboration among team members located in geographically separate sites.

A bundled set of services and networks holds the promise to meet current and future

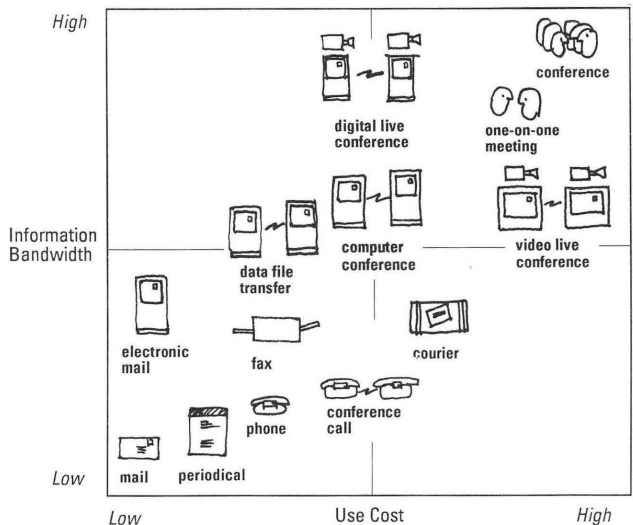


Figure 1. **Communications media map.** Each medium differs in its use-cost and bandwidth (amount and quality of information).

needs for design communications. Imagine an information utility, or “Design Channel,” which combines the best in technology – live electronic communications and design research – not one network, but a variety of services available to members when they need them.

Managed by a small coordinating office, Channel members will be individuals, firms, organizations and universities that contribute some resource of value to other members and maintain it (e.g., a data base on Korean anthropometry, or a dynamic diagramming software program). Channel participants will be able to pay per use, much like subscription television services. Opening Channel use to all interested parties will avoid narrow-minded “electronic cul-due-sacs” (Bull, et.al., 1990) by encouraging a group dialogue in an open forum. Exposing users to many different ways of thinking will create opportunities to cross-fertilize the professions, sparking new insights and broader points of view.

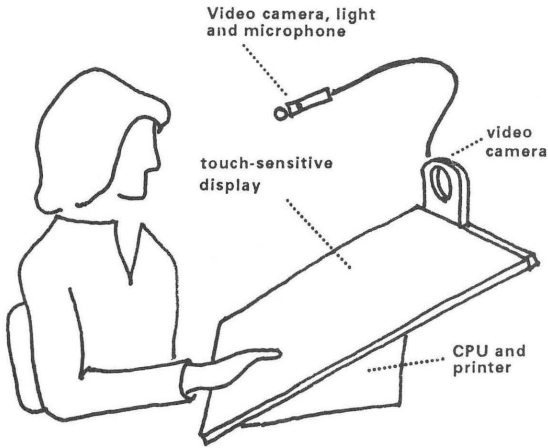


Figure 2. Image-intensive computer workstation.

Workstations will be standard commercial products configured for intensive image use. The “Next” computer is a forerunner of this kind of product. Features such as a large scale flat display and live video interaction managed through a central processing unit (CPU) will become cost-effective within the decade (Stults, 1988).

What will a typical session be like? Here is an example. A designer at the Research and Educational Institute for Industrial Design (REIID) at National Cheng-Kung University (NCKU) in Taiwan is involved in a project to create a user interface for an interactive computer software program to be sold in the U.S. and Japan. She needs to verify how its layout, icon design and decision tree will fit user needs in both countries. As she sits at her workstation and flips on the CPU, its large flat screen

flickers to life. By modem, she logs-on to the Channel's service index, via a satellite link, at the Channel operations center. The index lists a variety of design-related services, who offers them, how they operate, and more. Pulling down a menu labelled "interface design," she scans the menu for resources which will help her to assess her concept.

She finds that the Institute of Design at Illinois Institute of Technology in Chicago has a team with experience in interface R&D. They also have systems which will run the software she has developed. Keeping the uplink, she redials the Institute of Design. She chooses the "mail" function on her display and, when the ID system indicates start, glances at the video camera at the edge of her display saying "Hi, I'm Susan Chin from NCKU Taiwan. I'd like your comments on an interface I've developed for use in the U.S. and Japan.

She opens a window and shows the file with the U.S. version on her display screen, continuing, "I'm particularly interested in your thoughts on this section of the decision tree." Moving through the interface menus, she demonstrates how she has built its links from higher to lower stages and shows what results they yield, adding, "I'd appreciate any comments you have on the icon design and screen layout, too." She drags a file icon across her display to a mailbox icon, saying, "Here's the source code, so you can operate the complete interface, if you like." Tagged to the message, the source code is loaded onto the ID system. "It would help if you could get back to me by 1900 Zulu next Thursday. Thanks," she concludes, with a brief smile and wave to her video camera. She presses the control surface to close the message, which is now stored in the ID system ready for the next time the ID staff checks for messages.

It will take a few years for all members to interact with such power and ease. In the meantime, a pilot network now enables members to get started. Using a commonly available network such as Bitnet will enable members to experiment with service concepts, evolve methods of working together and develop a track record to merit sponsor funding by the time they inaugurate expanded services.

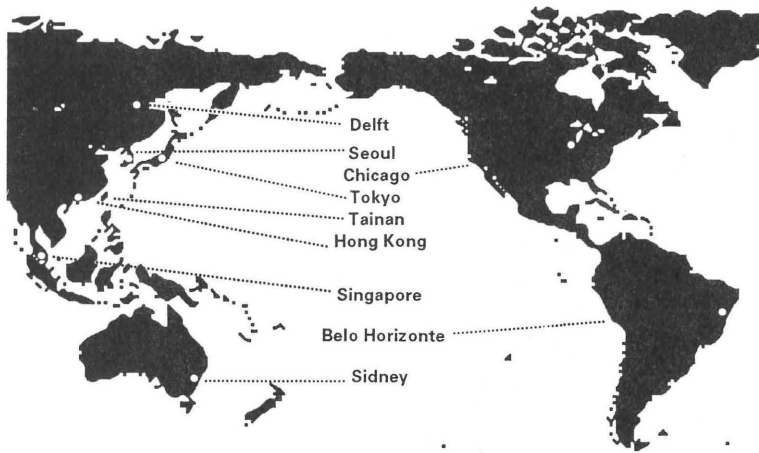


Figure 3. Pilot network.
 Nine countries formed
 a pilot Channel
 network in 1991.

■ VARIETY OF TOOLS

The tools available to Channel members and users will be a far cry from swapping facsimiles and phone calls. While mail, phone, fax and physical shipment will play a role, interactive electronic systems offer the greatest potential to add value to Channel communications. Some of them will include:

■ **Common computer network.** A low-cost on-line computer network, such as Bitnet, will serve as the gateway to all Channel activity. Its high reliability and low cost will make basic Channel communications services available to any current or prospective user. This common network will offer a variety of features. For example, the Channel will take initiative to notify individuals of recent service additions, newly published articles, upcoming activities and more, based on their professional interest profile.

■ **Data bases.** Technical information, stores of diagrams, graphic, photo and video images rarely available now will be offered in a variety of media. Users will be able to tap into a cache of resources and services which were previously unavailable unless a person was lucky to find them or willing to travel to use them.

■ **Design on-line conferencing.** A variety of conferences organized along different topics of interest will be

moderated by Channel participants. Such informal sessions will enable participants to conduct focus groups, ask for observations on new concepts, seek new methods for different varieties of problems, and more.

■ **Digital image conferencing.** Decreasing costs for satellite links and image-intensive workstations will enable participants to hold simultaneous remote conferences one-on-one or among remote groups. Unlike video conferencing, digital sessions will be processed through each participant's workstation central processing unit. Any portion of the conference can be captured and stored as a data file, including work-in-progress.

■ **Three-dimensional form depiction.** Rather than shipping fragile costly models across the globe, participants will be able to transfer data files between stations. Data will drive numerically-controlled machine tools or flexible modeling units to produce form models from foam or other media, much as newspaper make-up data is sent via data link to remote printing sites today.

■ PROMISING FUTURE

Work teams in earlier times shared the same chores, space, and sweat. Information-based culture brings drawbacks as well as benefits. "Knowledge work isolates people; they need the support and company of others to validate their work, so they can go beyond what they have just done." (Smith, 1988). The Channel network seeks to link those separated by physical space and culture, much as the Xerox Media Space project sought "...to extend the physical medium with a new medium provided by audio and video technologies." (Stults, 1986)

■ A widespread design network will provide benefits on a number of levels, such as:

- Improved understanding and relationships between cultures and between professions
- More widely accepted protocols for understanding and solving problems
- Easier access to important current technical information and better-integrated data sources
- Broader forum for design concept experimentation

- More vibrant interactions among imaginative, resourceful collaborators
- Greater emphasis on the quality of ideas, rather than on the details related to presenting and producing them
- Improved understanding of project needs and solutions

Electronic systems are not a panacea. They are subject to hardware failure and software errors. Compatibility between hardware systems and between software programs is an issue. Many systems require unique skills to operate them and habits developed on one can interfere with operations on others. Systems can become obsolete. Adopting a new technology requires a critical mass (15% penetration) before its advantages turn the tide and economies of scale make it cost-effective (Vanston, et.al., 1989). As a result, users may choose to buy a popular system rather than the one which is most advanced. Users may also defer buying a system and wait for a clearly superior product to emerge and its price to decline.

At sum, the Channel is still about human communication. Its value rises or falls on how well it enables users to create artifacts. As a bundle of services, the Channel will complement, not supplant, the physical world. Stults (1986) cautions that “we treat the media space as an extension of physical space, not as a replacement for it.” He continues, “...we can never properly contain human relations in our media; in trying to do so, we’ll always miss something important.”

This article is based on a number of concepts set forth during the Pan Pacific Design Conference Working Meeting held at the Institute of Design, Illinois Institute of Technology in Chicago, from July 28 to August 3, 1990. The session was co-chaired by Professor Charles Owen (Institute of Design) and Professor Emeritus Michitaka Yoshioka (University of Tsukuba) in the interest of planning and implementing a means of communicating about design suited to the needs and technology of the 1990s and beyond. The meeting concluded with plans to initiate a pilot network, linking all working meeting participants. Plans are now in progress to stage a world design conference in 1992-93 which will be open to all and will inaugurate the actual design channel.

Meeting participants included: John Heskett, Charles L. Owen, Sharon Poggenpohl, Gregory Prygrocki, Keiichi Sato and Patrick Whitney (US), Takeshi Sunaga, Michitaka Yoshioka (Japan), Kun-Pyo Lee, Soon-Jong Lee (Korea), Alfred Chen, Kuohsiang Chen (Republic of Taiwan), Sing Kung (Tony) Sin, Douglas Tomkin (Hong Kong), Michael Kok Cheng Gan (Singapore), Alonso Lamy de Miranda (Brazil), James S. Montague (Australia) and James Hennessy (Netherlands).

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BIOGRAPHY

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**COMMUNICATION
WITH VISUAL SOUND**
KATHLEEN
BURNETT

**HERBERT
BAYER**
AND THE DESIGN OF TYPE

The pervasiveness of Herbert Bayer's influence on every aspect of modern commercial book design and production has been significantly underestimated. Bayer's contributions to type design, layout, book production methodology and technology have been until recently largely overlooked despite the extent to which his vision and example have influenced the design of contemporary textbooks, atlases and exhibition catalogs. Bayer's influence extends beyond these specialized formats.

It is in the area of type design that Bayer's contribution has been most unfairly dismissed. Among the progenitors of functionalism in type design, Bayer was the first to design a type specifically for photo offset reproduction. His designs for universal and bayer-type served as models for such commonly used modern fonts as Univers and Bauhaus. He was an advocate of clear, systematic thought tempered by pragmatism, whose principles of type design were twofold: 1) type as visual language, and 2) the relationship of type to technology. He proposed that types should represent language in a clear and readable manner, with full attention to the characteristics of the reproductive medium. It is in the attempt to formulate a theoretic of type design, rather than in the design of any one type face, that Bayer's importance lies. While many of his more practically-oriented colleagues considered his desire to reconcile linguistic, technical and aesthetic concerns eccentric, contemporary designers grappling with the problematics of digital typography and computer screen design will find his work provocative.

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Visible Language, XXIV, 3/4
Kathleen Burnett, pp 298-333
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Providence, Rhode Island 02903

Herbert Bayer, a painter, designer, architect, typographer, and typographical theorist, was born in 1900 and died in 1985. Following four years as an apprentice in two different arts and crafts ateliers, he enrolled in 1920 as a student in the Bauhaus where he studied with Wassily Kandinsky in the wall-painting workshop.¹ Five years later he was appointed master of the typographic workshop, a position he held for three years. In 1928 he resigned from the Bauhaus to pursue a career in advertising and graphic design in Berlin, where he worked first as a freelance designer for *Vogue* magazine, then as director of Dorland Studio. In 1937 he emigrated to the United States, settling first in New York, then moving to Aspen, Colorado, and finally, to Montecito, California. Bayer turned to corporate sponsorship of his diverse design activities in the late forties. Container Corporation of America's director, Walter Paepcke, was instrumental in providing corporate sponsorship for many important Bayer projects including the *World Geographic Atlas*. When Paepcke died in the late sixties, another corporate entrepreneur, William O. Anderson, initiated a new sponsoring relationship with Atlantic Richfield.

Contrary to popular opinion, Bayer—not László Moholy-Nagy, the designer of the celebrated *Bauhausbücher* series—championed the major accomplishments of the Bauhaus in typographic design. In 1925, Bayer proposed the adoption of sans serif types and a single-case alphabet for all Bauhaus-related correspondence and, as the master of the typographic workshop between 1925 and 1928, directed the research into the new types which became the hallmark of the Bauhaus. Moholy-Nagy's designs for the *Bauhausbücher* show comparatively little evidence of familiarity with or interest in the typographic research of his colleagues, nor can they be said to place him at the forefront of contemporary design. That he was aware of the research being conducted by Bayer, Joost Schmidt and Josef Albers in the workshop, is clearly indicated in an article for the special Bauhaus issue of *Offset Buch und Werbekunst*, "Zeitgemässe Typographie" (1925). The seeming disparity between Moholy-Nagy's theoretical position, as evidenced in his writing of this period, and the 1925 publication of his designs for the initial volumes of the *Bauhausbücher* series, was in part due to publication delays; the designs for these initial volumes date from 1923, thus predating the formal establish-

ment of the workshop and the inauguration of the research conducted there. When it came time to design the later volumes, Moholy-Nagy probably felt that the necessity to maintain the integrity of the series design outweighed the need for innovation. However, Moholy-Nagy's typographic production during his remaining years at the Bauhaus shows little indication of a consistent or whole-hearted embracing of the principles of typography except as they relate to his interest in photography.

