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Semantic Differentials of Typefaces as a Method of Congeniality Research

Dirk Wendt

The semantic differential, a technique of standardized descriptions for various kinds of objects in order to obtain quantitative measures of similarity, can be applied successfully to discriminate between typefaces and to locate them in a semantic space. Two different semantic differentials—a more general and a more specific one—yielded semantic spaces of three and four dimensions, respectively, on independent aspects. Results are interpreted briefly and with some caution. The main point is the demonstration of the applicability of this technique to typographic problems.

Many intuitive statements on congeniality, atmosphere value, and feeling tone (or whatever it may be called) of printing types have been made in the literature, but only a few experimental approaches to this problem have been attempted. A. Berliner (1920) had subjects sort 18 different typefaces according to four different products: fish, pork and beans, pancake flour, and orange marmalade. After examining 29 typefaces, Poffenberger and Franken (1923) arrived at five main qualities of atmosphere value: cheapness, dignity, economy, luxury, and strength. Ovink (1938) had subjects judge the appropriateness of 30 typefaces for eight ideas and eight literary topics, and determined three main

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categories of atmosphere value: luxury-refinement, economy-precision, and strength. Burt (1959) discovered correlations between pleasantness and readability of typefaces. Haskins (1958) had 300 subjects read ten different magazine articles, gave them ten headlines printed in different typefaces, and had them assign to each article the headline in the most appropriate typeface. The result was that some typefaces were assumed to fit more articles than other ones. Wrolstad (1960) found that aesthetic judgments of typographic experts are not shared by ordinary readers. A good review of the research was given by Zachrisson (1965, Ch. III).

In this article we demonstrate a technique of research which has shown good results in other fields but in only a few cases applied to typographic problems: the semantic differential (German: *Polaritäts-Profil*), introduced by Osgood, Suci, and Tannenbaum (1957), and by Hofstätter (1955, 1958, 1966) in Germany. Brinton (1961) and Tannenbaum, Jacobson, and Norris (1964) used it to show differences in perception of typefaces by professional and laymen; Click and Stempel (1968) applied it to evaluate layouts of newspaper front pages.

It should be mentioned that the study presented in this paper was done in Hamburg, Germany, with German subjects and German semantic differentials. This restricts the generality of the results but not the applicability of the method, as such. The study could easily be repeated with American readers and English semantic differentials, or in any country and language.

The semantic differential consists, essentially, in a standardized list of antonym attributes with seven-category scales extended between them (Fig. 1). To judge an object on a semantic differential, the subject decides which point on this seven-category scale best matches his feelings about each of the antonym attributes. The categories approximate the meanings indicated in the example below. If a subject is asked to rate his feelings—e.g., about the concept "female" on the following scale for the antonym "hard/soft"—he has to make up his mind whether he feels that "female" is very soft (scale value 1), soft (2), more soft than hard (3), neither soft nor hard (4), more hard than soft (5), hard (6), or very hard (7).

SOFT	1	2	3	4	5	6	7	HARD
	very soft	*soft*	*more soft than hard*	*neither soft nor hard*	*more hard than soft*	*hard*	*very hard*	

The subject then indicates his judgment by marking a check or an "x" over that category which best matches his feelings about this concept. In the same manner he judges this concept on all of the other antonym scales through the entire list. Descriptions of the same object, but by different subjects, can be averaged by taking means over the respective scale values of the individual judgments. To visualize the descriptions obtained by this method, the marks of an individual subject (or the averages over a group of subjects) can be connected from scale to scale by straight lines, thus displaying the description as a profile over the scales. The profiles of the concepts "male" and "female" (averages from a larger group) are given in Figure 1 as an illustration.

Such profiles can turn out more or less similar. Quantitatively, similarities between profiles can be calculated by means of correlation coefficients (Q-technique of correlational analysis: correlations between judged concepts over scales) or by means of distances in a Euclidean space. Osgood uses distances; Hofstätter prefers correlation coefficients, as we will do in this study. The matrix of all correlations (i.e., for all possible pairs out of a given set of objects judged on the semantic differential) can be factor analyzed, thus yielding a semantic space in which each concept is represented as a point. In this space, similarity between objects (as judged on the semantic differential) is indicated by the relative closeness of their representing points.

