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- 7—38 An Investigation of the Design and Performance of Traffic
Control Devices
John Lees and Melvin Farman
- 39—50 Ligature Design for Contemporary Technology
Joseph S. Scorsone
- 51—59 Type Design for the Computer Age
Wim Crouwel
- 61—66 Reader Preferences for Typeface and Leading
D. Becker, J. Heinrich, R. von Sichowsky, and D. Wendt
- 67—72 Designing the Initial Teaching Alphabet in Five Typefaces
Arleigh Montague
- 73—75 Speed-reading Made Easy
W. S. Brown
- 77—83 Comment: Voice, Print, and Culture
Walter J. Ong
- 85—90 Reading the Journal
Gerrit Noordzij
- 91—93 Abstracts of Journal Articles in French and German
- 96 The Authors

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Reading the Journal

A discussion of starting points in the issue of April 1969.

Gerrit Noordzij

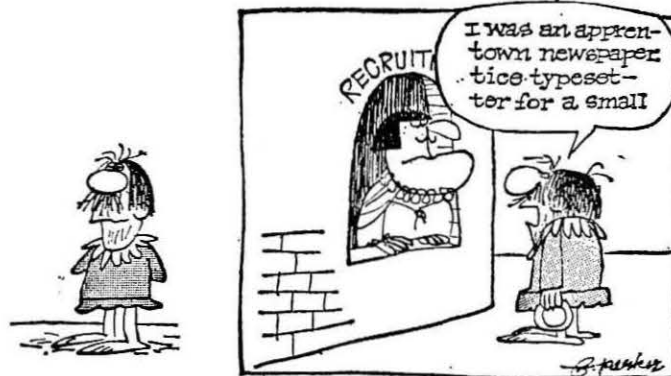
“A report of the editor” deplores the lack of communication between research and design. It might be worth while to seek out the nature of this misunderstanding. Scientists say what design ought to be, the following notes say what research ought to be from a designer’s point of view. By shaking some passages of articles in the same issue of April, 1969, I use the Journal as an intellectual battleground. I don’t know if this is, as the editor says, scholarly research but it may be more palpable than a general contemplation.

Barbara S. Bartz: Type variation and the problem of cartographic type legibility.

Quotation: Perhaps the most common use of a type characteristic which might be considered a quality analogy is the very traditional use of italic type for labeling various classes of hydrographic features. There seems to be fairly general agreement that this type came to be used in this fashion because it looks wavy and more “flowing” than other forms of type (p. 132).

Comment: I inspected a collection of old and new atlases for an illustration of this traditional use, but in vain. Sometimes large wet area’s are labeled with sloped flourished capitals, but that is not italic.

According to R. A. Skelton (*Decorative Printed Maps*, London, 1965), script in cartography has been chosen according to engraving conditions and fashions in handwriting, and he may be right. But the “easy to write, and exceptionable legible” (Mercator) italic is before all economic. No other script can contain nearly as much information in such a small space as italic. (Of course we cannot consider the ugly distorted letters on duplex-matrices of Linotype and Intertype.)



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This is the reason why, since its introduction in cartography, italic has always been the preferred script to label cities, or, generally, localities which are too small to contain the description within their outlines. To get a word in italic, the letters must be crowded. A word in capitals is easily overcrowded. Capitals require generous spacing, which makes them the appropriate script for the names of countries, mountains, seas, and other vast areas. If the danger of confusion prescribes variations, they should be sought in inclination and color of the letters. Roman and italic offer no alternative for such situations.

The author declares that italic looks wavy and flowing by which it should be associated with water. In malicious people like me, such talk evokes associations with a dense fog.

Quotation: In cartographic literature, legibility is very often an Alice-in-wonderland word, which can mean whatever one decides it should mean. . . . Slogans substitute for fact [. . .] How prevalent such slogans are is illustrated in a 1964 article "Map design and typography." "Scientific investigation has shown sans serif to be the worst of all type styles for word recognition." This is a substitute for fact, but it is not a fact itself (p. 136).

