VISIBLE LANGUAGE

The Journal for Research on the Visual Media of Language Expression
Volume XI, Number 3, Summer 1977 *ISSN 0022-2224*

Cover: The Passepa script (see the inside back cover for details). This is the second in a series of covers showing scripts from the Far East, contributed by André Gürtler of Basle from his extensive collection of scripts of the world.

VISIBLE LANGUAGE, Volume XI, Number 3, Summer 1977.
Published quarterly (Winter, Spring, Summer, and Autumn) by Visible Language, Box 1972 CMA, Cleveland, OH 44106.
 Second-class postage paid at Cleveland, Ohio.

Merald E. Wrolstad, Ph.D., Editor and Publisher
P. O. Box 1972 CMA, Cleveland, OH 44106 USA

General Information

VISIBLE LANGUAGE is concerned with research and ideas that help define the unique role and properties of written language. It is a basic premise of the Journal that writing/reading form a distinct system of language expression which must be defined and developed on its own terms. Published quarterly since 1967, *Visible Language* has no formal organizational affiliation.

Address
All communication with *Visible Language*—both editorial and business correspondence—should be addressed to:

Visible Language
c/o The Cleveland Museum of Art
Cleveland, OH 44106 USA
Telephone 216/421-7340

Subscription Rates

	One Year	*Two Years*	*Three Years*
Individual	$13.00	$23.00	$30.00
Institutional	18.50	33.00	45.00

All orders must be prepaid.

Back Copies
A limited quantity of all back numbers of *Visible Language* are available at $3.00 to individuals and $4.50 to institutions. Copies should be ordered directly from the Journal's address given above. A folder listing the contents of all past Journal issues is available on request.

Reprints of Specific Articles. Readers interested in securing copies of any of the articles published in *Visible Language* should send for the appropriate number of the Journal. Individual reprints are not available.

General Information
Claims. To be honored free of charge, claims for missing issues must be made immediately upon receipt of the next published issue.

Manuscripts

All manuscripts and inquiries about research articles and other contributions to the Journal should be addressed to the Editor. An Author's Guide for the organization, preparation, and submission of manuscripts is also available and includes special instructions for designers in preparing research reports. Authors are strongly advised to follow the general editorial style—headings, references, tables, captions—as shown in this and past copies of the Journal.

All copy must be double-spaced, including all references and long quotations in the text. All manuscripts should be submitted in *triplicate*, one of which should be an original typed copy. Authors are cautioned to retain a copy of their manuscript to guard against loss in the mail.

Abstracts. Manuscripts should be accompanied by an abstract of 100-200 words, typed on a separate sheet of paper. An abstract of *a research paper* should contain statements of (a) the problem, (b) the methods, (c) the results, and (d) conclusions. Results are most important, and every abstract should contain at least the trend of results. An abstract of *a discussion article* should state the topics covered and the central thesis of the article. Only complete sentences should be used in abstracts.

Letters to the Editor

The editors welcome comments on articles, reviews, and letters that have appeared in the Journal. Communications should be addressed to the Editor. The Editor will also relay to the author your questions or comments on any article. Your response—and the author's comment in reply—will not be published without your permission and your approval of any editing.

Advertising

	Advertising Rates	*Type-page Size*	*Overall Page Size*
Full page	$100	26 x 41 picas	6 x 9 inches
Half page	$60	26 x 20 picas	6 x 4½ inches

For inside covers, add 25%. Minimum space is a half page.
Bleed pages and color accepted; write for additional information.
Cost of composition and artwork charged to advertiser at cost.
Agency commission 15%. No cash discount.
Advertising content subject to approval of the publisher.
Advertising copy should be received *two months* prior to quarterly publication on 1 January, 1 April, 1 July, and 1 October.

Advertisers should contact *Visible Language* at the address given above.

Paul Claudel and Guillaume Apollinaire as Visual Poets: *Idéogrammes occidentaux* and *Calligrammes*

Nina S. Hellerstein

Paul Claudel and Guillaume Apollinaire both experimented with visual forms in an effort to incorporate a more synthetic and immediate experience into their poetry. The letters of the *Idéogramme* and the shapes of the *Calligramme* do not reproduce reality as much as they translate the fundamental images and world-view of the authors into the visual mode. In both cases the linearity of writing symbolizes movement and time while the larger unit, word or sentence-shape, imposes a more immobile, spatial form upon this movement. For both authors, in spite of differences, this synthetic aspect of visual logic expresses the structure of the real world, which is a dynamic and simultaneous interaction of multiple phenomena, yet is in constant evolution.

The two French poets Paul Claudel and Guillaume Apollinaire both composed their major works during the same period: the first two decades of this century. Yet they have very rarely been compared because of their apparently profound differences in temperament and outlook. Apollinaire is known as an aggressive modernist, Claudel as an equally aggressive conservative. In reality, however, the two authors share some common preoccupations and heritage which are hidden beneath their dissimilarity of temperament. Both, in fact, were very much interested in visual poetry; their works *Idéogrammes occidentaux* and *Calligrammes* (originally entitled *Idéogrammes lyriques*) show them to be heirs not only of the long tradition of visual poetry originating with the Greeks but also of its more recent partisans, notably Stéphane Mallarmé and his *Un Coup de dés jamais n'abolira le hasard*.[1] This

1. David W. Seaman, "The Development of Visual Poetry in France," *Visible Language*, VI, 1 (Winter 1972), 20. For a discussion and reproduction of *Un Coup de dés jamais n'abolira le hasard*, see Gerald L. Bruns, "Mallarmé: The Transcendance of Language and the Aesthetics of the Book," *The Journal of Typographic Research* (now *Visible Language*), III, 3 (July 1969), 219-40.

Visible Language, XI 3 (Summer 1977), 245-270.

Author's address: Roosevelt University, 430 South Michigan Avenue, Chicago, IL 60605.

poem was important because it showed that typography could be a visible metaphor for a new poetic syntax, liberated from the temporal succession of language which had, until now, imprisoned poetry in its mechanical, grammatical order. Implicit in this experiment was the notion that the essence of poetry itself is in fact spatial and visual, because its structure is characterized by an internal system of relationships between words created by the poet himself, a system which immobilizes the constant movement of ordinary language and turns the act of reading back upon itself. Thus, for Claudel, "Le vers est une ligne qui s'arrête, non parce qu'elle est arrivée à une frontière matérielle et que l'espace lui manque, mais parce que son chiffre intérieur est accompli et que sa vertu est consommée."[2] Visual and spatial representation, capable of expressing this interaction of words simultaneously, is thus a natural means of exploiting the synthetic, non-logical potential inherent in all poetry.

Both Claudel and Apollinaire propose to do this by creating "written signs of an idea," or "idéogrammes," although both seem to have interpreted this as "signs of specific objects." They therefore seek a formula which will enable writing to express an object through its specifically pictural and visual attributes rather than through the process of abstraction which is the normal act of reading. However, they must first overcome the obstacle posed by typography itself, which is necessarily rigid and impersonal and allows for little intervention without losing its intelligibility as a system. Claudel deals with this problem by investing the fixed letters of the alphabet with symbolic significance. His "idéogramme" is a written word whose letters resemble aspects of the object it designates, as in the word "faux" or scythe: "f est le manche et la poignée de la faux, a la place qu'on vient de faucher et l'on voit la lame qui s'éloigne, u est l'herbe, x tout ce qui est section, la lame avide pour couper qui ouvre de toutes parts ses mâchoires." "Corps," or body, is described as follows: "c est la

2. Paul Claudel, *La Philosophie du livre,* in *Oeuvres en Prose,* éd. Petit et Galpérine (Paris: Gallimard, La Pléiade, 1965), p. 77. Translation: "A verse is a line which stops, not because it has arrived at a material boundary and runs out of space, but because its interior number has been accomplished and its virtue consummated."

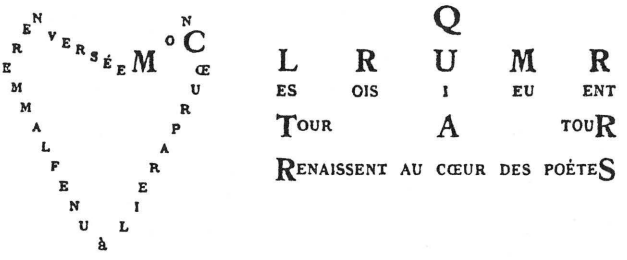
bouche qui respire et qui avale, o tous les organes ronds, r les liquides qui montent et qui descendent, p le corps proprement dit avec la tête (ou les bras), s tout le tuyautage, ou le souffle." And Claudel sees in the word "oie," or goose, "o la mare ou le corps du volatile; i sa langue d'où sort le cri, e à la fois l'oeil, la tête et le bec ouvert."[3] The plastic shape and direction of the lines which make up each letter are imagined to resemble components of the total concept. Apollinaire, on the other hand, intervenes on a level which gives him greater freedom: the patterns among whole words. His "calligramme" is a poem whose parts are organized in the form of objects which play a role in the meaning of the poem. In "Coeur, Couronne et Miroir," for example, each object is figured by the shape of the sentence which also describes it poetically: "Mon coeur pareil à une flamme renversée" forms a heart shape (Fig. 1; see also Figs. 2 and 3).[4] Thus both poets seem to be using writing as visual representation, to create a parallel between the linguistic image of an object and the real qualities of this object.

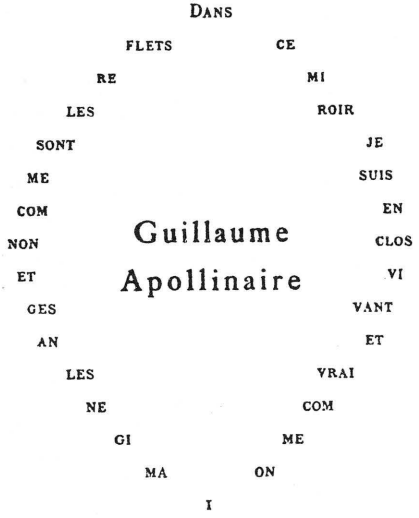
Most specialists in the field would be quick to object to this proposal, of course, since it is a generally accepted doctrine of post-Saussurian linguistics that there can exist no such simple resemblance. The connection between word and thing is an arbitrary one created by convention and system.[5] The two poets were aware of this problem, however: in reality, the relationship

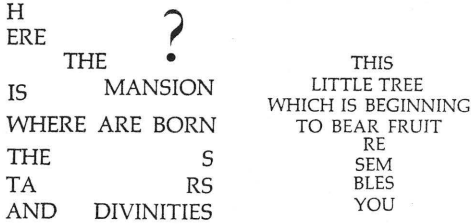
3. Claudel, *Idéogrammes occidentaux,* in *Oeuvres en Prose,* pp. 83-6. "f is the handle and the grip of the scythe, a the spot that has just been cut and one can see the blade moving away, u is the grass, x everything which is division, the blade avid for cutting which opens out its jaws in all directions. . . . c is the mouth which breathes and swallows, o all the round organs, r the liquids which rise and fall, p the body properly speaking with the head (or the arms), s all the pipelike forms, or the breath. . . . o the pond or the body of the fowl; i its tongue from which comes its cry, e the eye, the head the opened beak all at the same time."

4. Guillaume Apollinaire, *Calligrammes,* in *Oeuvres poétiques,* éd. Adéma et Décaudin (Paris: Gallimard, La Pléiade, 1956), p. 197. Figure 1: "Heart, Crown and Mirror: My heart like an upside-down flame. . . . In this mirror I am enclosed living and real as one imagines the angels and not in the way of reflections. . . . The kings who die turn by turn are reborn in the hearts of poets."
Figure 2: p. 170; Figure 3: p. 213.

5. Ferdinand de Saussure, *Cours de linguistique générale,* éd. De Mauro (Paris: Payot, 1972), p. ix.





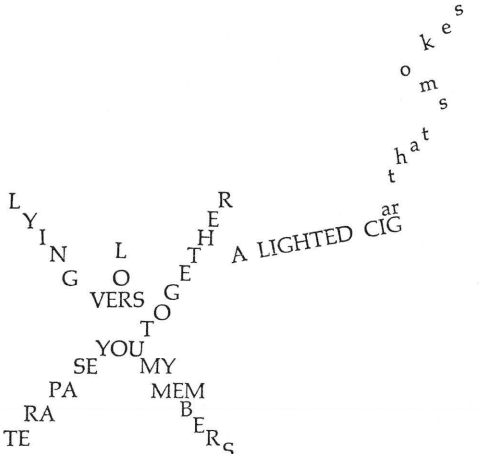


Above

Figure 1.
"Heart, Crown and Mirror (Coeur, Couronne et Miroir)."
Apollinaire, *Calligrammes*.

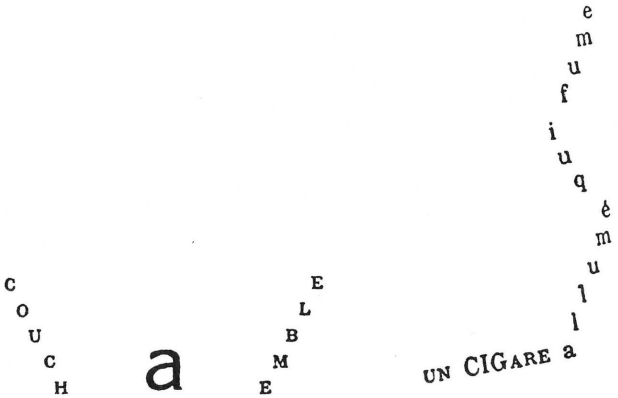
Right & Opposite

Figure 2.
"Landscape (Paysage)."
Apollinaire, *Calligrammes*.



V
OI ?
LA
CI MAISON
Où NAISSENT
LES É
TOI LES
ET LES DIVINITÉS

CET
ARBRISSEAU
QUI SE PRÉPARE
A FRUCTIFIER
TE
RES
SEM
BLE



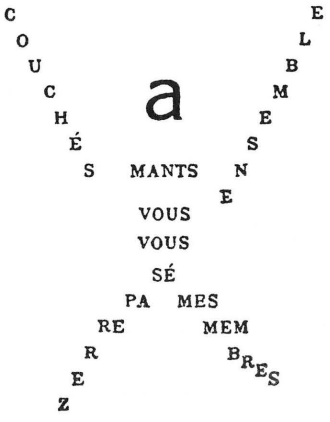
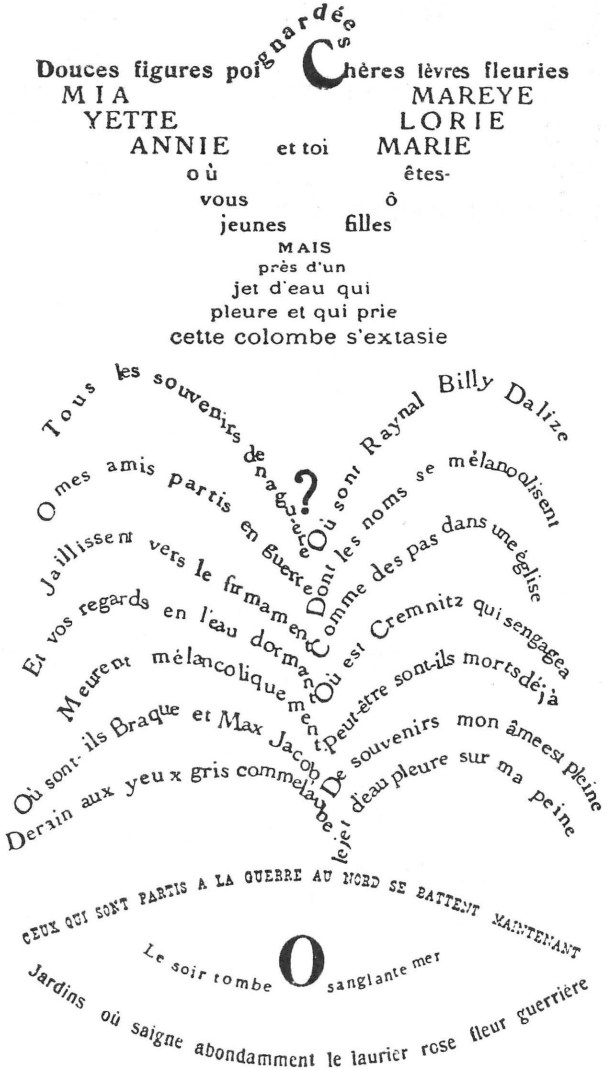
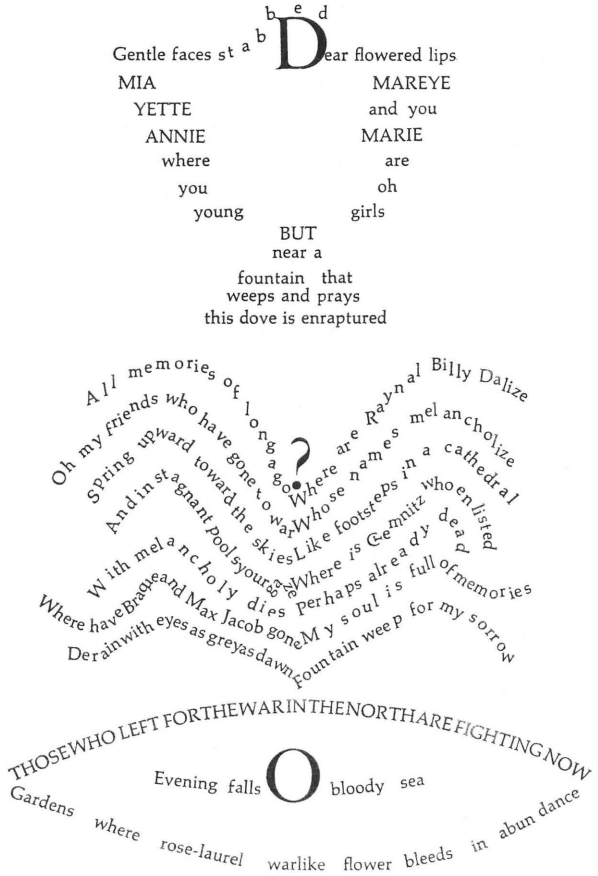


Figure 3. "The Stabbed Dove and the Fountain (La Colombe Poignardée et le Jet d'Eau)." Apollinaire, *Calligrammes*.



between the visual form and the linguistic notion is in both cases more complex than it first appears. Apollinaire later changed his title to *Calligrammes,* meaning "beautiful" written objects, thus implying that the esthetic function of his visual forms was more important than the expressive function. His object-poems, on one level, are games which seem to juxtapose the visual and semantic modes of communication rather than seeking to have them coincide. There is a certain redundancy to the process, since each mode is merely reinforcing a meaning which was already clear and complete in the other mode. The parallel, for example, between the poetic idea of the heart and the picture, in the poem already quoted, seems so clear and simple as to be almost superfluous. This redundancy in some ways strengthens the seemingly arbitrary character of the relationship between the linguistic notion and the visible shape in that it creates a sense of irony.



However, Apollinaire's choice of specific objects does play a role in the total impression and the profound poetic intention of the *Calligramme*, but this role must be understood in terms of structure rather than reference to reality. The isolation of a specific object, both visually and mentally, tends to immobilize it and thus to withdraw it from the ceaseless flux of time which haunted Apollinaire.[6] In this sense, the representation of objects in the *Calligrammes* is a part of their esthetic dimension, because immobility and synthetic structure can be seen as aspects of specifically poetic form, as opposed to the movement of prose.

For Claudel's *Idéogramme*, on the other hand, the resemblance between writing and meaning is essential: literature and language must reflect the real world, since it was created by God. However, Claudel acknowledges at the same time that this principle is scientifically untenable. He succeeds in overcoming this seeming contradiction by a compromise: the resemblance is a potential rather than a real one—it resides in the human psyche, and perhaps the unconscious—but the laws which govern this human psyche themselves correspond to the divine law which governs the world. The writer or reader, in the act of following the physical movement of the lines across the page, will invest them with a symbolic emotional meaning which Claudel calls a "geste." And this active symbolic value corresponds to the dynamic "geste" by which real things create and maintain themselves in Claudel's world-view. As he explains in his *Art poétique*, "Tout mot est l'expression d'un état psychologique procuré par l'attention à un objet extérieur. C'est un geste qui peut se décomposer en ses éléments ou lettres," and elsewhere, "Ce qui subsiste d'une chose dans ce signe qu'est d'elle un mot, c'est seulement son *sens*, son intention, ce qu'elle veut dire et que nous disons à sa place."[7] If one studies his *Idéogrammes* closely, one notices that the same

6. Philippe Renaud, *Lecture d'Apollinaire* (Lausanne: L'Age d'Homme, 1969), p. 378.

7. Claudel, *Art poétique*, in *Oeuvre poétique*, ed. Petit (Paris: Gallimard, La Pléiade, 1967), pp. 195, 178-9. "Every word is the expression of a psychological state obtained by attention to an external object. It is a gesture which can be broken down into its elements or letters. . . . What is left of a thing in that sign of it which is a word, is only its *meaning*, its intention, what it means to say and (what) we say in its place."

letters change in value from one word to the other. These lines or letters are "éléments mécaniques," whose visual symbolic value depends on the total meaning conferred on the word by the mind of the author. When the word "faux" mentioned above becomes the adjective "false," the same letters acquire a different meaning: "Un véritable rébus mathématique. F est l'unité branlante et coupée par le milieu, a l'unité à qui le zéro est amalgamé, u deux unités égales et équivalentes, x l'unité définitivement détruite par l'unité, l'inconnu, le carrefour, l'inextricable."[8] Thus, as in the case of Apollinaire, it is the structure of writing rather than the objects it represents which interests Claudel: this structure depends on the simultaneous interaction of the different "gestes," which are symbols of the structure of reality.

Beneath their variability, however, the lines or "gestes" retain a minimum, fundamental symbolism from one word to the other. This symbolism is mostly based on abstract principles and relationships: in "faux" or false, quoted above, the concept of "l'unité"; in "âme," or soul, that of "l'ouverture": "a est à la fois ouverture et désir, réunion de l'homme et de la femme, ce qui exhale et inhale le souffle, m est la personne entre deux parois, e l'être." In "sur," (on) it is "l'action parallèle": "s la compression, u l'action parallèle de haut en bas dont témoigne la boucle inférieure, r la ligne de force verticale avec l'indice en haut comme en chinois"; and in "toit" (roof) "la conservation et la force" which for Claudel are represented by the circle, symbol of the feminine principle, and the vertical line or masculine: "N'avons-nous pas là une représentation complète de la maison à laquelle ne manquent même pas les deux cheminées? O est la femme et I l'homme, caractérisés par leurs différences essentielles: la conservation et la force; le point de l'i est la fumée du foyer ou, si vous aimez mieux, l'esprit enclos et la vie intime de l'ensemble." Among the most interesting is the S-shape, often symbol of a twisting descent into mysterious depths, as in "Soi" (oneself):

8. "A true mathematical rebus. F is the unit tottering and cut through the middle, a the unit to which zero is amalgamated, u two equal and equivalent units, x the unit definitively destroyed by the unit, the unknown, the crossroads, the inextricable" (p. 85).