More extensive descriptions of the technique are given by Hofstätter (1955 and 1966). Its major advantage is that it can be used to compare the connotations, descriptions, or association fields of any kinds of objects. Hofstätter has used the method in a large variety of fields, exploring the stereotypes of national and ethnic groups, art and industrial products, professions, and abstract concepts—some of which we will refer to in this study.

Hofstätter's factor analyses of profiles, in most cases, gave him three or four orthogonal dimensions which could be rotated to be identified as "female," "male," and the German concepts of *Einsamkeit* (lonesomeness) and *Triebhaftigkeit* (impulsiveness). Note that the concepts of male and female, usually considered as antonyms, are not judged so in the semantic differential. Instead, they are almost uncorrelated, i.e., independent of each other. We

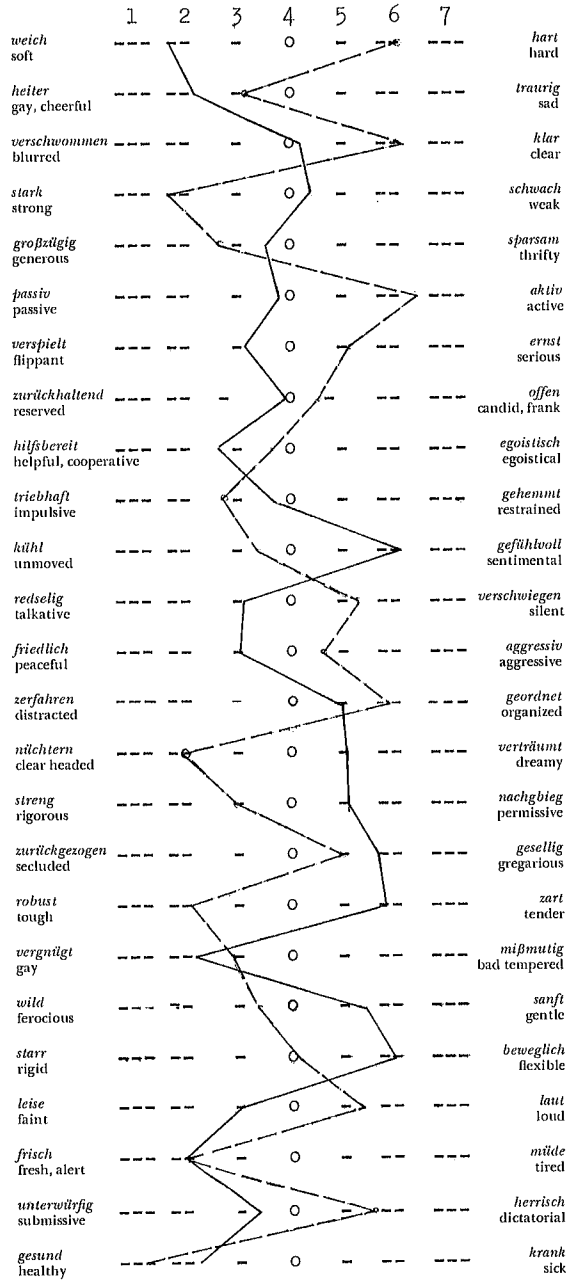


Figure 1. Hofstätter's Semantic Differential with the average concepts "Male" (broken line) and "Female" (solid line) as examples.

include in our analysis these four and a sample of other verbal concepts from Hofstätter's studies in order to orient and identify the dimensions resulting from our factor analysis of typefaces judged on this semantic differential. This sample of verbal concepts included in our analysis is given in Table I.

TABLE I. *Typefaces and Verbal Concepts Used in This Study*

1	Manuscript Gothic
2	Weiss Round Gothic
3	Renata
4	Centenary Fraktur
6	Weiss italic
8	Schneider Medieval
9	Amalthea
16	Bodoni
17	Bodoni italic
18	Bodoni semi-bold
19	Bodoni semi-bold italic
20	Bodoni bold
22	Heavy italic
24	Volta semi-bold
25	Volta semi-bold italic
26	Volta bold
27	Beton semi-bold
29	Beton extra-bold
30	Beton bold-condensed
31	Folio light
32	Folio light italic
33	Folio semi-bold
34	Folio semi-bold expanded
35	Folio italic semi-bold expanded
36	Folio bold condensed
37	Folio extra-bold
38	Futura Book
39	Futura Book oblique
41	Futura light condensed
42	Futura semi-bold condensed
44	Lithographic Script
45	Cantate
46	Bernhard Script
47	Legende
48	Maxim