Even as a student, Bayer filled the role of resident Bauhaus typographic designer and exhibited a willingness to experiment with new types and new forms throughout. He was granted special admission status to the Bauhaus largely on the basis of a portfolio consisting of typographic and graphic designs executed in prior apprenticeships, and was the *Bauhäusler* most often called upon for projects requiring expertise in lettering design. His appointment as master of the typographic workshop acknowledged this facility and encouraged its further development in both practical and theoretical contexts. It also provided him with his first real opportunity to experiment with the lowest common denominator in typographic layout—the design of

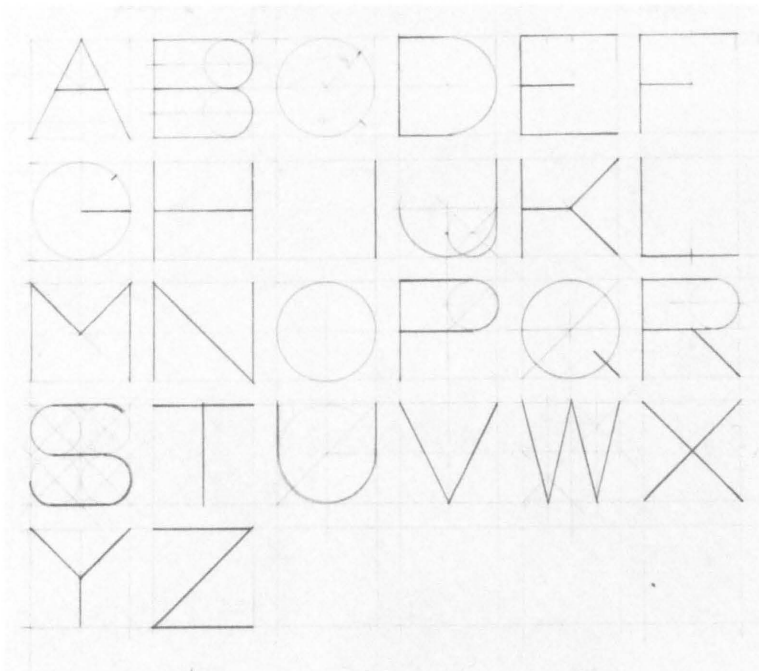
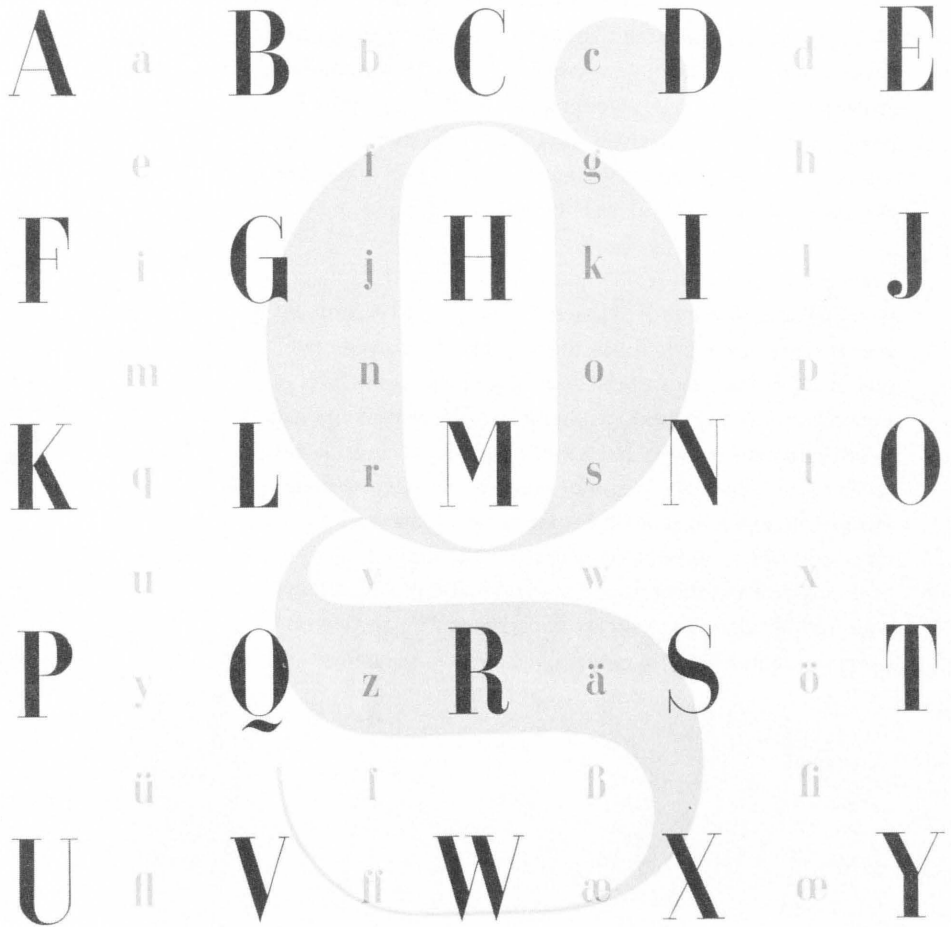


Figure 1. *universal*
Sketch 11 detail
(October 1925)



The Figure for bayer Type ballbet

Figure 2. *bayer type* (1935/36).
 From *type prospectus*

By permission of the Denver Art Museum



Figure 3. *basic alfabet* (1959). From "*basic alfabet*" 1963

the type. Thus, it was in the area of type design that Bayer first came into his own as a theoretician. “Versuch einer neuen Schrift,”² among the earliest of Bayer’s published articles, was the first in which he took a theoretical stand rather than simply adopt the aesthetics he inherited from Laszlo Moholy-Nagy and the New Typographers. It was also the first of many articles that dealt with the role of type design in the reform of language.

Of the *Bauhäusler* who did design types, Bayer was the most prolific. He designed many display types, including a contourless shadow type and several stencil types. While still at the Bauhaus, he experimented with designs for an Egyptian type—which he abandoned—and in Berlin with Latin cursive and *Fraktur* types. But it is with the designs for three text types, *universal* (figure 1), *bayer-type* (figure 2), and the *basic alfabet* (figure 3), that he really came into his own as a type designer. The designs for the *universal* date from between 1925 and 1928. *Bayer-type* was first marketed by the H. Berthold Type Foundry in Berlin in 1935 or 1936, and re-introduced in the late seventies by the International Typeface Corporation as *Bauhaus*.³ With the designs for the *basic alfabet*, executed between 1958 and 1960, Bayer moved beyond type design into the realm of orthographic reform.

THE UNIVERSAL TYPE

Bayer defined his motives in designing his first type as:

- a) simplification of form for the sake of legibility (the simpler the optical appearance the easier its comprehension);
- b) clean proportions for each letter, designed with basic geometric elements to produce a harmonious character for the alphabet;
- c) renunciation of serifs, up-and-down strokes and of a handwritten character;
- d) adaptation for the typewriter, for handwriting, etc., to be developed from the basic design of the “universal type” for machine printing.⁴

In 1925 Bayer recommended—and the director of the Bauhaus, Walter Gropius approved—the use of lower-case only in all

Bauhaus correspondence. Stationery designed by Bayer for the institution reflects this change, both in its design, and in the inclusion of a statement which discusses the relative advantages of a lower-case typography:

. . . our writing loses nothing but becomes more easily legible, learnable, considerably more economical . . . why have two symbols for one sound such as a, A and a? why two alphabets for one word, why twice the number of symbols, if half the number accomplishes the same thing?⁵

Universal was in part intended to showcase this adoption; however, marginalia and the presence of capitals in early drafts of the designs indicate that at various stages the goals outlined above took precedence over attempts at designing a single-case text type.

The second of Bayer's goals, "clean proportions for each letter, designed with basic geometric elements to produce a harmonious character . . ."⁶ reflects his interest in the aesthetics of type design. To create a face suitable for modern production, Bayer redesigned letterforms in accordance with contemporary artistic principles, especially those expounded by Wassily Kandinsky, who divided the "general problem of form" into two parts: "1. Form in its narrower sense—plane and space. 2. Form in its broader sense—color and the relation to form in its narrower sense."⁷

Leaving aside for the moment the role of color in the design of type, it was precisely Kandinsky's approach that Bayer adopted in his early sketches for the universal type, dividing the fundamental geometrical forms into their constituent parts—a few angles and radii—then using these to construct the letterforms, thus eliminating any vestiges of the influence of manuscript hands usually associated with pre-twentieth century type designs. Actually, Bayer's attempt to derive his type designs from something other than manuscript hands belongs to a long tradition. He cites Albrecht Durer's experiments in the sixteenth century relating the structure of the typeface to—among other things—human anatomy. He was also familiar with the tendency of some of the Secessionists to derive calligraphic letterforms from plant forms. Others, including the *Baubäusler* Josef Albers and Joost Schmidt, were actively engaged in constructing geometrically-derived typefaces at approximately the same time,

but Bayer was apparently the only one to attempt a type intended for textual use. The analytical method of construction he used ensured the production of a type which satisfied his third goal the “renunciation of serifs, up-and-down strokes and of a handwritten character.”⁸

The earliest extant design for *universal* is a pencil sketch of lineal capitals constructed from three radii and different angles so that the letterforms maintain different widths. Bayer’s own commentary, written in pencil in the lower-right of the design, would indicate that his concerns in this early sketch are primarily aesthetic: “why has no one ever designed a consistent type, where every stroke can hold its own under examination!”⁹

The sketch was executed in October 1925, the same month that saw the appearance of Jan Tschichold’s “Elementare Typographie” in *Typographische Mitteilungen*, a trade journal far-sighted enough to recognize the importance of introducing new trends to its readers. Bayer had worked with Tschichold in selecting examples of the New Typography for the article, and had therefore been instrumental in defining just what constituted the movement.¹⁰ Because he was an artist and his work for the article consisted primarily in evaluating visual material, it is not surprising that his initial concern was with the aesthetics of the type he was designing; however, his interest soon shifted to functional issues.

A slightly later sketch of the same year (*figure 4*),¹¹ Bayer notes that while geometric systems may be useful in the construction of typefaces, the legibility of the type must not be compromised, as may happen in cases where legibility would seem to demand that the body of the type occupy a greater area than the grid would allow. Although the appearance of the typeface is still central to this discussion, the focus has shifted slightly from strictly aesthetic issues to the problematics of legibility, which, in turn, would ultimately lead Bayer to the design of a phonetic type. At this point, however, Bayer’s concern with legibility is limited to the design of a face which eases the eye’s task in reading, that is, which concentrates on the optics of the face, without addressing the contiguous issue of its relation to the sonics or phonetics of the language itself. While his notes clearly reject classical types because of their

illegibility, the sketch addresses only the aesthetics of legibility—“simplification of form for the sake of legibility”¹²—while ignoring the role of type as visible language—as the visual expression of sound. Although his awareness of the power and influence of visual form on the communication of individual messages was well developed by this time, he had not yet begun to think out its relationship to the development of linguistic idiom. In a few short months, however, this relationship was to become the focal point of his theoretical discourse:

If the formation of a new type is derived from the basic organization of its characters, it must necessarily bring about a reorganization of the language itself. But as long as it is limited to the transformation and further development of previously existing characters, this will be possible only on a purely optical basis.¹³

In Bayer’s next sketch for the type (numbered 15 and undated, though probably executed between October and December 1925),¹⁴ he gives the designs some volume, sketching the letterforms as blocks, rather than as simple line drawings (*figure 5*).¹⁵ Each letter is constructed on a grid of 4x4 squares, with the area for the “B” being further subdivided into 10x10 and 4x25 squares to accommodate the breadth of the letter, thus enabling the systematic derivation of four different weights from one and the same grid. A table to the right of the final line relates the weights and proportions of the letterforms. Below, he lists proposed applications for the type: machine printing, typewriter, and stencil. The order of this list is significant. Bayer maintained throughout his career that the unique typographic character of the twentieth century, in which the predominant appearance of the written word was in machine-printed form, needed to be reflected in the design of the types used. Bayer’s enthusiasm for adopting new forms to reflect new technologies remained undiminished throughout his life. For this reason he proposed that type should be derived from a machine-aesthetic rather than from its historical roots in manuscript hands. He proposed that:

all letters be composed from the primary forms of circle and square, resulting in a synthetic structure through the fewest basic elements. The form of the type should reflect the sound and muscular formation in speech of different consonants.¹⁶

The typewriter appears on the list just below machine printing. Bayer's fascination with designing letterforms for use with the typewriter was persistent, and seems to have originated in the concentration of commissions for stationery he received—both from the Bauhaus and from outside sources—during this period. In “Versuch einer neuen Schrift,” he also discussed the need to design a prototype which could then be adapted to different uses, including type, handwriting, machine-printing and type-writing. Bayer made sketches for a typewriter face based on the *universal* and derived a hand which he used for personal correspondence.¹⁷ The development and rapid proliferation of the personal computer and word-processing technologies late in Bayer's life led him to discuss the need to reconsider type design once again.¹⁸ Each technology, Bayer argued, possessed atypical characteristics which must be recognized and accounted for so that the technology might fulfill its own unique potential for design.

This tendency—to make a clean break with tradition and develop the design from the prevailing technology, rather than the technology from the design—is of a piece with Bayer's Bauhaus training and the artistic tendencies of the period during which he was learning the craft. It also surfaces in his interest in photographic illustration and the then still experimental uses of photo-offset for the reproduction of text.

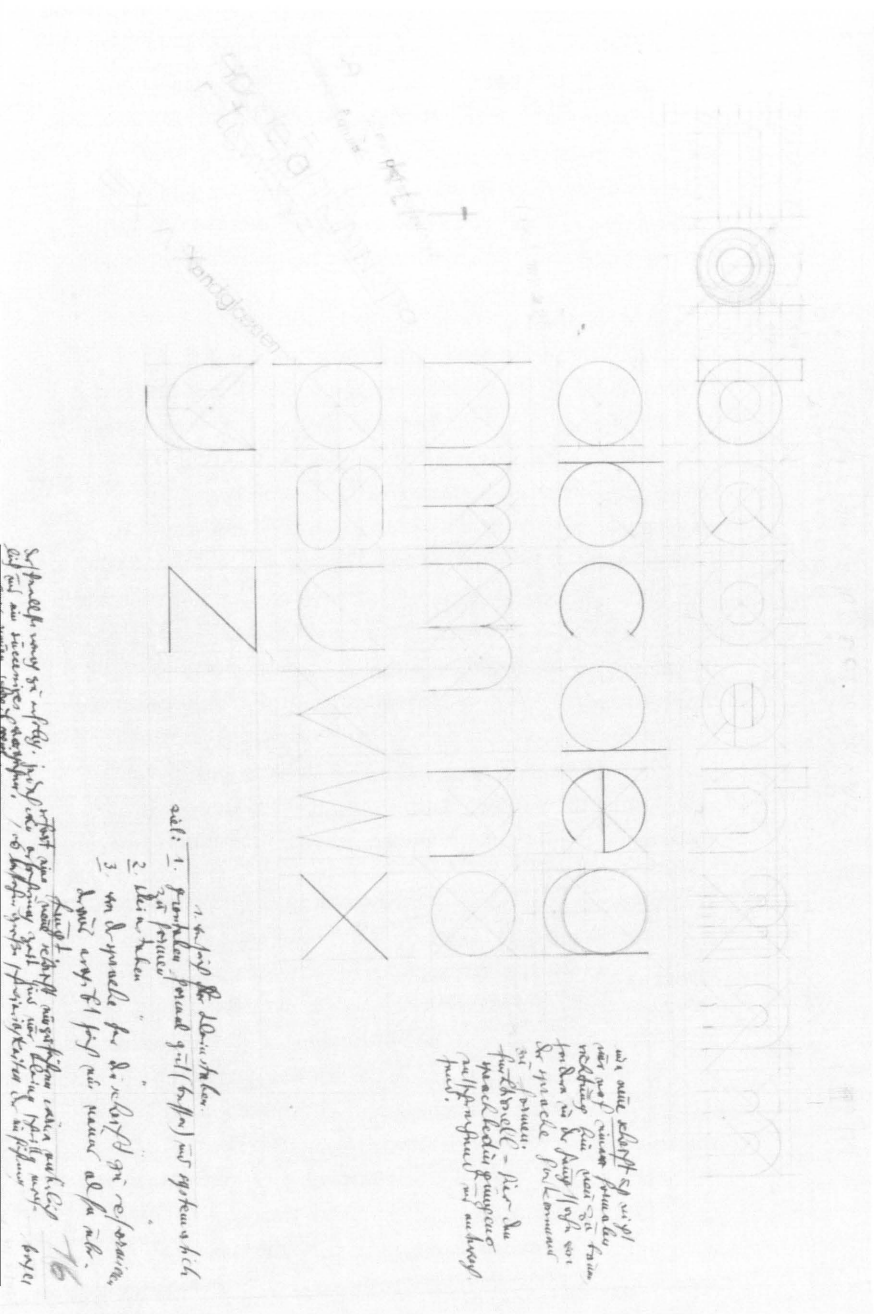
Bayer's use of photo-reproduction reaffirmed his conviction that type should be without serifs or other embellishments which tend to reproduce less clearly since the type does not make an actual impression into the paper as it does in letterpress reproduction. It is here that color becomes an issue, since serifs and other embellishments vary the coloration of the typographic image, the thin lines of the serifs appearing to the eye as lighter areas than the thicker areas of the body of the type. Examples of the effects in coloration created by pronounced contrast between the thicks and thins can be found in Bodoni and Didot's designs of the nineteenth century, where the type takes on a steely-cold coloration as sharp as the contrasts themselves. In his designs for *universal*, Bayer eliminates all variations of weight. The stems and bodies are of equal thickness, the distinction between letters deriving entirely from the planar shapes of the letterforms, from “form in its narrower sense—plane and space.”¹⁹