Comment: Readability is likely to be a result of good design and adequate production, not of type, but of text. Not Times New Roman is readable or unreadable, but a newspaper or a book. What is good and adequate depends largely on training and habituation. It seems indeed to be the main conclusion which can be obtained from a comparison of different investigations in readability that readability is a subjective quality. Readability of a script (type) might prove to be something like "understandability" of a language.

Next to this subjective readability I could imagine some more objective legibility factors as, for instance, the balance between assimilation and differentiation of letterforms. According to such a measure, italic might be inferior to roman because different letters look less different in italic. For the same reason italic might be again superior to uncial, etc. Arabic script and Hebrew quadrat might prove to be inferior to Japanese or Latin writing because the units have their main accents in the direction of the writing line. If this comes true, it will not be in favor of sans-serif type. This suspicion is a good reason to avoid sans serif. Notably in cartography sans serif is the worst of all

type styles and not only for word recognition: sans-serif D, O, l, 7 interfere with data printed in the same color. But where esthetics are prevailing, they substitute for clearness.

Quotation: Dawson pleads for a return to hand-lettering, and even concludes optimistically: ". . . and it may be that Captain Withycombe's dream of high quality freehand map lettering [. . .] will at least be partially realized in future Australian cartography." In the late 1960's such a remark appears almost medieval (p. 141).

Comment: "Medieval" conveys more of us than of the Middle Ages. Medieval people ate bread, slept in a bed, and made love. However, nobody will call such behavior medieval, because we still do the same things. He who calls a specific skill medieval, apologizes for the lack of that skill by suggesting that it should be obsolete. The quotation does not afflict handwriting in cartography, it only shows the author's incompetency on this subject.

Handwriting has advantages over typographic lettering. Form, construction, scale, and place of the letters can be adapted to the situation of each item. Typographic lettering is not flexible and it takes much more time. When the map with handwriting is printed, the typographic lettering is still to be corrected. Maps to illustrate recent developments in newspapers or on television depend on handwriting. Any doubt about these facts could be taken away by research, for which a preoccupied "medieval" is not a valid substitute.

If we could with reason call something medieval which has been devised in the Middle Ages, the word would not apply to handwriting but to typography. Medieval people are not to blame for it; they would never have tried to substitute handwriting by such a painstaking process if they would have had photography. Why should we stick to it?

Paul A. Kolers: Clues to a letter's recognition: implications for the design of characters.

Quotation: The salient fact of the figures is that transformations which may be regarded as geometrically equivalent rotations in space are not equivalent for the reader.

I
 and M
 than R.

take far more time

[. . .] I do not have a complete explanation for this fact but have offered some conjectures elsewhere (pp. 150–153).

Comment: I wonder in how far the disorientation which slows down reading is due to the choice of the material. The humanistic minuscule (roman lower-case) which has been used for the reading experiments contains a number of letters with relations to each other which resemble the rotations of the experiments:

N nubdpq
 I bdpqnu
 M mrrpqbd
 R pqbdmrr

These “pseudowords” are absolutely illegible; they can be deciphered only. The peculiar typeface of the experiments (an extremely bad design by IBM) adds greatly to this chaotic effect by the absence of meaningful contrasts in the letters. As moreover a and reversed e have too much in common to be quickly distinguished in rotations, we can safely say that the majority of the characters as they occur in common English are disqualified for the experiments with reversed and rotated letters. Text in capitals may lead to quite different results. Some scepticism towards Kolars’ conclusions is necessary.

Quotation: The conclusion seems clear that typefaces that emphasize bold downstrokes for the Roman alphabet, however elegant the letters esthetically, impede their smooth visual processing. As I have shown, the skilled reader needs to look more to the right than to the left; hence the typeface designer concerned to facilitate reading should emphasize the distinguishing marks of the letter rather than the informationally impoverished downstroke. Distinguishing marks appear on a letter’s right (p. 164).