W	*weiblich* (female)
MA	*männlich* (male)
E	*Einsamkeit* (lonesomeness)
TR	*Triebhaftigkeit* (impulsiveness)
SD	Social desirability—how subjects want to be seen by others
I	*Intelligenz* (intelligence)
P	*Produzent* (producer)
KO	*Konsument* (consumer)
V	*Vater* (father)
M	*Mutter* (mother)
GB	*Geborgenheit* (feeling of security)
KA	*Kampf* (fight, battle)
TO	*Tod* (death)
EL	*Elend* (misery)
HK	*Heiterkeit* (cheerfulness)
GL	*Glück* (luck, fortune)
GM	*Gemüt* (feeling, disposition)
O	*Ordnung* (orderliness)
ER	*Erschöpfung* (exhaustion)
EK	*Ekel* (loathing)
SK	*Sklaverei* (slavery)
BQ	*Bequemlichkeit* (comfort)
F	*Fortschritt* (progress)
LA	*Langeweile* (boredom)
LI	*Liebe* (love)
D	*Diktator* (dictator)
HL	*Held* (hero)
SA	*Sauberkeit* (tidiness)

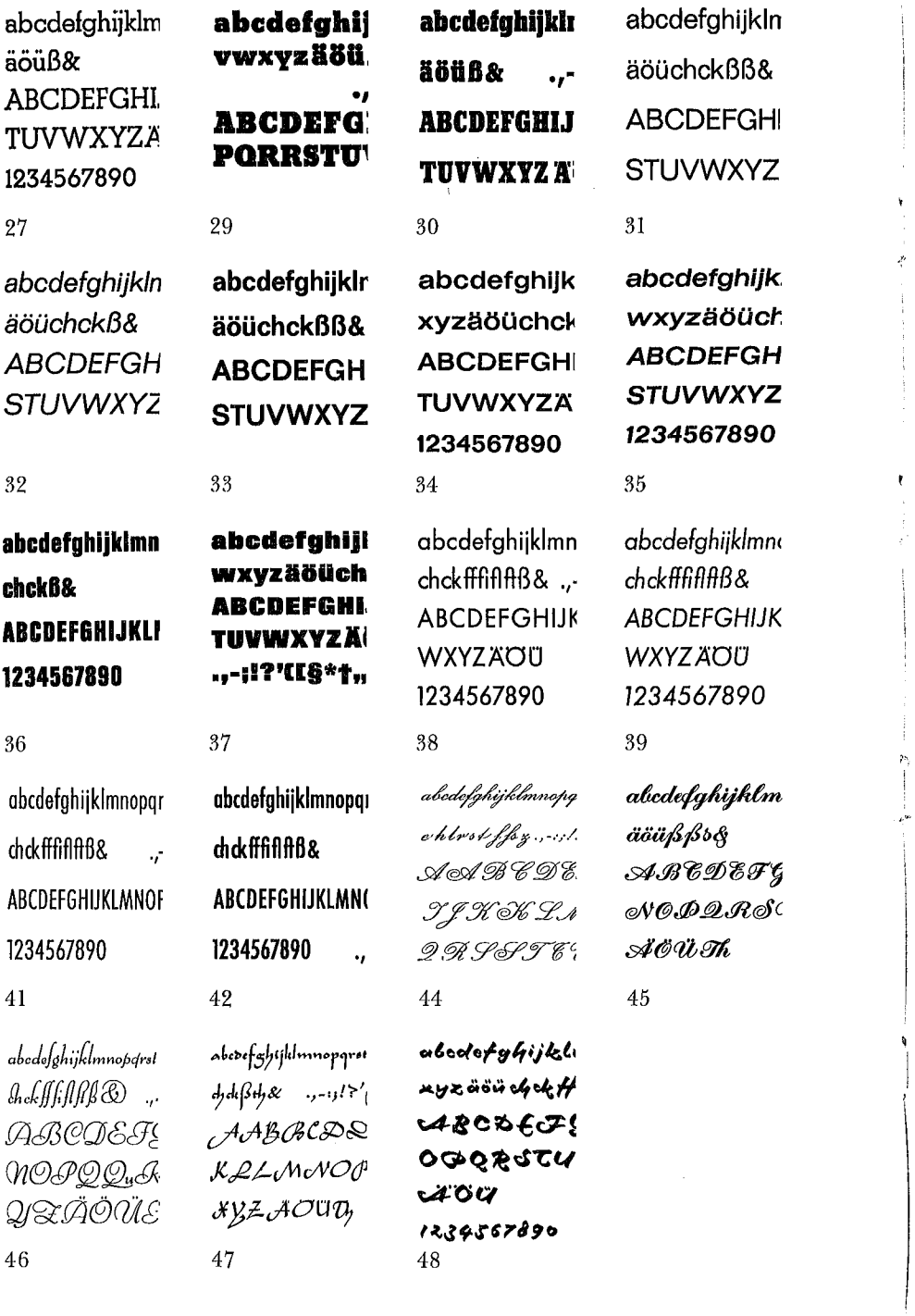
Bold numbers indicate notation in the graphs.