Bayer accomplished a design which is strictly and uncompromisingly black-on-white, in which the forms of the letters themselves—and not their coloration—gave the type its animation. This echoed the kind of coloration found in Bayer's photographs and photomontages of the same period, where pure, flat areas of contrast, rather than line or shading, were the central visual elements.

The marginalia for Sketch 15 (*figure 5*) provides the first clear reference to Walter Portsmann's *Sprache und Schrift* (1920) which Ute Brüning describes in her article "Zur Typografie Herbert Bayers" as a standard work at the Dessau Bauhaus, quoted by Bayer and J. Schmidt, as by all those writing on typography.²⁰ The dictum, "one sound—one sign," which appears so frequently in Bayer's stationery designs and early writings, was initially formulated by Porstmann as a call for the adoption of both a single-case type and a phonetic alphabet.²¹ His quasi-scientific approach to the reform of scientific notation, systems of measurement, and postal standards, as well as language, appealed to Bayer and his colleagues. Bayer adopted the DIN norms for stationery—developed by Porstmann—for his own and all official Bauhaus correspondence at the same time that he switched to the use of an exclusively lower-case typography.

Bayer was not, however, one for extremes. His ability to balance the pragmatic and the idealistic, evident in the coupling of references to "economy" and "promotion of international understanding" in the marginalia for Sketch 15, is the key to the relative success of his type designs. He was more inclined toward theoretical idealism than either Joost Schmidt or Josef Albers, the only other *Baubäusler* who designed types. On the other hand, his pragmatic understanding of the conservative nature of the printing industry made him reticent to adopt Porstmann's proposal for a phonetic alphabet. A single-case alphabet, Bayer argued, would save the industry money, through savings in casting and composing time, storage space and raw materials. Although the proposal would result in a radical change in the appearance of the printed word and, consequently, to the long-established conventions of reading, its economic feasibility was undeniable. The adoption of a phonetic alphabet, on the other hand, would require strong governmental and educational support and an enormous start-up investment for the industry itself.

Figure 6. universald. Sketch 16 (late 1925 or early 1926)



In the marginalia accompanying Sketch 16 (*figure 6*), executed in late 1925 or early 1926, Bayer notes that:

a new type cannot be constructed simply from a new formula or rule, instead it must take its structure in the main from language. to be functional it must reflect and outline the sounds of the language. therefore, to create a new form of writing would naturally be the most direct way to proceed. however, experience shows that only small, progressive steps will be effective. there are great obstacles in the formation of a new system of writing.²²

Porstmann's influence is evident in the execution of the letterforms in Sketch 16 as well. Apart from some roughly sketched capitals in the left margin, the design includes lower-case only. The first line shows certain letters in outline, drawn on a grid. The second through fourth lines are line-drawings on a 4x4 square-grid, with an extra square added for ascenders and descenders. Some letters are missing in both sketches, and alternative forms of the "n" and "m" are included. Bayer used the same principle in the construction of these latter two letterforms that he adopted in the final design of the *universal* "a"—all three letterforms are narrowed, causing the rounded portions of the letters to ascend much more steeply than if the full breadth of the square was used. On the whole, the drawings rely much more heavily on radii than had earlier designs for the upper-case, so that the blocky angularity of the majuscule designs is replaced by a more open, rounded feeling in the minuscules.

This characteristic roundness is also present in an undated sketch of a few capital letters (*figure 7*). The "E, F" and "L" on the first line are outlined as they appeared in earlier sketches; however, only a part of the outlines of the "E" and "F" are then filled in to make the letterforms, and the bottom line of the "L" is cut short by a line. The filled-in areas in the first line represent a condensing of the original sketches, more clearly seen in the second line, which contains letters constructed from radii. The "O," "D," "G" and "C" are clearly condensed forms of earlier sketches, drawn on a grid of 5x4 squares which extended the height of each letter by one square while leaving the breadth the same. The "B" appears somewhat less condensed to the eye, but it is in fact drawn using the same grid. The angles and radii used are the same as those for Sketch 15 (*figure 5*), but the extension of the height of the letters alters their appearance considerably.

The open, rounded character of the letterforms is carried through Bayer's next two sketches, the first of lower-case, and the second of capitals, probably executed at the about the same time (*figures 8 and 9*). These sketches exhibit several features found in the final versions of the type: 1) the construction of "x" (both lower and upper-case) from two inverted half-circles; 2) a lower-case "k" which borrows its form from the upper-case and has been stripped of its ascender; 3) rounded pinnacles of the "m" and "M," which are reversed to make the base of each letterform distinguishable from that of all the others. Bayer contended that in the act of reading the eye does not register each letterform independently and in its entirety, but rather "reads" only the base of each form in combination with the base of adjacent forms which are grouped to make words and then sentences. The letters "a, b, d, g, p" and "q" are still composed of circles with extending stems, and the "n" and "r" are not in their final form.

A short time later, Bayer interrupted his work on the *universal*, and concurrently, with the design of types altogether. It is clear, however, that typographic forms were never far from his mind—three-dimensional letterforms, sometimes reversed, appear repeatedly in his paintings and drawings of this period. It is in this context that serified forms make their first appearance in

Figures 7-9 by permission of the Bauhaus Archiv, Museum für Gestaltung, Berlin.



Figure 7. *universal*. Sketch (updated)

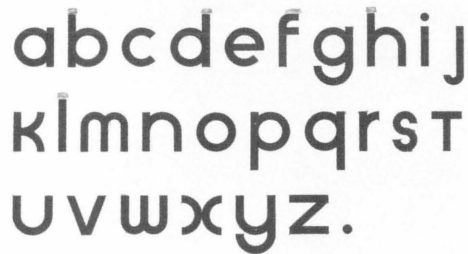


Figure 8. *universal*. Sketch of lower-case (updated)



Figure 9. *universal*. Sketch of upper-case (updated)

Figure 10. Cover for *Section Allemande* exhibition catalog (1930)



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Bayer's work. Bayer was already exploring the extensions of the boundaries of the *New Typography* in the personal context of his paintings as the movement itself was being codified. By 1928, the year that saw the publication of Tschichold's *Die Neue Typographie* and the installation of Bayer's own room for *Elementare Typographie* at the *Pressa Ausstellung* in Cologne, Bayer was beginning to explore the foundations for new type designs which would take that movement's principles one step further.

Bayer had conceived the designs for the *universal* type as laboratory exercises for the typographic workshop at the Bauhaus. The workshop was both a teaching facility and a research laboratory for exploring new ideas and methodologies. There was very little pressure to design saleable products, and although the institution's goal of training individuals to design for industry imparted a practical orientation, experimentation was limited only by imagination and laboratory equipment. In 1928, Bayer resigned his position as master of the typographic workshop and moved to Berlin, where he worked first as a free-lance designer for *Vogue*, then as art director with Dorland International. Pragmatic by temperament, Bayer recognized that the kind of research fostered by the Bauhaus was not financially practicable in the commercial sector.

When he resumed his type experiments in 1929, it was therefore with practical applications in mind. He began with drawings for a stencil type, presumably either for exhibition or advertising use. However, the letterforms eventually selected to explicate the displays at the *Section Allemande* for the *20e Salon des Artistes Decorateurs Français* (1930), perhaps the most important of the exhibitions he participated in during this period, are clearly those of a condensed version of the universal, and do not appear to be related to the stencil sketches he was working on at the time.²³

Bayer also experimented with contourless shadow types in 1930. The earliest drawings are for block capitals, unrelated to any of his other types, but the final version, used on the cover of the *Section Allemande* catalog, is a single-case sans serif based on the *universal* (figure 10). Bayer's contributions to the typography of the exhibition itself combines a context-appropriate realization of the experiments conducted in the typographic workshop at the Bauhaus with intimations of new directions.

For example, the *universal* type appeared as a display in the form of a three-dimensional type mural. The letterforms are virtually unchanged from his designs of 1927, but the techniques employed in the three-dimensional display are indicative of those he would use in billboard design over the next eight years.

Although Bayer continued to use sans serif types after the exhibition, and *universal* appeared in a variety of contexts, there is no evidence that he ever reworked the designs again. In 1938, when the Bauhaus exhibition at the Museum of Modern Art in New York inclined him to take a retrospective look at the accomplishments of the Bauhaus, he made some slight variations in the face, but on the whole, *universal* remained unchanged from 1930 until his death.

The *BAYER-TYPE*

Between 1930 and 1933 Bayer turned his attention to the re-design of an antiqua type²⁴ which he was to name *bayer-type*. Prior to this time, sans serif types received the unqualified endorsement of the New Typographers; therefore, Bayer's interest in redesigning such a face has often been dismissed as a personal aberration. Ute Brüning, whose analysis of the New Typography is more perceptive than most, acknowledges that Schmidt and Moholy-Nagy also used antiqua types after leaving the Bauhaus, but makes it clear that this marks a clear departure from their Bauhaus work:

the antiqua, although officially no longer in use, played from then on an important role in Bayer's type designs, likewise in those of Moholy-Nagy and Schmidt.²⁵

What such an analysis misses is the difference between theory and praxis. That the New Typographers, Bayer included, universally eschewed antiqua types in their writings, is indisputable. In praxis, however, antiqua types crop up repeatedly in their typographic layouts, most notably as the text type chosen by Moholy-Nagy for the majority of the *Bauhausbücher*.

The dating of the *bayer-type* is somewhat uncertain. In sketches and several unpublished writings, Bayer provides a date of 1933 for the type. On the other hand, he also retrospectively

assigned dates as early as 1930 to certain transitional designs which contain some elements of both the *universal* and the *bayer-type*. Combinations of these transitional designs and the contourless shadow type appear on catalog covers and printed posters as early as 1930, but the designs are still much closer to the universal than to any of Bayer's later types.²⁶

Unfortunately, only one study for the *bayer-type*, and that a very early one, has survived (*figure 11*). Essentially a revision of the universal with the additions of marked delineations between thicks and thins, and hair-line serifs, it is a far-cry from the *bayer-type* as it was cast in 1935 or 1936 (*cf. figure 2*), and bears no resemblance to any antiqua design I have been able to identify.²⁷

Bayer was obviously familiar with a variety of antiqua types. A page from the prospectus for the *bayer-type* illustrates an "example of the construction of a *bayer-type* a" which includes three "previous non-constructive a-forms."²⁸ All three were probably manufactured by the Berthold foundry. The first, which includes a distinctive inclined serif and a round counter, I have been unable to identify; the second is *Cheltenham* bold condensed, a transitional face which Berthold initially manufactured under the name *Sorbonne*; and the third, *Goudy Antiqua*, is a humanist type, cut by Goudy

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Figure 11. *bayer-type* (transitional) Sketch (1930)

Figure 12. Advertisement for Adrianol nosedro



Figure 13. Bayer photograph of classical head.



permission of the Bauhaus Archiv, Museum für Gestaltung, Berlin.

in 1930 and also known as *Ratdolt Roman*.²⁹ There is no evidence that any of the three were used as models for the *bayer-type*. In fact, *bayer-type* (cf. *figure 2*) is clearly a modern face, closer to Didot's designs than any of the types illustrated in the prospectus. It is also clearly not a redesign of the *Genzsch Antiqua*, manufactured by Harris-Intertype GmbH in Berlin and used by Moholy-Nagy for the text of the *Bauhausbücher*.

While the use of antiqua types was not entirely foreign to the New Typographers, it is true that Bayer was the only member of the movement to show a serious interest in re-designing such a face before 1940.³⁰ This interest was stimulated by his preoccupation during the period from 1930 to 1937 with the business of creating a distinctive advertising image for the Dorland Studio. The earliest advertisements created in the new studio employed many of the same design solutions that Bayer had adopted at the Bauhaus, including the dramatic cropping of photographic images. Photographs and photo-reproduction became increasingly predominant in Bayer's advertising work, probably in part because of the availability at the studio of a fully-equipped photographic laboratory and a trained photographic assistant. By 1931, Bayer began to incorporate human figures, especially faces, into his advertising designs as part of a shift in focus from the product to its use. Initially the images included photographs and drawings from human models, but by 1934 these were largely supplanted by montaged photographs of classical statuary. Bayer's advertisement for Adrianal nosedrops (*figure 12*) is a good example of this technique. It is composed of a Bayer photograph of a classical portrait head (*figure 13*) over which Bayer has montaged a color transparency of a modern scientific diagram of the sinus area. The classical head functions in this context as a "common sign"—as a visual image which would have been recognizable to any German school child in the thirties. Bayer used the techniques of collage and photomontage to juxtapose recognizable, historical elements with those of a scientific or pedagogic origin, thus creating a new image to enliven his advertisements for mundane products.

At times Bayer used this kind of juxtaposition in his typography as well, choosing a serified typeface either to emphasize the traditional content of a text in a non-traditional context, or to place a non-traditional text in a reassuringly familiar



bayer-Type

Die [bayer]-Type wurde nach Entwürfen von herbert bayer in drei Garnituren, mager, halbfett und fett von der Schriftgießerei H. Berthold AG. geschnitten und zeigt die gleiche meisterhafte Formbeherrschung wie die vielen eindrucksvollen Plakate und Werbgedrucksachen, die den Namen dieses Künstlers weithin bekannt gemacht haben. Die bayer-Type baut sich auf dem sicheren Fundamente klassischer Grundformen auf, läßt aber deutlich den Willen zur Gegenwart erkennen und darf Anspruch darauf erheben, als ein bewußter Ausdruck neuzeitlicher Formgesinnung gewertet zu werden. Ihre exakten Einzelformen schließen sich zur harmonischen Einheit zusammen, die deutlich erkennbar den Willen und das Gefühl für die bindenden Verpflichtungen der zeitgemäßen Forderungen betont.