Figure 4. "It's Raining (Il Pleut)." Apollinaire, *Calligrammes.*

écoute tomber les liens qui te retiennent en haut et en bas

écoute s'il pleut tandis que le regret et le dédain pleurent une ancienne musique

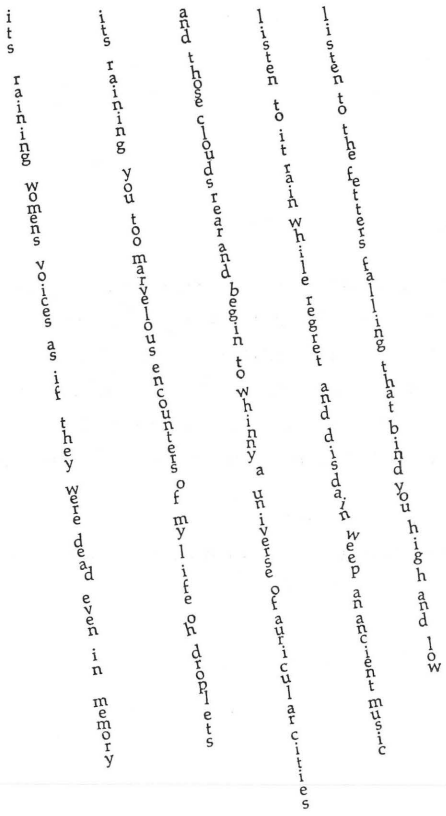
et ces nuages cabrés se prennent a hennir tout un univers de villes auriculaires

c'est vous aussi qu'il pleut merveilleuses rencontres de ma vie ô gouttelettes

il pleut des voix de femmes comme si elles étaient mortes même dans le souvenir

"s=souffle (dans souffle les f les deux traits profonds de l'haleine) spirale mouvement de descente en soi-même recherche toujours éludée de la parallèle, o et i le flambeau et le miroir."[9] In this respect there are direct parallels with Apollinaire since he, too, seems to return to certain characteristic forms which express the abstract essence of objects rather than their exact image. The direction of lines on the page can evoke primordial archetypes, gestures or attitudes: the vertical as descent or ascent, as in "Il Pleut," Figure 4; the horizontal as progression, and the scattering

9. "L'ouverture": opening. "Soul: a is both opening and desire, meeting of man and woman, that which exhales and inhales breath, m is the person between two walls, e the being." "L'action parallèle": parallel action. "On: s compression, u parallel action from top to bottom as proved by the lower curve, r the vertical line of force with the indication on top as in Chinese." "La conservation et la force": conservation and force. "Roof: Don't we have here a complete representation of the house even including the two chimneys? O is the woman and I the man, characterized by their essential differences: conservation and force; the dot on the i is the smoke from the fireplace or, if you prefer, the enclosed spirit and the intimate life of the whole." "Oneself: s=breath (in 'souffle' the f's the two deep lines of respiration) spiral movement of descent into oneself search always eluded for the parallel, o and i the torch and the mirror" (pp. 82-88, *Idéogrammes*).



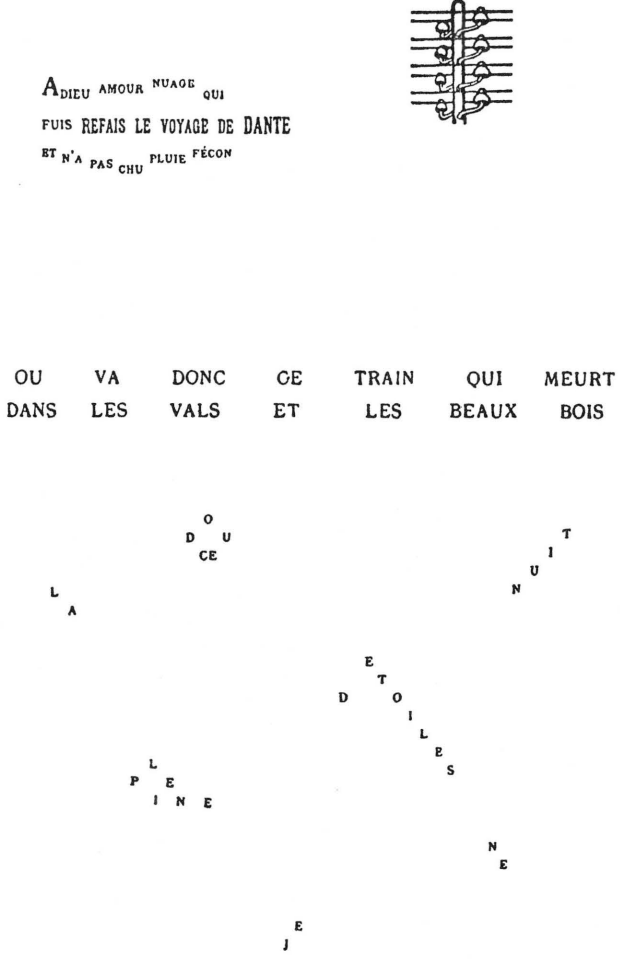


Figure 5. "Voyage (Voyage)." Apollinaire, *Calligrammes.*

of letters which implies spiritual dispersion or disintegration, as in "Voyage," Figure 5.[10] In both cases, the continuity of these primordial archetypes suggests the intervention of the subconscious, as Claudel himself says in *Idéogrammes occidentaux:* "Tous les mots sont constitués d'une collaboration inconsciente de l'oeil et de la voix avec l'objet."[11] For this reason one can find striking

10. Figure 4: *Calligrammes,* p. 203; Figure 5: p. 198.

11. Claudel, *Idéogrammes,* p. 90. "All words are constituted by an unconscious collaboration of the eye and the voice with the object."

TELEGRAPHE
OISEAU
QUI TOMBER
LAISSE
SES AILES PARTOUT

?ELAP

AU LOIN
FRAIS DU **TENDRE ÉTÉ SI**

L U
N A E T
I
R
E

C' TON
EST SA
VI GE

QUE

V
O PLU
I S
S

LOVE CLOUD THAT
FAREWELL
FLEES MAKE AGAIN DANTE'S JOURNEY
AND HASN'T FALLEN FERTILE RAIN

TELEGRAPH
BIRD
THAT FALL
LETS
HIS WINGS EVERYWHERE

?ELAP
WHERE DOES THIS TRAIN GO THAT DIES FAR AWAY
INTO THE VALLEYS AND BEAU TIFUL FRESH WOODS OF TENDER SUMMER SO

W
SET E
THE NIGHT
MOONISH AND

YOUR
IS FACE
THAT
FULL OF STARS
LONGER SEE
I NO

parallels between the two poets' favorite forms and the major imagery in their poetic works as a whole: for Claudel, the vertical as tree, the circle as Omega and "Maison fermée" (closed house); for Apollinaire, horizontal space as a realm of literary, military, and amorous conquest.[12] The space of the page, for both, has become a visible metaphor for poetic and spiritual space, through a coincidence of primordial structures rather than direct reproduction.

At the same time, however, the two poets are obliged to deal with the fixed aspect of line as it has been codified in Western linear syntax: line as an impersonal, universal aspect of structure rather than an individual symbol. Claudel suggests that the linearity of Western writing is a metaphor for the movement of time as it is defined by Christian theology. Each being evolves towards its death, as the world towards the Day of Judgment: "Dans les pays chrétiens . . . il y a ce qu'on appelle un sens, à la fois dans le sens d'une phrase ou d'une expression et dans le sens d'un fleuve. La civilisation chrétienne vient de quelque part et va ailleurs."[13] This is the reason for the title of his work, *Idéogrammes occidentaux*. Claudel opposes this movement of Western writing to the Chinese character which is totally synthetic and therefore immobile, and he suggests that Chinese civilization is as immobile as its writing. To a certain extent he integrates the principle of linearity into his *Idéogramme,* which is a series of individual concepts or letters organized into a unity of meaning after they are read successively, just as his universe will fully realize its meaning only on its final day.

Apollinaire also does not seek to destroy linear reading in his *Calligrammes* but to integrate it and to utilize it. However, he does this in a highly ambiguous, ironic way, so that the end result is a heightened awareness of this linearity, of the space which

12. Jean Levaillant, "L'Espace dans *Calligrammes*," *Revue des Lettres Modernes,* Nos. 217-222, (1969), p. 49.

13. Claudel, *Mémoires improvisés* (Paris: Gallimard, 1969), p. 298. "In Christian countries . . . there is what one could call a direction, both as in the meaning of a sentence or expression and in the direction of a river. Christian civilization comes from somewhere and goes somewhere else."

alphabetic typography creates for itself. Almost all of his *Calligrammes* are shapes, therefore plastic, anti-linear forms; but these are built up by lines of type, which must be read successively to be understood. The poet delights in playing with the hapless reader by creating a constant tension between these two elements. "Du Coton dans les Oreilles," for example, forces the reader to read backwards or upwards, and other poems make him follow the sentences around circles, down lines letter by letter, or across diagonals (see Figs. 6-8).[14] Like Claudel, Apollinaire uses this linearity as the symbol of the movement of time. In "La Cravate et la Montre" (The Necktie and the Watch) the words which describe the watch and its time, "la beauté de la vie passe la douleur de mourir," are broken up into a descending curve like one side of a round watch and like the clockwise movement of the hours around this watch.[15] However, the shape which is formed by

14. Figure 6: "Cotton in the Ears" (p. 287): "So many explosives at a live point. . . . Write a word if you dare. . . . The points of impact in my soul always at war. . . . Your fierce herd spits fire. . . . Omegaphone."

Figure 7: "Lettre-Océan" (pp. 184-5): "Do you remember the earthquake between 1885 and 1890 we slept more than a month in a tent Hello My Brother Albert in Mexico City. . . . Young girls in Chapultepec . . . Toussaint Luca is now in Poitiers . . . And how I hitched a ride with my girl . . . St. Isidore Street in Havana that no longer exists . . . Chirimoya . . . With cream at . . . Pendeco is more than an imbecile . . . he called the Indian Hijo de la Cingada . . . prietor of 5 or 6 buil . . . I got up at 2 A.M. and I've already drunk a sheep . . . the cablegram consisted of two words In Safety . . . Let's move on gen . . . board all travelers for Chatou . . . The poet's new shoes . . . of your flower gardens close the doors . . . change of section . . . 300 meters high."

Figure 8: "Aim" (p. 224): "Horses cherry color boundary of Zeeland . . . Of golden machine-guns croak the legends . . . I love you liberty who watches in the hypogeums . . . Harp with silver strings o rain o my music . . . The invisible enemy silver wound in the sun . . . And the secret future that the rocket elucidates . . . Hear the Word swim subtle fish . . . Cities turn by turn become keys . . . The blue mask as puts on God his sky . . . War peaceful asceticism metaphysical solitude . . . Child with cut hands among the pink oriflammes."

15. Figure 9: "The Necktie and the Watch" (p. 192): "The beauty of life exceeds the pain of death . . . The painful necktie which you wear and which decorates you, o civilized man, take it off if you wish truly to breath . . . What a good time we're having . . . the hours . . . my heart . . . the eyes . . . the child . . . Agla . . . the hand . . . Tircis . . . week . . . the infinite straightened up by a crazy philosopher . . . the Muses at the gates of your body . . . the beautiful unknown and the Dantesque verse, shining and cadaverous . . . It's five till at last . . . And everything will be ended."

Figure 6. "Cotton in the Ears (Du Coton dans les Oreilles)." Apollinaire, *Calligrammes*.

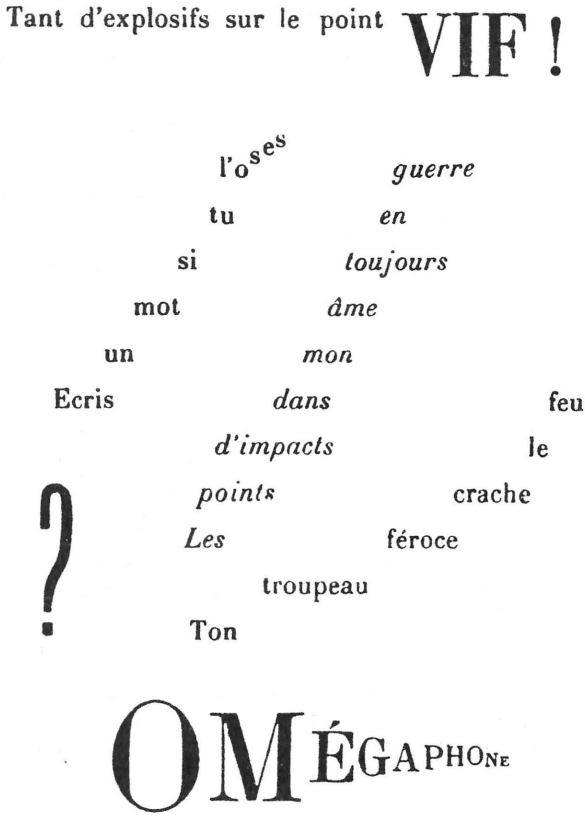


Figure 7. "Ocean-Letter (Lettre-Océan)." Apollinaire, *Calligrammes*.

Te souviens-tu du tremblement de terre entre 1885 et 1890
on coucha plus d'un mois sous la tente

BONJOUR MON FRÈRE ALBERT à Mexico

Jeunes filles à Chapultepec

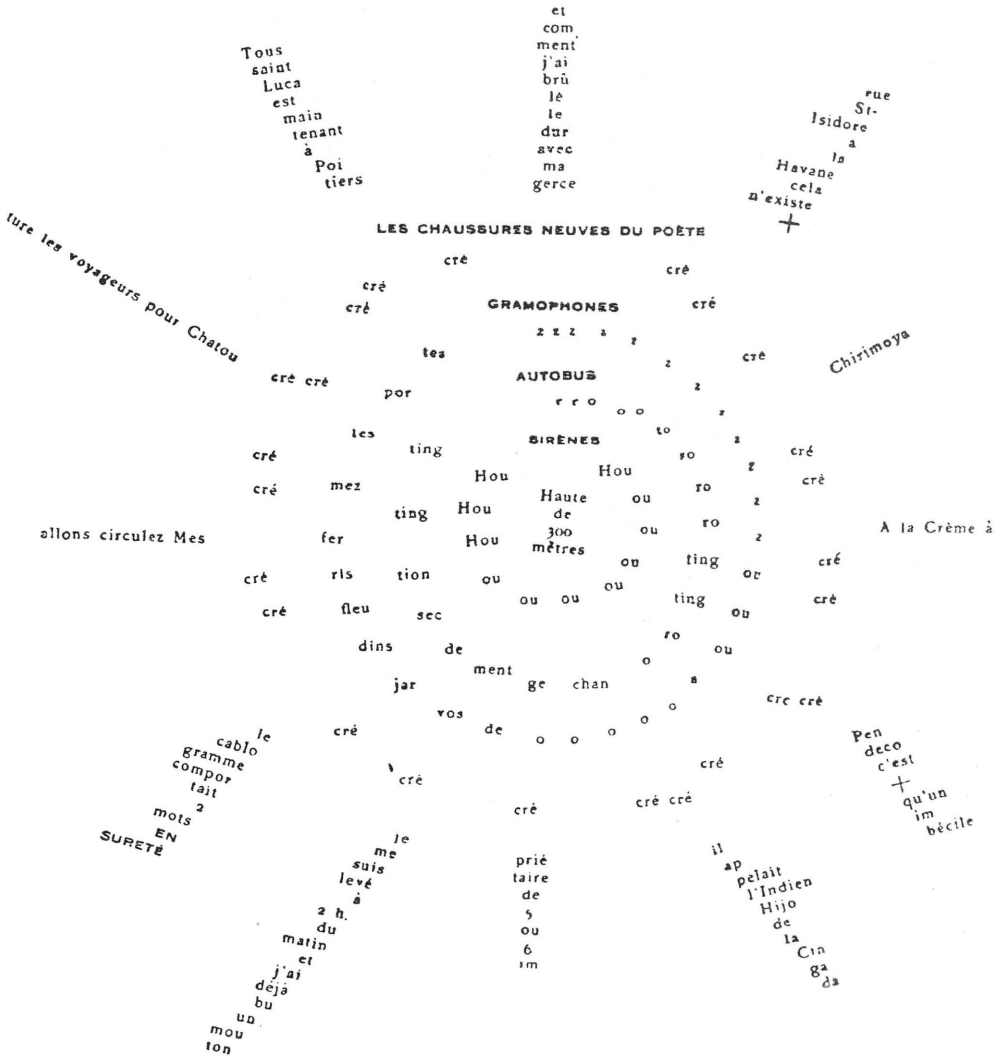


Figure 8. "Aim (Visée)." Apollinaire, *Calligrammes*.

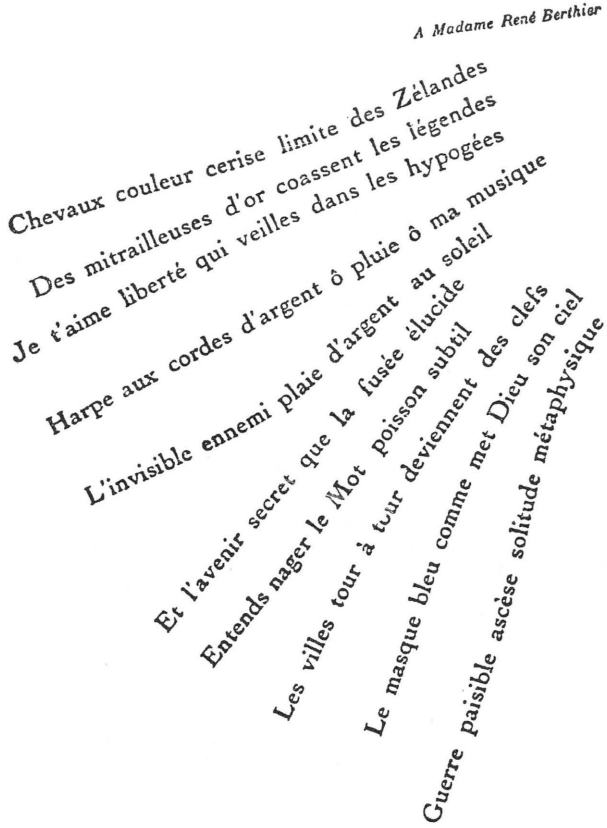
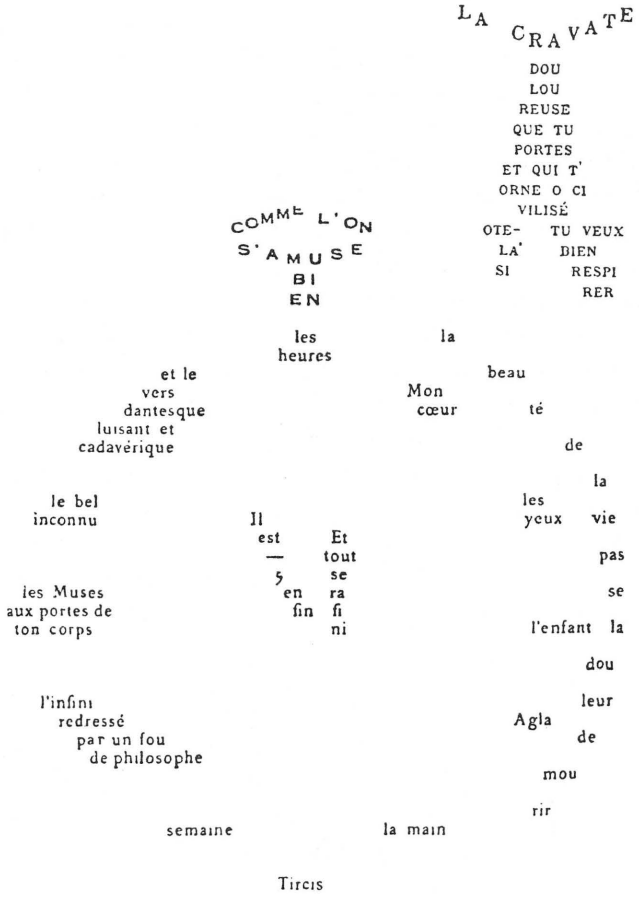


Figure 9. "The Necktie and the Watch (La Cravate et la Montre)." Apollinaire, *Calligrammes*.



the letters conflicts with the movement of reading, and thus undermines the idea of linear time instead of reinforcing it. At the same time, the shape is much more concrete and therefore communicates a literal value; the meaning of the words, on the other hand, is poetic and often figurative. The "cravate" of the above-mentioned poem is formed by the words "La cravate douloureuse que tu portes et qui t'orne ô civilisé, ôte-la si tu veux bien respirer," arranged in the shape of a necktie. The movement of language creates this poetic extension of the object by the process of linear reading: thus the interaction of literal object and figurative meaning is similar to that between the immobility of the visual form and the temporal succession of reading. The immobile object gives form to the ceaseless movement of time, contains it within a comprehensible structure; yet this movement of time is an equally vital part of Apollinaire's universe, since it symbolizes the dynamic quality of poetry and of reality itself. Thus there is a subtle interaction between the two modes, which seem to coexist without ever quite coinciding; the reader is indirectly conscious of one level while reacting directly to the other. In the same way, Apollinaire's general view of poetry and the world suggests a tension between space and time; the world is ceaselessly moving and evolving, yet the only mental and poetic structure capable of seizing its truth is an immobile, synthetic, global vision. "Chaque jour peut-être une volonté toute puissante change l'ordre des choses, contrarie les causes et les effets et anéantit le souvenir et la vérité même de ce qui existait la veille pour créer une succession d'événements établissant une nouvelle réalité. Et ces nouveautés sont le mensonge de l'ancienne vérité. Tel est l'ouvrage poétique: la fausseté d'une réalité anéantie." [16]

Thus Apollinaire's visual poetry utilizes the movement of time without attributing to it the character of logical causality and historical progression which had been implicit in nineteenth-

16. Apollinaire, in *La Phalange* (August 1908), quoted by Renaud, *op. cit.*, p. 397. "Each day perhaps an all-powerful will changes the order of things, disrupts causes and effects and destroys the memory and even the truth of what existed the day before in order to create a succession of events establishing a new truth. And these new things are the lie of the former truth. This is the poetic work: the falsity of a destroyed reality."

century ideas of time. And here we touch on perhaps the most fundamental resemblance between Apollinaire and Claudel. Claudel, too, feels that the real world is essentially a dynamic interaction of multiple phenomena. Although he accepts time as the dimension in which things perfect themselves, in a ceaseless effort to realize God's ideal image, this image is itself eternal and therefore timeless. His world is both linear and simultaneous: a totality which at each moment changes and builds upon itself like a text being written.

> Comme la main de celui qui écrit va d'un bord à l'autre du papier, donnant naissance dans son mouvement uniforme à un million de mots divers qui se prêtent l'un à l'autre force et couleur, en sorte que la masse entière ressent dans ses aplombs fluides chaque apport que lui fait la plume en marche, il est au ciel un mouvement pur dont le détail terrestre est la transcription innombrable.
>
> Le passé est une incantation de la chose à venir, sa nécèssaire différence génératrice, la somme sans cesse croissante des conditions du futur. Il détermine le *sens*, et, sous ce jour, il ne cesse pas d'exister, pas plus que les premiers mots de la phrase quand l'oeil atteint les derniers.[17]

The instantaneous and simultaneous perception of spatial relationships expresses an aspect of Claudel's world which is just as important as the movement of sound and time. Each word on the page, each letter of his *Idéogrammes*, each member of the universe depend on their relationship with all the others for their full meaning. It is necessary to perceive the totality all at once in order to situate each part. An *Idéogramme* is a total picture which tries to englobe many different facets of a synthetic experience,

17. Claudel, *Art poétique*, pp. 135-6: "As the hand of the person writing goes from one side of the paper to the other, giving birth in its uniform movement to a million different words which lend each other force and color, so that the entire mass feels in its fluid equilibrium each contribution made to it by the moving pen, there is in heaven a pure movement of which earthly detail is the innumerable transcription."

Art poétique, p. 140: "The past is an incantation of the thing to come, its necessary generative difference, the endlessly growing sum of future conditions. It determines the *direction*, and, in this light, it does not cease to exist, no more than the first words of the sentence when the eye reaches the last ones."

even while each aspect remains distinct. In the word "baum" (German for tree) Claudel imagines a whole landscape in miniature: "a est un lac alimenté à la fois par la pluie et le ruissellement, u est une vallée sur laquelle flotte un gracieux nuage, m est une forêt de sapins." In "locomotive," he sees "Un véritable dessin pour les enfants. La longueur du mot d'abord est l'image de celle de l'animal. L est la fumée, o les roues et la chaudière, m les pistons, t le témoin de la vitesse, comme dans *auto* à la manière d'un poteau télégraphique, ou encore la bielle, v est le levier, i le sifflet, e la boucle d'accrochage, et le souligné est le rail!" And in "courir" (to run), "c est le corps penché, u les deux jambes, r les deux genoux qui travaillent, i le but qui est en avant et au-dessus, tout ça roule o!" [18] The task of the poet in general, as Claudel sees it, is to expand and to exploit this synthetic potential of writing till it expresses the entire universe. For the very basis of poetry is image, or the juxtaposition of two different things, like the basis of synthetic visual logic itself.