The English translations of these verbal concepts and of the attributes in the semantic differentials should be regarded with some caution. In such subtle applications of language, translations frequently cannot provide completely equivalent terms. What is judged on the semantic differential is not only the literal meaning of the word but also a whole field of connotations and associations attached to it; these might vary from language to language. Hofstätter (1957) has shown this, e.g., when comparing the profile of the American concept "lonesomeness" to that of its literal equivalent in German *Einsamkeit*. *Einsamkeit* had much more positive associations than lonesomeness, and both concepts were located in completely different places in the respective semantic spaces.

Some special problems arose when we tried to apply the technique of the semantic differential to describe typefaces. Typefaces always occur in some printed context, and it is easily possible that the subject in his judgment takes into account not only the typeface, as such, but also the meaning of the text, the surroundings, layout, color of ink and paper, etc. In order to avoid undesired interference of these variables, we tried to keep them as constant as possible. We presented a printed alphabet of each typeface (both capitals and lower-case) in constant size, layout, ink, and paper—on cards of about 5 x 7 inches. They were taken from the 48 fonts in the Typoskizzenkarten of the Bauersche Gießerei, Frankfurt am Main, Germany. The 35 typefaces used in our study are reproduced, on smaller scale, in Figure 2. The bold-face numbers refer to their original numbers in the Typoskizzenkarten.

It is possible that the use of alphabet cards may not be the best presentation of a typeface for judging its congeniality (e.g., normal printed text never shows such long sequences of all-capitals). An ideal text composed specifically to judge a typeface in its natural use but without a meaningful text to distort the judgments would be a probabilistic approximation to a language; e.g., a third-degree approximation to English: "In no ist lat. Whey cratict froure birs grocid pondenome of demonstures of the reptagin is regoactiona of cre" (from Luce, 1960, p. 21). Its essential feature is that all triples of adjacent letters (including the space

Figure 2. Partial reproduction of the typefaces used in the study, courtesy Bauersche Gießerei, Frankfurt.



as a "letter") occur with the same probability as they would in the regular language. This makes it look very similar to regular text, but without any meaningful sense. However, such material was not available for this study.

Each of the 35 typefaces reproduced in Figure 2 was individually judged by ten subjects on Hofstätter's semantic differential (Fig. 1) and on another semantic differential especially made for judging typefaces, which we will talk about later. No subject judged more than five typefaces on both semantic differentials, so that there was a total of 70 subjects participating in this study.