[bayer]-Type, cut after designs of herbert bayer's, and cast in three weights: - Lean, Medium, and Bold, shows the same perfection of forms as displayed in a lot of attractive posters and advertisement lay-outs designed by this graphic artist which have made him known everywhere. bayer-Type has been designed upon the sure basis of classical forms, but shows an obvious tendency to the present time, and has a title to be appreciated as a clear expression of up-to-date type formation. Just like into a well constructed building the individual forms, full of tightness, exactness, and of an ingenious arrangement, are joining into an harmonious union, securing the right balance between the form and end in view, and, for all the energy of its artistic expression, laying yet an obvious stress upon the strong determination to comply with up-to-date tendencies.

context. The reader/viewer is initially reassured by surface familiarity in either case, but further examination of the text will lead the viewer to a contextualized understanding when the former technique is employed, while the latter leads to disassociation. It is probably to this end that Bayer experimented in 1929 and 1930 with the designs of two typefaces, the first based on a Latin manuscript hand, and the second, on *Fraktur* type.³¹

The connection between the appearance of classical, stone-carved images and Bayer's adoption of more classical types based on Roman stone inscriptions is made explicit in the prospectus for the *bayer-type* (figure 14). Thus, Bayer's first foray into historical reference in his imagery begat historical reference in his typography as well, though clearly the model for the *bayer-type* was not stone inscriptions, but one or more existing typefaces.³²

Throughout his Berlin period, sans serif types continued to play a prominent role in Bayer's typographic layouts. In extending his repertoire to include antiqua types, Bayer was not rejecting the New Typography as Jan Tschichold did at about that time, but recognizing and encouraging a natural maturation process. The movement began with an attempt to define itself as something entirely modern and unique. Bayer's designs for a machine type, geometrically constructed without reference to either historical models or calligraphic precedents, were clearly an important part of this definitional process. Once the movement was firmly grounded, Bayer was free to explore in new directions—to investigate the past and envision the future. From the mid-thirties until the successful completion of the Bauhaus exhibit in New York in 1939, Bayer worked as something of an archaeologist or historian, delving into the past to resurrect the disregarded and revitalize the familiar. The *bayer-type* was an extension of this revitalization. A new environment and, most importantly, a new language directed him into another more progressive, and definitely more reformative, arena.

THE BASIC ALFABET

From his arrival in the United States in 1938 until his move to Aspen, Colorado in 1946, Bayer was absorbed with the business of adopting a new country and adapting to it. This included not only adjusting to a new locale, as the move from the Bauhaus to

Berlin had, but also learning a new language and establishing himself in a place where there was little knowledge of—and perhaps even less sympathy for—either the Bauhaus or the New Typography. Fortunately for Bayer, commissions for exhibitions and freelance book designs provided a relatively stable source of income, supplemented by a developing relationship with the Container Corporation of America, which soon became his major sponsor.

Bayer took the requirements of adapting to the new environment quite seriously, to the extent of abandoning his mother tongue completely even in the private context of his own journals and in conversation with fellow expatriates. Total immersion in the English language was both a political and an economic necessity; as a typographic designer who believed unequivocally in the relationship between form and function, Bayer found it absolutely essential that he be able to understand the content of the projects given him. His struggle to become proficient in a language as idiosyncratic and aphonetic as English renewed his interest in the notion of “one sound—one sign,” one aspect of which he had explored earlier at the Bauhaus. Between 1958 and 1960, Bayer began to look at this dictum in a new way, preparing sketches for a partial type font he called the *basic alfabet* and writing an article to accompany its publication. The article included letterforms for a single-case, twenty-six letter alphabet, sixteen alternate forms, and at least fifteen special characters (*figures 3, 15-17*). Between 1964 and 1968, Bayer corresponded first with Sidney R. Jacobs of Knopf³³ and then with Carroll G. Bowen of the MIT Press,³⁴ about plans to have either a photo-composition disc or IBM typewriter keys made from these designs for his *basic alfabet*. Bayer’s own reluctance to have anything appear in less than its final form ultimately killed the project. The *basic alfabet* did receive, however, fairly wide exposure through its publication, first in *Print* in June 1964, then later in *herbert bayer: painter, designer, architect* (1967).

It is not entirely clear how much Bayer knew of the history of phonetic alphabets before he began his project. In the “*basic alfabet*” he mentions “g. b. shaw’s notable bequest for a proposed british alfabet” and illustrates one of the winning entries from the contest held in 1959.³⁵ Although Bayer dates the inception of the *basic alfabet* as 1958, it is entirely possible that

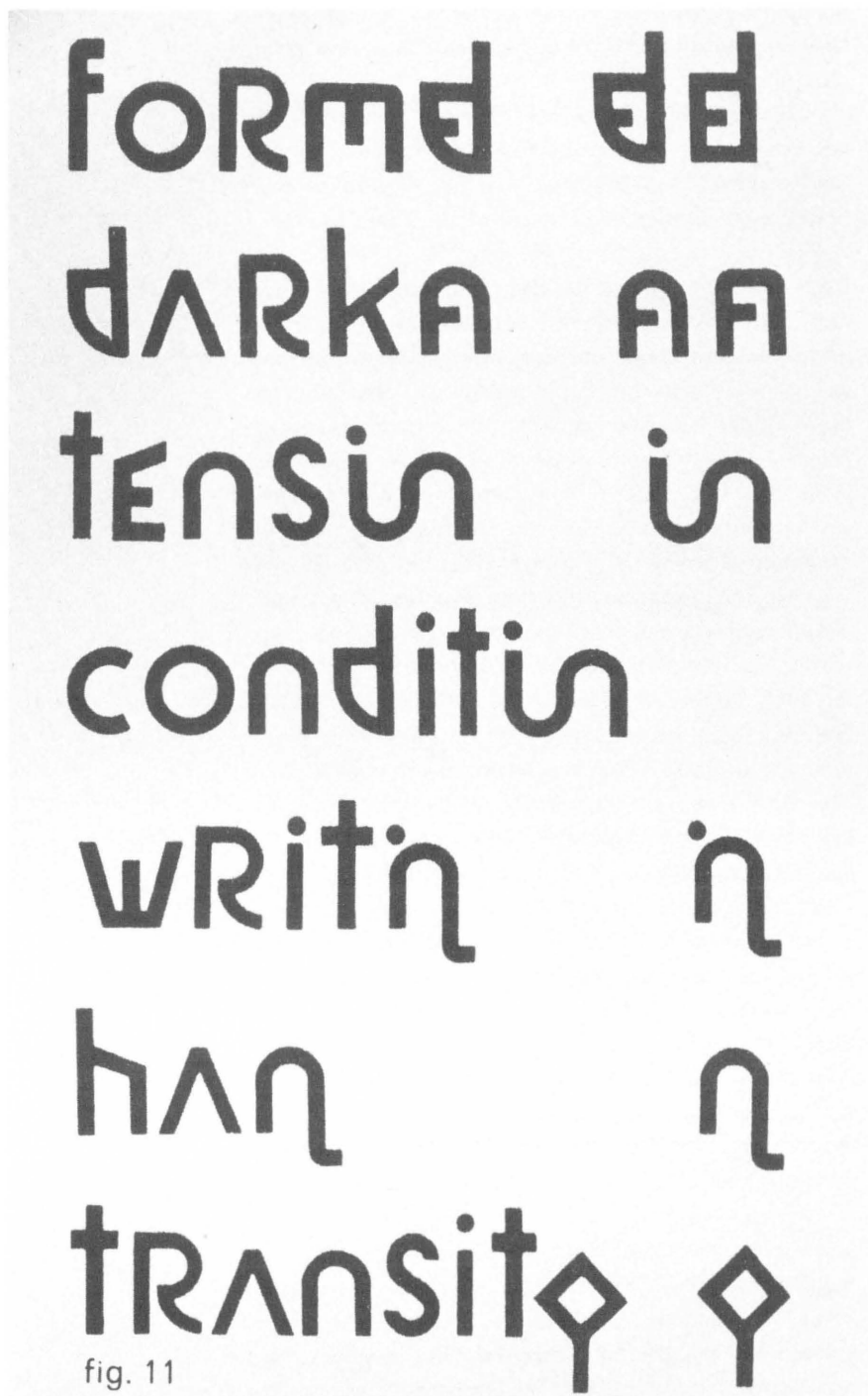


fig. 11

Figure 15-17. *basic alfabet* (1959)



fig. 10



Figure 16.

Q E A P

Q Q

h i n k

h h

S A R P

S S

Figure 17.

his research was inspired by the publicity surrounding the contest, and certainly his awareness of the contest dates from an early point in his research.

In his correspondence with Jack Stauffacher, which began in 1962 and continued through 1963,³⁶ a somewhat clearer picture of the extent of Bayer's knowledge of the history of phonetic alphabets emerges. He wrote:

I have just seen a newspaper story about a system of teaching English to small children as proposed by Sir James Pittman, publisher in London. There is a similarity in thought between this and my idea of coordinating the optical and phonetic.³⁷

On May 6, 1963, he suggests the possibility of adding a footnote to "Pittman"³⁸ and mentions, with some concern, that he has heard that "Lucien Bernhard is also publishing a new alphabet."³⁹ In March 1963, Stauffacher suggested that Bayer read "*Monotype Recorder* volume 42, number 3 winter 1962-3 'Augmenting the Roman Alphabet/Some Orthographic Experiments of the Past Four Centuries' by David Abercrombie."⁴⁰ Since Bayer penciled a note in the margin to obtain a copy, it is safe to assume that he was not previously aware of Abercrombie's work, the only significant historical examination of phonetic types available at the time. In fact, his knowledge of phonetic types was probably limited to Porstmann's *Sprache und Schrift* (1920), the discussions generated by George Bernard Shaw's bequest, and whatever he may have picked up in conversation with other designers.

Whatever his knowledge of the field, it is clear that Bayer saw his interest in phonetic types as an outgrowth of his work in the twenties:

previously used largely as a medium for making language visible, typographic material was discovered to have distinctive optical properties of its own, pointing toward specifically typographic expressions. typographers envisioned possibilities of deeper visual experiences from a new exploitation of the typographic material itself. they called for clarity, conciseness, precision; for more articulation, contrast tension, in the color and black and white values of the typographic page.⁴¹

Two things occurred in the intervening years to transform his reticence “to relate the letterforms to language, therefore, to create a new form of writing . . .” into an enthusiastic desire to meet head-on the “. . . great obstacles in the formation of a new system of writing.”⁴² In addition to the successful adoption of a new language with a largely aphonetic writing system, Bayer was encouraged by the publication and critically favorable reception of a long-term project sponsored by the Container Corporation of America: the *World Geo-Graphic Atlas*.⁴³ The overwhelmingly favorable response to the design of the atlas, which included the substitution of graphic images, charts and tables for the traditional long blocks of prose text, was taken by Bayer to be an indicator of readiness on the part of the reading public to accept radically new forms of presentation. The nearly instantaneous acceptance and adoption of such seemingly revolutionary modifications inspired in Bayer a greater confidence in the industry’s ability to make positive changes—a confidence which was probably only partially deserved, and which had faltered by the time he began to negotiate the commercial production of the typeface. The adoption of a new alphabet involved nothing short of a total transformation of the educational system as well as the industry.

The design of the *basic alfabet* took the basic tenets of the Bauhaus and the *New Typography* to their limits. The type was functional in its orientation, technologically-appropriate in its aesthetic and constructed according to geometrical principles. Most remarkably, the *basic alfabet* marked Bayer’s emergence as a typographic theorist whose theory was firmly rooted in practical application. Although the *basic alfabet* remained unfinished and commercially unavailable as a typeface at his death, the article which accompanied its publication remains the most fully-developed theoretical formulation of issues surrounding the development of a phonetic system of writing. Bayer wrote that:

new concepts will not grow on mere design variation of long established forms . . . there can be no doubt that our writing-printing-reading methods are antiquated and inefficient as compared to the perfection attained in other areas of human endeavor. the history of our alphabet and any probing into its optical effectiveness expose a lack of principle and structure, precision and efficiency which should be expected from this

important tool. attempts have been made for the design of visually (to distinguish from aesthetically) improved alphabets, but redesigning will result in just another typeface unless the design is primarily guided by optics as well as by a revision of spelling. this in turn exposes the need for a clearer relation of writing-printing to the spoken word, a reorganization of the alphabetic sound-symbols, the creation of new symbols. the type designer is not a language reformer, but a systematic approach will inevitably carry him to a point where he will ask for nothing less than a complete overhaul of communication with visual sound.⁴⁴

ENDNOTES

1. I have followed the practice in the existing literature on the Bauhaus of translating the German *Wandmalerei* as “wall-painting.” The workshop dealt with architectural and interior design issues as well as mural-painting, hence the broader term.
2. In: *Offset Buch und Werbekunst* 7 (1926): 398-400.
3. Arthur Allen Cohen, *Herbert Bayer: the Complete Work*. Cambridge, Mass.: MIT Press, c1984, 409, note 23.
4. “toward a new alphabet the ‘universal type,’ ” *herbert bayer: painter, designer, architect*. New York: Reinhold, 1967, 26. Bayer reiterated the goals outlined in the 1926 German publication of “Versuch einer neuen Schrift” in his 1967 English publication “toward a new alphabet the ‘universal type.’” Rather than contend with the problematics of translation, I have elected to supply Bayer’s later English text which, while organized somewhat differently, is similar in content.
5. Stationery for “Der Direktor, Das Bauhaus in Dessau,” in: Bauhaus-Archiv, *Herbert Bayer: das künstlerische Werk, 1918-1938: Ausstellung im Bauhaus-Archiv Berlin, 6. Mai bis 20. Juni 1982, Ausstellung im Gewerbemuseum Basel, 2 Juli bis 29. August 1982*. Berlin: Bauhaus-Archiv; Gebr. Mann, 1982, 40 (trans. mine).
6. “toward a new alphabet the ‘universal type’” 26.
7. Wassily Kandinsky, “The Fundamental Elements of Form,” *The Bauhaus: Weimar, Dessau, Berlin Chicago*, ed. Hans Maria Wingler; trans. Wolfgang Jabs and Basil Gilbert. Cambridge, Mass.: MIT Press, 1969, 74.
8. “toward a new alphabet the ‘universal type’” 26.
9. Bauhaus-Archiv, *Herbert Bayer: das künstlerische Werke* 178, Kat. 287 (trans. mine). Unless otherwise noted, all references to sketches for the designs of types are to this volume.
10. Arthur Allen Cohen, interviews with Herbert Bayer, Oral History Program, Archives of American Art, Smithsonian Institution, San Francisco, Calif.; Montecito, Calif., 3-6 November 1981.
11. 120, Kat. 288. This design is dated “bayer 10.25” and numbered “11”; it is one of three extant designs from a series which originally must have contained at least 16 sketches. The remaining two sketches which have survived are numbered 15 and 16. All three are held by the Bauhaus-Archiv Museum.
12. “Versuch einer neuen Schrift” 398 (trans. mine).
13. “Versuch einer neuen Schrift” 398 (trans. mine).