> Par *l'image,* le poète est comme un homme qui est monté en un lieu plus élevé et qui voit autour de lui un horizon plus vaste où s'établissent entre les choses des rapports nouveaux, rapports qui ne sont pas déterminés par la logique ou la loi de causalité, mais par une association harmonique ou complémentaire en vue d'un *sens.*
>
> Jadis au Japon, comme je montais de Nikko à Chuzenji, je vis, quoique grandement distants, juxtaposés par l'alignement de mon oeil, la verdure d'un érable combler l'accord proposé par un pin. Les présentes pages [développent ce] nouvel Art poétique de l'Univers, une nouvelle Logique . . . celle-ci a [pour organe] la métaphore, le mot nouveau, l'opération qui résulte de la seule existence conjointe et simultanée de deux choses différentes.

18. Claudel, *Idéogrammes,* pp. 83-7: "Tree: a is a lake fed both by rain and streams, u is a valley over which floats a graceful cloud, m is a pine forest. Locomotive: A real picture for children. The length of the word, first, is the image of that of the animal. L is the smoke, o the wheels and the boiler, m the pistons, t the witness of the speed, as in *auto* like a telegraph pole, or maybe the connecting-rod, v is the lever, i the whistle, e the hitching hook, and the underlining is the rail! To run: c is the inclined body, u the two legs, r the two knees working, i the goal which is ahead and above, all of that's rolling o!"

> Il est impossible pour un poëte d'avoir vécu quelque temps en Chine et au Japon sans considérer avec émulation tout cet attirail là-bas qui accompagne l'expression de la pensée . . . Quelques traits délibérés . . . et voici, de quelques mots, débarrassés du harnais de la syntaxe et rejoints à travers le blanc par leur seule simultanéité, une phrase faite de rapports!
>
> Le *mot* chez nous (qui signifie: *acquis par le mouvement*) est un ensemble obtenu par une succession. Il vibre encore, il émane encore dans cet arrêt du blanc qui le limite l'allure de la main qui l'a tracé.[19]

Throughout his life, as the passages above show, Claudel was haunted by the idea of a poetic structure liberated from mechanical and logical progression, and suspended in the mind as written words are suspended in blank space.

The *Idéogramme* and the *Calligramme* are, as we have seen, very different in structure and intention: one is a fully developed, self-contained poem, the other a reverie on the visual potential of the system of writing as a whole. And, as we have also seen, Claudel believes in the ultimate power of this system to suggest an eternal reality, albeit indirectly. Apollinaire, on the other hand,

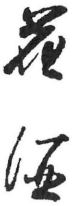
19. Claudel, *Introduction à un poème sur Dante* (Introduction to a Poem about Dante), in *Prose*, p. 422: "By the *image*, the poet is like a man who has climbed up to a more elevated spot and who sees around him a more vast horizon where new relationships are established between things, relationships which are not determined by logic or the law of causality, but by a harmonic or complementary association in view of a *meaning*."

Art poétique, p. 143: "In former days in Japan, as I climbed from Nikko to Chuzenji, I saw, although quite distant, juxtaposed by the alignment of my eye, the green of a maple complete the accord proposed by a pine. The present pages [develop this] new Poetic Art of the Universe, a new Logic . . . it has [for organ] the metaphor, the new word, the operation which results from the simple united and simultaneous existence of two different things."

Claudel, Préface à *Cent phrases pour éventails*, in *Oeuvre poétique*, p. 699: "It is impossible for a poet to have lived some time in China and Japan without considering with emulation all those implements which accompany there the expression of thought . . . Some deliberate strokes . . . and here we have, out of several words, liberated from the harness of syntax and joined across space only by their simultaneity, a sentence composed of relationships!"

Ibid., p. 700: "Our *word* (which signifies: *acquired by movement*) is a unity obtained by a succession. It still vibrates, it still emanates, through the white space that arrests it, the rhythm of the hand that traced it."

Figure 10. Claudel, *One Hundred Phrases for Fans (Cent phrases pour éventails)*, pp. 708-9.

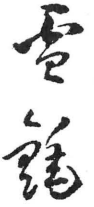


Une rose

d'un rouge si fort
qu'elle tache
l'
â m e
comme du vin

Une pivoine

aussi blanche
que le sang
est
rouge



La neige

sur
toute la terre
pour la neige
étend
un tapis de
neige

Au travers de la cascade

une
longue fée horizontale
verte et rose
joue de la
flût
e

is interested in exploring the potential of different forms in order to express an essentially human truth, and in innovation per se as a necessary image of the constantly changing world. It is possible to question, as many critics have done, the real success of the *Calligrammes* as visual poetry and the usefulness of the *Idéogrammes occidentaux* in the actual reading and understanding of poetry: in both cases, the visual and linguistic modes remain perhaps too loosely fused. In this context it is interesting to compare them with a third work, Claudel's *Cent phrases pour éventails (One Hundred Phrases for Fans)*, in which the words of each poem are laid out in different patterns on the page: here the designs are purely abstract, yet perhaps for that very reason seem more intimately a part of the total experience of the poems (see Fig. 10).[20] The structure of the thought is more closely related to the visual structure which expresses it.

This problem of structure is thus the most important component in the question of Claudel's and Apollinaire's visual poetry. Not only their ultimate success or failure but also their intentions can best be understood by their efforts to penetrate the essential, internal workings of visual and poetic expression. Both perceive poetry as a way of organizing language and thought, a unique structure, and the visual mode as a direct way of formulating this structure. Thus, beyond their differences and the question of their relative success or failure, the *Calligramme* and the *Idéogramme* retain a certain enigmatic quality because their ultimate workings defy exact translation into ordinary language. The choice of the visual mode imparts to the poetic message an aura of suggestiveness and concreteness so that we experience a different type of logic which, in its own way, completes and expands the conventional act of reading.

20. Figure 10: *Cent phrases pour éventails (One Hundred Phrases for Fans)*, pp. 708-9: "The rose . . . is only the form resounding for an instant of what the heart in a low voice names its desire/We r . . . eopen our eyes and the rose has d isappeared we have breathed it all in/ Fan . . . out of the poet's words nothing is left but the breath/ The rose . . . I have crossed on a coral bridge something that does not permit return/ A rose . . . of a red so deep that it stains the soul like wine/ A peony . . . as white as blood is red/ Snow . . . over the whole earth for the snow spread out a carpet of snow/ Across the waterfall . . . a long horizontal green and pink fairy plays the flute."

A Child Learns the Alphabet

Lenore McCarthy

This study chronicles the process in which a young child teaches herself to write the letters of the alphabet. The letters which she chose to learn may be classified into categories containing distinctive features of circles: O, C, Q; straight lines: L, I, T, E, F, H; lines and loops: B, P, R; and angles: M, N, Z, K, V, W. The four stages through which the child progressed before she was able to recall the graphic form of a letter which only the letter name was mentioned were: Stage I, the letter must be visible so that the child could copy the form; Stage II, the distinctive features of a letter written in the air facilitated recognition of the graphic form; Stage III, the verbal description of the letter enabled the child to write the letter; and Stage IV, the name of the letter was sufficient information to enable the child to produce the letter. Implications for further research and possible teaching methods are recommended.

Review of the Literature

The majority of literature that has been written on the process of writing acquisition centers on developmental theory. Legruns (1932) lists five stages through which a child progresses. At first a child makes unorganized scribbles which become more recognizable as time progresses. Cattell (1960) describes the stages as starting with scribbling at 18 months and steadily progressing toward the written word with its goal, expressive writing. The stages begin at four years when the child prints a few capital letters with a preference for circular letters (such as C, G, O, Q) or straight line letters (such as E, H, I, L, T). By five years the child prints some letters of varying sizes, which are usually large and placed in various positions. As time passes, the writing develops from letters to words to sentences.

The role that instruction plays in the development of children's writing causes as much interest as does the role of spontaneous development of writing. Wheeler (1971) analyzes the spontaneous

Visible Language, XI, 3 (Summer 1977), 271-284.

Author's address: 402 West Webster, Chicago, IL 60614.

writing of kindergarten children in order to detect developmental trends from aimless designs to words in sentences. Experiments by Wheeler (1971) and Gibson, Schapiro and Yonas (1968) indicate that children can learn to write without instruction if sufficiently motivated.

At this point, there is no step-by-step description of the development of letter acquisition. Therefore, there is no evidence to indicate whether a child learns letters in an organized manner or in a haphazard manner. Certain questions concerning beginning writing need to be answered. Is the acquisition of letterforms a random process that the child stumbles through and eventually emerges with the ability to write letters? What motivates a child to begin writing? What types of motivation enable the child to learn all 26 letters, upper- and lower-case? What type of reinforcements are needed until mastery is achieved? Does the child need to know that a letter is a letter or that a letter can be read and has a sound correspondence in order to have the motivation to continue learning to write? What methods of instruction can be utilized to teach the letters of the alphabet to children who are not motivated to learn without assistance? These questions can be answered more fully after examining the manner in which a child has mastered the alphabet.

The Study

Learning Circle Letters. This study started when Sarah—a white, middle class child—began to teach herself to write at the age of 2½ years. Sarah is the second child of college educated parents. At the time that Sarah began to write, she was able to identify the names of all the letters of the alphabet. Neither parent taught her the names of the letters in a formal manner, although she did learn most of the letters and became motivated to write through television program, *Sesame Street.* After viewing the presentation of the letter *Q* on *Sesame Street,* Sarah requested that someone draw the letter for her. A number of requests for someone else to write the letter were made before an attempt was made to draw the letter alone. The first attempt consisted of a very uneven and overlapping circle with a slanted line piercing the circle (Figure 1).

The letter *O* developed from the letter *Q* when Sarah discovered

Figure 1. The letter *Q*.

that just before the addition of the intersecting line, the letter *Q* looked like an *O*. Although this discovery was made within a week of writing her first letter, Sarah had made hundreds of *Q* letters before she discovered the similarity between *Q* and *O*. The process of writing the circle and the intersecting line required complete concentration and therefore the parts of the letter could not be separated from the whole. It was only after the child was familiar with the letter could she examine the unfinished letter. After the discovery of these two letters, Sarah became an avid creator of notes and letters that consisted of strings of the letters *O* and *Q* which were then read as words. At this point she was aware that letters written on a page could be used to communicate a message.

One month later Sarah became interested in the letter *A* after she discovered that she could write it by herself. One day, while writing a series of lines and circles, she recognized one of the figures as an *A*. This *A* was made with curved lines and resembled a divided and bisected *O* (Figure 2). This letter *A* continued to be written in this manner for almost one year, and did not change its shape or form and is therefore classified as a circle letter. Further development of this letter to a straight-line form will be covered later in this study. The first two letters learned consisted of circles as distinctive features of the *Q* and *O*. The third letter, *A*, was altered in shape and therefore a circle became part of the features of this letter. All these beginning shapes contained a circle with a line which distinguished this circle from the other letters.

Learning Line Letters. Letters that consisted of straight lines (such as T, L, I) were learned together approximately three months after she learned the letter *O*. When Sarah saw the letter *T* on television,

Figure 2. The letter *A*.

she announced, "I can make that!" In this instance she was aware of her ability to write a letter before attempting it. The letter *T* often varied in shape because of Sarah's poor coordination (Figure 3). Many times it was very difficult for adults to recognize this symbol as the letter *T*, but it was never difficult for Sarah to recognize the letter.

The choice of the next four letters—which were also learned at three years of age—indicated an emerging pattern. The letters *H, I, E, L* consist of horizontal and vertical straight line features. None of these letters, nor the *T* that had been previously learned, contained curves or diagonal lines. It is possible that these letters were chosen to write because they required the least amount of control or because the similar features made them easier to identify and to remember; perhaps it is a combination of all these factors. Only one letter of all these straight-line letters continuously varied in its shape. The capital letter *E* was made with one vertical line and a range of from two to seven horizontal lines (Figure 4).

The other letters learned did not require the fine distinction that the letter *E* required. Even after thirteen months of writing these letters—from age 2 years 9 months to 3 years 10 months—the letter *F* consisted of two vertical lines often arbitrarily placed (Figure 5), while the letter *E* consisted of nine horizontal lines (Figure 6). The number of horizontal lines for the letter *E* may have been caused by the inability to discriminate letters or by an analysis that the more lines, the better one is able to discrminate the letter *E* from the letter *F*. A theory of "if three lines are okay, several should be superb" emerges.

Each time that Sarah became interested in a new letter, her parents wrote both the upper-and the lower-case forms until preference was shown for one form of the letter. The most frequent response to the wrong form of the letter was an exasperated, "Not that one, the other one." Some of her choices were easy to analyze, while the reason for other choices did not become evident until later. The lower case *i* is a distinctive letter which was always made with care, especially the dot which perched on the tip of the straight line (Figure 7). Sarah's sister wrote a capital *L* for the first letter of her name and the familiarity with this letter resulted in the use of the capital rather than small letter *l*.

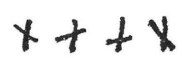


Figure 3. Variations of letter *T*.

Figure 4. The letter *E*.

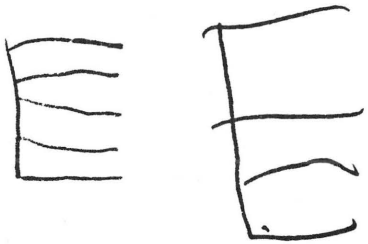


Figure 5. The letter *F*.

Figure 6. The letter *E*.

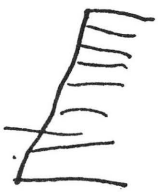
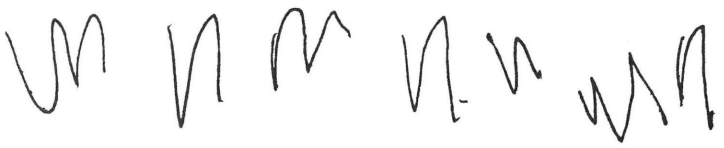


Figure 7. The letter *i*.

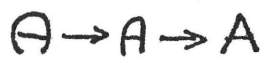
Figure 8. The letters *m* and *n*.



Letters with Lines and Loops. The next group of letters (*R, B, P, D, m,* and *n*) all contained a loop and a straight line. The first of these was learned at 3 years 2 months. The letters *m* and *n* were confused perhaps because of an inability to discern the finer features of *m* and *n*. As in the letters *E* and *F* where there was no fine distinction in the number of lines used, there was an inconsistent number of loops in the *m* and *n* (Figure 8). The letter *U* and the letter *V* were read as different letters, but were written as the same letter, *U*. In this instance the distinctive features being learned were a line and a loop; therefore, an existing letter was changed in form to emphasize the new distinctive feature. The letter *V* was altered and written with a loop so that it now resembled the letter *U*. At the same time, the letter *A*, which had resembled an open *O* bisected with a bar, began to change its form until it resembled an upside-down *U* (Figure 9). In both of these instances, the line and loops of letters were determined to be the important feature of the letter and other letters were altered in order to contain this distinctive form. The angles in the letter *A* were distorted in order to accommodate the newly discovered attribute of lines and loops.

Figure 9. The letter *A* changes form.

Figure 10. The progress of letter *A*.



Angle Letters. Angle letters did not appear until ten months after the writing process had begun and were the last type of letters to be learned. When Sarah became aware of letters with diagonal lines (at the age of 3 years 6 months), distinct changes in her writing became apparent. The letter *A* developed further to two diagonal lines and an angle (Figure 10). The *m* and *n* developed more angled and diagonal lines. The loops of the lower-case *m* were changed to the angles of the upper-case *M*. But, just as in the loop form, there was no distinction as to the number of slanted lines (Figure 11).

A form of regression also developed when slanted lines were introduced. The letter *U,* which Sarah had been writing for six months, became confused with the letter *V*. The curved loop of the *U* seemed to disappear and became an angled *V*. If Sarah wanted to spell the word "cute." the letter *u* resembled the upper-case *U,* but after the introduction of the letter *V* it would be written "cvte." She could, however, still tell the difference between the letters *U* and *V* when they were printed by someone else. Here again, she altered the distinctive feature of a letter to accommodate the angle feature that she has just discovered.

Figure 11. The progress of letters *m* and *n*.

Because Sarah's name begins with *S*, she was highly motivated to write this letter, yet she had distinct problems mastering it. She was unable to write a recognizable symbol after fourteen months of letter writing. She was consistently unable to perceive how to start the formation of the letter and consistently began with a straight rather than a curved line. The letter then resembled a *Z*, yet Sarah never confused this symbol with a *Z* when presented with her own letter days later (Figure 12). At four years old a curved beginning line was produced, but the start was still backwards and did not resemble the letter *S*. Sarah was always aware of the fact that she could not produce the letter *S* and when she signed her name, often requested that someone "start it" for her and then she would finish the rest. Needless to say, this situation often caused frustration for the child and one day, Sarah threw her pencil across the room and declared that she would never be able to write the letter *S*. She was then introduced to tracing over a letter written by someone else as well as sandpaper letters for finger tracing. After ten tracings, she was able to do the letter *S* on her own. She jumped about shouting with surprise, "I did it!" Within a few weeks, however, she was unable to write it as well as she had after the tracing activity. Eventually, she returned to the backward starts (Figure 12). A repeated tracing activity would cause a brief improvement for a few days, but then this improvement would disappear. Learning to write includes not only the motivation but also the developmental dexterity needed to produce the components of a letter. In this instance the ability to write did not keep pace with the motivation to write. Activities such as tracing written letters and tracing sandpaper letters did not speed up the process of coordination and perception that are needed to produce a symbol correctly for a long period of time.

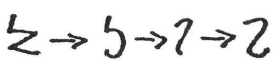


Figure 12. The progress of letter *S*.

Mental Processing and Distinctive Features

Sarah was always aware of the letters that she could write and of the letters that she could not write. The previous example of asking someone to start the *S* in her name is one instance. Sarah seemed to "picture" the letters in her mind when she heard a letter name. If she asked the spelling of a word like "Daddy," she would respond in one of two ways to a letter name. If the letter was well known to her, like *A*, she would immediately write it down. If, however, she was given the name of a letter with which she did not have immediate recall, like *Y*, she would stop, stare off in the distance and then say, "Oh, yeah," or "I don't know it." It seemed as if she was trying to produce a mental picture of the letter in order to produce this letter on paper. One of the main questions then is, how does she store the information about the letters in order to produce a specific letter upon demand?

Sarah learned the letters of the alphabet in a definite pattern: circles—*O, Q, A* (with curves); straight lines—*L, H, T, i, E, F*; lines and loops—*B, R, P, D, m, n*; and diagonal lines—*K, W, X, M, N, A, V*. This pattern of the grouping of characteristic features of the letters of the alphabet corresponds to the theory of distinctive features (Gibson and Levin, 1975). Distinctive features consist of the contrastive features of the alphabet—such as the straight, curved, and diagonal lines—that provide the pattern of uniqueness of one letter to another. These patterns enable the individual to distinguish one letter from another letter.

In order to determine whether or not a child can and/or does use distinctive features in order to distinguish the letters of the alphabet, Sarah's parents developed a series of activities to determine the influence and importance of distinctive features. In the first stages of writing, any letter that Sarah requested was written on a piece of paper and Sarah copied the letter that the adult had written. After a certain amount of familiarity with a letter, a requested letter was written in the air. For example, if the letter *H* was requested, a two-foot high letter *H* was drawn in the air. Each letter was written in the form of the upper- or the lowercase that Sarah had chosen for the letter; *m, n, i, L, H, T*. Sarah watched the letter as it was drawn in the air and then she wrote the letter on her paper. If the form written in the air did not

match the form that Sarah used, she was not able to write the letter. For example, if the capital *H* rather than the lower-case *h* (which Sarah used) was written in the air, Sarah was not able to recognize the letter. An unfamiliar form of the symbol did not help her in connecting the letter name with its graphic symbol.

As Sarah became more accustomed to this form of recognizing letters, the form written in the air became more vague. As she became more familiar with the letters, she needed less clues in order to recognize the letter. The letters were written in a general pattern that reflected the major distinctive feature of each letter. *P*, for example, would be written as a straight line and a loop. In addition, the letter could be written backwards or upside down since only the distinctive features were needed to provide recognition.

The next stage was to give Sarah the distinctive features orally. For example, "The letter *P* has a line and a loop on part of the line." "The letter *B* has a line with two circles on the line." A certain amount of familiarity with the letter was necessary in order to progress from one stage to another.

The goal of these stages and the last stage to be reached occurred when a letter name was all that was needed for the child to recall the graphic symbol. The letters which were produced upon mention of the letter name were those letters used most frequently. These letters were familiar enough to Sarah that she did not need assistance in order to write the letter name that she heard. Other letters, such as *J* and *G*, which were rarely written by Sarah never progressed beyond the first stage in which they had to be written on paper in order to be recognized. If these letters were written in the air, Sarah was unable to recognize them. The progress from one state to another was determined by the child's familiarity with the letter.

Conclusions

The findings of this study may help us to look further at how children begin to learn the alphabet. If one child's unstructured and internally motivated learning of the alphabet can be categorized into sets that contain specific features, then it may be true that other children abstract specific features of a letter and are aware of these contrastive features. A study of other children may

indicate that there are specific patterns of letter learning. In addition, general features may be consistent and all children may learn the letters in a specific order: circle letters, straight line, line and loop, diagonal. Perhaps the sequence of letters in each category will differ with one child learning the sequence *B, P, D* as Sarah did and another child learning the sequence *D, B, P.* Certainly, Sarah characterized letters as a set that included specific distinctive features and then differentiated individual letters. The acquisition of the alphabet is not a random process, but an organized and systematic act of learning.

The fact that Sarah never associated any sounds to the letters other than the letters in her name indicated that she did not see the relationship between writing individual letters and reading. Often, Sarah would "read" a note that she had written, but the note always was read with words which did not contain the letters that she had written on the paper. She never tried to sound out a letter nor did she give a sound correspondence to any letter. The only exceptions were *S* and *M,* the initials of her name. Just after the last category of distinctive features was learned, Sarah wrote a note to a friend (Figure 13). This note included representative letters from each set of distinctive features: circles, *O*; straight lines, *H*; line and loop, *B, P, D*; and angles, *V.* This note indicated that Sarah is aware that letters convey meaning, but more important, it is a culmination of her letter learning. Sarah did not concentrate on the fact that letters had sounds. This fact may be due to her total involvement in the writing act. She is looking only at the graphic details of the letters that she has learned. Perhaps attention to sounds and symbols at the same time is too much for this child. Learning sounds is a step that follows after this step is completed. The note, however, reflects that Sarah is aware of her final goal, to communicate.

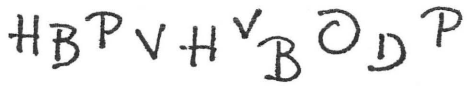


Figure 13. A note written by Sarah to a friend.

The only reinforcement that this child needed in order to learn all 26 letters was the satisfaction derived from the successful completion of the letter. Understanding of sound-symbol relationships was not necessary for Sarah to continue learning all the letters of the alphabet. She was aware of the fact that letters can be "read" and was able to "read" notes to her friends even though only five letters had been written on the page. In this instance, she dealt with the visual appearance of letters before approaching the linguistic meaning of letters.

This study has brought up another question concerning the complexity of the organizing system children use when learning a new skill. Is the discrimination of letters a totally different task than the writing of letters? Certainly in Sarah's case, the learning of a new letter caused regressions in the discrimination is intriguing and occurred specifically with *U* and *V*. One possible hypothesis is that a new set of distinctive features demands so much concentration that all letters are then examined in order to find this new distinctive feature. As a result, confusions occur. Another hypothesis is that a new writing movement may be required that is not natural and may be handled only if extreme attention is paid to the act. After the performance becomes more routine, the required attention decreases, and a more natural action takes over. Perhaps other studies with other children will be able to answer the question as to whether or not regressions are evidence of an interference effect.

Sarah's acquisition of letters can be divided into four stages:

Stage I: The letter learned must be seen, and direct copying is necessary in order to aid the child in successfully producing the letter.

Stage II: A more abstract symbol, such as writing the letter in the air, aids in graphic recall of the letter named. Familiarity with the letter enables the child to recognize the letter when provided with fewer clues. The clues necessary include the distinctive features of the letter: lines, loops, and circles.

Stage III: These same distinctive features may be given orally to the child. If told the letter *V* has two slanted lines, the child is able to produce the letter needed.

Stage IV: The name of the letter enables the writer to produce the graphic form of the letter.