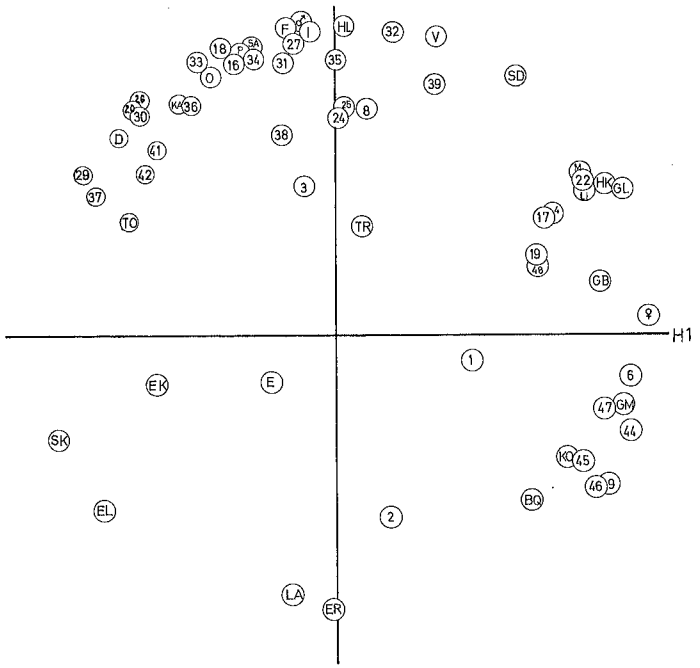
The individual profiles were averaged for each typeface over the ten subjects, and the resulting 35 mean profiles for typefaces were correlated to each other and to the profiles of the 28 verbal concepts which are reproduced in Table I. Profiles for these 28 verbal concepts were taken from former studies by Hofstätter with his semantic differential. The 63 x 63 correlation matrix was factor analyzed in such a manner that the resulting factors were as close as possible to the four orientation dimensions of Hofstätter's semantic space: "female" (H1), "male" (H2), *Einsamkeit* (lonesomeness) (H3), and *Triebhaftigkeit* (impulsiveness) (H4). These four factors were responsible for 30%, 38%, 10%, and 4% of the common variance in the correlation matrix. The planes expanded by the pairs of factors H1/H2, H1/H3, and H2/H3 are given in Figures 3, 4, and 5, respectively. (We dropped factor H4 since its contribution is rather irrelevant as compared with the other factors.)

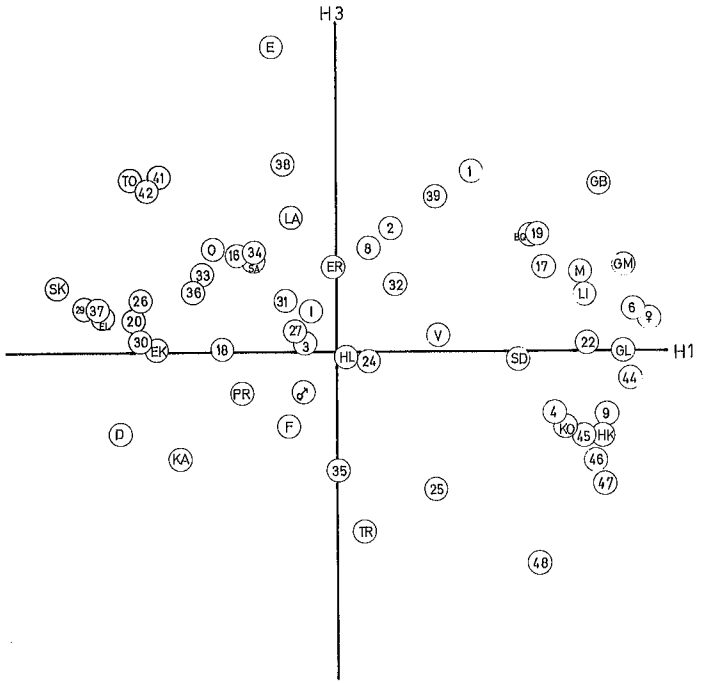
The points in these graphs (circled numbers and letters) represent the typefaces and verbal concepts judged on the semantic differential; their numbers and letters correspond to those given in Table I and Figure 2. However, it is important to mention that these points are only the projections of the representing points in the semantic space onto the respective plane between two factors. Consequently, if the representing points of two concepts or typefaces are very close together on one of these graphs, this does not necessarily imply that these objects are also very close together in the semantic space, since they can be separated in a third dimension. To understand this a little more easily, imagine that you are looking at a galaxy of stars (which is three-