14. This dating is conjectural. It would seem reasonable that the sketch, which is numbered 15 would fall between the sketches numbered 11 and 16, dated October and December respectively.
15. 120, Kat. 289.
16. “Versuch einer neuen Schrift” 398 (trans. mine). While the notion of a direct reciprocity between letterforms and the sounds they represent seems rather bizarre today, it is of a piece with Bauhaus theory and praxis.
17. Philip B. Meggs, *A History of Graphic Design*. New York: Van Nostrand Reinhold, 1983, 339, includes an illustration of the *universal* type, a proposed typewriter face, and Bayer’s personal hand.
18. Arthur Allen Cohen, interviews with Herbert Bayer.
19. Wassily Kandinsky, “The Fundamental Elements of Form” 74.
20. Ute Brüning, “Zur Typografie Herbert Bayers,” *Bauhaus-Archiv, Herbert Bayer: das künstlerische Werk*, 118 (trans. mine).
21. Walter Porstmann, *Sprache und Schrift*. Berlin: Verlag des Vereins Deutscher Ingenieure, 1920, 100 (trans. mine).
22. 121, Kat. 290 (trans. mine).
23. Bayer did make use of stencil-type for his advertising designs during the Berlin period, but most of these were derived from the later *bayer-type*, rather than the *universal*. One sketch which might reveal Bayer’s intentions concludes with drawings for an “HB” monogram (c.f. 180, Kat. 307), which he may have intended for his own use, or for that of H. Berthold type foundry. The Berthold calendar for 1933, designed by Bayer, has an “HB” in a 3-dimensional serif type on the cover. There are several designs for a stencil type for H. Berthold in 1934, but these appear to be unrelated to the earlier designs. At the same time, Bayer was occupied with plans for three exhibition projects: the *Section Allemande* of the *20e Salon des Artistes Decorateurs Français* (1930), the *Baugewerkschafts Ausstellung* (1931), and a stand for H. Berthold at a Paris exhibition (1930 or 1931). A variety of typefaces were employed for the *Baugewerkschafts Ausstellung*, but none appear to be related to his sketches of 1929 or 1930. Stenciled letterforms do appear in at least one display, but they are clearly of an antiqua origin, and may, in fact, represent Bayer’s earliest experiments with that type family.
24. Type designs can be divided into two major categories: black-letter or gothic (German, Fraktur), and roman (German, Antiqua). The New Typographers rejected black-letter types unequivocally. Within the roman category, there are two families: sans serif (German, Grotteske) and roman (German, Antiqua). To avoid the terminological ambiguity present in both languages (the same term is used to refer to both the category of type and the smaller family within that category in each) I have retained the German Antiqua to refer to the family of

serifed types, and will use the English roman only when both sans serif and serifed types are to be included. Antiqua should not, however, be confused with the English old-style as I have followed Bayer's use of the term Antiqua to include old-style, transitional and modern typefaces.

25. Ute Brüning 126 (trans. and emphasis mine).

26. While Brüning's proposal of 1935/36 as the date of manufacture of the *bayer-type* is probably correct, I cannot agree with her suggestion that the date Bayer himself gives, 1933, probably indicates the beginning of his research, rather than the appearance of the cast type (cf. her "Zur Typografie Herbert Bayers" 137, note 38). 1929/30 is the more probable date for the inception of Bayer's research, in part because his participation in the *Section Allemande* clearly motivated his renewed interest in type design and early drafts of the *bayer-type* are very closely related to the *universal*, but also because his relationship with the Berthold type foundry dates from this year, as does the appearance of classical imagery in his graphic work.

27. The design was retrospectively dated by Bayer as 1930/32. It is my opinion that the earlier of the two dates is the more accurate, and that this design probably belongs more properly to the series of revisions Bayer made of the *universal* during that period. The sharp delineations and the hair-line serifs do give it a classical appearance, which is probably why Bayer, in retrospect, identified it with the *bayer-type*, but the body of the type is so non-classical as to make any identification with the antiqua family tenuous at best.

28. *Prospectus for the bayer-type* (Berlin: H. Berthold GmbH, 1935 or 1936? (trans. mine).

29. These identifications are admittedly somewhat tenuous. The only letter provided on the prospectus is the lower-case "a," not one of the best for identifying a type. The identification of the second type as *Cheltenham* is supported by the fact that Berthold did manufacture a bold condensed version of that type with an identical "a." The *Goudy Antique* is the only type of an appropriate date included in *The Encyclopedia of Typefaces* which displays the main features of the second "a": a teardrop shaped counter, an extended, slightly curled tail, and a nodal terminus to the top arch.

30. But, compare Brüning 123, fig. 114: illustration of a partial font designed by Schmidt.

31. 180, Kat. 311-313.

32. No records exist which would indicate a model for the *bayer-type*; however, *Albion*, supplied by the Monotype Corporation from 1910 on, has both the strong vertical stress characteristic of the *bayer-type*, and the ascender of the "f" and descender of the "j" terminate in the same peculiar way. Bayer was certainly aware of the Monotype Corporation's inventory as he designed at least one catalog for them (reproduced in *Bauhaus: Drucksachen, Typografie, Reklame*, edited by

Gerd Fleischmann. Dusseldorf: Edition Marzona, c1984, 205). *Albion* is, nonetheless, a squatter, heavier type, with longer descenders.

33. Letter from Stanley R. Jacobs to Herbert Bayer, undated, Herbert Bayer Collection and Archive.
34. Carroll G. Bowen, correspondence with Herbert Bayer, March 25, 1965 through March 13, 1968, Herbert Bayer Collection and Archive.
35. Herbert Bayer, "the basic alfabet," *Print* 18 (May-June 1964): 16-19.
36. Jack W. Stauffacher, correspondence with Herbert Bayer, 1962 through November 1963, Herbert Bayer Collection and Archive.
37. Herbert Bayer, letter to Jack W. Stauffacher, March 8, 1963, Herbert Bayer Collection and Archive.
38. Jack W. Stauffacher, correspondence with Herbert Bayer, 1962 through November 1963, Herbert Bayer Collection and Archive.
39. I have found no evidence of such an alphabet designed by the graphic designer Lucien Bernhard (1883-1972), though certainly he may have expressed an interest in phonetic types.
40. Jack W. Stauffacher, letter to Herbert Bayer, March 8, 1963, Herbert Bayer Collection and Archive.
41. Herbert Bayer, "on typography," *herbert bayer: painter, designer, architect*. New York: Reinhold, 1967, 75.
42. 178, Kat. 290 (trans. mine).
43. Cf. Meggs, Philip B. "World Geo-Graphic Atlas," *Print* (Jan/Feb. 1990) 93ff, for a recent discussion of the atlas and its reception.
44. Herbert Bayer, "on typography" 75.

BIOGRAPHY

Kathleen Burnett is an assistant professor in the school of Communication, Information and Library Sciences at Rutgers University. She is pursuing two areas of research: the history of book design with particular emphasis on European avant-garde typography including the “New Typography,” and the development of multi-media computer interface design.

From the Bookshelves: *What the User Tells the Designer*

Paul Stiff

Graphic designers' need for feedback is typically answered by other designers. They tend not to engage in the kinds of empirical evaluation which might yield feedback about readers' performance. Graphic designers also need generous and informative models of readers and their various objectives. In the absence of such feedback and models, designers may set themselves goals which neglect readers' needs.

This article reports informal observation of one reader's interaction with a series of texts—information displayed on the spines of a serial publication. The reader's interaction, which led to remedial intervention by that reader to correct a design fault, offers both strong unsolicited feedback about performance and an informal model of one kind of reading objective.

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Visible Language XXIV.3/4
Paul Stiff, pp. 334-343
© *Visible Language*, 1990
Rhode Island School of Design
Providence, RI 02903

All designers need feedback about the results of their work. Most thoughtful designers think about how and when to get it, about the form in which it comes, and about how to assess its value. But few graphic designers engage in the kind of empirical testing that engineering designers, say, would do as a matter of course. Nobody would wish designers of bridges and airplane wings to adopt the methods of graphic designers.

One strong disincentive to formal inquiries about the results of design decisions is the common folklore that testing or research inhibits creativity and even common humanity. Despite the work of journals like *Visible Language*, to many graphic designers research appears to mean questionnaires in shopping malls, as in Neville Brody's recent *cri de coeur*: "clients who have been persuaded. . . to use market research instead of intuition. . . need to be re-educated by designers into thinking on a more human scale" (Brody 1990). Another disincentive may be that designers don't have the skills to conduct formal inquiries. Another is that designers are often concerned primarily with personal style: "The core of our philosophy is the belief that design is based on personal expression" (Minale 1989). Another may be that graphic design problems (to the extent that they are seen as problems at all) are held to be neither complex nor critical enough to require formal methods. So for most graphic designers, feedback first comes in the form of informal peer commentary (comments from colleagues while work is in progress, much as writers ask friends to read their drafts), and second (and often finally) from their client: "If it looks terrific, then that's all I care about. After the looks, and strictly of secondary importance, comes client approval" (Rand 1989). And this feedback usually comes in the form of statements of opinion about preference. It is much less common to get informal feedback from users, and about performance. So when evidence about user performance is available, and is also unsolicited, then designers should take note. What follows is a short account of this kind of evidence.

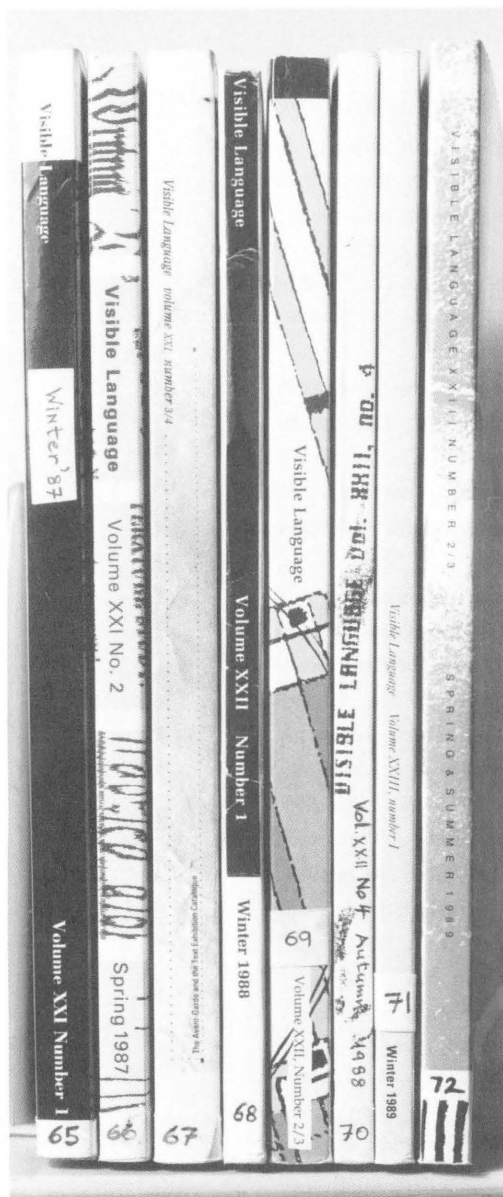


Figure 1.
Visible Language
on the bookshelves.

One of the sets of *Visible Language* taken in the place where I work is shelved in a small departmental reference library (figure 1). The clerk who looks after the library has about twelve hours each week to monitor the collection and keep the shelves in order.

Figure 2 shows how the clerk has redesigned the spine of *Visible Language*. She has added small labels to each spine, and has written a number on each label. She has introduced a new numbering sequence, overlaying this on the journal's own numbering sequence of volume numbers, issue numbers, years, and seasons. Given that time is short, why has the clerk taken so much trouble? The answer, and its implications, may be obvious. But spelling out the obvious is sometimes a worthwhile activity.

We could start by thinking about the good intentions which designers have. One of these might be expressed aphoristically: design for the reader. A problem with realizing the good intention is that designers often seem to think of readers as undifferentiated subjects and reading as a unitary activity. But

people have many different purposes for reading, and engage in many different kinds of reading activity, and do it in many different kinds of environment. So it may be that although the designers of *Visible Language* really do try to design for the reader, they only think of one kind of reader, and one kind of reading activity.

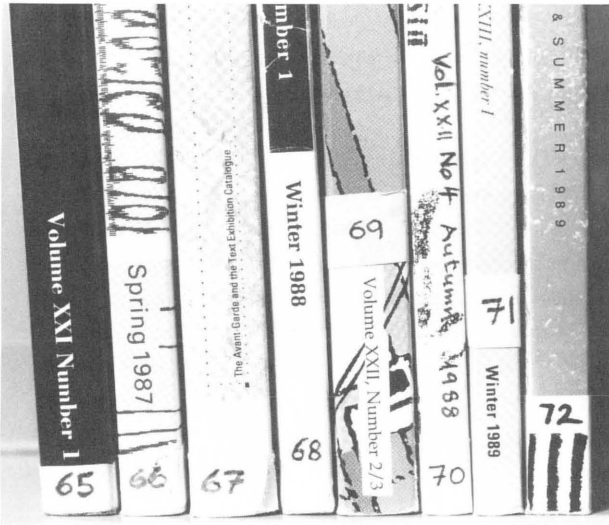


Figure 2.
The clerk has made
these additions to the
spines of *Visible Language*.

Think of the spine as a text, and the clerk as a reader, and the library, its patterns of use, and the clerk's available time as the task environment. Why does the clerk read the spines? What are her reading objectives?

One of the clerk's tasks is to physically arrange issues of *Visible Language* within limited shelf space. We can imagine many solutions to this arrangement problem. Arrangements could be: alphabetically by surname of author of the first article in each issue; or, in order from the thickest spine to the thinnest; or, in order from the darkest spine to the lightest; or, the clerk might rank each spine in order on a scale of personal emotional response. Or she might use one of these arrangements on Monday, another on Tuesday, and so on.

This part of the clerk's work is a form of designing. The arrangement she chooses—chronological, by order of publication date—is the one she considers best suited to the needs of library users. This default option is so conventional and universal that it hardly needs to be declared. Why? "Because that's the way libraries do it" is no answer. She, and libraries, do it this way because the arrangement of journals on shelves has to correspond usefully to the way readers and writers refer to texts, cite them, search for them, find them, and refer to them again. (When bibliographies at the end of articles in this journal start

referring to the extra thick issue of *Visible Language*, or to the one with the spine which scores 4.7 on an anger scale, then a different ordering principle will be called for.)

The clerk's reading objectives are first, to identify the journal as *Visible Language*; second, to discriminate and select information relevant to her ordering task (so her targets are likely to be year of publication, volume number, and issue number); third, to memorize that information in a form appropriate for the ordering task. So the question "Why did the clerk redesign the spine of *Visible Language*?" is answered by another question: what kind of information about chronological sequence of publication is given on the spine of *Visible Language*, and in what ways is that information visibly presented? An approximate answer is given in table 1. The table represents the information on the spines of the eight issues shown in figure 1.