In each of these stages, the use of distinctive features aids the child in learning to write the letters of the alphabet. Perhaps because the information concerning the graphics form of the letter is stored according to the distinctive forms of the letters. Familiarity with the letter is needed in order that the child progress from one stage to another. These stages may be investigated further in order to determine if the use of distinctive features aids the child in the learning process. A teacher may also develop games for each of these areas in order to provide visual, verbal, and motoric reinforcement for letter learning. Children may play guessing games with each other and give a verbal, motoric, or visual clue to aid in the guessing of a letter name.

How, then, does the information from this study provide us with information that will be of use in the teaching of the alphabet? If children do differentiate letters through the use of distinctive features, then we need to evaluate our present method of teaching letter recognition and other prereading skills. Presently we try to teach children letters, but in reality the child must develop his own strategy for distinguishing visual differences between letters. Early methods of instruction do not teach the differences between letters emphasizing distinctive features. If children use distinctive features, then we can simplify the task of the young child and provide him with the strategy that he will develop on his own.

A child is a learning theorist who looks for relationships in what he is learning in order to develop a system of categorization. If the teaching of the alphabet is built upon a system of categorization (i.e., distinctive features) a child then learns how to observe graphic similarities and differences. The emphasis on distinctive features enables the child to grasp the principle of categorization. He may then expand upon this system of categorizing relationships when he must search for relationships between sounds and letters in beginning reading. Further research will indicate if the teaching of distinctive features is a more effective means of teaching the letters of the alphabet because it coincides and supports the natural and spontaneous learning process.

REFERENCES

Catell, P. *The measurement of intelligence of infants and young children* (rev. ed.). New York: Psychological Corp., 1960.

Gibson, E., and Levin, H. *The psychology of reading*. Cambridge: MIT Press, 1975.

Gibson, E., Schapiro, F., and Yonas, A. Confusion matrices for graphic patterns obtained with a latency measure. In *Analysis of reading skill: A program of basic and applied research*. Final report, Project No. 5-1213, by Cornell University and the U.S. Office of Education, 1968.

Gibson, E., and Yonas, A. A developmental study of the effects of visual and auditory interference on a visual scanning task. *Psychonomic Science*, 1966, *5*, 163-164.

Legun, A. The development of prereading skills. Chap. 8 in E. Gibson and H. Levin (eds.), *The psychology of reading*. Cambridge: MIT Press, 1975.

Quirk, Frank. Language acquisition in children. *Elementary English*, 1974, 272-275.

Wheeler, M. E. The development of prereading skills. Chap 8 in E. Gibson and H. Levin (eds.), *The psychology of reading*. Cambridge: MIT Press, 1975.

Effects of Grapheme Substitutions in Connected Text Upon Reading Behaviors

Richard L. Allington and Michael Strange

It has been suggested that good readers make better use of semantic/syntactic information than do poor readers and that the former group uses relatively less graphic information compared to the latter group. To test these hypotheses, minor visual alterations were inserted in words in connected text. Fifteen good and 15 poor readers at the fourth grade level orally read two of these altered passages. Results indicated the good readers' rate of reading was significantly faster and that this group made fewer miscalls in overall word identification. However, there were no differences in ratio of textually acceptable miscalls, and poor readers' responses to altered words seemed less bound to graphic cues than those of the good readers. Neither comparison supported the above hypotheses.

In processing print at least two distinct types of information are available to the reader. The first of these we have chosen to call orthographic information in that it is carried by the printed symbols. In alphabetic languages this orthographic information can be used to recognize instantly a word based only upon visual characteristics (e.g., sight word recognition) or used in mediated word recognition to produce a phonemic approximation (e.g., sounding out). A second type of information in connected text can be considered non-orthographic in that it is based in the reader's tacit knowledge of language. The semantic and syntactic information in connected text limits the possible alternatives, or in other words, reduces the reader's uncertainty when confronted with a decision on word identification. That is, at any point in any given sentence only a limited number of words can be considered since the contextual information indicates words of a certain syntactic class and appropriate semantic content. The importance of this language based information has only recently been emphasized (Weber, 1968; Ryan and Semmel, 1969; Goodman, 1969; Smith, 1971).

Visible Language, XI, 3 (Summer 1977), 285-297.

Dr. Allington's address: Department of Reading, SUNY at Albany, Albany, NY 12222.

A variety of research studies have been conducted to examine the role of this information in the reading process. Biemiller (1970) and Clay (1972), for instance, have found developmental changes in the use of these types of information in beginning readers, and Barr (1975) has demonstrated the effects instruction has upon their utilization. However, controversy exists on the particular roles orthographic and contextual information play in the development of fluent reading.

Several problems plague this literature. First, as Weber (1968) points out, far too many studies in this area suffer from a naivete concerning "linguistic variables." That is, reading errors have often been considered only in terms of erroneous processing of orthographic information without consideration to the possible influences that might have been exerted by semantic-syntactic information. Second, a bulk of the studies have been descriptive in the sense that error patterns were not experimentally manipulative. Thus, while a number of researchers (K. Goodman and Burke, 1973; Y. Goodman, 1971) have examined oral reading performances and performed comprehensive analyses of reading errors, the materials typically did not allow the researchers to manipulate experimentally specific types of orthographic and contextual information.

The central issue in the controversy is the extent of utilization of orthographic and contextual information by good and poor readers. Smith (1971, 1975) and Goodman (1967, 1969) suggest that as reading fluency develops relatively less orthographic information is employed, and as dependence on graphic information decreases reliance upon contextual information increases. A correlate to this position is that good readers make better use of contextual information than do poor readers and that the latter group relies more heavily upon orthographic information.

On the other hand, Weber (1970), Clay (1972), and Biemiller (1970) report that use of contextual information does not typically differentiate between good and poor readers but rather that all readers make use of this information. These authors report that the errors of good readers were more likely to have a higher degree of graphic similarity to the printed word than the errors of the poor readers. However, in each of these studies the subjects were in their first years of reading instruction.

This position has recently received support from a study conducted by Kolers (1975) with older subjects. He presented good and poor readers at the seventh grade level with a sentence memory task and concluded good readers were more sensitive to orthographic features of text than were poor readers.

The primary research question in the present study, then, was whether good and poor readers differ in their use of orthographic and contextual information available in printed text. The experimental technique employed was originally reported by Pillsbury (1897) and recently employed by Rayner and Kaiser (1975) and Strange (1976). In each study letters within words were altered. However, only the two more recent studies presented altered words in connected text. Position of alteration within the word (initial, medial, final) as well as type of alteration (similar vs. changed configuration) were manipulated in both studies. The results of each demonstrated that altering configuration disrupted reading rate. However, Rayner and Kaiser were primarily interested in assessing the relative importance of different types of graphic information for word recognition in reading connected text. Therefore, subjects were made aware alterations existed and were told to try and ignore them and respond with "the words they thought should be there rather than the strange words" (p. 302). Furthermore, 18% of the characters were altered. Thus, the directions for the task and the quantity of alterations seemed to ensure a rather disruptive effect. Strange (1976) on the other hand employed silent reading rate as the metric, thus eliminating a measure of word identification accuracy as an experimental variable.

A primary assumption underlying the present study was that a similar strategy could be employed to assess good and poor reader's utilization of orthographic and contextual information. However, while a similar strategy was employed, a number of changes seemed necessary. First, all alterations maintained the configuration of the original word, since these had been shown to be the least disruptive. Second, the proportion of alterations was tremendously reduced. Third, the subjects were not alerted to the existence of alteration by the experimenter. These procedural changes then provided a design which allowed analyses of the

relative utilization of graphic and contextual information by the subjects. Further, the design also allowed direct comparisons between good and poor readers relative to their utilization of these information sources.

Method

Subjects. All fourth graders in an elementary school were screened on reading ability on the word identification subtest of the *Woodcock Reading Mastery Tests* approximately two weeks prior to the initial experimental sessions. This individual achievement test presents words in isolation for oral pronunciation. The correlation between this subtest and the total test score was .94 for fourth grade subjects, the highest correlation attained between any subtest and total test score.

Students with raw scores between 50 and 98 (2.0 to 3.6 grade equivalents) were classified as poor readers since achievement lagged at least one year behind grade placement and 15 subjects were randomly selected from this pool. Students with raw scores between 108 and 127 (grade equivalents 4.6 to 7.0) were classified as good readers and 15 subjects were again randomly selected. The mean raw score of the poor readers was 79.0 (2.9 grade equivalent), while the mean of the good readers was 112.2 (4.9 grade equivalent). Following the random selection, lists of subjects (identified by group) were presented to the classroom teachers responsible for each subject's reading instruction. Teachers were asked to draw a line through the names of any subjects which seemed to be placed inappropriately. No subject was identified as inappropriately grouped.

The mean chronological age for both the good and poor reader groups was 9.6 years. Sex distribution for the poor readers was 10:5 male to female while for the good readers the male to female ratio was 7:8.

Materials. The experimental passages were developed by graduate students following written directions. The materials were to be approximately 200 words in length and suitable for subjects with second grade reading ability. After the selection of a passage, grapheme substitutions (or alterations) were to be introduced

Figure 1. Illustration of experimental materials.

He leaned too fan over the edge of the well.	(far)
A green frog came hopping oven the snow.	(over)
Just them an owl came down.	(then)
Each stands on its back logs and leans on its tail.	(legs)
Bill jumped off the bus and ram to the river.	(ran)

following a series of constraints.[1] Briefly, approximately 5% modification (or single-letter changes in ten words) was to be introduced, but each change had to result in another real word (e.g., change *a* in *came* to *o* resulting in *come*, or change the *m* to *n* resulting in *cane*). The following alphabet characters were allowed to be interchanged: e, a, o, c; n, m, h, r; b, d, p; t, b, l. These letters were selected because of their high visual similarity according to several rankings (Dunn-Rankin, 1968; Niles, 1974). In one passage the developer ignored the constraints on a single occasion—substituting *what* for *that*—however, recent research (Allington, in press) has demonstrated that these words are often confused on discrimination tasks, thus this misalteration was not deleted. Figure 1 presents several example sentences drawn from the experimental materials. The altered word is underlined and the original words appear in parentheses to the right of the sentences; the altered words were *not* so marked in the experimental materials.

A total of four passages were constructed, all of which had been selected from different basal reader series. All passages were rated between 2.5 and 3.0 grade level difficulty prior to the grapheme substitutions (Spache, 1953).

Procedure. One passage was randomly selected as the standard experimental passage and administered to all subjects; one of the remaining three passages was randomly assigned to each subject in an attempt to ensure greater generalizability of results (Coleman and Miller, 1974). Thus, two passages were administered to each subject with one passage being common to all subjects.

Subjects were tested individually in a small room adjacent to the classrooms. Subjects were told they were to read two passages orally. Since a microphone was conspicuously present, the subjects were told that a recording was being made for the experimenter to listen to later. No subject expressed undue concern about the presence of the microphone. Operation of the recording equipment was controlled by a foot pedal switch, thus making the mechanical operations unobtrusive.

Prior to beginning reading, each subject was orally given a single sentence introduction to the story which contained a general prelude to the passage. Several of the less skilled readers needed a word or two pronounced early in the passage. In no case was a word which immediately preceded an altered word pronounced for a subject. Every attempt was made to limit the number of words pronounced for subjects.

Subjects who made mention of the character substitutions or to the fact that a word did not make sense, were simply told: "Read it the best you can."

Time required to read each passage was measured with a stopwatch during the experimental sessions. The sessions typically lasted less than 15 minutes.

Scoring. A written transcription of the oral reading performance was made from the taped recordings. Particular emphasis was given to responses to words containing the grapheme substitutions. In the case of multiple responses each was coded in the sequence of occurrence. The analyses that follow report the responses to the altered words in categories such as first response, second response, etc. Two responses were of particular interest; first responses which seemed to indicate whether the subject was employing orthographic or contextual information at that point, and final responses, which seemed to be indicative of the order imposed by the subject if an attempt was made to produce meaningfulness.

Results

Reading Time. Poor readers took considerably longer to read each passage than did good readers. An analysis of the time data for the first passage indicated that mean reading time for good readers,

121.2 seconds, was significantly different ($F(1, 28) = 9.43$, $p < .01$) than that of poor readers, 249.4 seconds. Similar differences existed on reading time for the second passage with the mean of good readers, 119.4 seconds, again significantly faster ($F(1, 28) = 10.81$, $p. < .01$) than that of poor readers, 243.3 seconds. Poor readers required approximately twice as long to read each passage as did good readers. These longer times seemed not so much attributable to long isolated pauses as to simple word by word reading which was much more predominant among poor readers.

Responses to non-target words. The two groups exhibited significant differences ($F(1, 28) = 12.87$, $p. > .01$) in general (non-target) word identification accuracy, the good reader group performing at a near perfect 99.5 percent accuracy level and poor readers at 95.6 percent accuracy (remember the experimental materials were selected to approximate reading level of the poor reader group). Poor readers then, exhibited less accurate word identification skills. However, in addition to frequency, misread words were evaluated for contextual appropriateness. These analyses indicated that while poor readers exhibited a greater percentage of misread non-target words, there was no significant difference between groups ($F(1, 28) = 1.23$, $p. < .27$) on the percentage of misread words which made sense in relation to preceding contextual constraints. Thus, while good readers were more accurate on non-target words, poor readers cannot be characterized as responding primarily to orthographic information; the data seem to point to a reliance by the poor readers on contextual information. This is congruent with the results of others (Weber, 1970) who have found no differences between good and poor readers' use of preceding contextual information when reading aloud.

Responses to target words. Table 1 summarizes the data for initial responses to target words containing an altered character. Responses for each passage read were quite similar to overall performance, indicating good readers responded with the altered word 40% of the time (120 responses of 300 total responses) while poor readers responded with the alteration only 27% of the time

TABLE I. Initial responses to target words.

		PASSAGE 1		PASSAGE 2		BOTH PASSAGES	
Read alteration		*Good*	*Poor*	*Good*	*Poor*	*Good*	*Poor*
first response	Σ	64	42	56	41	120	83
	$\bar{X}$	4.26	2.80	3.73	2.73	8.0	5.53

(83 of 300 responses). Both groups at times ignored the semantic and syntactic constraints (assuming of course this information was always strong enough to cue a prediction), responding instead to the graphic information.

Application of an analysis of variance found that while not reaching traditionally accepted levels of significance—$F\ (1,28) = 3.19$, $p.<.08$ and $F\ (1, 28) = 2.92$, $p.< .10$—the differences between groups on both passages suggested that good readers were more likely to be attending to graphic information than were poor readers. The poor readers read what could logically have been expected based upon the contextual information. However, it should be noted that subjects in both groups were generally responding not to the graphic information in the altered words but more often supplied the contextually appropriate original word (the word in the passage prior to the alteration of a character). In fact both groups responded with the original word 56% of the time, thus all the available graphic information was ignored more than half the time by both groups of subjects. Poor readers, however, were more likely to respond with some other contextually appropriate word than good readers, ignoring graphic information to an even greater extent.

A second comparison was labelled attempts at meaning; this was a simple tally of the number of responses to the target words. That is, subjects often responded more than once to the altered words. For instance, a subject might have first read the target as printed (ignoring contextual constraints and responding instead to graphic information), reread again as printed after a regression and finally regressing once more rejecting graphic information and responding with the original word which was, of course, contextually appropriate. This sequence would have provided a score

of two on the attempts at meaning; that is, two attempts beyond the first response were elicited. The good readers had a mean of 8.33 attempts at meaning across both passages while the corresponding value for poor readers was 7.13. An analysis of variance indicated the groups did not differ on this characteristic ($F(1, 28) = .57$, $p. < .45$).

Discussion

These results are highly congruent with those reported by Rayner and Kaiser (1975) who used somewhat older subjects (reported only as sixth grade, junior and senior high school students). Though a similar research paradigm was employed, they reported no direct statistical comparisons for the more and less skilled readers. The several modifications of procedures and materials in the present experiment, in addition to the statistical tests, seem to add to the generalizability of our data.

The results are also quite similar to those of Kolers (1975), who assessed recognition memory for sentences read by good and poor readers. He concluded that "good readers were far more sensitive to typographic characteristics of sentences than poor readers were" (p. 284). Similarly, the poor readers in that study exhibited significantly slower reading times than the good readers and the less skilled group also made more word identification errors. However, like the subjects in the present study the two groups did not differ in substitutions which fit the contextual framework. These similarities are even more striking when one considers that the subjects in these two separate studies differed substantially on age ($\bar{x} = 12.3$ vs. 9.6), grade placement (7th vs. 4th), and reading abilities ($\bar{x} = 9.5$ and 4.7 vs. 4.9 and 2.9). Furthermore, Kolers' transformed text, as an experimental manipulation, presented the letters in reversed orientation as contrasted with our technique of grapheme substitution. Both experimental paradigms required oral reading but Kolers (1975) employed sentences only, while we required subjects to read two separate stories.

As noted at the beginning of this paper, it has been suggested (Smith, 1971; 1975; Goodman, 1969) that as reading ability develops relatively less use is made of orthographic information with the good reader attending relatively more to contextual

information. Conversely, poor readers might then be depicted as making less effective use of contextual information while depending more heavily on orthographic cues. These data do not support such formulations of reading ability. In fact, the similarity of the data patterns to those of Kolers (1975) makes his statement that follows as apt a summary to our study as it was to his: "The results of the present tests are not consistent with such a hypothesis, as shown by the finding that it was the good reader rather than the poor one who was more sensitive to features of typography. . . ."

However, while not wholly consistent with this hypothesis, the fact that more than half of the initial responses (to the target words) of both groups in the present study were the words which had been present prior to alteration indicates that contextual information is a powerful source of information in word recognition. This supports Weber's (1970) contention that "children, no matter what their potential for acquiring literacy skills, bring to the task a fundamental linguistic ability" (p. 154). Reading is a language process but it is also a visual receptive process, thus necessitating attention to both sources of information: contextual and orthographic.

The data suggest complex interactions between the various cues within the reader and the cues (or information) available in printed connected text (Pearson and Studt, 1974). The relative availability, accessibility, and employment of information sources —such as experience, background, oral vocabulary, contextual richness, word frequency—seem to play as an important role as a subject's reading ability. In fact, these results when combined with a variety of other recent data (Allington and Fleming, 1976; Samuels, Begy and Chen, 1975; Kolers, 1975; Rayner and Kaiser, 1975; Guthrie, 1973) seem to suggest that the relative *efficiency* with which these sources are tapped *integratively* may be what distinguishes a "good" reader from a "poor" reader.

Limitations. Several limitations of this study must be noted. First, the experimental task was oral reading. While we feel that this task is an infinitely more acceptable paradigm than tachistoscopic recognition of words or letters, or recall of letters, figures, etc., for

those who would investigate reading ability, oral reading does not seem to be an identical process to silent reading (Mosenthal, 1976). Thus the generalizability must necessarily be viewed within a model of oral reading ability.

Similarly, understanding is the ultimate goal of all reading, but understanding (or comprehension) of the printed message was not required in this experimental setting.

Finally, the task demands may have influenced response patterns. That is, each subject in this study had to decide individually what "read it the best that you can" meant.

Further research. The grapheme substitution paradigm seems an effective method to manipulate experimentally orthographic characteristics of text within a framework quite similar to the task demands normally required when reading. That is, visual exposure time is not manipulated, nor is text orientation, nor typographic clarity. Thus, use of this strategy keeps the research in closer proximity to the natural task demands. Our reduction of character alterations from the level used in the Rayner and Kaiser study (1975) to one letter alteration per 10 words seems to be less disruptive, allowing subjects in some cases to read without noting any of the anomalies.

However, future research might attempt to further constrain alterations. Some of the most promising, in terms of information about visual receptive functioning in reading, would seem to be: (a) limit alterations to words of single syntactic class, (b) alter characters in contextually varied situations, (c) alter characters in relation to phrase boundaries, and (d) vary directions as well as alterations (e.g., alert subjects to anomalies but tell them to attempt to ignore them).

Summary. Using a research paradigm which was felt to more closely approximate the "natural" task demands of reading, this study demonstrated that good and poor readers seem not to differ in their use of contextual information when reading in connected text. Further, good readers seemed to attend more closely to graphic information than poor readers even though they processed text significantly faster. Finally, it was suggested that the data

point to a complex interaction of information sources and that a major difference between good and poor readers may be the efficiency with which the information sources are integratively employed.

1. Though we chose to use the terms grapheme (or character) alteration, it must also be noted that the constraint that text alteration had to result in another word, in effect, simultaneously created a semantic alteration. Thus, a subject who read the altered word as printed produced a response that agreed with the graphic cues but violated semantic constraints. This, of course, was the basis for the hypothesis we hoped to test.

REFERENCES

Allington, Richard L. The confusability of high frequency words, *Journal of Learning Disabilities*, 1977 (in press).

Allington, Richard L., and Fleming, James T. Misreading of high frequency words. Paper presented at New England Educational Research Organization, May 9, 1976, Provincetown, Mass.

Barr, Rebecca. Processes underlying the learning of printed words, *Elementary School Journal*, 1975, *75*, 258-268.

Biemiller, Andrew. The development and use of graphic and contextual information as children learn to read, *Reading Research Quarterly*, 1970, *6*, 75-96.

Clay, Marie. *Reading: the patterning of complex behaviour*, Auckland, NZ: Heinemann, 1972.

Coleman, Edmond, B., and Miller, Gerald, R. The simplest experimental design that permits multiple generalizations, *Journal of Reading Behavior*, 1974, *6*, 31-40.

Dunn-Rankin, P. The similarity of lower-case letters of the English alphabet, *Journal of Verbal Learning and Verbal Behavior*, 1968, *7*, 990-995.

Goodman, Kenneth. Reading: a psycholinguistic guessing game, *Journal of the Reading Specialist*, 1967, *4*, 126-135.

Goodman, Kenneth. Analysis of oral reading miscues: applied psycholinguistics, *Reading Research Quarterly*, 1969, *5*, 9-30.

Goodman, Kenneth, and Burke, Carolyn. *Theoretically based studies of patterns of miscues in oral reading performance*, U.S. Office of Education Final Report for Project 9-0375, 1973.

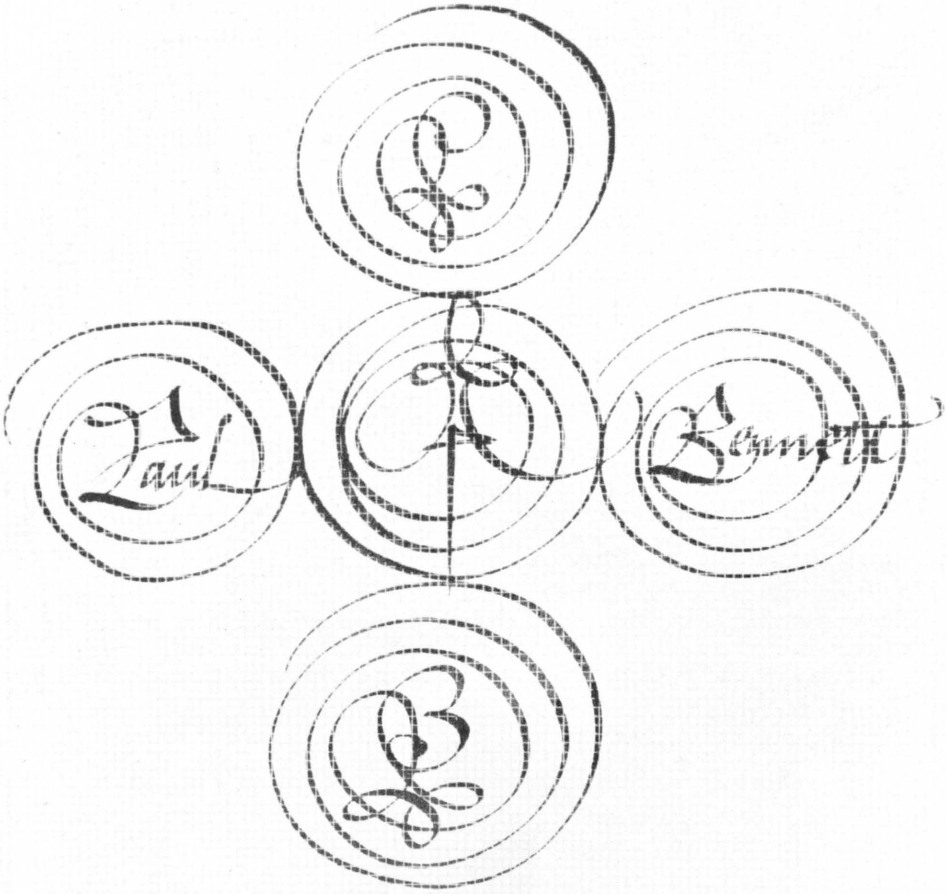
Goodman, Yetta. *Longitudinal study of children's oral reading behavior*. U.S. Office of Education Final Report for Project 9-E-062, 1971.