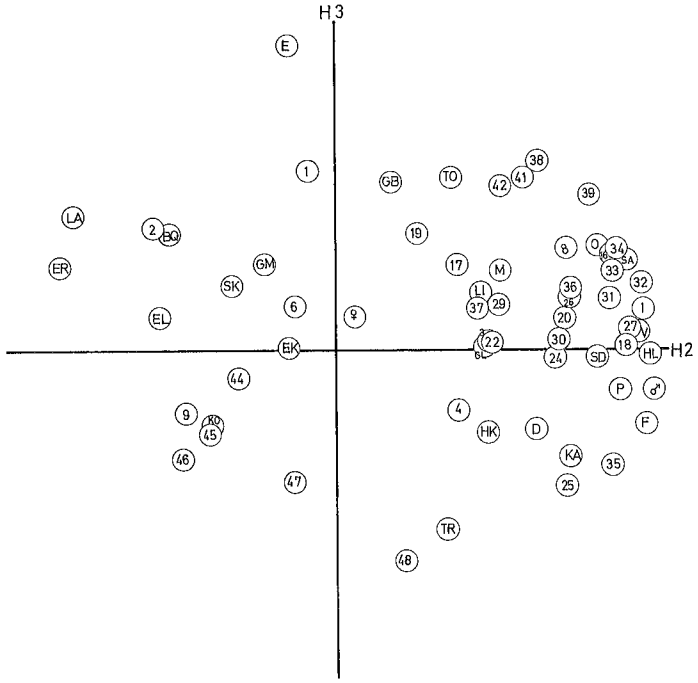
dimensional) from a certain point outside of it, and you take a photograph. On this photograph, two stars might seem to be very close together, but they actually can still be far apart in the direction you are looking at them. To check on this, you can move around the galaxy until you look at it from an angle perpendicular to your first viewpoint, and take another photograph. Only if the two stars are very close together on both of these two-dimensional projections of the three-dimensional space, can you infer that they are actually close together.

To investigate the relative distance of the typefaces and verbal concepts within the three-dimensional space more precisely, a cluster analysis was performed to determine which typefaces and concepts actually cluster together. Objects (i.e., typefaces or verbal concepts) were judged to be in a cluster if the mean rela-

Figures 3 through 5. Results of the factor analysis with Hofstätter's Semantic Differential.







tive closeness between members of the cluster exceeded a certain criterion, which was dependent on the distribution of relative closeness between objects throughout the entire semantic space. The results of this cluster analysis are displayed in Table II. They will be interpreted later in this paper.

Now let us take a closer look at Figures 3 to 5, and see how the factors are characterized. The typefaces (6), (9), (44), and (47) have high loadings (≥ .8) on factor H1 (best characterized as "female"). The typefaces (22), (45), and (46) have considerable loadings (≥ .7) on H1, too. These are mainly the cursive and similar typefaces. Among the verbal concepts, *weiblich* (W) (female), *Mutter* (M) (mother), *Geborgenheit* (GB) (feeling of security), *Heiterkeit* (HK) (cheerfulness, serenity), *Glück* (GL) (luck, fortune), *Gemüt* (GM) (feeling), and *Liebe* (LI) (love) have highest loadings on this factor. Its negative end is characterized by *Sklaverei* (SK) (slavery) and the extra-bold typefaces (29) and (37). This does not imply that the typefaces (29) and (37), which are highly correlated to each other, are also strongly associated with slavery. Their correlation to slavery (SK) is only moderate; they are separated by other dimensions.

Factor H2 (best characterized as "male") shows largest loadings (≥ .8) for the typefaces (16), (18), (27), (31), (32), (33), (34), (35), and also (≥ .7) for (26), (36), and (39). These represent a large variety of typefaces, and it is hard to make any generalization about them, except perhaps that there are no extraordinary ones among them. Factor H2 seems to represent "print" (or "typefaces") in general within Hofstätter's semantic space. No typefaces have considerable negative loadings on this factor; the largest negative loadings are (between −.6 and −.4) obtained by the typefaces (2), (9), and (46) which give a less technical impression. Verbal concepts loading high on factor H2 are *männlich* (M) (male), *Intelligenz* (I) (intelligence), *Produzent* (P) (producer), *Vater* (V) (father), *Ordnung* (O) (orderliness, organization), *Fortschritt* (F) (progress), *Held* (HL) (hero), and *Sauberkeit* (SA) (tidiness); the negative end of this factor is characterized by *Erschöpfung* (ER) (exhaustion) and *Langeweile* (LA) (boredom). Factor H2 absorbs much of the common variance of the typefaces in Hofstätter's semantic differential, without differentiating much among them. (Anticipation of such results led us to the construction and application of a special semantic differential for the description of typefaces which we will discuss below.)