Table 1. Information about chronological sequence of publication given on the spines of the eight issues shown in figure 1

volume	number	date
XXI	1	—
XXI	2	Spring 1987
XXI	3/4	—
XXII	1	Winter 1988
XXII	2/3	—
XXII	4	—
XXIII	1	Winter 1989
XXIII	2/3	Spring & Summer 1989

The year of publication is not always shown, so it is an unreliable target. When season is shown, its value is questionable. (Is the winter issue the first or the last of the four issues which make up a volume?) This leaves the volume number and issue number which together offer a simple hierarchical sorting task (given that issues are nested within volumes). Imagine that

thirty issues of *Visible Language* are in a heap on the floor. A likely sorting strategy might be: first put all issues bearing the same volume number into groups by volume; then arrange issues from first to fourth within volumes; and last arrange volume groups by volume number.

This might be a simple enough task if it weren't for the fact that roman numerals are used for volume numbers. The numerals present the reader with a translation task before the sorting can begin. Table 2 shows how volume numbers are presented, and what has to be done to translate them.

Table 2. The translation and sorting tasks

volume numbers are shown like this	so must first be translated into this form	before they can be sorted into this sequence
XXII 1	22.1	19.3
XIX 3	19.3	20.4
XXI 2	21.2	21.1
XXII 2	22.2	21.2
XXIII 1	23.1	22.1
XXI 1	21.1	22.2
XX 4	20.4	22.3
XXII 3	22.3	23.1

But before the translation can be done, so that the sorting can be done, the volume numbers and issue numbers have to be found. To do this, readers have to mask out, or filter, everything that is redundant—title, year, season, and background pattern (*figure 3*). For each issue they have to attend selectively, and engage in a search task (somewhat similar to finding place names on a map). When they make comparisons between issues, they may have to attempt to perceptually align (so to speak) the apparently randomly positioned arrays of target numerals (*figure 4*).

VISIBLE LANGUAGE XXIII NUMBER 2/3		SPRING & SUMMER 1989	
Visible Language	Volume XXIII, number 1	Visible Language	Winter 1989
Visible Language	Volume XXII, Number 1	Visible Language	Volume XXII, Number 2/3
Visible Language	Volume XXI No. 2	Visible Language	Winter 1988
Visible Language	Volume XXI Number 1	Visible Language	Spring 1987
Visible Language	Volume XXI Number 1	Visible Language	Volume XXI Number 1

Figure 3. Spine typography after background pattern has been filtered.

The reason for the clerk's intervention is of course clear. Doing this task once, or even once a month, might be irritating but tolerable; doing it once or twice a week is intolerable. The clerk has taken remedial action to correct a design fault in order to make her task easier.

Strong unsolicited feedback of the kind offered by the clerk invites us to draw conclusions which are both particular and general. The particular conclusions might be of three kinds. First, the editors might consider dumping the volume and issue numbers altogether, and simply numbering future issues serially in one sequence. But that would mean starting a new series, with new pagination and consequent disruption of established patterns of referring to issues, so assume that this step is discounted. The remaining option is to abandon roman numerals. Second, the designers are invited to consider the virtues of constancy and predictability. These might be realized graphically by allocating fixed positions for different categories of information, which are thus aligned over a set of spines on shelves, to aid in scanning (*see figure 6*). Third, the designers might also appeal to homely virtues such as legibility, and so might consider how much background noise (from the graphic pattern) is acceptable, and what particular graphic attributes are required by the type on the spine.

This particular message from the bookshelves is not directed just at *Visible Language*. I should now admit to an association with a journal which has also been redesigned by the clerk. Figure 5 shows that the designers of *Information Design Journal* have similarly failed that user, and have sometimes even completely ignored the spine.

The general conclusions are more troublesome. The problem I have described is a trivial one, almost devoid of theoretical interest. If the work shown here had been produced by amateurs, we should say that there was nothing here which could not be solved by common sense and some elementary training. But this is not the work of amateurs, and we can assume not only common sense and elementary training, but also a high degree of competence. What has happened? What is the designer's problem? Limited powers of analysis? Many graphic designers would not regard designing a book or journal spine as a problem at all; they would think of it as something which barely requires 'analysis'; and we might agree that nothing so elaborate as 'testing' was required. Is the problem one of limited imagination? *Visible Language* often prints brief accounts of the designer's reasoning behind each issue. Here are a few samples: "geometric shapes relevant to the articles' content were used for the purpose of distinction, overall consistency, and to enhance the illusion of movement" (XXI, 1, 1987); "the purpose. . . is to challenge the viewer's reading and to propose an alternative view of the book as object" (XXI, 3/4, 1987); "the pages were designed to visually portray and build on the ideas presented in the articles. . . It is a worthwhile effort to sacrifice a comfortable, yet generic text presentation for one which involves and challenges the reader's imagination." (XXII, 4, 1988).

These accounts don't suggest a deficiency of a certain kind of imagination: couched in the terms of "artist's statement," they are strong on what is sometimes called design concept.

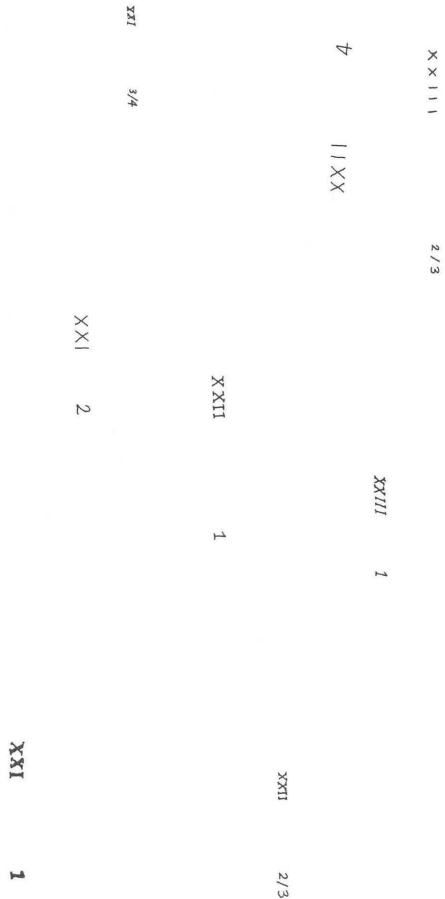


Figure 4.
Randomly positioned arrays of target numerals.



Figure 5.
Information
Design Journal.

What seems to be missing is any imaginative view of the reader, or, more formally, any useful model of the varieties of readers and of reading activities. These accounts make it clear that designers have set themselves other priorities; they recall Michael Macdonald-Ross's comments on the failure of certain kinds of graphic illustrations:

"It is usual to blame the artists or designers for their incompetence or lack of interest in the subject matter. But this is not a sufficient explanation. We have to ask ourselves: how is it that people can act with apparent disregard for the quality of their work? Surely because they have become separated from the natural feedback all of us must have, and in (desperation) substituted surrogate forms of gratification."

(Macdonald Ross & Smith, 1976)

One of the problems facing editors and designers of journals with titles like *Visible Language* and *Information Design Journal* is the pressure to be exemplary in deed. We might consider learning from scientific journals (figure 6). In the meantime, dissenting graphic designers who think that this kind of thing is just too dull will have to show that they can do two things at once: look good *and* make sense.

Acknowledgements

My thanks to Alison Black for helpful comments on this paper, and to Ilona Hajdu for answers to questions.

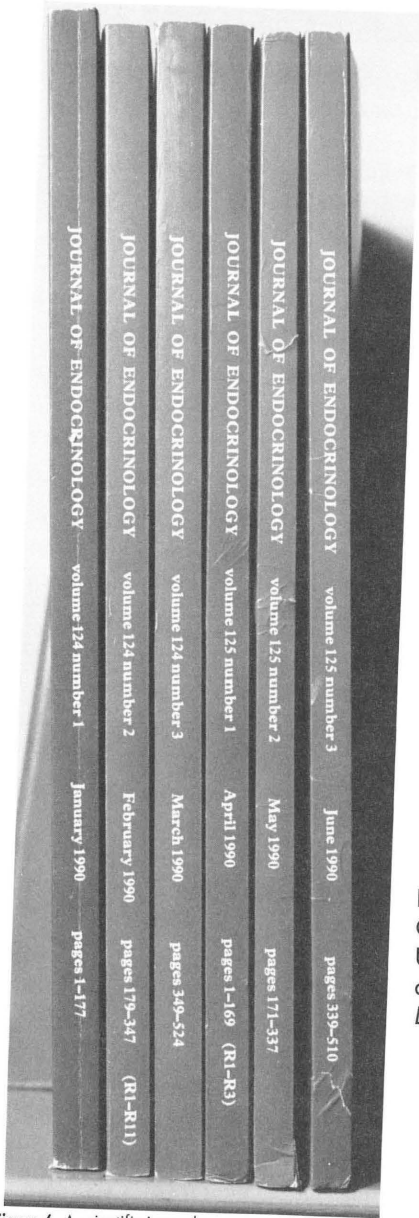


Figure 6. A scientific journal: plain, predictable, constant.

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Book Reviews

The Origins of Writing

Edited by Wayne M. Senner

Lincoln and London: University of Nebraska Press, 1989.

\$37.95, 245 pages, illustrated.

In Montreal a couple of summers ago, I ordered a pair of custom-made boots from an immigrant bootmaker. He was charming and spoke both a broken English and French. His mastery of the craft of bootmaking was evident in the numerous samples that sat around his shop. I selected the leather and we discussed the style and the price. He asked me to clearly write out my name and address on the top of a blank sheet of paper. On this sheet and another he traced my footprints. He measured various parts of my ankle and leg writing the numbers on the footprint sheets. He made additional notations. As I was writing out a check in payment, I saw the footprint sheets up-close. The numbers were barely legible and the other notations looked like scratches; like no writing system I had ever seen. I felt uneasy. I asked him if he knew what the marks meant and in what language they were written. He smiled sheepishly and said that he was from Greece and had never learned to read or write but he could make boots. He knew what the marks meant; they were his own code used over many years. I asked how he would make out a mailing label to send the package to me. He replied that his son would do it.

As I left his shop, the uneasiness remained. Were all those beautiful samples boots returned because they didn't fit?

Six weeks passed and the boots arrived. They were what I had ordered—they were carefully crafted—and they fit perfectly.

Marking and assigning significance are the beginning of writing as marks hold information precisely and externally until needed. The bootmaker communicates with himself via his personal marks. The elaboration of writing systems and their shared signification and use within various times and places is the subject of *The Origins of Writing*. It is easy to routinely dismiss writing because of its ubiquity, but questions concerning its origin remain. The archaeological record together with the poverty or wealth of physical evidence of various writing systems are still coming to light, giving rise to revised theory and

opinion. This book is a collection of twelve scholarly articles on the continuing investigation of writing origins for systems as diverse as cuneiform, Mayan, runes, Ogham, Greek and Chinese. The introductory article by the book's editor, Wayne M. Senner, sets the context for subsequent articles with a careful definition of writing; descriptions of pictography, the rebus principle, phonetics; an overview of histories and myths surrounding the origins of writing and a sense of time sequence relative to the various scripts contained within the collection.

Each article details what is known or theorized concerning the development of a specific writing system. The development is traced geographically and through the evolution of its physical forms. The articles are accessible for the layperson and contain detailed endnotes and suggest additional readings for further exploration; the material is prepared for an intelligent interdisciplinary audience.

That writing originated independently in widely separated cultures seems evident. That it developed to address somewhat different cultural needs is one of the threads running through the collection. The earliest writing system of plain and complex tokens (clay markers) served to organize and store economic data. Denise Schmandt-Besserat distinguishes between the cultural use of plain tokens, which supported the rise of agriculture and an economy based on the cultivation and hoarding of cereals with complex tokens, which supported the rise of cities and the establishment of a redistributive economy based on taxation. Plain tokens stood for agricultural products, while complex tokens stood for goods manufactured in workshops. Cuneiform, likewise, was a technological invention designed for clerical function within a rapidly expanding urban environment with large scale labor projects, commodity distribution and inter-city exchange networks. M. W. Green indicates that the early use of cuneiform was for documentation; later it was used for narrative and creative expression. Chinese script also served a growing imperial bureaucracy. The author of this entry, David Keightly, presents a convincing argument relating measurement and precision craftsmanship, as evidenced by 3rd millennium B.C. perforated jade *pi*-disks and *ts'ung*-tubes, to the cultural needs for a writing system to control precise production.

In contrast to these, the Greek alphabet, in the 8th century B.C., shows no connection to economic record-keeping. Ronald Stroud speculates that poetry and song played a decisive role in the origin of the Greek alphabet as the earliest texts are private records of ownership or dedication. Likewise, Rex Wallace, in his discussion of the early evidence of the Latin alphabet, suggests that writing was acquired by the wealthiest families as a symbol of prestige.

The collection can be read in various ways. One reading is as a mystery that is still unfolding replete with false starts, blind alleys, surprising intuitions and speculations. The article “The Ancient Writing of Middle America,” by Floyd G. Lounsbury, supports such a reading. The Maya used their script to record important events in their rulers lives such as birth, heir-designation, marriage, death and apotheoses. One aspect of the Mayan glyphs that has been decoded in detail is their extensive calendar system which extends back to mythological time. The author translates the calendar glyphs into our contemporary calendar so that the reader can appreciate events in a known context. Much remains elusive in the meaning and structure of this script which surpasses the Chinese in visual complexity.

In contrast, the visual system of the Celtic Ogham script is remarkably simple and abstract. It consists of from one to five horizontal or diagonal lines that appear in relation to a vertical reference line in either left, right or both left and right positions (the diagonals are always in the combined left and right position). Dots from one to five are additional characters (vowels) to which more complex but geometric forms were added later to accommodate diphthongs. This script is the quintessence of a series of marks. There is no anthropological evidence that it was used for texts. Grave or boundary markers with ogham inscriptions listing lineage indicate the script was used for conventional records.

Speculation has surrounded Ogham origins; the unusual shapeless characters have been linked to wooden tally sticks for counting sheep and they have been described as a finger language of druidic origin. Some corroboration exists for the later. A manuscript from the early fifteenth century, the “Book

of Ballymote,” describes Cossogham, a kind of leg ogham in which the fingers sign relative to the shin bone as a reference line. Nose ogham, where the nose becomes the reference line and palm ogham, where one hand strikes the other in signed ways also appear in the manuscript.

The text production problems that a book of this scope presents deserve recognition. The running text is Galliard with Galliard Italic into which is inserted at various points for reference Egyptian hieroglyphics, Etruscan signs, runes, Chinese characters and Mayan glyphs. Some of these are drawn and some are typeset. The space surrounding these graphically very different characters needs better control, nevertheless, the production of this book is characterized by attention to detail.

Reviewed by Sharon Helmer Poggenpohl, editor, *Visible Language*.

Symbols Signs Letters

About handwriting, experimenting with alphabets and the interpretation of texts

Martin Andersch

(translated by Ingrid Li)

New York: Design Press, 1989

\$75.00, 258 pages, profusely illustrated.

For the accomplished calligrapher the rewards of writing are only partly visual. The pleasures are also *kinetic*, as the writing fluid records the rhythmic movements of the body, and *tactile*, as the delicate contact of the tool with the writing surface transmits subtle vibrations to the fingers. During the normal course of training the calligrapher experiences these dimensions only after months or years of dedicated practice, and inevitably few students achieve the mastery necessary to experience them at all.