Guthrie, John T. Models of reading ability and disability, *Journal of Educational Psychology*, 1973, *65*.

Kolers, Paul. Pattern-analyzing disability in poor readers, *Developmental Psychology*, 1975, *11*, 282-290.

Mosenthal, Peter. Psycholinguistic properties of aural and visual comprehension as determined by children's abilities to comprehend syllogisms, *Reading Research Quarterly*, 1976, *12*, 55-92.
Niles, Jerome. *The use of featural and letter dependency information in word recognition by elementary school children.* Unpublished doctoral dissertation, State University of New York at Albany, 1974.
Pearson, P. David, and Studt, Alice. Effects of word frequency and contextual richness on children's word identification abilities, *Journal of Educational Psychology*, 1975, *67*, 89-95.
Pillsbury, W. B. The reading of words: a study of apperception, *American Journal of Psychology*, 1897, *8*, 315-393.
Rayner, Keith, and Kaiser, Jacqueline. Reading mutilated text, *Journal of Educational Psychology*, 1975, *67*, 301-306.
Ryan, Ellen Bouchard, and Semmel, Melvyn. Reading as a constructive language process, *Reading Research Quarterly*, 1969, *5*, 59-83.
Samuels, S. Jay; Begy, Gerald; Chen, Chaur. Comparison of word recognition speed and strategies of less skilled and more highly skilled readers, *Reading Research Quarterly*, 1975, *11*, 72-86.
Smith, Frank. *Understanding Reading*, New York: Holt, Rinehart, Winston, 1971.
Smith, Frank. The role of prediction in reading, *Elementary English*, 1975, *52*, 305-311.
Spache, George. A new readability formula for primary-grade reading materials, *Elementary School Journal*, 1953, *53*, 410-413.
Strange, Michael. *The effect of orthographic anomalies upon good readers behavior.* Unpublished doctoral dissertation, University of Minnesota, 1976.
Weber, Rose-Marie. The study of oral reading errors: a survey of the literature, *Reading Research Quarterly*, 1968, *4*, 96-119.
Weber, Rose-Marie. A linguistic analysis of first-grade reading errors, *Reading Research Quarterly*, 1970, *5*, 427-451.
Woodcock Reading Mastery Tests, Circle Pines, Minn.: American Guidance Service, 1974.

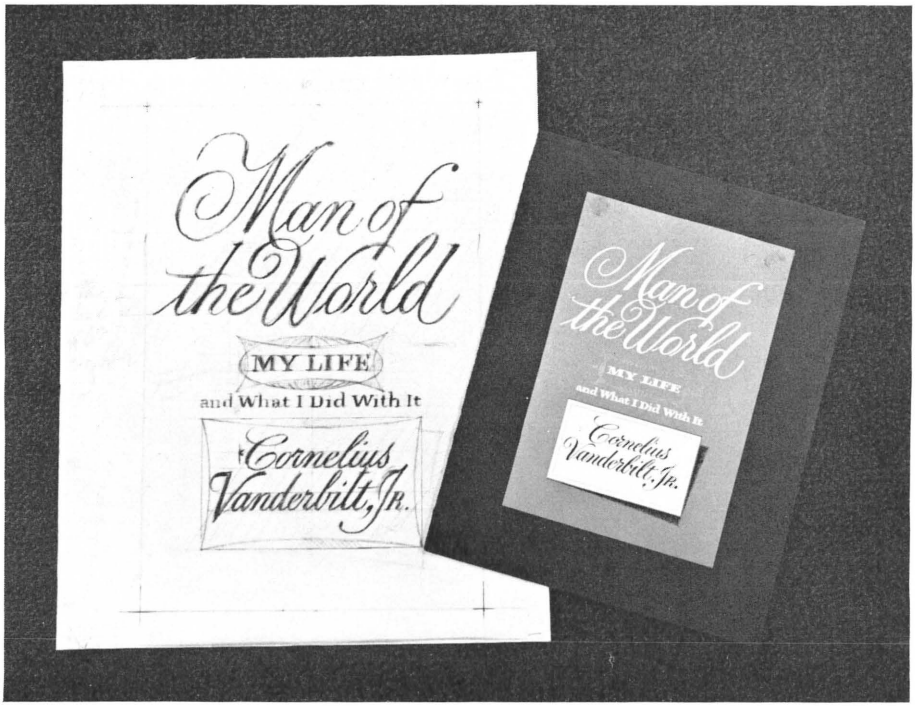
This research was supported in part by a grant from the Research Foundation of the State University of New York. The cooperation of the administration, faculty, and students of the Woestina School, Rotterdam Junction, N.Y., is greatly appreciated.



Decorative page from *Festschrift of Originals* given to and in honor of Paul A. Bennett by The Typophiles, New York City. Original strike-in on gray-line 1/2 pica graph paper.

Calligraphy of Arnold Bank

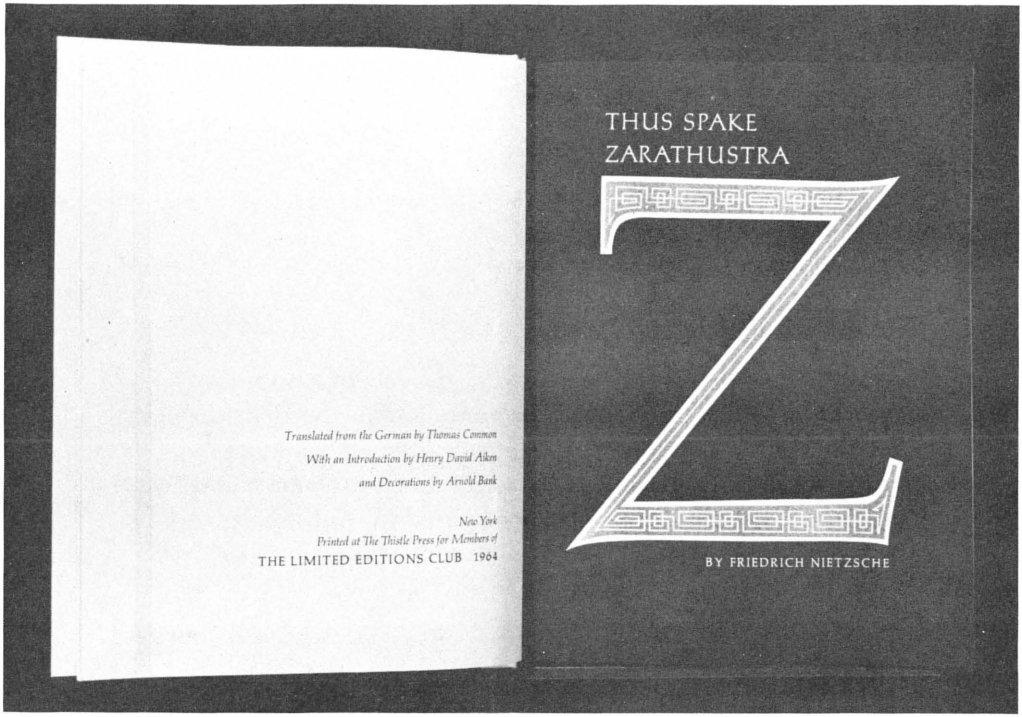
The following selection of work is from the recent exhibition—Arnold Bank: Artist, Scholar, Teacher—held at the Hunt Library, Carnegie-Mellon University, Pittsburgh. Arnold Bank is a calligrapher and has been a professor of design at Carnegie-Mellon since 1962. The exhibition was coordinated by Ann Skoog, librarian of the Fine and Rare Book Room of the Hunt Library.



Book jacket design, 1959. Enlarged pencil layout sketch and finished printed dust jacket.

Visible Language, XI, 3 (Summer 1977), 298-306.

Arnold Bank's address: 3 Roselawn Terrace, Pittsburgh, PA 15213.



Titlepage for the Limited Editions Club, 1964.

Preliminary and final masthead design, 1949. First printing, October 24, 1949. This was the first change in masthead since 1876.

PRINCETONIAN

THE DAILY

PRINCETON, N. J., WEDNESDAY, MAY 25, 1949

Founded 1876

The Daily PRINCETONIAN

Vol. LXXIII, No. 124 PRINCETON, N. J., MONDAY, OCTOBER 24, 1949 5 Cents

Big Red Edges Spirited Tigers In 14-12 Thriller

Band Performances, Antics At Halftime Provide Amusement

By GRENVILLE GARSIDE '51

ITHACA, N.Y.—A colorful crowd of [illegible] Cornell grads and students, [illegible] and native Ithacans filled picturesque Schoellkopf Field to near capacity Saturday for the 42nd clash between the Big Red and the Orange and Black.

Threatening skies, which produced a light rain an hour before the 2 o'clock kickoff, cleared providentially as game time approached.

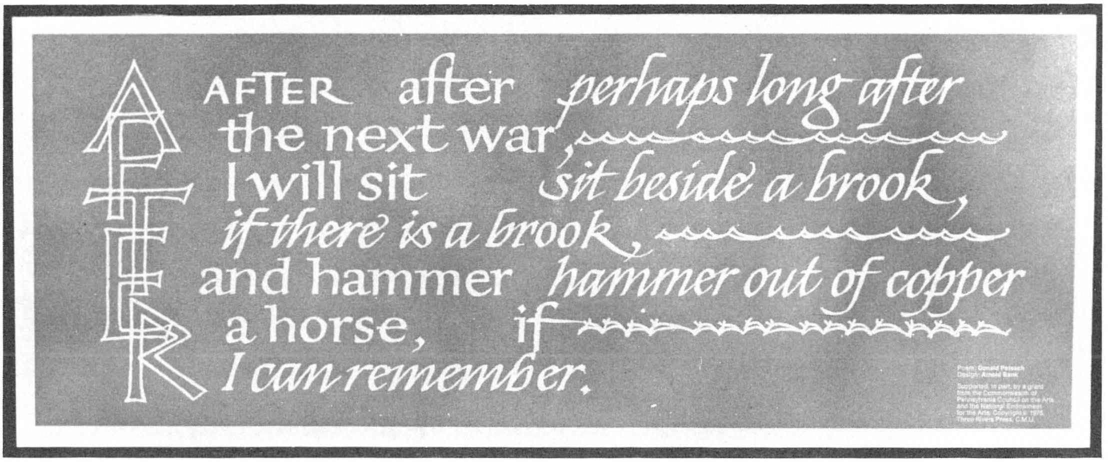
Cornell Band Expert

The snappy, 100-piece Cornell band provided the spectators with expert

Mighty Tiger Drives Match Rivals' Power In Desperate Fight

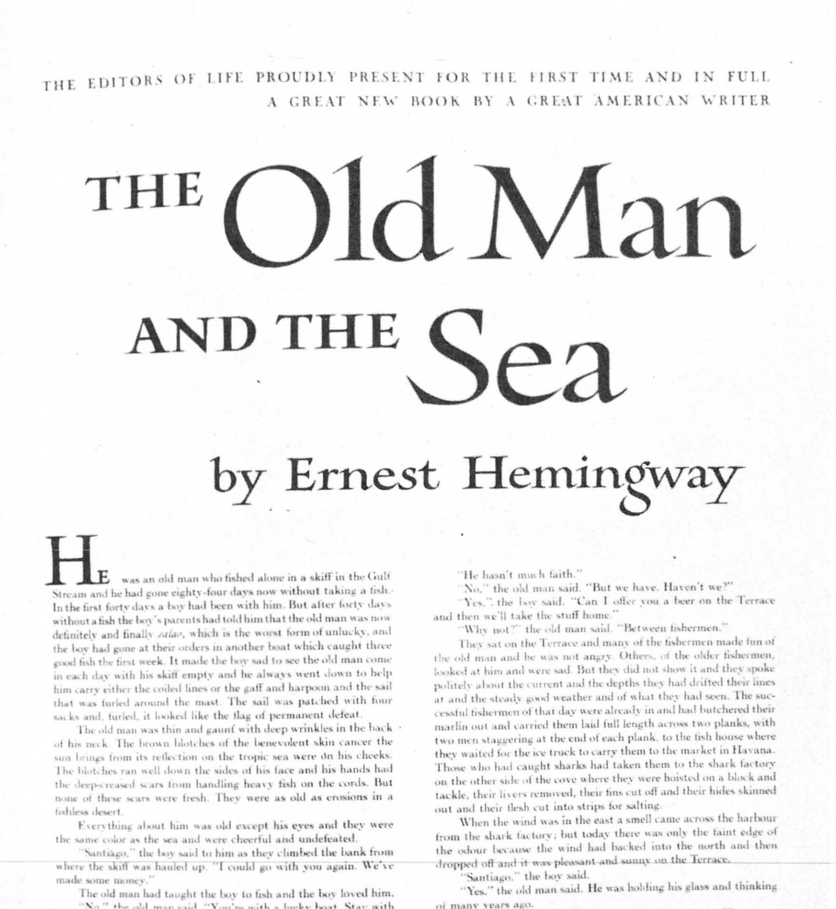
By ROBERT M. LOVELL Jr. '52

ITHACA, New York, — Flashing a high-geared running attack to the outside, Cornell's undefeated legions managed to defeat the underdog Princeton Tigers by the slim margin of two extra points, 14-12. This bare account of the facts, however, gives no indication of the fight shown by Charlie Caldwell's spirited eleven, who played the rugged Big Red to a standstill after being injured by the most fantastic series of breaks they have run up against this year.



Design and calligraphy for the Bus Poetry Series, Pittsburgh PAT System, 1975. Car card, 11 x 28 inches, white on copper orange. Poem "After" by Donald Petesch.

Headings and initial letters. *Life*, 1952.



THE EDITORS OF LIFE PROUDLY PRESENT FOR THE FIRST TIME AND IN FULL
A GREAT NEW BOOK BY A GREAT AMERICAN WRITER

THE Old Man AND THE Sea

by Ernest Hemingway

HE was an old man who fished alone in a skiff in the Gulf Stream and he had gone eighty-four days now without taking a fish. In the first forty days a boy had been with him. But after forty days without a fish the boy's parents had told him that the old man was now definitely and finally *salao*, which is the worst form of unlucky, and the boy had gone at their orders in another boat which caught three good fish the first week. It made the boy sad to see the old man come in each day with his skiff empty and he always went down to help him carry either the coiled lines or the gaff and harpoon and the sail that was furled around the mast. The sail was patched with four sacks and, furled, it looked like the flag of permanent defeat.

The old man was thin and gaunt with deep wrinkles in the back of his neck. The brown blotches of the benevolent skin cancer the sun brings from its reflection on the tropic sea were on his cheeks. The blotches ran well down the sides of his face and his hands had the deep-creased scars from handling heavy fish on the cords. But none of these scars were fresh. They were as old as erosions in a fishless desert.

Everything about him was old except his eyes and they were the same color as the sea and were cheerful and undefeated.

"Santiago," the boy said to him as they climbed the bank from where the skiff was hauled up. "I could go with you again. We've made some money."

The old man had taught the boy to fish and the boy loved him.

"He hasn't much faith."

"No," the old man said. "But we have. Haven't we?"

"Yes," the boy said. "Can I offer you a beer on the Terrace and then we'll take the stuff home."

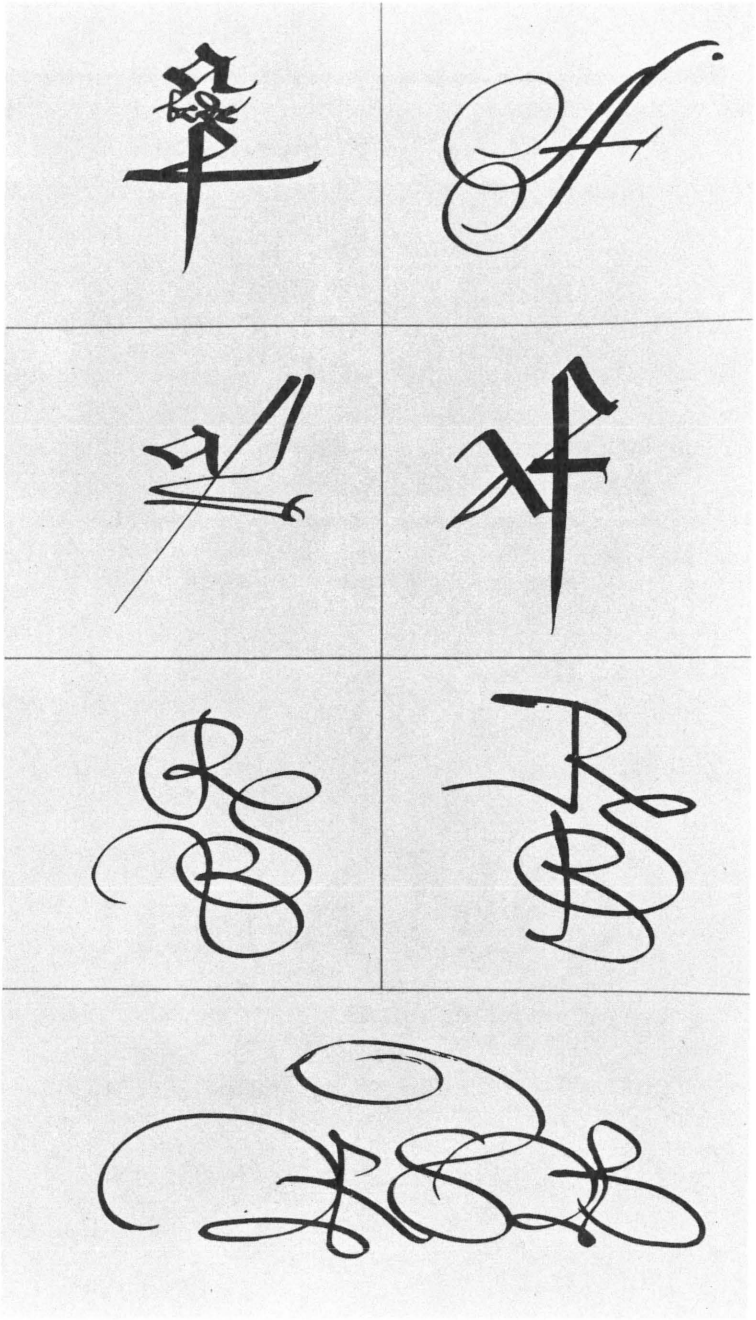
"Why not?" the old man said. "Between fishermen."

They sat on the Terrace and many of the fishermen made fun of the old man and he was not angry. Others, of the older fishermen, looked at him and were sad. But they did not show it and they spoke politely about the current and the depths they had drifted their lines at and the steady good weather and of what they had seen. The successful fishermen of that day were already in and had butchered their marlin out and carried them laid full length across two planks, with two men staggering at the end of each plank, to the fish house where they waited for the ice truck to carry them to the market in Havana. Those who had caught sharks had taken them to the shark factory on the other side of the cove where they were hoisted on a block and tackle, their livers removed, their fins cut off and their hides skinned out and their flesh cut into strips for salting.

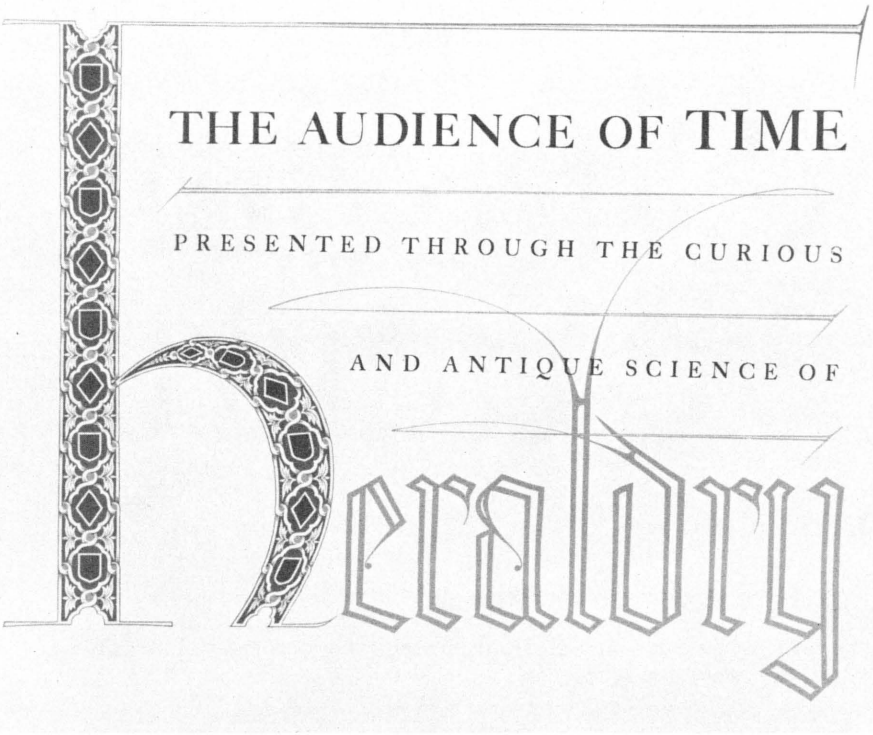
When the wind was in the east a smell came across the harbour from the shark factory; but today there was only the faint edge of the odour because the wind had backed into the north and then dropped off and it was pleasant and sunny on the Terrace.

"Santiago," the boy said.

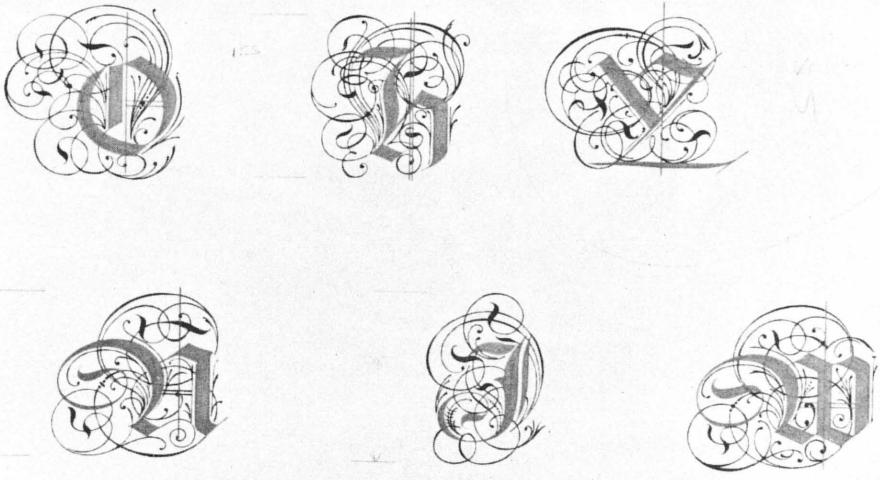
"Yes," the old man said. He was holding his glass and thinking of many years ago.



Studies for marks and monograms. Top four for Alfred Fairbank; three for Rose S. Bank.