Comment: As I have shown, the skilled reader needs not to look more to the right than to the left. And the distinguishing marks are not on the right side of letters. The quoted statement may be true to some extent for capitals, though the “informationally impoverished downstroke” bears the only difference between D and O, D and P, X and K, V and Y, but the capital alphabet is not suited for reading at all.

Reading, understood as grasping words, depends on a writing system in which the word is a clear unity. Writing is designing the medium for reading. Design does not “impede the smooth visual processing” of the alphabet; design is its condition. Design which afflicts communication is bad design; it cannot be esthetically satisfying, but to illiterates.

Quotation: I am told that the designer of letters learns to make his down-strokes heavy and his upstrokes and curves light (p. 160).

Comment: The designer learns writing. Writing results in heavy downstrokes and light upstrokes. Generally this result is called letter. Curves and upstrokes tend to exclude each other: italic has upstrokes

but no curves; "roman lower-case" has curves (generally bold, due to the technique of writing) but no essential upstrokes.

Writing is not a series of strokes, but space, divided into characteristic shapes by strokes. In our system of writing these shapes are arranged along horizontal lines. This is effectively done by downstrokes.

More than informationally impoverished, the downstroke might prove to be a pillar of visual communication, of the same importance as the horizontal brushstroke in Chinese writing.

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Résumé de Articles

Traduction: Fernand Baudin

La conception et la lisibilité des signaux routiers par *John Lees et Melvin Farman*
Ce rapport tire les conclusions d'une étude comparative (entreprise à la demande du U.S. Bureau of Public Roads) portant sur les principaux systèmes de signalisation connus dans le monde. Formes, couleurs, symboles, pictogrammes et inscriptions furent examinés en studio, en laboratoire et sur la route. L'enquête fut réalisée par une équipe qui comprenait des psychologues, des ingénieurs et des graphistes. Elle ne négligea pas les autres recherches en cours en ces mêmes matières. L'introduction fait un bref historique du développement de la signalisation routière et de sa réglementation; elle explique aussi les réactions du conducteur au volant de sa voiture.

Les ligatures et la technologie actuelle par *Joseph S. Scorsone*
La composition électronique supprime bien des restrictions quant au nombre des caractères qui peuvent entrer dans une fonte. C'est ainsi que 27 ligatures ont pu être ajoutées au News Gothic et au Century Schoolbook. L'article est illustré.

Le dessin des caractères dans l'ère électronique par *Wim Crowwel*
Autrefois, la typographie était toujours le reflet de la culture contemporaine. Aujourd'hui, elle reflète le passé et pas du tout notre société présente. Or, nous devons penser en termes d'ordinateurs et d'électronique. Comment? C'est ce que nous montre l'auteur, par la parole et par l'image.

Les préférences des lecteurs en matière de caractères et d'interlignes par *D. Becker, J. Heinrich, R. von Sichowsky, et D. Wendt*
L'article examine la part du caractère et de l'interligne dans l'attrait consciemment éprouvé à la vue d'une page imprimée. 80 sujets ont eu à juger 48 caractères tels que le Garamont, le Bodoni, l'Akzidenz Grotesk, romain et italique, en composition justifiée ou non, et interlignée 1, 2, 3, 4 et 5 pts. Ils eurent à exprimer leurs préférences sur 6 colonnes. Les résultats furent mis en parallèle et fournirent une échelle de valeurs pour chaque type de caractère et de présentation. Il n'y eut pas d'écart appréciable dans les préférences en matière de composition justifiée ou non. Mais il apparut clairement qu'il faut varier l'interligne selon le caractère adopté.

L'adaptation du Initial Teaching Alphabet par *Arleigh Montague*
L'usage de l'I.T.A. se répand dans l'enseignement primaire. Mais sa diffusion sous forme imprimée est encore entravée par une adaptation insuffisante des