In his classes at the Werk-Kunstschule (School of Arts and Crafts) in Hamburg and the Fachhochschule Hamburg (University of Hamburg), Martin Andersch has reversed the sequence of traditional training in calligraphy, so that his students can experience these pleasures from the beginning. *Symbols Signs Letters* is an exquisitely designed record of his teaching, abundantly illustrated with full-color examples of his students' class work. Instead of starting with an introduction to

the edged pen and prescribing exercises to learn the basic strokes of the italic hand, Professor Andersch throws his students immediately into the deep waters of abstract form and gestural movements. In an effort to “free my students from indifference and ugliness caused by incompetent previous instruction,” they spend the first several classes creating and improvising abstract rhythmic marks which may look like anything *except* letters. They explore different writing media, surfaces and tools—“leaves, reeds, quills, twigs, stones, shells, wood and metal shavings, strips of cardboard. . .” and use various techniques to awaken submerged sensibilities: breathing exercises, “listening to music, singing or even screaming to body movements.”

Only after immersing his students in this program of radical re-programming does Andersch introduce the traditional forms and tools of western writing. They begin with the italic hand (“because the preliminary exercises with free form seem to prepare the hand and eye for this script’s complicated forms”) and progress through a standard chronologically structured sequence of traditional alphabets: square capitals, rustic capitals, uncials, Carolingian miniscules and blackletter. His students approach the study of historical forms with a heightened sensitivity to their rhythmic and expressive qualities and to the form-giving potentials of the writing tool. In spite of his initial emphasis on personal expression, Andersch does not neglect the formal, rationalist tradition in western letterform history. His students meticulously carve monumental Roman capitals in plaster, and they follow the example of the Renaissance and Enlightenment designers by constructing letterforms on graph paper with compass and straight-edge. Eventually, these forms too are mined for their abstract expressive potential as they are cropped and re-interpreted in a three-dimensional sculptural form.

Entitled “The Echo of Language,” the final chapter of the book is devoted to spectacular examples of works that integrate the expressive freedom of the initial exercises with the formal discipline gained through the careful study of traditional letterforms. These works are visual interpretations of texts, attempts to “speak” the words in a purely visual medium. “The written interpretation of a text differs from a spoken version in only one point: it is visible instead of audible. Pathos, gestures

and presentation in both cases come from the same source: the mind, stimulated by emotion.”

Although enormously valuable for the work it contains and for the pedagogical techniques it illustrates, *Symbols Signs Letters* is clearly intended to be more than a compendium of excellent calligraphy. It is also a manifesto about the cultural importance of writing and its shameful decline. In his foreword, Andersch denounces “the ministers of cultural affairs and education” for having neglected “any intelligent and intensive teaching of handwriting in any applicable departments. Such neglect is foolish as well as dangerous, and should finally yield to the realization that our written heritage is an asset of extraordinary importance.” The first chapter is a brief and passionate essay on “The State of Handwriting” in which he attributes “rampant analphabeticism” to “the decay of education on the subject in the schools and the digitization of letters that turns variation into repetition.”

Andersch’s observations about education are directed specifically at the situation in West Germany, but most English-speaking type and lettering professionals would agree with the deplorable state of handwriting education in their respective countries. In the absence of leadership and a public willingness to commit the necessary resources to education, a significant number of our citizens will continue to be culturally and intellectually impoverished; “unlettered” in the broadest sense of the term.

It is difficult to understand the exact thrust or the source of the curmudgeonly tone behind Andersch’s observations about typesetting technology, particularly his remark about “digitization of letters that turns variation into repetition.” At one point he seems to be disappointed that computers have not led to more original type designs: “What has happened to writing since the age of the computer dawned on us? Nothing much. The canon of form and shape that grew and developed during the last five hundred years is constantly being recycled . . . Sadly . . . most designers go around in circles, trapped in endless repetition. Their leitmotiv might well be Figaro’s famous aria from Rossini’s “Barber of Seville,” “Garamond here, Garamond there . . .” But mere novelty, “the thesaurus-like collections of alphabets that circulate among advertising

agencies and typographers” is equally disparaged: “Some [of these alphabets] bore us to tears, others surprise us with what can only be described as exhibitionism.”

There is no question that many of the best contemporary typefaces are designed by designers who are also expert calligraphers. Even typefaces which are not particularly “calligraphic” benefit from the rhythmic energy that informs them. Andersch is encouraged by the fact that many of his recent students have been sponsored by the managers of progressive corporations, such as Ikarus (a company that manufactures software for letterform design) and Rowohlt (a large German publishing house). But he is equally convinced that a piecemeal, individual approach is inadequate in the face of institutional and cultural ignorance. “The demands of industry are high. It is imperative that we reevaluate the position of writing in the greater context of our European culture. Theoretical and practical studies of writing have to be integrated into the curricula of institutes of higher learning.” His philosophy is reiterated at the very end of the book beneath the colophon where he quotes William Morris: “I do not want art for a few, any more than education for a few or freedom for a few.”

Symbols Signs Letters is a beautifully made book. The four-color illustrations capture every nuance of ink on paper and are by far the best printed reproductions of calligraphy I have ever seen. The sewn spine allows the book to lie flat, permitting the author/designer to run illustration across the gutter with a minimum of disruption. The strongly vertical page format is reinforced with a hairline rule that defines a marginal column used for explanatory text, credits and inspirational quotations. Though its author hopes for much more, the book will at least inspire the calligrapher, the type designer, the book designer and the teachers of these disciplines.

Reviewed by Michael McPherson, a managing partner in Corey McPherson Nash, a graphic design firm in Watertown, Massachusetts. He teaches part-time at the Rhode Island School of Design.

Baudin, Fernand.

How Typography Works (and why it is important)

London: Lund Humphries Publishers, Ltd., 1988.

Paperbound, 144 pages, illustrated.

New York: Design Press, 1989.

\$14.95, paperbound, 144 pages.

Paris: Editions Retz, 1984. (*La typographie au tableau noir.*)

79 F, paperbound, 162 pages, illustrated.

Fernand Baudin is a real man of letters. He is equally, it seems, at ease in French, German or English, and when talking about type, the erudition just tumbles out. Some of his life long excitement about typography is conveyed in the presentation of this text. This book is not an attempt to teach professional typographers, it is a first step towards a public understanding of what typography is, and the establishment of common standards.

The text is made up of a series of 'little clips'; each a typographical feature previously exposed on a blackboard at an Antwerp School to product design students. This format apparently caught the imagination of the original French publisher, even though it seems a little awkward to continue this blackboard format into a printed book and positively perverse to write the text out by hand and print the manuscript hand, rather than set it all in type, especially in a book on *typography*. But the result does have urgency and passion cloaked in that charm that characterizes the author.

Baudin has always claimed that both writing and typography are an extension of literacy, the printed word gains meaning by the way it is composed and set out on the page. As study organizes knowledge into logical patterns, so typography organizes thought into communication. It follows that the lessons of typography should be available to all, there can be no worthwhile society without them. Essentially the lessons of typography are those inherent in writing. It then follows that the laws of writing are immutable and will dictate the paths taken by the technology in communication by lettering—computers and their like will just have to fall into line.

The author passionately believes that the correct ordering of letters into words, words into phrases and phrases into printed pages—that is the physical arrangement of all those things and the choices of size, scale and style—inform and educate our *thinking*: cognition, communication and recognition patterns. For these reasons he ascribes to printers both authority and responsibility and feels we fall short on both counts. He is now in this book reaching over our heads to those who are typographically uneducated but have the powerful tools of desktop publishing under their hands.

The first edition in French was called *La typographie au tableau noir* for that indicates its particular audience and, the teacher of graphic design at the blackboard—but now there is a wider pool of those needing to be taught, for as Baudin says, with the arrival of desktop publishing, “We are all consumers of typography.” He makes the telling analogy that to say desktop publishing gives one direct access to the typographical knowledge of five centuries . . . is rather like saying that the piano gives us a hot-line to J.S. Bach.

The blackboard formula employed here provides one of the most cogent arguments for typography, that is using type: handwriting gets relatively few words into a given space, so the notes on the blackboard are usually developed by the teacher, consequently this book tends to be *The Tablets without The Moses*; we could do with a bit more explanation and development.

The book charts the development of letter forms through the great variety of alphabets that are available to us in type. Baudin explains their classification by significant features—and tells us where their use is appropriate and where it is not. The book shows us the layout of a page, book through broadsheet; for we end with an illustrated chronicle of how text is specified and laid out in a modern newspaper.

The glossary is useful, as is the extensive bibliography, but the latter is also eccentric; why should Fernand Baudin’s product design students have found *The World of Aldus Manutius: Business and Scholarship in Renaissance Venice* essential core reading?

The jacket design is awful (British edition).

La typographie au tableau noir won Le Prix Extraordinaire de la Société des Gens de Lettres de France which is recognition of a significant contribution to literature; for what we have here are thoughtful, scholarly and provocative essays for a sophisticated lay audience.

Reviewed by Colin Banks, a partner and typophile in Banks and Miles, London.

Stone, Summer

On Stone, The Art and Use of Typography on the Personal Computer

San Francisco: Bedford Arts, Publishers

\$34.95, hardbound, 112 pages, 2 color, many illustrations.

What follows may be a strange—even hybrid—book review.

On Stone, The Art and Use of Typography on the Personal Computer, invites comment on the book itself and the

underlying subject of the book—the Stone family of type.

As a book, I suspect it will have a difficult time finding its audience. Let me digress for a moment. Some years back, my five-year-old niece came across me as I was pouring over a type specimen book. I was comparing several typefaces by flipping back and forth between the pages. She watched me for a short time and then said in surprise, “But Aunty, don’t you know your alphabet?” Seeing typographic variations in form, understanding their place in visual history and having the ability to use specific faces well requires study and the development of a sensibility.

In the early pages of the book, the audience is identified as the “growing ranks of typographers,” but this is a vaguely defined group that might include sub-groups with very different backgrounds and needs such as: other type designers; professional type users, i.e., graphic designers; journalists and writers with access to new typographic options on their computers; secretaries, who now prepare more elaborate newsletters and reports with the typographic options available to them; and many other more specialized sub-groups. Type designers and graphic designers want more content development from Sumner Stone than he delivers. They would like a more detailed description both in words and images of how he developed the specific typographic

forms that are the Stone family. Conversely, journalists, writers and secretaries know little about typographic history and even less about typographic terminology. For them, the text and uncaptioned images presume too much and move too quickly from topic to topic. The tone of the text is friendly, but there is an undercurrent of boredom to it. It reminds me of many designers who either cannot or will not discuss their work. They typically say, “It is visual, you *see* it or you don’t.” Learning about visual things requires that we show *and* we tell. Visual literacy, in this case typographic literacy, will remain a mystery until designers are willing and able to intelligently discuss their work.

The book follows the genre of the type prospectus, which typically contains: a description of the concept for a new typeface including historical references or technological considerations; examples of the type in application; and a range of traditional specimens of the type such as entire alphabets in various sizes and paragraphs set in various point sizes with changes in leading.

The Stone family consists of serif, san serif and informal faces in various weights. Sumner Stone stresses the importance of the computer to his type development process. In particular he emphasizes the iterative nature of the tool. In the past, the drawing of precise, subtly varied renditions of a particular character required a great deal of time. Now, the computer allows for easy storage of the various generations of form development and the easy change of subtle details. Once the visual concept and the fundamental form are drafted and translated to a computer screen, the type designer becomes more of a visual editor. This is in contrast to the past, when the type designer spent much, if not most, of the time in drafting variations. Stone says, “The computer is also important in allowing us to track small differences in the letterforms being developed and to assess their impact. The choice between longer or shorter serifs, lighter or heavier main strokes may be measured in thousandths or ten thousandths of an inch. Such small differences are significant for type designers because they are repeated over and over again . . .” Here, Stone gives us the essence of what careful, committed type design is about—it is about nuances and their repetition. By virtue of a wordless illustration on page 13 showing the characters “a c f r y,” our attention is drawn to the variations in stroke endings for the top of the a, c, f and r and the bottom of the descender of the y. These are elegant,

energetic forms. While each is a distinctive form, the variations work together rhythmically and spatially. These are the kinds of details that require our attention as we try to understand and appreciate a type design, as we flip back and forth between type designs in a type specimen book.

Stone makes a distinction between the outer structure of a typeface, which is based on the distinctive shapes of character elements such as the arches, joins, bowls and serifs, and the inner structure, which is based on calligraphic movement or the kinesthetic rhythm of the hand writing and the eye reading. An outer structure design consideration for him was the computer itself. He designed to accommodate fairly low-resolution computer screens in that he avoided visual attributes that cause difficulty, such as lines that depart slightly from horizontal or vertical.

The visual examples that demonstrate the Stone family in action are accompanied by a commentary that points out general typographic principles and values such as clarity and uniformity. Typographic specifications for each of the examples can be found on one of the last pages. The first group of examples covering information design are beautiful and telling demonstrations of what can be accomplished with the unified typographic variations that the Stone family provides. (Novice typographers would do well to use Stone when they need many typographic distinctions rather than mix faces unknowingly.) The vitality of these first examples is in sharp contrast to the wooden character of many that follow covering signage systems, corporate identity and other obligatory designerly demonstrations. (Here the relationship between content and form is seen in high contrast. When there is no real content, when the tension between a message and its vehicle for delivery is missing, the design appears empty and false. Samples used to demonstrate typographic or printing capability nearly always seem strange.) The last examples, typography as art, regain the vitality of the earlier ones. At least these examples have some aesthetic consistency, even though some of them lack conviction as a communication.

Since this book is, in essence, an enlarged type prospectus, it is reasonable to comment on the Stone family itself. The concept behind the design is solid and the relationship between the three variations: serif, san serif and informal is carefully conceived and executed. As I mentioned earlier, many aspects of the characters are

elegant. Before making a few critical comments concerning the type, I should mention that for years I judiciously avoided, whenever possible, the use of italic. This may have been some leftover remnant of the Bauhaus-oriented training I received at the Institute of Design in Chicago. In recent years and particularly since editing and publishing this journal, I have become a careful user and even a fan of italic typeforms. Three lowercase characters in the Stone serif italic font trouble me: the f, g and z. They are odd and for me disturbing departures from the rest of the italic characters. The crossing stroke at the top left of the lowercase p, where the character's bowl crosses the stem, is eccentric but not troublesome. What is for me even more troublesome is the uneven color of the serif italic setting in semibold and bold. The italic works well in relation to the roman font, but as an all italic chunk in these weights, it has some problems.

It takes time to become acquainted with a typeface. I have never used Stone, but I intend to use it. It has much to recommend it: the related serif, san serif and informal; useful weight variations; and often elegant detail design. I will avoid use of the serif italic but I will use the san serif and informal italics with ease.

The type design is much more substantial than the book. *On Stone* is a well designed and beautifully produced book, but it is lacking in content—in idea development. Unfortunately, the problem of lack of content is one that is shared by many books that are oriented to the design market. High production values and refined aesthetics must be considered a substitute for discourse on history, criticism or process development. I suspect that no one connected with this book ever thought much about the audience, the end-user, and what information or questions they would like to have addressed. No one thought much about how this book would be used. *On Stone* could have delivered across the board with: a fine design, beautiful production *and* informative content. All that was needed was a conception of the audience and the audience's specific needs.

Reviewed by Sharon Helmer Poggenpohl, editor and publisher of *Visible Language*.

BOOKS RECEIVED

Adams, Marilyn Jager.