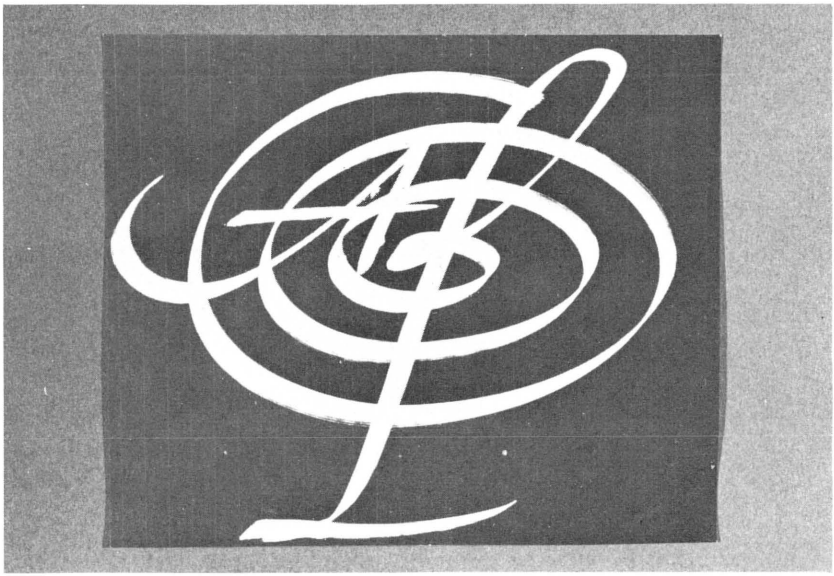


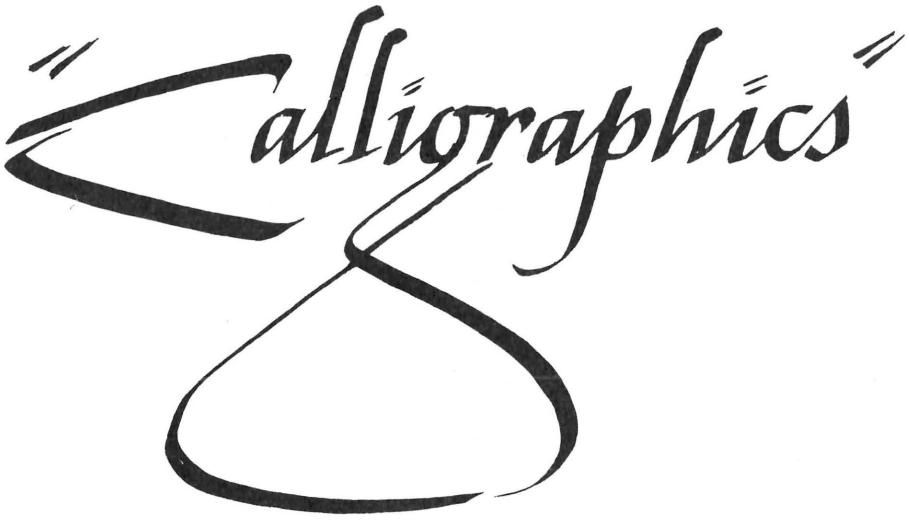
Book titlepage (above) and drawings for colored initials. Time Advertising Promotion Department, 1947.



Sketch for periodical masthead. Broad pen and ink, 11 x 8-1/2 inches.

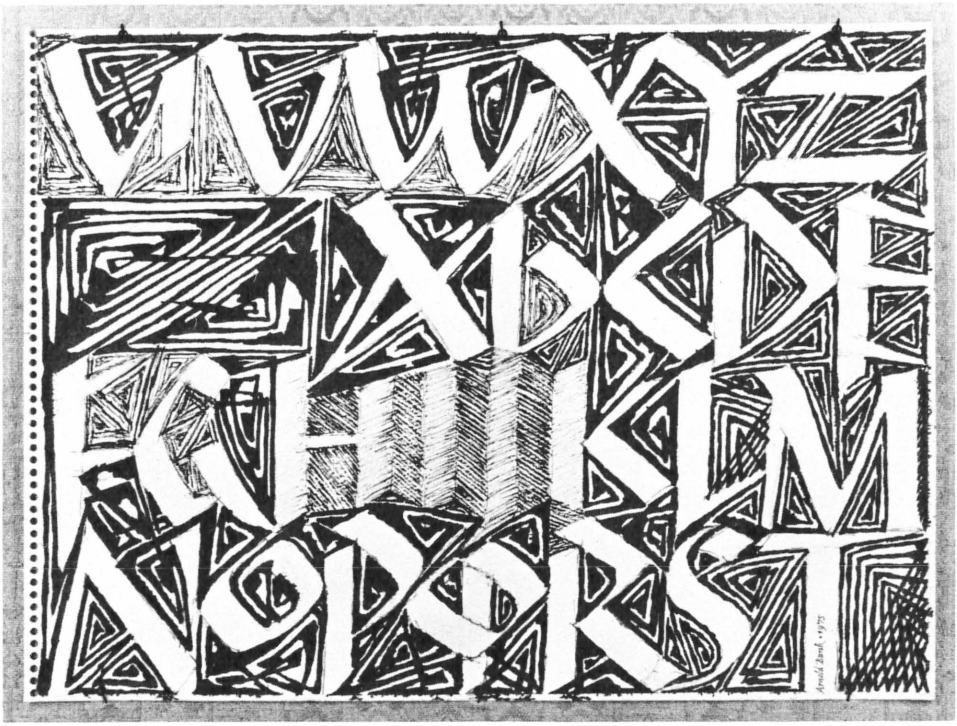
Study for a mark for Alfred Fairbank. Strike-in with broad marker on foolscap, black and white, 9 x 8-1/2 inches.



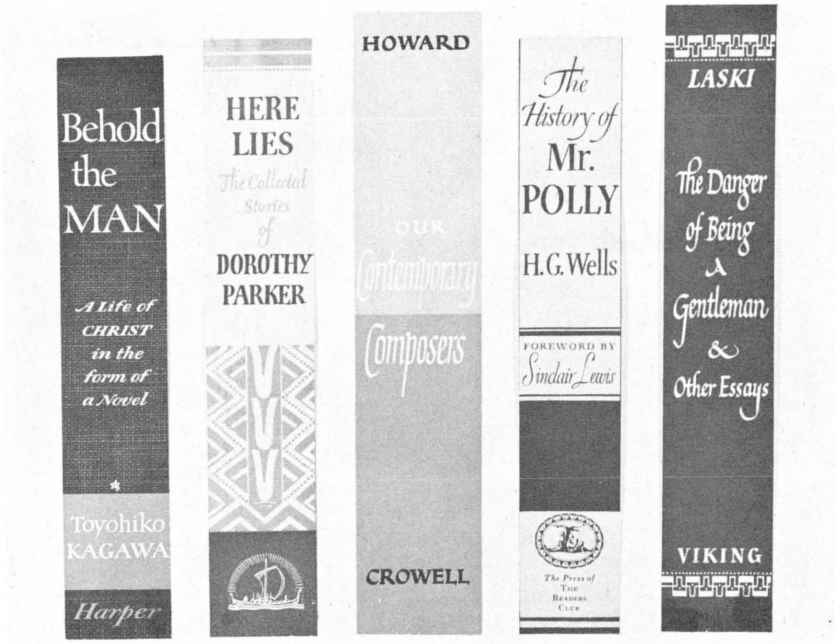


Titling for exhibit. Hunt Library, Carnegie-Mellon University. 22-1/2 x 13 inches.

Alphabet, 1975. Broad pens and ink on watercolor paper, 15 x 11 inches.



Spine designs for book jackets.



The Reinvention of Reading

Ana Hatherly

The concrete poetry movement started simultaneously in Europe and in Brazil. Although they agreed on fundamentals, the Brazilians/Portuguese—with a background in traditional poetry—were concerned with spatialization of the text and its relation to music, while the Europeans—with a background in graphics and architecture—were more influenced by the plastic arts. For both the concrete poem becomes a relational field of functions yielding tensions of word-things in space-time, and extending the boundaries of reading beyond the traditional literary limits. The author illustrates and discusses her own "image-texts"—studies in the illegibility or ambiguity of writing and the disintegration of language.

Plural Reading of the Image

Although the modern concrete poetry movement started simultaneously in Europe and Brazil, with Eugene Gomringer and the NOIGANDRES Group respectively, these two sources of the movement did not agree on all points. On fundamentals they did agree—acknowledging the stimulation of Stéphane Mallarmé's "Un Coup de Dés" together with Ernest Fenellosa's and Ezra Pound's theories about the Chinese ideogram and also information theory, mass-communication techniques, and other mathematical and scientific theories—but elsewhere they differed, and these differences later became conspicuous in the work of their followers.

The Brazilian group, which in Portugal influenced especially the work of E. M. de Melo e Castro, tended to yield to the lyricism of the ideogram and to fidelity to Mallarmé's principles, particularly to his notion of the spatialization of the text and its

This article has been adapted and translated from the Portuguese (with kind permission) by W. C. Watt from Ana Hatherly's *A Reinvenção da Leitura (The Reinvention of Reading)*, Lisbon: Futura, 1975.

Visible Language, XI, 3 (Summer 1977), 307-320.
Visible Language, Box 1972 CMA, Cleveland, Ohio USA 44106.
Author's address: Rua do Viveiro, Edif. S. Joao, Frente, Monte Estoril, Portugal.

relation to music, with the consequence that the text almost becomes a musical score. The Europeans, in contrast, were more influenced by the plastic arts, mainly via the Bauhaus (though it should also be borne in mind that the impact of Cubist and Post-Cubist avant-garde art has been pervasive in all fields of creativity). Another telling difference is that while the Brazilian group, and later the Portuguese one, were made up of poets who had written poetry in the traditional way before taking up *poésie concrète,* the European followers of the movement—generally speaking the German and Anglo-Saxon world—were in most cases mainly graphic designers, architects, or painters.

This may explain why the Brazilian group, starting from a sort of scientific lyricism, headed towards social criticism and even satire of capitalist society; while for the European concrete poets the importance of the formally visual aspect gradually imposed itself to the point of almost completely eliminating the literary aspect, with important ramifications in the phonetic areas of language, thus renewing the avant-garde tradition (if "avant-garde" and "tradition" aren't incompatible) where language, sound, and image are completely identified, consequently overthrowing all barriers between their arts.

It must be noted that the European concrete poets, by thus claiming that the concrete poem could and should be immediately grasped, were condemning their products to an immediate obsolescence, placing them unexpectedly at the level of sacrificial immolation: on the one hand by totally assuming the value of the instant (a Zen Buddhist influence) and on the other by the metaphorical assumption of the consumer's society in which men and things indifferently consumed sink into a desperate inutility, an awareness of which makes one renounce beforehand all values proposed by it. This would then be one more way of rejecting the *status quo* and traditional values as competing for importance with the concept of immortality of (or through) art: a reflection of the basic *dur désire de durer* that has haunted all artists and all men.

Still, this radicalism has had a price, for despite the repeated wish for immediate communication, *poésie concrète* is often considered truly incomprehensible: that is, *illegible.*

Perhaps for this very reason, however, the concrete poetry

movements in Brazil and Portugal—fighting against traditions of laziness, lack of culture, underdevelopment, and everything that represented the state of decrepitude of those societies—claimed that *poésie concrète* was a sort of symbol of impeachment, a way of rebelling against traditional values and above all against an outdated unrealistic concept of culture. Questioning those values, threatening their meaning and all that was associated with them, they aimed at society and its institutions. In South America as in Portugal the questions the movement asked were to remain a long time unanswered. Within the "intellectual milieu" even the best members of the movement were often objects of bitter criticism or mockery and derision. However, this treatment seems only to have toughened them up, for both Portuguese and Brazilian concrete poets survived and in some cases became notable figures on the literary scene, including literary criticism and literary theory.

Meanwhile, the "concrete revolution" has taken place all over the world; to those who have experienced it, the event has been decisive. A definition from the English avant-garde magazine *Link* (1964):

> If you see it for the first time do not try to read it as poetry; better, do not even try to read it at all, just look at it. Examine the spaces between the letters, the typographical variations, the spaces around the words. Look at it as an image. Then see what ideas come out of that image associated with the letters and the words in it.

This position became quite easy to understand with familiarity, illustrating clearly the necessity of an initiation, an interpretive way of reading, both rigorous and specific (in other words, creative). Another definition from the NOIGANDRES Group's *Teoria da Poesia Concreta* (São Paulo: Edicões Invenção [1965]):

> Concrete poetry assumes a total responsibility before language, accepting the presupposition of the historical idiom as an indispensable nucleus of communication, but refuses to absorb the words as mere indifferent vehicles without life, without personality, without history—forbidden tombs in which convention insists on burying the idea.

With the conversion of every aspect of poetry into poetic substance, including the space of the composition, through the simultaneous functioning of its visual, auditory, and linguistic structures, the concrete poem becomes *verbivocovisual* in its interaction. Refusing the older formal syllogistic-discursive foundation, the concrete poem becomes a relational field of functions, yielding *tension of word-things in space-time.*

The concrete poet sees the word in itself as a magnetic field of possibilities, and he rejects the perspectivist syntactic organization (of conventional poetry) in which the words "sit like corpses at a banquet." For the concrete poem its visible form is also its structure, in Gomringer's words (*Worte Sind Schatten,* Berlin: Rowohlt, 1969), and when he defines the poem as a constellation following Mallarmé's "prismatic division of the Idea," he is really proposing a new "plural reading of the image." The greater or lesser degree of intelligibility—that is, its informative content—is what is going to define the poem's degree of communication and the need for an "adequate" reading.

In its initial phase in the 1950's tne concrete poem was still exclusively made up of words, or rather "word-objects." It was still literary. Only later did concrete poetry free itself from this constraint, attaining and assimilating wider and more ambiguous areas, starting from the elements it already used: the graphic image, the phonetic values of language. When it is possible to assume the sound of speech or the image of the composition of writing liberated from semantics, considered not just as purely aesthetic matter but also as autonomously informative, then wider perspectives open themselves up for *poésie concrète,* while at the same time the link with earlier cultural times is thus renewed without affecting the reality of the present.

One could say that concrete poetry in its original form was soon caught in a predictable cycle—that of its speedy and necessary exhaustion—but also that through the same process of annihilation it found itself able at the same time to give birth to new and different ways of investigation. And this is fundamental: *extending the boundaries of reading beyond the traditional literary limits.*

Legibility/Illegibility

For the further evolution of reading, the concrete poetry movement is fundamental inasmuch as it contributes to a new approach to the text, which ceases to be merely a lyrical-literary expression in order to become a new trajectory from the word to the sign. If the word becomes a sign again, a pure sign, then other signs can become newly legible—can become literal and even literary—thus justifying the connection between *ikon* and *logos*.

For myself, an important experience of illegibility was the study of archaic writing which I pursued during the 1960's when I was trying to discover experimentally the mechanisms of handwriting. The results of these attempts appeared in my *Mapas da Imaginação e da Memoria* (Lisbon: Moraes Editores, 1973). At that time, when the study of modern linguistics and oriental philosophy dominated my work, I had the opportunity of thinking at length about the problems of the communicability of the text, its legibility and illegibility, for I was constantly confronting texts which in the literal sense were illegible to me—for instance, archaic Chinese—but which I was nevertheless able to *read*.

Starting from that experience of the fragility of content-communication and the possibility of there being various readings of forms, I developed (in my own way) the practice of the image-text, which simultaneously transcends and embodies the problem of the text's content at the level of meaning. I was trying to enlarge this to what could be designated *a field of integral meaning*, characterized by a deliberate non-specification of content, the only limitation being the graphic form itself. In this way I was trying to extend beyond mere literality the area of what can be "read"; at the same time I was also trying to broaden the domain of research on forms and to expand the creative area of writing itself, both metaphorically and in fact. While inviting attention to handwriting as drawing, as painting of signs (making it illegible in order to jolt people out of the habit of content-reading), I was trying to restore writing (and handwriting) to the semiotic, iconic, autonomously semantic power that it had at its origin.

Investigating the problem of the legibility/illegibility of the text is natural for the writer or poet who is constantly faced with the twin facts of writing as a codification and reading as a decipher-

ment. It is natural for him to ponder the degree of legibility or illegibility of a text and the influence of time over the text's legibility; natural to meditate upon the wear and tear of one's language (languages become "worn out"), a sort of exhaustion that is distinct from the debilitation of the successive ideologies that utilize (but also recreate) it. In short, to study legibility is to attempt to estimate to what extent it derives from the limitations imposed by a code which, in the course of establishing the relationship between transmitter and receiver, regulates its own legibility: i.e., the degree of possible communicability of messages and their decipherments, which is the real problem of reading.

E. H. Gombrich, for instance, has written that in art communication consists in "making concessions" to the receiver's knowledge. In fact, even within a specific language area it would still be necessary to decide what is and what is not literally legible, just as in art. And above all: legible to whom? when? how? why?

We know that whatever the "language"—of words, of gestures, of objects—it is not the case that everything in it is invariably legible, or sayable, or decipherable. And it is precisely in that area of obscurity determined by the limitations of expression and interpretation that the essential illegibility of the art object is inscribed—what part of it remains unsaid, silent, unsayable, which is to way what part of it will allow for innumerable creative readings. The word "unsayable," however, is not used here to refer to a mystical notion, *"l'innommable."* It refers on the contrary to a practical test, that of the impossibility of the "total saying," as put forward in Wittgenstein's famous Proposition 7 *(Tractatus Logico-Philosophicus)*.

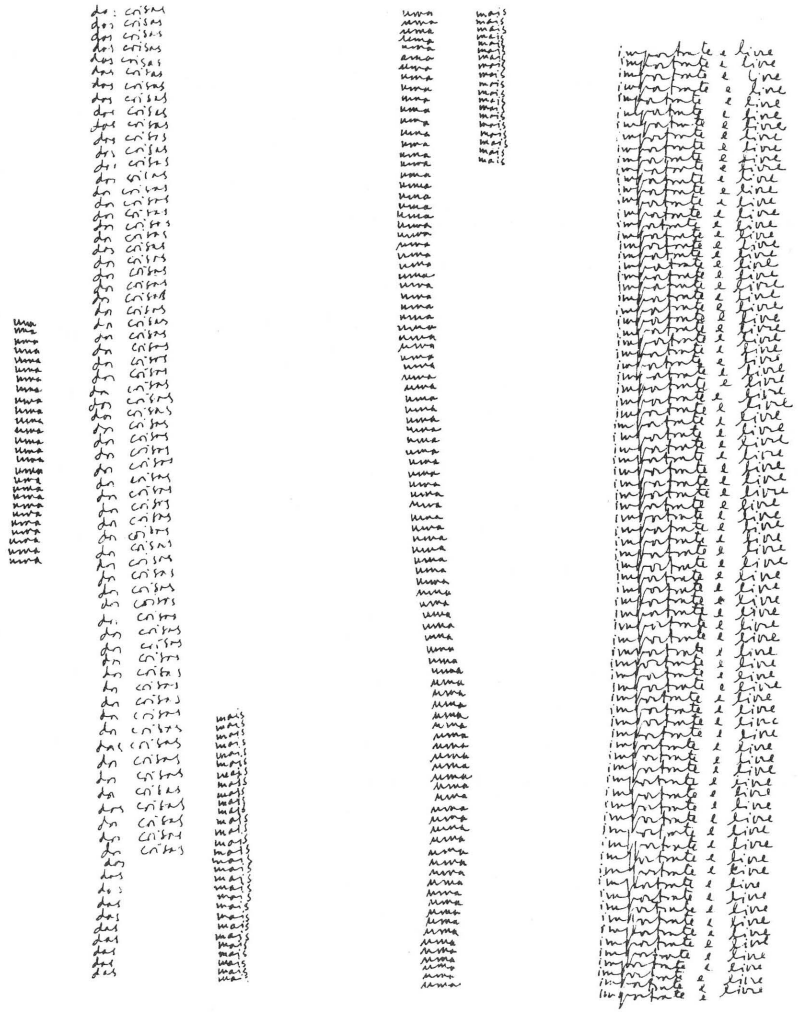
Writing is mute. The writer is obliged to dwell upon the silence of words. But the same problem of silence can also be found in other forms of artistic expression, as in all forms of expression *tout court*. "That which can be shown cannot be said," declares Wittgenstein in Proposition 4.1212. And in that assertion one could well see an eloquent justification of all forms of visual communication.

The visual poem—visual-text, image-text—is literally and literarily silent. The non-literal legibility it can attain was

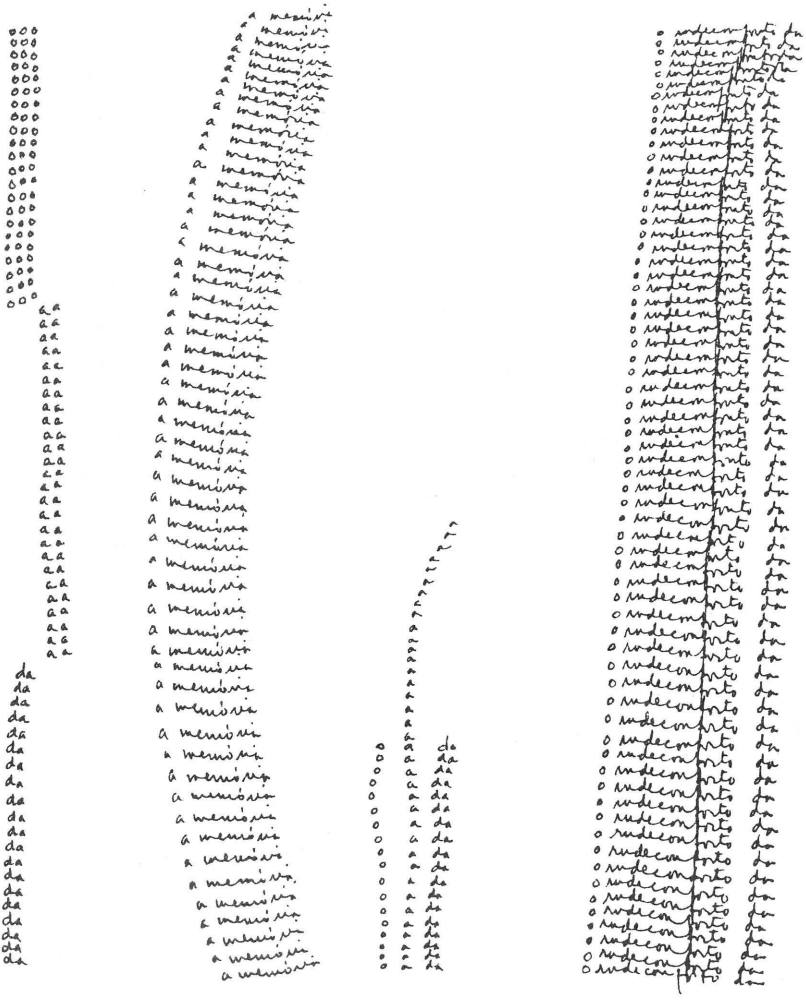
precisely what made it possible for the visual poem to be diffused all over the world; in the confusion and the incommunicability of languages and, concomitantly, that of civilizations and cultures (Joyce once said that the Tower of Babel is the Tower of Sleep), communication through the non-verbal image becomes a sort of *lingua franca,* a universal language. And renouncing the implications of literary tradition divests the society which gave rise to them of its robes—its ideologies and the techniques—making an *auto-da-fé* of preconceived ideas as to how writing, the writer, the text should be.

When widely adopted, a new technique defines its own viability and its own necessity. If it becomes universal in a given period this is because it corresponds to a contemporary truth, at the same time creating it. That is how, as soon as new techniques impose themselves on a society, a corresponding mutation in sensibility is brought about, deriving from their use. That mutation is epitomized in the texts of concrete poetry, which demand a true revolution in the reading, interpreting, and conceiving of poetic (more generally, artistic) expression.

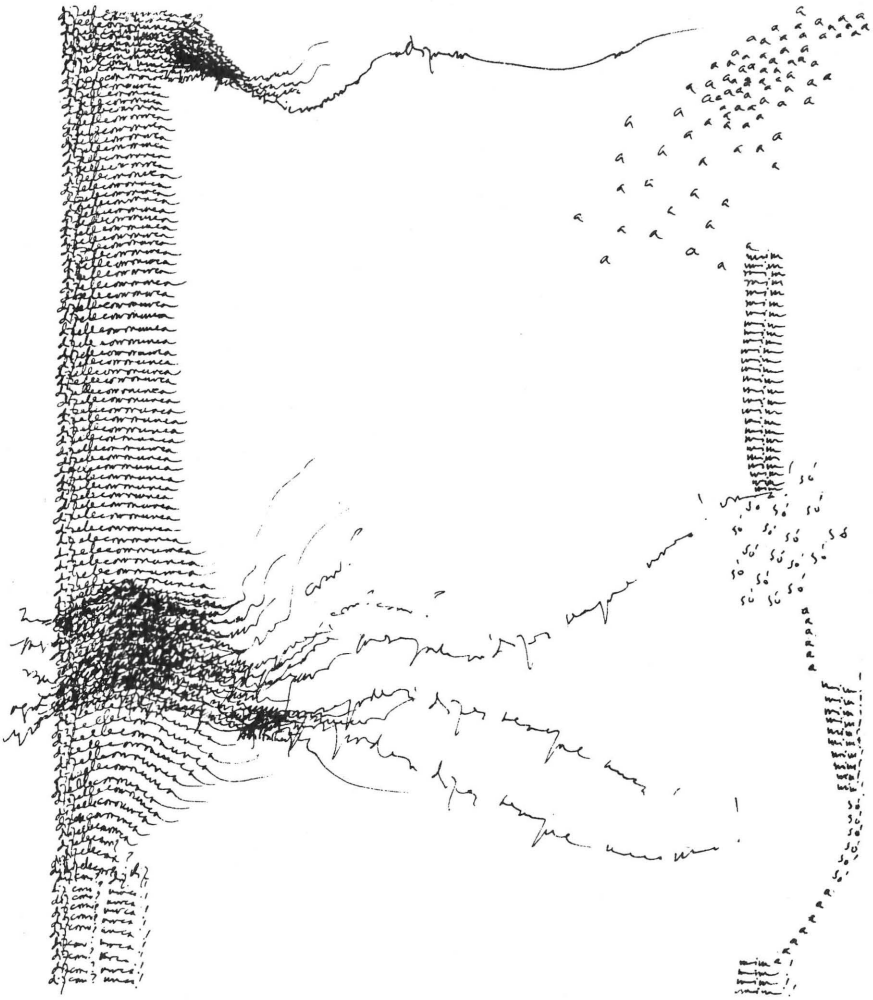
Inserted into the context of traditional logic, the word, like logic itself, has become an ambiguous reality. The ambiguity of writing and its contradiction in the plurality of meaning, combined with natural illegibility of writing taken in and of itself, now make of reading a form of reinvention, which reinvention becomes a civic obligation. And if the art of narrative, which has been that of poetry, leads to the exploration of space and visual effects, the disintegration of language defines a struggle for innovation which the text attests and which reading recreates through interpretation.