Factor H3 (characterized by the German concept *Einsamkeit* (E), which may be translated as "lonesomeness" or "isolation" but has been shown to have a different location in the semantic space, as mentioned above) shows no considerable loadings for any of the typefaces under investigation. Highest loading typefaces on this factor (although only between .6 and .4) are (1), (38), (39), (41), and (42) on the positive end, and (25), (47), and (48) on the negative end. Since this factor explains only about 10% of the common variance of both typefaces and verbal concepts, it is not of much explanatory value in this study.

Thus, we finally got two essential factors, one of them (H1) accounting mainly for the female-looking cursive and brush-paint types, the other one (H2) being a more general factor which did not differentiate much between the typefaces under consideration. However, this part of the analysis gave us the location of individual typefaces within the known semantic space by Hofstätter, their correlations and clusterings with the verbal concepts, and thus, a good idea of how these typefaces are perceived.

Hofstätter's semantic differential was originally developed as an instrument to judge people and abstract concepts. However, it can be applied to any kind of object if we consider the list of attributes in the semantic differential as a representative sample of all possible attributes. But it is possible that this sample (although representative for the attributes relevant to judge people and abstract concepts) neglects relevant aspects which are important to judge typefaces. Therefore, we constructed another semantic differential especially to describe typefaces. It consists of attributes which we found frequently used in literature about typefaces, mostly in more intuitive descriptions of associative qualities of fonts; e.g., Kaech (1949), Kapr (1955), Kropf (1952), Mengel and Schantz (1954), Nettelhorst (1959), Tschi-

chold (1963). The new semantic differential is reproduced in Figure 6.

Since Hofstätter's semantic differential was an instrument which had been used successfully by him and his collaborators in many previous studies, we adopted it for our investigation rather uncritically, but we had to be somewhat more cautious with the newly-constructed semantic differential for typefaces. To make sure that the items of our new list discriminated sufficiently between judged typefaces, an analysis of variance between typefaces was computed for each scale (pair of antonyms) of the new list. These analyses of variance gave significant F ratios for all scales ($p \leq .05$). To make sure that the items of the new list were not redundant but took into account a sufficiently large variety of independent aspects, a factor analysis between the scales of this list was computed. It showed four major independent factors which were responsible for 31%, 25%, 27%, and 11% of the common variance. These four factors can be interpreted as different aspects of judging typefaces. They could be rotated such that factor I is characterized by scales which refer to the weight, strength, or firmness of a typeface vs. looseness and laxity; factor II by scales referring to tradition, but also despondency and paltriness vs. progress and generosity; factor III by order and reliability; factor IV by the extraordinary vs. the ordinary. However, it is not important here how we chose and named these factors; the point is that the dimensionality of the new semantic differential is large enough to take into account several uncorrelated aspects of judgments on typefaces, and that all our new scales discriminate significantly between the typefaces used in this study. An interesting typographic investigation of this kind—i.e. correlating and factor analyzing judgement scales—has been done by Tannenbaum, Jacobson, & Norris (1964).

The data analysis of the profiles for the 35 typefaces on this new semantic differential was exactly the same as for those obtained on Hofstätter's semantic differential, except that no verbal concepts were included in this case. Although we started from a smaller matrix (35 x 35 instead of 63 x 63), a larger number of four relevant factors could be extracted. This indicates that we actually obtained additional information by using this special se-