Beginning to Read. Thinking and Learning about Print.

Cambridge, Massachusetts: The MIT Press, 1990.

\$29.95, 494 pages.

With a cross-disciplinary approach, this book tackles the philosophical divisions between meaning-oriented and code-oriented approaches to the teaching of reading. It provides a complete review of our expanding knowledge of: the history of the Latin alphabet, controversies surrounding phonics instruction, issues and research in early reading instruction and basic perceptual and reading processes. The author proposes specific steps to improve reading instruction. Both the general reader and the educator will find this book of value.

André, Jacques and Roger D. Hersch.

Raster Imaging and Digital Typography.

Cambridge: Cambridge University Press, 1989.

\$49.50, 292 pages, illustrated.

Twenty-five articles are assembled as the proceedings of the Raster Imaging and Digital Typography Workshop held at the Ecole Polytechnique Fédérale in Lausanne. The proceedings are not intended for a technological or typographic neophyte. The book contains real information concerning font architecture, Bézier curves, sampling techniques and font generation algorithms for Kanji to list some of the contents. The discussion of Donald Knuth's metafont continues within this collection as well as a discussion of "dynamic" fonts which are guaranteed to offend typographic traditionalists.

Canfora, Luciano. (translated by Martin Ryle)

The Vanished Library, A Wonder of the Ancient World.

Berkeley: University of California Press, 1990.

Hardbound, 206 pages, some diagrams.

Did the Library of Alexandria exist? Where was it? What was in it? How were its resources housed? How extensive were they? Who had access to it? What role did contemporary politics play

in its demise? Is there any truth to the legend of the fire? These and other questions that have tantalized bibliophiles concerning the Alexandrian library are explored by the author who joins the craft of novelist with the discipline of the historian. Using historical and literary sources, Canfora develops anecdotes and conversations that bring the context of this time to life at the same time he presents concrete reconstructions in the form of diagrams that show the city plan of Alexandria in Ptolemaic times and the architectural plans of other buildings from that era that housed libraries. His conclusion is an elegant piece of detection.

Harris, R.R. Roy.
The Origins of Writing.
 La Salle, Illinois: Open Court, 1986.
 \$24.95, 166 pages, illustrated.

A critique of 'scriptist misconceptions' is followed by the author's explanation of origins in this book. Writing may have developed out of counting and emblematic representation of livestock and other economic items; numeracy preceded literacy. European ethnocentric bias which relates all non-alphabetic writing systems to the alphabet, which is conceived as essentially phonetic, is called into question as the author opens the discussion to the larger problem of representation.

Kapr, Albert.
Johannes Gutenberg Persönlichkeit und Leistung.
 Leipzig: Urania-Verlag, 1988.
 332 pages, illustrated with historic documents, some in color, in German.

In this book, Gutenberg is described as a man who lived and worked amidst the tensions of change between the Middle Ages and the Renaissance. The author pursues a process not unlike that of a criminologist. Historic documents, missing facts, trial hypotheses and reconstructions form a portrait of Gutenberg within the wider cultural and historic contexts of his time. "It must be possible to infer from the inventor's world his motives, from his work the person, from the state of technology the possibilities for invention, from the known behavior of the master his positions on issues of the time, and

from his education his reactions, and from the echo of his environment the character of the inventor and his work.”

Kuckenbergh, Martin.

Die Entstehung von Sprache und Schrift.

Cologne: Du Mont Buchverlag, 1989.

295 pages, illustrated, paperback, in German.

Language and writing, common everyday occurrences, are what set humans apart in the animal kingdom. Human evolution, which started at the earliest one-half million years ago, is covered in a reasonably simple and understandable form in the first part of the book, supported by findings of diverse disciplines such as research in animal behavior and communication, anatomy, neurology and archaeology. The second section of this book covers methods of communication and the stages before writing emerges by investigating ancient and contemporary cultures without writing traditions. It then presents the evolution of writing as a product and instrument of high cultures, developed to deal with increasingly complex economical and organizational tasks. The history covers the development of writing and its evolution from concepts to phonetics, pictograms to linear application, from simple functioning text to works of literature.

Purves, Alan C.

The Scribal Society. An Essay on Literacy and Schooling in the Information Age.

New York: Longman, 1990.

118 pages, paperback, illustrated.

The current literacy debate continues in this slim and carefully argued book. The author, a keen observer of the changing cultural and educational context, notes that the scribal society has remained steadfastly connected to print while the growing popular culture has embraced electronic media. He takes literacy beyond encoding and decoding or specific lists of knowledge into the arena of shared scribal conventions. His conclusion is a critique of typical literacy programs in American schools and a proposal to demystify scribal learning thereby engaging the student in a life-long learning process.

Rafoth, Bennett A. and Donald L. Rubin, editors.
The Social Construction of Written Communication.
 Norwood, N.J.: Ablex Publishing Corporation, 1988.
 \$45.00, 336 pages.

This book focuses on social factors in the nature and development of written communication. Its four-part thematic structure includes: cultural perspectives, social context of writing acquisition and instruction, audience needs in various writing situations and the writers' mental representations of social context. The collection of articles addresses an interdisciplinary audience of researchers and teachers in language, communication, education, anthropology and sociology.

Saenger, Paul.
A Catalogue of the Pre-1500 Western Manuscript Books at the Newberry Library.
 Chicago: The University of Chicago Press, 1989.
 \$125.00, 300 pages, illustrated, some in color.

The Newberry Library's collection of pre-1500 western manuscripts is formally described in the scholarly tradition. In addition to a careful accounting of the visual characteristics and provenance of the manuscripts, the author describes how the collection was formed through the acquisition of two large private collections along with an active acquisitions program. In contrast to many rare book collections which are dominated by 'beautiful' and 'deluxe' as the primary criteria for acquisition, the Newberry collection represents a broad variety of interests certainly including the former but also including "a wide variety of visually modest books collected for their textual, paleographical and codicological interest. It is this special mixture which makes the Newberry collection a rare pedagogical tool for the art historian, the editor of texts, the paleographer and especially the student of the history of written and printed communication."

Smalley, William A. and Chia Koua Vang.
Mother of Writing. The Origin and Development of a Hmong Messianic Script.
 Chicago: The University of Chicago Press, 1990.
 \$15.95, paperback, 221 pages.

The authors are an American linguist and a Hmong disciple of

Shong Lue Yang, the inventor of the Hmong messianic script. Shong Lue Yang could not read or write in any language when he began to develop his Hmong alphabet. Chia Koua Vang documented the stages of the alphabetic invention as it went through three revisions of the system, each of which became simpler than the previous; capitalizing on more powerful notions of linguistic abstraction. The writing system is placed within the context of world writing systems including other Hmong systems as well as within the cultural and political context of Southeast Asia in the 60s and early 70s. The authors manage to balance the intellectual and spiritual traditions of the West and East in this contemporary account of writing invention.

Modern Scribes and Lettering Artists

Boston: David R. Godine, Publisher, 1980.
\$19.95, softbound, 160 pages, illustrated.

This is a visual compendium of various calligrapher's work organized in three sections: original lettering and calligraphy, work cut or incised into stone or other material and lettering made specifically for reproduction. Many of the calligraphers in this collection have an international reputation. American and British calligraphers dominate in this collection. Virtually all the work presented uses the Roman alphabet. A brief description accompanies each entry and a listing of calligraphy societies and services appears on the last pages.

Contemporary Calligraphy, Modern Scribes and Lettering Artists II

Boston: David R. Godine, Publishers, 1986.
\$19.95, softbound, 168 pages, illustrated, some in full color.

This is a companion volume to *Modern Scribes and Lettering Artists* (above) and is organized along similar lines. Its final pages contain a list of participants in the book with reference to page numbers on which their work appears along with their address.

- By Author** **Banks**, Colin. Review of *How Typography Works (and why it is important)*, 351-353.
- Bonsiepe**, Gui. Interface Design, Language, Graphics: Interpretations of Human User Interface, 262-285.
- Burnett**, Kathleen. Communication with Visual Sound, Herbert Bayer and the Design of Type, 298-333.
- Ericsson**, Kjerstin. Graphic Skills as a Diagnostic Tool for Working with the Elderly, 214-226.
- Fields**, Virginia M. Deciphering Maya Hieroglyphic Writing: The State of the Art, 62-73.
- Justeson**, John S. (with Peter Mathews). Evolutionary Trends in Mesoamerican Hieroglyphic Writing, 88-132.
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- Reilly, F. Kent**. Cosmos and Rulership: The Function of Olmec-Style Symbols in Formative Period Mesoamerica, 12-37.
- Sassoon**, John. Who on Earth Invented the Alphabet? 144-163.
- Sassoon**, Rosemary, guest editor. The Hand and the Trace: Some Issues in Handwriting, 137-226.
- Sassoon**, Rosemary. Handwriting—How Much Do We Know About It? 137-143.

Sassoon, Rosemary. *Writer's Cramp*, 198-213.

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Stiff, Paul. *From the Bookshelves: What the User Tells the Designer*, 334-343.

Stross, Brian (with F. Kent Reilly). *An Overview of Mesoamerica*, 6-11.

Stross, Brian. *Mesamerican Writing at the Crossroads: The Late Formative*, 38-61.

Troike, Nancy P. *Pre-Hispanic Pictorial Communication: The Codex System of the Mixtec of Oaxaca, Mexico*, 74-87.

Twyman, Michael (with Susan Walker). *Preliminary Thoughts on Nomenclature for Teachers of Handwriting*, 176-193.

Walker, Susan (with Michael Twyman). *Preliminary Thoughts on Nomenclature for Teachers of Handwriting*, 176-193.

Zapf, Hermann. *Is Creativity in Alphabet Design Still Wanted?* 254-261.

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Title**

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of****pages** **The Origin of Visible Language in the New World, a special
in** *issue*, volume XXIV, number 1, pages 1-132.**Volume** **The Hand and the Trace: Some Issues in Handwriting, a
XXIV.** *special issue*, volume XXIV, number 2, pages 137-226.**A double general issue**, volume XXIV, number 3/4, pages 229-372.

Visible Language is concerned with research and ideas that help define the unique roles and properties of written language. A basic premise of the journal is that writing and reading form a distinct system of language expression which must be defined and developed on its own terms.

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A biographical note of approximately 100 words, typed on a separate sheet. The first line should begin with the author's name, position and address.

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Captions should not be attached to illustrations. Type all captions together (double-spaced) on a separate sheet.

Figure 5. Peter the Great's Civil Type.

Tables should each be on a separate page. Identify them with roman numerals plus title:

Table IV. Hopi Vowels.

To create the least possible distraction to readers, references should not be spelled out in the text. Instead, use consecutive numbers at appropriate points in the text and fully identify the reference in endnotes, under the heading "Endnotes" and using this style:

Books, first reference:

1. **Rosenthal**, Peggy. 1984. *Words and Values: Some Leading Words and Where They Lead Us*. New York: Oxford University Press, 110.

Subsequent reference:

4. **Rosenthal**. *Words and Values*, 187.

Articles, first reference:

2. **Kinross**, Robin. 1985. "The Rhetoric of Neutrality." *Design Issues* 2(2):18.

Subsequent reference:

11. **Kinross**. "Rhetoric of Neutrality," 21.

In addition to sources cited in the endnotes, authors may wish to list a few particularly useful/interesting works. These should be limited to about five titles and listed under the heading "Additional Bibliography."

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NEXT ISSUE

25:1 A General Issue

Leading-edge Research or Lost Cause?: The Search for Interscriptual Stroop Effects. Philippa Jane Benson, Carnegie Mellon University.

Literary Assessments in Polyscriptal Societies: Chinese Character Literacy in Korea and Japan. R.A. Brown, Ewha Women's University, Korea.

Copying Fluency and Orthographic Development. Donald A. Bear, University of Nevada-Reno.

Intonation and the Comma. Alan Cruttenden, University of Manchester, England.

Spacing Printed Text to Isolate Major Phrases Improves Readability. Thomas G. Bever, Steven Jandreau et al., University of Rochester.

Bastard in the Family, the Impact of Cubo-Futurist Book Art on Structural Linguistics. Harry Polkinhorn, San Diego State University.

Upcoming Special Issues

The Artist's Book: The Text and Its Rivals. Renée Riese Hubert, guest editor, University of California at Irvine.

Fluxus. Estera Milman, guest editor, University of Iowa.

Diagrams. Dietmar Winkler, Southeastern Massachusetts University, and Sharon Poggenpohl, Rhode Island School of Design, guest editors.

Writing . . . in Stereo: Bilingualism in the Text. Ralph Sarkonak and Richard Hodgson, guest editors, University of British Columbia.

COLOPHON

Since this issue is a general issue, it employs a magazine type format, to better distinguish each article – the individuality of each author is enhanced. Too often scholarly journals are dull and repetitious, in effect blending the information together, causing a mish-mash of otherwise worthy text and leaving the reader unstimulated and disinterested. By producing a visually appealing "style," this publication enables not only the expert but also the enthusiast to appreciate the insights and knowledge presented.

The basic text of *Visible Language* was set in Galliard Roman, Bold, Italic, and in Futura Light, Book, Regular, Bold and Italic. It was produced on the Apple Macintosh Ilci system, using Aldus Pagemaker 4.0.

A.D.

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The Avant-Garde and the Text, Guest editors: Estera Milman and Stephen C. Foster, 21:3/4, a double issue, 200 pages, illustrated. *"In the modern era, the debate between the old and the new has been most crucially centered around, and given substance through, the use of the text. The importance of its role for both the status quo and reform movements can scarcely be overestimated. This collection of essays concerns itself especially with the use of the text by the avant-garde, the force in modernism that has been most responsible for sharpening the focus of crucial social issues and for the advocacy of their 'movement' towards change."*

This issue is of special interest to art and design historians as well as designers interested in experimental typography.

Pattern Poetry, Guest editor: Dick Higgins, 20:1, 148 pages, illustrated.

"... pattern poetry ... is known from not many but most literary cultures of the past two thousand years. ... something like 2200 pieces have been documented. It is therefore a false assumption ... that visual poetry is only a phenomenon of the twentieth century—of the futurists, dadaists, concrete poets."

This issue is of special interest to historians of language and typography, teachers of typography and those who play compulsively with words.

The Computer and the Hand in Type Design, Guest editors: Charles Bigelow and Lynn Ruggles, 19:1, 168 pages, illustrated.

"The papers in this volume ... come from artists who design and use type, and from scientists who design and build the computer systems for producing type, but the subject here is more than 'typography,' which in its traditional sense narrowly connotes an industrial craft now obsolescent. The explicit purpose ... was to bring together artists and scientists for inter-disciplinary discussion of technical and aesthetic problems in the creation of digital type, but an implicit result was a study of literacy from a modern scribal perspective."

Of particular interest to those who teach typography or typographic history or who design type.

The Spatial Arrangement of Text, Guest editors: James Hartley and Peter Burnhill, 15:1 120 pages, illustrated.

"This special issue ... brings together papers which deal in one way or another with spatial factors in the layout and use of written/printed matter. Different writers in the past have expressed different views and many mock battles have been fought. Nonetheless, despite these, there is much agreement. The debate is with the details rather than with the general proposition that typography can be manipulated in order to improve comprehension."

Of special interest to typographic designers, teachers of typography and anyone involved in educational publishing.