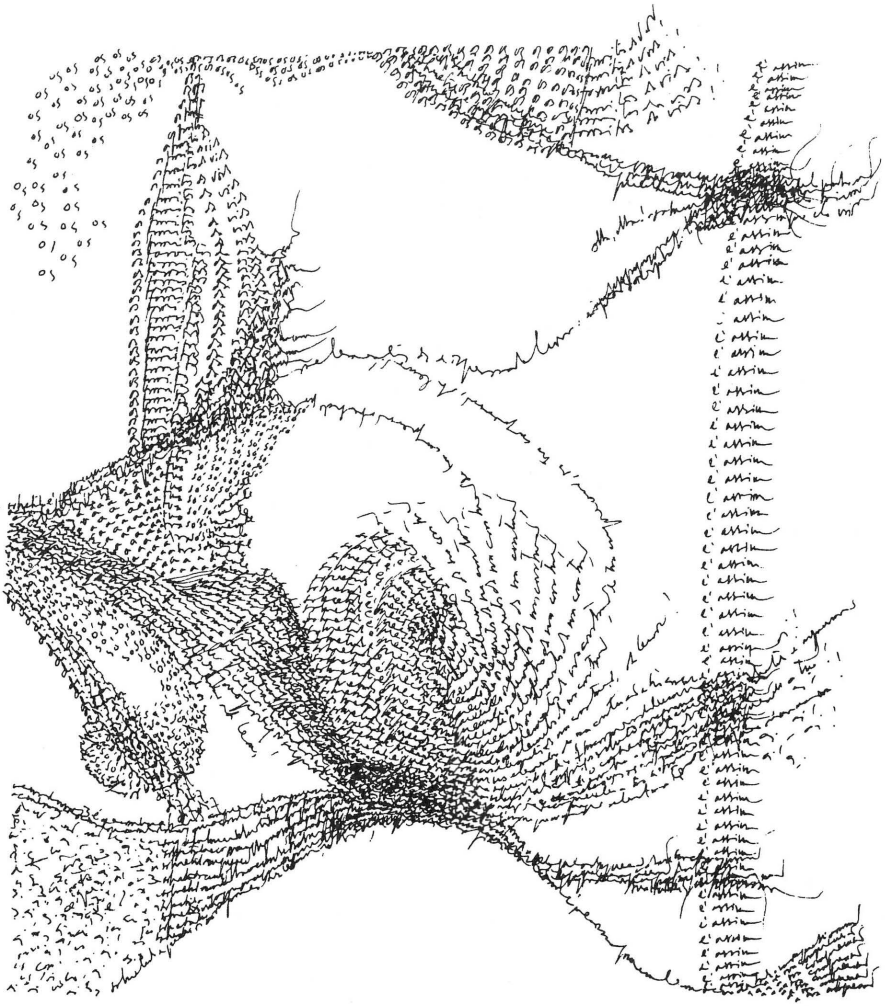
More Important and Free



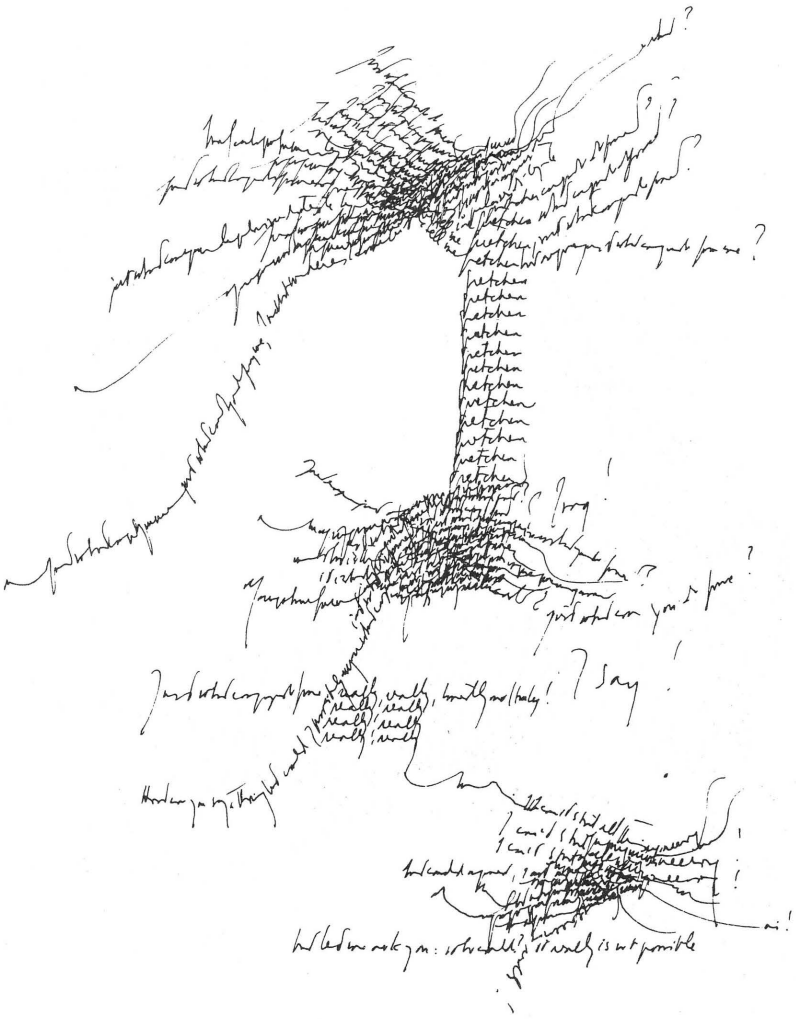
The Rude Comfort of Memory



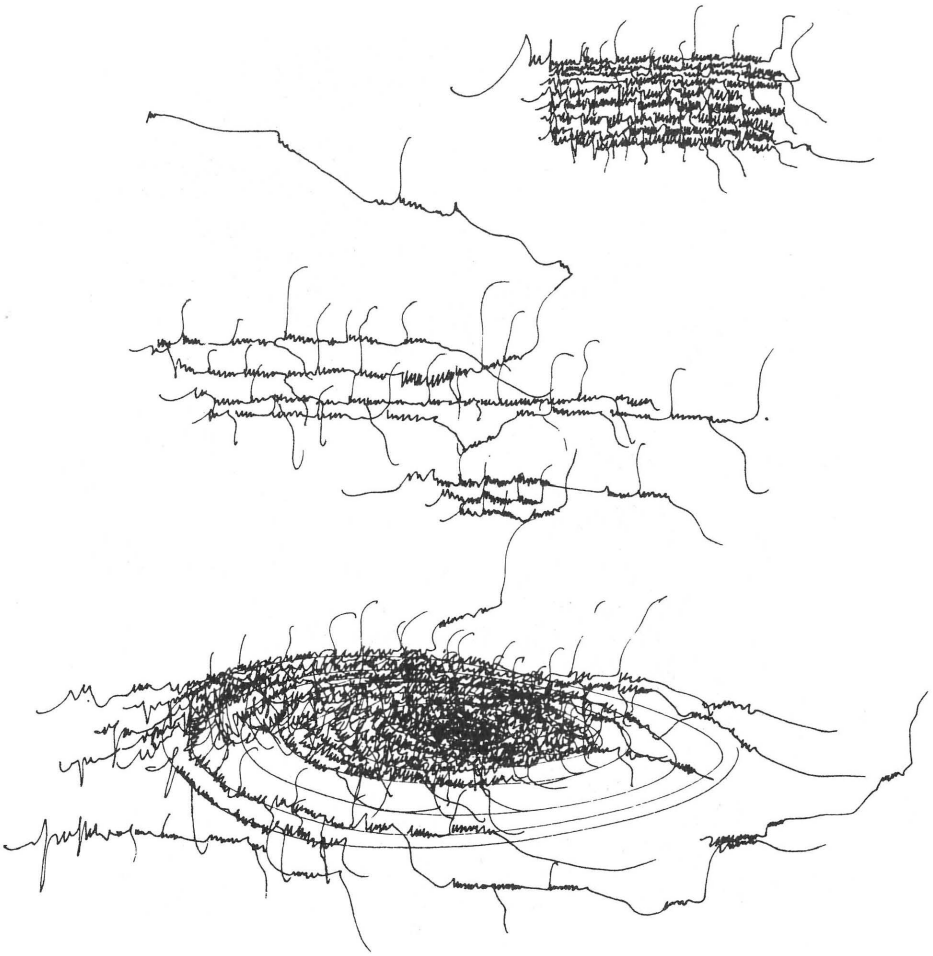
As never (to me alone)



One Must Understand



Margarita at the Loom



Beginning of Reason

The Pleasure of the Text

The Designer and Language II

Alexander Nesbitt

There are a number of misleading statements in Mark E. Cory's translation of Eugen Gomringer's "Poetry as a Means for the Structuring of a Social Environment" (X:3, pp. 227-241), and it appears necessary to controvert these. In doing so I am continuing the comment on designers and language that appeared in these pages in the winter 1975 number.

The major criticism of Gomringer's viewpoint is this: for all his aesthetic sensibilities and astuteness, his direction points to the destruction of the human spirit and of humanity itself. It is a dead-end street, and this becomes increasingly apparent as he proceeds. Perhaps as good a place to start as any is with the statement: "I think the young creative builders of the early Fifties were characterized by their desire to create beautiful and yet functional objects. It was the great period of good form." A couple of congresses are then mentioned, taking place in 1951, 1954, and the establishment of the *Rat für Formgebung* in 1951, as though these occurrences marked the beginning of the interest in form and function. One must insist that the great interest in form and function, and its importance to foreign trade, was of much earlier inception both in England and Germany. The one factor of greatest importance in this respect was the founding of the German Werkbund in 1907-08. This organization of architects, artists, manufacturers, sociologists, et al., continued to function until 1933, when it was dissolved by the National Socialist government; it was reorganized in 1947. Its members included such men as Peter Behrens and Walter Gropius. To speak of form and function (as Gomringer does) without mention of the Werkbund, indicates a strange lack of historical perspective and a definite bias.

"Another stimulus for us at that time was the concept of 'Functionalism'. . . ." It is noted that the word had been bandied about until its meaning was corrupted. What discredited Functionalism is not so much the "smooth façades" as the smooth talk indulged in by cliques of architects and designers. Gomringer might be much surprised that Horatio Greenough, in the first half of the nineteenth century, pro-

Visible Language, XI, 3 (Summer 1977), 321-324.

Author's address: 29 Elm Street, Newport, RI 02840.

pounded ideas of form and function that were remarkably like those given out by the Bauhaus in the 1920's. The adulatory remarks about Max Bill and his book, *Form*, may be excused as those of a student about his teacher. Apparently the student never studied anything before the era of the teacher; this is typical of the disturbed quality of some German education in what must have been Gomringer's student years.

To enter the subject of poetry, the text now explains how the poets missed the boat, when they could have joined the "international team of creative builders." There is much of the team concept; it sounds very much like the organization man. The great contributions came from "neopositivistic and behavioristic philosophy." One might ask who were the members of this international team, and where are they now? Of course, Max Bill, the one known member of the team, would have to be the manager-prophet. Ezra Pound's name is inserted quickly and just as quickly dropped; he is considered the one poet worthy of the name. One can rest assured that Pound had absolutely nothing to do with neopositivism or behaviorism, what then is the point? That point as it appears in the following paragraph is that poets should get together with graphic designers and typographers to create the "weapons in the struggle for free enterprise." This would be the excuse for the effort to "control the everyday surroundings of people as individuals and as a society." Communism does this quite well; any totalitarian system works in this manner. The poet is supposed to learn something about paper quality, format, proportion, and technique from graphic designers; he should sit "at the feet of the graphic designer and typographer." These poets must be concrete poets, naturally. I can't think of any feet less worthy to sit at; there are exceptions to be sure.

I have listened to more than a few lecturers of the Gomringer type; design schools have brought them in regularly over the past quarter century to *inspire* the students. Their patter plunges from mile-high apartments to cities under the sea, then back to cities in outer space, ad nauseam. It is possible, I am sure, to track down all of their gimmicks and gobbledegook in the pages of science fiction, or in other areas of aberration; it is not worth the effort. It is not that these people have not had an education; it is simply that they use their bits of abstruse knowledge to "pull the wool over people's eyes," as one of my pre-world-war II acquaintances expressed the possibilities of coming to the USA and cashing in on his education and charisma. Hopefully, this type of person can be prevented from "structuring the modern world." The world is being structured by energy problems, pollution, lack of food, lack of water, waste, etc.; no mile-high idiocies will solve these problems.

It is fairly clear that Gomringer got his main impetus from the Hochschule für Gestaltung in Ulm, Germany. The school has long since disappeared from the scene. I remember my visits there in 1959 and my discussions with Otl Aicher who became the rector of the school soon afterward. Max Bill built the buildings in the years between 1950-54; they were paid for in considerable part by the U.S. Government. The major difficulty of the school was that it could not get public funds—basically because the school administration would not take the position against communism that was demanded by the German government of that time from all institutions of higher learning. I am sure there were other problems, but these are not of importance at this point of time. When I arrived at the school Max Bill had vanished—the result of some power struggle among the leading figures: Aicher, Maldonado, Vordemberge-Gildewart, and possibly Aicher's wife, who was the head of the Scholl Foundation.

I made the acquaintance of Dr. M. W. Perrine while at the school; he was installing some perceptivity equipment under an American grant to the school. Perhaps the final summary from my notes of our discussions will indicate some of the carried-over shortcomings of Eugen Gomringer. "I can say that the Hochschule für Gestaltung has an extreme position. Perrine does not believe this position is correct, nor do I. Aicher explained that much of the thinking in the school is based on mathematical work done by Russell and others: probability methods, establishment of all possible solutions to a given problem, etc. This is all fine; but it appears that they miss the visual point. None of the final problems of communications—to a great extent product design and architecture—are simply mental, theoretical, even practical. They are visual problems, things we must look at and see as we use them and live with them. Perrine is closer to the truth, I believe, when he says, 'We make our own world in the way we see things.' As the eye sees, it would appear, so the mind will think. This, in the last analysis, is the basic criticism of the present thinking at the Hochschule."

Reading further in Gomringer's article, we find him preaching planned obsolescence. As one may note he has got away from concrete poetry into marketing, housing projects, and the inevitable systems analysis that he inherited from Ulm. And he even manages to bring in Andy Warhol, that pet of the venal art galleries, as producing something "monotonous yet intellectually agreeable." Finally we are back at poetry. His notion that the phenomena of the times are "sound, color, and texture" is the point at which all goes to pot. As he implies throughout his article, this is the point at which one befuddles and then structures

society—to what purpose remains unclear. More of the same, no doubt. I would say, as a final statement, that the designer should keep the Gomringers away from his feet; the designer who can take it should read Ezra Pound as a curative measure against the "world of tomorrow" boys who do it all with distorted words and distorted meanings.

Alexander Nesbitt

U.S. POSTAL SERVICE

STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION

(Required by 39 U.S.C. 3685)

1. TITLE OF PUBLICATION	A. PUBLICATION NO.	2. DATE OF FILING
VISIBLE LANGUAGE	1 0 7 7 3 0	Sept. 30, 1977

3. FREQUENCY OF ISSUE	A. NO. OF ISSUES PUBLISHED ANNUALLY	B. ANNUAL SUBSCRIPTION PRICE
QUARTERLY	four	$13.00 individual; $18.50 institution

4. LOCATION OF KNOWN OFFICE OF PUBLICATION *(Street, City, County, State and ZIP Code) (Not printers)*
c/o Cleveland Museum of Art, 11150 East Blvd., Cleveland (Cuyahoga), OH 44106

5. LOCATION OF THE HEADQUARTERS OR GENERAL BUSINESS OFFICES OF THE PUBLISHERS *(Not printers)*
Same

6. NAMES AND COMPLETE ADDRESSES OF PUBLISHER, EDITOR, AND MANAGING EDITOR

PUBLISHER *(Name and Address)*
Merald E. Wrolstad, c/o Cleveland Museum of Art, 11150 East Blvd., Cleveland 44106

EDITOR *(Name and Address)*
Same

MANAGING EDITOR *(Name and Address)*
Same

7. OWNER *(If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual must be given.)*

NAME	ADDRESS
Merald E. Wrolstad	c/o The Cleveland Museum of Art 11150 East Boulevard Cleveland (Cuyahoga), OH 44106

8. KNOWN BONDHOLDERS, MORTGAGEES, AND OTHER SECURITY HOLDERS OWNING OR HOLDING 1 PERCENT OR MORE OF TOTAL AMOUNT OF BONDS, MORTGAGES OR OTHER SECURITIES *(If there are none, so state)*

NAME	ADDRESS
None	

9. FOR COMPLETION BY NONPROFIT ORGANIZATIONS AUTHORIZED TO MAIL AT SPECIAL RATES *(Section 132.122, PSM)*
The purpose, function, and nonprofit status of this organization and the exempt status for Federal income tax purposes *(Check one)*

☐ HAVE NOT CHANGED DURING PRECEDING 12 MONTHS ☐ HAVE CHANGED DURING PRECEDING 12 MONTHS *(If changed, publisher must submit explanation of change with this statement.)*

10. EXTENT AND NATURE OF CIRCULATION	AVERAGE NO. COPIES EACH ISSUE DURING PRECEDING 12 MONTHS	ACTUAL NO. COPIES OF SINGLE ISSUE PUBLISHED NEAREST TO FILING DATE
A. TOTAL NO. COPIES PRINTED *(Net Press Run)*	1679	1640
B. PAID CIRCULATION 1. SALES THROUGH DEALERS AND CARRIERS, STREET VENDORS AND COUNTER SALES	-0-	-0-
2. MAIL SUBSCRIPTIONS	1127	980
C. TOTAL PAID CIRCULATION *(Sum of 10B1 and 10B2)*	1127	980
D. FREE DISTRIBUTION BY MAIL, CARRIER OR OTHER MEANS SAMPLES, COMPLIMENTARY, AND OTHER FREE COPIES	58	61
E. TOTAL DISTRIBUTION *(Sum of C and D)*	1185	1041
F. COPIES NOT DISTRIBUTED 1. OFFICE USE, LEFT OVER, UNACCOUNTED, SPOILED AFTER PRINTING	494	599
2. RETURNS FROM NEWS AGENTS	-0-	-0-
G. TOTAL *(Sum of E, F1 and 2—should equal net press run shown in A)*	1679	1640

11. I certify that the statements made by me above are correct and complete.

SIGNATURE AND TITLE OF EDITOR, PUBLISHER, BUSINESS MANAGER, OR OWNER
Merald E. Wrolstad Editor & Publisher

12. FOR COMPLETION BY PUBLISHERS MAILING AT THE REGULAR RATES *(Section 132.121, Postal Service Manual)*

39 U. S. C. 3626 provides in pertinent part: "No person who would have been entitled to mail matter under former section 4359 of this title shall mail such matter at the rates provided under this subsection unless he files annually with the Postal Service a written request for permission to mail matter at such rates."

In accordance with the provisions of this statute, I hereby request permission to mail the publication named in Item 1 at the phased postage rates presently authorized by 39 U. S. C. 3626.

SIGNATURE AND TITLE OF EDITOR, PUBLISHER, BUSINESS MANAGER, OR OWNER
Merald E. Wrolstad Editor & Publisher

PS Form 3526 Mar. 1977 *(Page 1)* (See instructions on reverse)

Book Review

David Kindersley. *Optical Letter Spacing for New Printing Systems*. London: Wynkyn de Worde Society, 1976. 4-1/2 x 11 inches. 40 pp., 45 figs. ISBN 85331-360-1. (Distributed by Lund Humphries Publishers Ltd.).

This small, narrow book provides an important key to the interlocking puzzles of letterspacing. David Kindersley, formerly apprenticed to Eric Gill, is a master of lettering and inscriptional stone-cutting, and he draws upon his understanding of the ancient epigraphic arts to delineate part of the photo-electronic future of typography.

Lettering is a figure-ground synthesis in which the letterforms are the figure, the salient element, and the counterforms and spaces are the ground, the unnoticed element. There have been many analyses of letterforms, from the Renaissance geometrics of Felice Feliciano to contemporary cathode ray tube digitizations, but corresponding analyses of the counterforms and letterspaces have been few.

Although the empty space of the ground has resisted precise analysis, it is nevertheless intuitively understood by all good practitioners of the lettering arts. Kindersley's contribution here is an analysis, amenable to calculation by machine and man, that can rival the trained eye in the just spacing of letters.

The question he asks appears simple, "What is good letterspacing?" But his answer is a complex story of mathematics, gadgetry, and trial and error, told in an informal and anecdotal style. As such, it makes an interesting contrast to Jan Tschichold's definitive academic discussion of the same subject in his *Treasury of Alphabets and Lettering*. Whereas Tschichold dictates principles distilled from his study of the past masters, Kindersley tells of his search for an algorithm applicable to future machines.

His method is to locate the vertical central axis of each letter of the alphabet by means of a photoelectric device. This device is a bilaterally symmetrical gradient filter, dark in the center and lighter toward the periphery, which allows light from the letter to strike a bank of photo-

cells. The letter is adjusted in relation to this filter until it gives photocell readings equal on both sides of the filter center, thereby indicating the central axis of the letter. Therefore, it is the rate of change of the filter density that determines the center, and a different rate of change will determine a different center. The letters are then assembled in the usual fashion (each indicated space abutting its neighbors indicated space). Kindersley's method achieves two major goals of spacing: 1) "that each letter should appear to be exactly in the centre between its neighbors" and 2) that the setting have "consistant colour."

Several examples of both capitals and lower-case optically spaced by this device and method show the value of his approach. The capital settings are equal to good hand-spacing by an experienced typographer, but the lower-case settings are especially impressive, as they show a decided improvement over the usual foundry or composing machine spacings. Impressive, because determination of the best fit of lower-case is a difficult craft, whether practiced by the hand justification of matrices or by the allocation of set units in a computer program. Lower-case was traditionally composed as cast and dressed by the foundry, but modern photo-electronic machines allow considerable spacing adjustment, either manually or by special software. The result of this freedom has been a great deal of deplorably spaced composition.

Kindersley's examples, however, achieve that supple rhythmic pattern and refined texture found in the finest calligraphy and typography of the Renaissance, a manuscript of Poggio Bracciolini or the Egenolff-Berner specimen of Garamond types—works whose subtle beauty has previously eluded our advanced technology.

Clearly, his methodology and gadgetry work. But why? Probably not for the theoretical reasons he advances, which are at best only *ad hoc* adaptations of an enticing physical analogy, the calculation of moments of inertia. In locating the center of a letter, he uses a bilaterally symmetrical gradient filter—dark in the center and lighter toward the periphery—which allows light from the letter to strike a bank of photocells. The letter is adjusted in relation to the filter until it gives a photocell reading equal on both sides of the filter center, which thereby indicates the central axis of the letter. Therefore it is the rate of change of the filter density which determines the center, and a different rate of change will determine a different center.

At the time of writing this book, Kindersley had tried various filter gradients in which the density varied in proportion to the distance, the square of the distance, or the cube of the distance from the center. A gradiẽnt based on the square of the distance from the center appeared to

work best. This square law calculation resembles the method in physics of calculating the moment of inertia of a body. Therefore Kindersley called this the "second moment wedge" (=filter) and reasoned that the eye was somehow intuitively computing the moment and center of inertia of two-dimensional letterforms.

However, the analogy seems mistaken. First, because letters cannot in fact possess inertia, and secondly, because his more recent work suggests that the ideal filter gradient exponent seems to lie somewhere between the square and the cube, a rate of change unrelated to a strict inertial explanation.

Further, a much more powerful and useful explanation is available: spatial frequency analysis. By defining correct spacing as a mapping of each letter onto an underlying unit gradient, identical for all letters of an alphabet, he has in effect made it possible to conceive of a line of letters as having an underlying periodic structure, consisting of a regular linear assemblage of the unit gradient. This is identical to a spatial frequency, a regular waveform pattern of alternating light and dark.

Such patterns, of which bar gratings and checkerboards are common examples, can be analyzed into their simple sine and cosine wave components by a mathematical technique called Fourier analysis, which can be applied to any waveform, spatial, electronic, musical, etc. Thus the alternating black and white image of a line of type can be conceived abstractly as the sum of a fundamental wave and its Fourier components, just as a musical note may be analyzed into its fundamental and harmonics.

In type, the analysis is two-dimensional. In the horizontal dimension the low frequency components are determined by the rhythm of the spacing, and the high-frequency components by the sharp edges of the vertical strokes. In the vertical dimension the low frequencies are determined by the relationship of x-height to extruder length and leading, and the higher frequencies by the sharp edges of horizontal strokes and serifs. Obviously, the thickness ratio of vertical to horizontal stroke is one important harmonic element in the total text appearance. The two dimensions combine into a single pattern and texture, which is somewhat analogous to a musical harmonic interval sounded on two instruments of different timbre.

Recent psychological research on the existence of edge-detector and Fourier-like analytical mechanisms in the human visual system lends theoretical foundation to this interpretation. Following the demonstrations by Hubel and Wiesel (1962, 1968) of oriented edge-detectors in the cat and monkey visual cortex, several experimenters have used the

pattern-contingent color aftereffects first described by McCollough (1965) to show that the processing of spatial frequencies is achieved by Fourier-like analyzers in the human visual system (Green, *et al.*, 1977; May and Matteson 1977).

Our grandest cultural system of edges and spatial frequencies is typography, which has evolved through several millennia to its present worldwide status. Its fundamental principles could not have been the product of any one person, culture, era, or style, but were and are the expressions of our fundamental visual mechanisms, through the often anonymous creation and appreciation of forms, patterns, and textures, not for their own sake but in the mute service of language. The rationalization of these expressions, which began with attempts to geometrize the capital forms, may now be continued to the subtler emergent qualities, pattern and texture, which appear only *en masse* as harmonic oscillations of the figure-ground.

Already, computer programs have been developed for the fast Fourier-analysis of visual images (Harmon and Julesz 1973). As composition systems become more computerized and the relevant software more powerful, the typographer will be ever more able to design and tune the pitch and timbre of his silent instruments to a peak of perfection. It is prophetic that Tschichold, a master of this most abstract and conceptual of the visual arts, compared his beloved typography to the highest music, for now we may see that in a deep and unexpected sense they are related.

Still, it is the eye of the typographer trained by history and intuition that remains a far finer instrument than our theories and devices, for in the end it is perception and not the intellect that is the final judge.

Just as Kindersley's superior eye judges the spacings of his optical device, so also will computer composition of the future be judged by the qualities of the best hand-punch cutters of the past: the ingenuity of Griffo, the refinement of Garamond, the eccentricity of Kis, and in our time, the humble and anonymous subtlety of P. H. Raedisch, who brought Van Krimpen's designs to life with a brilliance and depth unattainable by any other means.

Charles A. Bigelow

REFERENCES

Green, Marc, T. Corwin, & V. Zemon
1976 "A Comparison of Fourier Analysis and Feature Analysis in Pattern-Specific Color Aftereffects." *Science, 192,* 147-148.

Harmon, Leon & Bela Julesz
1973 "Masking in Visual Recognition: Effects of Two-Dimensional Filtered Noise." *Science, 180,* 1194-1197.

Hubel, David, & T. N. Wiesel
1962 "Receptive Fields, Binocular Interaction and Functional Architecture in the Cat's Visual Cortex." *Journal of Physiology, 160,* 106-154.
1968 "Receptive Fields and Functional Architecture of the Monkey Striate Cortex." *Journal of Physiology, 195,* 215-243.

McCollough, Celeste
1965 "Color Adaptation of Edge Detectors in the Human Visual System." *Science, 149,* 1115-1116.

May, James, & H. H. Matteson
1976 "Spatial Frequency-Contingent Color Aftereffects." *Science, 192,* 145-147.

Tschichold, Jan
1966 *Treasury of Alphabets and Lettering.* New York: Reinhold.

Charles A. Bigelow is a consultant on typographic and letterform research. Address: 1135 Southeast Salmon, Portland, OR 97214.

This review is reprinted with kind permission from the November 1977 issue of FINE PRINT, which is published quarterly at 2224 Baker Street, San Francisco, CA 94115.

David Kindersley has written previously on his research into the proper fit of letters: "Space Craft," *Visible Language,* VII, 4 (Autumn 1973), 311-324.

Correspondence

To the Editor:
Martyn Hitchcock's letter and Philip Gaskell's reply (X:3, pp. 280-3) both point out once again a serious problem that confronts all who are involved in the scholarly study of written language: we have too few technical terms to name adequately all the things about written language that need to be named, and we have too many traditions that use the same terms for different things. To do a really adequate job of discussing written language, we will have to develop a more extensive terminology for describing it precisely—one that we can all use with understanding and without acrimony.

There are two ways in which we can develop such a common terminology. One is by systematically subscripting or parenthetically modifying every ambiguous term every time it is used, telling which of its several meanings we intend or telling the particular science or craft in which it has the intended meaning. To do this successfully we must first have careful lexicographical analyses for such ambiguous terms, describing and contrasting their several meanings and assigning some devices for distinguishing them. John Mountford, for example (II:3, pp. 221-32), has made such an analysis of the word "writing," in which he distinguishes four meanings, assigns them numbers, and gives words which contrast with each of the four meanings. Another way we can develop a common terminology is by abandoning every ambiguous term and replacing each such term with several new terms, one for each meaning of each term which was abandoned. I did this, for example (VIII:1, pp. 5-32), when I assumed that the term "roman" was too ambiguous to be worth saving, and set out to provide a set of alternative terms, such as "Neoroman," for its several meanings.

It might seem that we could also develop the common vocabulary which we need by keeping only one meaning for each ambiguous term, and assigning all its other meanings to other terms. However, that method is not likely to work in practice. Each of us will naturally feel that his own usage for each ambiguous term is the one which should be

retained, since it is as legitimate as any other. Moreover, most of us have to discuss written language in several registers (or professional dialects) anyway. Thus, when Gaskell talks with British printers, he will have to understand them when they call Æ a "diphthong" no matter what we tell him they should have said. (This and other popular confusions between speech and writing, arising ultimately from the Latin grammarians' doctrine that a letter has both a shape and a sound, are facts that we must all live with.)

Subscripted and parenthetically-modified terms, though they may be long and clumsy, and neologisms, though they may appear bizarre at first glance, have another advantage over ordinary terms used with restricted meanings: they automatically indicate that they are being used with a single certain meaning. Even if we were to limit arbitrarily the meanings of certain terms for purposes of our own discussions, we still could not be sure, upon seeing one of those terms, whether it had been used with the limited meaning we had assigned to it.

But while we are developing such a common vocabulary for the scholarly discussion of written language, let us all be tolerant of the various ways in which our colleagues use words. When we meet a term that seems to us to be improperly used, let us take it as a sign of an ambiguity that needs analysis, discussion, and clarification. Rather than lamenting the way someone else has used a term, let us grasp the opportunity to investigate the reasons for our own confusion. And when we propose new terminology, let us make sure that it is really suitable for general use. For example, Gaskell's terminology is designed for describing the images produced by printer's type, while Hitchcock's terminology is designed for describing the corresponding type itself. Both are necessary, but neither is sufficient to serve as our only terminology. (Consider, for example, the plight of a bibliographer who has been told that he must say, by looking at a book, whether it was printed from type cast, from certain matrices, on a 14-point body or from type cast, from the same matrices, on a 12-point body and leaded two points. By merely looking at the printed image, he cannot tell, though he could tell very easily by looking at the locked-up type itself.) In addition to Gaskell's and Hitchcock's terminologies, we will need a set of terms that can be used for both purposes, or a carefully-devised system of terminology which provides different but parallel terms whenever the printer's type and the images it produces cannot be described by the same terms.

Earl M. Herrick
English Department
Texas A & I University, Kingsville, TX 78363

To the Editor:

I must express exception to note 2 (p. 307) in James Jaquith, "Digraphia in Advertising: The Public as Guinea Pig" (X:4, pp. 295-308), which states, "Areas where the data were recorded are probably not significant statistically . . . ," for the very reason implicit in his criterion (1) on page 296. For a very large number of English speakers (and I don't restrict my comment to American English for obvious reasons) the pronunciations of *mirror* and *Mirro* are identical in preconsontal position (as in *Mirro-matic*). The source of *Mirro-matic* is the Mirro Aluminum Company, Manitowoc, Wisconsin, admittedly not at the geographic center of an *r*-less isoglossic island, but the name might well have originated elsewhere.

Moreover, the *Trade Names Dictionary* (Ellen T. Crowley, ed., Gale Research Co., 1974, 1976) would have provided Jaquith with a far more complete corpus than he could have gleaned from wandering about in supermarkets. The *TND* offers, for example, *Miro-Flex, Miro-Lite, Mirra-Cote, Mirro-* + several elements made by Mirro Aluminum, *Mirro-Krome, Mirrolac, Mirrolures,* and *Mirropane.*

If this criterion is eliminated, such names would fall under a subset of classification 3.2, as */-r/- Graph Deletion.* There are examples that present themselves: *Fayva* (shoes), *Flav-a-pop* (suckers), *Flav-o-jel* (food), *Flav-o-lok* (spray-dried flavors), *Flava* (food flavors), *Flava-Bake* (flavoring), *Flavo-Master* (bakery flavors), *Flavo-Matic* (percolator), *Shred-O-Mat* (salad maker: the *-O-* surely takes the place of *-er*), *Silva-Chrome* (trays and serving pieces), *Silva-Crystal* (decorated glassware sets), *Silva-Thin* (cigarettes), and so on, including *Rola Chair, Rolatape, Mastacut,* and many others.

Under 6, in his discussion of sound-letter correspondence, Jaquith has omitted *'t* (as in *'twas, 'tis, 'til*) as a spelling form of /t/. In the same paragraph on page 304, /uw/ also has the forms *oeu* (manoeuvre) and, if not cheating, *ug* (impugn). But I should like examples of *ey, ougha,* and *au* (unless he means the *au* in *beauty,* which is cheating). Also, I can count, with Jaquith's *ey, ougha,* and *au,* 383, not, as he says, 363 phonographemes. My list, which I devised, is on page xiv of *The Random House Dictionary, Unabridged Edition.*

I find Jaquith's naivity about the formation of trade names somewhat offputting: the mystery is immediately cleared up if one takes the trouble to investigate trade mark and copyright law.

Laurence Urdang, Editor
Verbatim, the Language Quarterly
Essex, Connecticut 06426

Résume des Articles

Traduction: Fernand Baudin

Paul Claudel, Guillaume Apollinaire et leurs poèmes visuels: *Idéogrammes occidentaux* et *Calligrammes, par Nina Hellerstein.*

Paul Claudel et Guillaume Apollinaire ont l'un et l'autre utilisé l'aspect visuel de leurs poèmes en vue de leur conférer une expression plus synthétique, plus vigoureuse. Les *Idéogrammes* de l'un, les Calligrammes de l'autre ne tendent pas à reproduire une réalité, mais bien plutôt à projeter dans le champs du visuel les images et les conceptions les plus essentielles de leurs auteurs. Dans les deux cas, le tracé linéaire de l'écriture symbolise le mouvement et le temps; tandis que le mot, la phrase qui sont de plus grandes unités de valeur imposent une forme plus spacieuse et plus stable. Pour l'un et l'autre auteur en dépit des différences, les possibilités de l'aspect synthétique de la logique visuelle expriment la structure du réel, qui cumule l'interaction dynamique et simultanée de phénomènes à la fois multiples et en évolution permanente.

Comment un enfant apprend l'alphabet: conclusions pour les chercheurs et pour les enseignants *par Lenore McCarthy*

L'article relate le processus par lequel une fillette apprend l'alphabet. Les Lettres qu'elle veut apprendre se classent en catégories selon certaines particularités telles que: les ronders, O,C,Q; les droites, L, I, T, E, F, H; les droites avec arrondis, M, N, Z, K, V, W. Elle est passée par trois stades avant d'arriver au quatrième où elle se rappellera la forme d'une lettre nen qu'à l'audition du nom de cette Lettre: 1. elle copie le modèle qu'elle a sous les yeux; 2. elle reproduit les traits évoqués par des gestes; une description verbale suffit; 4. le nom de la lettre suffit. L'article tire les conclusions utiles pour la poursuite des recherches et pour l'enseignement

Les substitutions de graphèmes et leurs effets sur le comportement à la lecture d'un texte suivi *par Richard L. Allington et Michael Strange*

Il est admis que les bons lecteurs déchiffrent mieux les informations sémantiques/syntactiques que les mauvais. Que les premiers utilisent moins les informations graphiques que les seconds. Pour vérifier la chose on a introduit de légères déformations visuelles dans un texte suivi. Quinze bons et quinze mauvais élèves de quatrième ont lu à haute voix deux passages ainsi déformés. Les résultats confirment que les bons lecteurs lisent beaucoup plus vite et se reprennent moins souvent, au total. Toutefois, il n'y a pas de différence dans le nombre de reprises provoquées par le texte et les hésitations des mauvais lecteurs semblent moins déterminées par le graphisme que celles des bons lecteurs. Aucune des deux comparaisons ne confirme l'hypothèse de départ.

Ré-inventons la lecture *par Ana Hatherly*

La poésie concrète a pris naissance simultanément en Europe et au Brésil. Les principes sont les mêmes. Toutefois les Brésiliens-Portugais, davantage marqués par leur héritage littéraire s'intéressent surtout à la mise en page du texte et à ses relations avec la musique. Tandis que les Européens intéressés avant tout par l'architecture et les arts graphiques accordent plus d'importance aux valeurs plastiques. Pour les uns comme pour les autres un poème concret constitue un réseau où s'entrecroisent les tensions de mots-objets inscrits dans un espace-temps, et où la lecture prend un sens qui déborde le sens littéraire traditionnel. L'auteur présente & commente à l'aide "d'images-textes" ses travaux, sur l'illisibilité ou l'ambiguïté de l'écriture et la décomposition du language.

Kurzfassung der Beiträge

Übersetzung: Dirk Wendt

Paul Claudel und Guillaume Apollinaire als Visuelle Poeten: *Ideogrammes occidentaux* und *Calligrammes, von Nina Hellerstein*

Paul Claudel und Guillaume Apollinaire experimentierten beide mit visuellen Formen mit dem Ziel, mehr synthetische und unmittelbare Erfahrung in ihre Dichtkunst hineinzubringen. Die Buchstaben des *Ideogramme* und die Formen des *Calligramme* geben nicht so sehr die Wirklichkeit wieder, sondern übersetzen vielmehr die grundlegenden Bilder und Sichtweisen der Welt der Autoren in das visuelle Medium. In beiden Fällen symbolisiert die Linearität des Schreibens die Bewegung und die Zeit, während die größere Einheit, die Wort oder Satzgestalt, dieser Bewegung eine mehr unbewegliche, räumliche Form auferlegt. Bei beiden Autoren—trotz mancher Verschiedenheiten— drückt dieser syntetische Aspekt sichtbarer Logik die Struktur der wirklichen Welt aus, die in einer dynamischen und gleichzeitigen Wechselbeziehung vielfältiger Erscheinungen besteht, aber doch in ständiger Entwicklung begriffen ist.

Ein Kind lernt das Alphabet: Folgerungen für weitere Forschung und Uterricht *von Lenore McCarthy*

Diese Untersuchung verfolgt den Zeitablauf, in dem ein kleines Kind sich silbst beibringt, die Buchstaben des Alphabets zu schreiben. Die Buchstaben, die es zum Lernen auswählt, können eingeteilt werden in Kategorien, die erkennbare Züge von Kreisen enthalten: O, C, Q, von Geraden: L, I, T, E, F, H, Linien und Schleifen: B, P, R, und Winkeln: M, N, Z, K, V, W. Ehe das Kind in der Lage war, die graphische Form des Buchstaben zu erinnern, wenn nur der Name des Buchstaben genannt wurde, durchlief es vier Stufen: Stufe I: Der Buchstabe mußte sichtbar sein, so daß das Kind die Form abzeichnen kann; Stufe II: Die entscheidenden Merkmale des Buchstaben, in die Luft geschrieben, erleichterten das Wiederfinden der graphischen Form; Stufe III: Verbale Beschreibung des Buchstaben befähigte das Kind, den Buchstaben zu schreiben; und Stufe IV: Der Name des Buchstaben war hinreichende Information, um das Kind in die Lage zu versetzen, den Buchstaben zu erzeugen. Es werden Folgerungen für künftige Forschung und mögliche Lehrmethoden nahegelegt.

Auswirkungen des Austausches von Graphemen in zusammenhängendem Text auf das Lese-Verhalten *von Richard L. Allington und Michael Strange*

Es wurde vermutet, daß gute Leser besseren Gebrauch von der semantisch/syntaktischen Information machen als schlechte Leser, und daß die ersteren relativ wenig graphische Information benutzen im Vergleich zu den letzteren. Um diese Hypothese zu prüfen, wurden geringfügige visuelle Veränderungen an Wörtern im zusammenhängenden Text vorgenommen. Fünfzehn gute und fünfzehn schlechte Leser auf dem Niveau der vierten Klasse lasen zwei dieser veränderten Textstellen vor. Die Ergebnisse zeigten, daß gute Leser signifikant schneller lasen und weniger Fehler bei der Erkennung von Wörtern insgesamt machten. Es bestanden aber keine Unterschiede im Verhältnis der vom Text her annehmbaren Lesefehler, und die Reaktionen der schlechten Leser auf die veränderten Wörter schienen weniger von graphischen Merkmalen verursacht zu sein als die von guten Lesern. Keiner der Vergleiche bestätigte die obige Hypothese.

Die Wiedererfindung des Lesens *von Ana Hatherly*

Die Konkrete-Poesie-Bewegung begann gleichzeitig in Europa und Brasilien. Obgleich sie in den Grundlagen übereinstimmen, befaßten sich die Brasilianer/Portugiesen-auf dem Hintergrund der traditionellen Poesie—mit der räumlichen Aufteilung des Textes und seiner Beziehung zur Musik, während die Europäer—auf dem Hintergrund der Graphik und Architektur—mehr durch die plastischen Künste beeinflußt waren. Für beide wird das konkrete Gedicht zu einem Verbindungsfeld von Funktionen, das sich zwischen Wort-Dingen in Raum und Zeit ausspannt und die Grenzen des Lesens über den traditionellen Bereich hinaus ausdehnt. Die Verfasserin zeigt und diskutiert ihre eigenen "Bild-Texte"—Studien zur Unlesbarkeit oder Mehrdeutigkeit von Schrift und zum Zerfall der Sprache.

Resumen de los Aríctulos

Traducción: Ana Fisch

Paul Claudel y Guillaume Apollinaire como poetas visuales: Ideogramas occindentales y caligramas *por Nina Hellerstein*

Tanto Paul Claudel como Guillaume Apollinaire experimentaron con formas visuales en un esfuerzo para incorporar en su poesía una experiencia mas sintética e inmediata. Las letras del *Ideograma* y las formas del *Caligrama* no reproducen la realidad sino que mas bien traducen al estilo visual las imagenes fundamentales y la vista del mundo de los autores. En ambos casos la linearidad de la escritura simboliza movimiento y tiempo mientras que la unidad mas grande, la palabra o la frase-forma, impone una forma mas inmóbil y espacial sobre este movimiento. Para ambos autores, a pesar de las diferencias, este aspecto sintético de lógica visual expresa la estructura del mundo real, que es una interacción dinámica y simultánea de fenómenos múltiples y sin embargo está en constante evolución.

Efecto de las sustituciones de grafemas en textos relacionados con el comportamiento en la lectura *por Richard L. Allington y Michael Strange*

Se ha sugerido que los buenos lectores hacen mejor uso de la información semántica/sintáctica que los malos lectores y que los que componen el primer grupo usan relativamente menos información gráfica en comparación con el segundo grupo. Para comprobar estas hipótesis se insertaron alteraciones visuales secundarias en palabras del respectivo texto. Quince buenos y quince malos lectores de un nivel de cuarto grado leyeron oralmente dos de estos trozos alterados. Los resultados indicaron que la velocidad de lectura del buen lector era significativamente mayor y que este grupo cometió menos errores en la identificación general de palabras. Sin embargo no hubo diferencias en la proporción de errores textuales aceptables y la reacción de los malos lectores a las palabras alteradas parecía menos limitada a claves gráficas que la de los buenos lectores. Ninguna de estas comparaciones apoyaron la citadas hipótesis.

La reinvención de la lectura *por Ana Hatherly*

El movimiento concreto de poesía comenzó simultáneamente en Europa y en Brazil. Los brasileros/portugueses, aunque de acuerdo en lo fundamental—y con un fondo en poesía tradicional—se preocuparon en lo referente a las cualidades espaciales del texto y su relación con la música. Los europeos, por otra parte-con una preparación en gráfica y arquitecturase vieron mas influenciados por las artes pláticas. Para ambos el poema concreto se convierte en un campo relacionado de funciones que producen tensiones de palabra-objetos en espacio-tiempo, extendiendo los límites de la lectura mas allá de los límites literarios tradicionales. La autora ilustra y discute sus propios "imagen-textos" -estudios en la ilegibilidad o ambigüedad de la escritura y la desintegración del lenguaje.

The Authors

Nina S. Hellerstein teaches French at both Rosary College and Roosevelt University (430 S. Michigan Avenue, Chicago, IL 60605). Dr. Hellerstein is interested in the theory and use of language, writing and visual art in early twentieth-century French poetry. She has also studied the influence of Oriental art and thought in this area and has published an article on the influence of Chinese and Japanese myths on Paul Claudel. She teaches courses in French language, literature, and civilization.

Lenore McCarthy is a member of the Faculty of Education at National College of Education (18 S. Michigan Avenue, Chicago, IL 60603). She has taught a variety of elementary grades in schools in Europe, Africa, and the U.S.A. Dr. McCarthy's principal research interests are the acquisition of decoding skills and writing skills. Her present research analyzes the strategy used by beginning readers in decoding words.

Richard Allington is an assistant professor in the Department of Reading at the State University of New York (1400 Washington Avenue, Albany, NY 12222) and a member of the research staff of the Center for Reading and Language Studies there. He received his doctorate from Michigan State University in 1973 and currently serves as a consultant to the NIE sponsored Institute for Research on Teaching on that campus.

Michael Strange is an assistant professor in the Department of Curriculum and Instruction at the University of Texas (Austin, TX 78712) where he teaches undergraduate and graduate courses in reading instruction. He received his Ph.D. in 1976 from the University of Minnesota.

Ana Hatherly is a Portuguese calligrapher and author. Her address is Rua do Viveiro, Edif. S. Joao, Frente, Monte Estoril, Portugal.

Alexander Nesbitt (The Third & Elm Press, 29 Elm St., Newport, RI 02840) is retired as professor of art at Southeastern Massachusetts University following a long career in art and design education with a special interest in graphic design. He has lectured widely and has numerous publications on typography, calligraphy, etc. With his wife he started in 1965 the Third & Elm private press which now takes most of his attention.