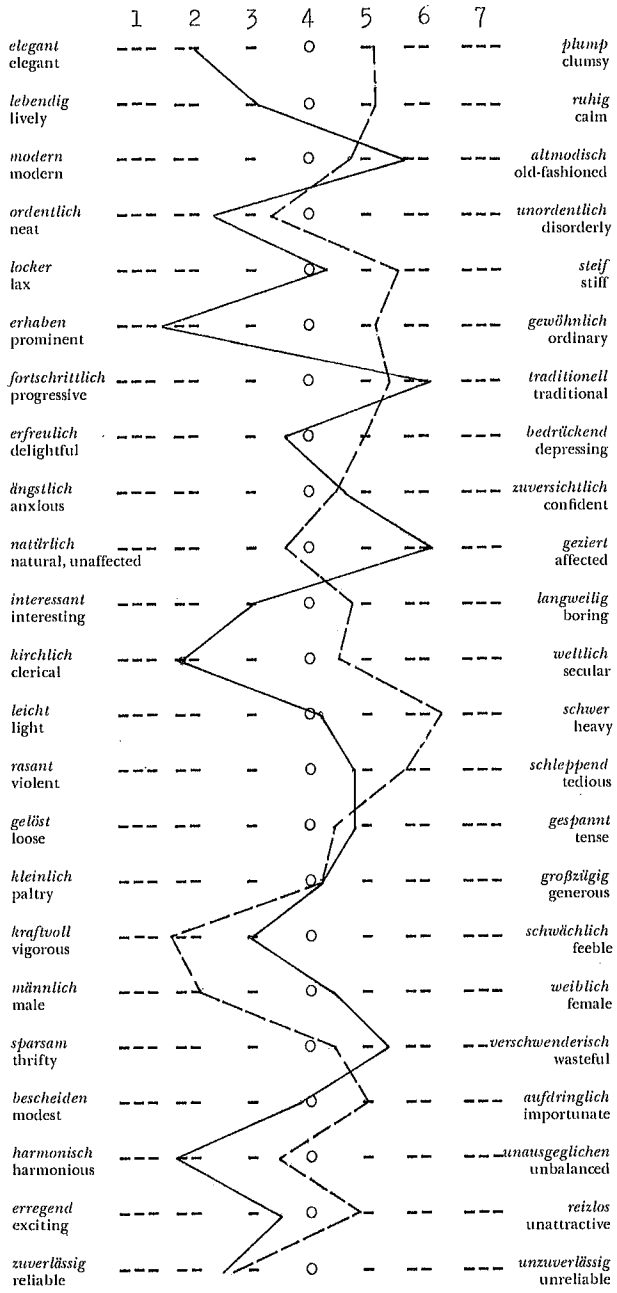


Figure 6. The special semantic differential for the judgment of typefaces with 1 (solid line) and 29 (broken line) as examples.

mantic differential. Figures 7 through 12 give the results of this factor analysis after rotation. Again, an additional cluster analysis was performed; results are given in Table III. Table IV summarizes which typefaces cluster in both analyses, in Hofstätter's general semantic differential as well as in our special one. We will interpret these results later.

Now, what does this special semantic space made up by the new semantic differential look like? On factor F1, the typefaces (8), (19), (27), (38), and (39) are loaded highest ($\geq .8$). They are characterized mainly by the attributes *ordentlich* (orderly, organized), *zuversichtlich* (confident), and *weltlich* (secular, profane). No considerable loadings occur at the negative end of this factor. Factor F1 seems to be a more or less general one, representing the judgment of typefaces in general on this semantic differential.

Factor F2 is characterized by the typefaces (48) and (47) (loadings $\geq .8$), to a somewhat smaller degree also by (46) and (9) (loadings $\geq .7$), and at its negative end by (41). It is obvious that this factor represents the cursive and brush-painted typefaces. They are judged as *lebendig* (lively), *elegant* (elegant), *unordentlich* (disorderly), *locker* (lax, loose), *zuversichtlich* (confident), *interessant* (interesting), *geziert* (affected, also ornate), *weltlich* (secular, profane), *verschwenderisch* (wasteful), *großzügig* (generous), and *weiblich* (female). The one typeface on the negative end of factor F2, (41), is considered *ruhig* (calm, quiet), *steif* (stiff, rigid), and *langweilig* (boring).

Factor F3 is determined by the typefaces (1), (2), (3), (4), and (45). Most of these are gothic types. They are *altmodisch* (old-fashioned), *traditionell* (traditional), *geziert* (affected, ornate), *schwer* (heavy), *kirchlich* (clerical, ecclesiastical), and *verc-schwenderisch* (wasteful). In short, they give a somewhat baroque impression.

Figures 7 through 12. Results of the factor analysis with special semantic differential.

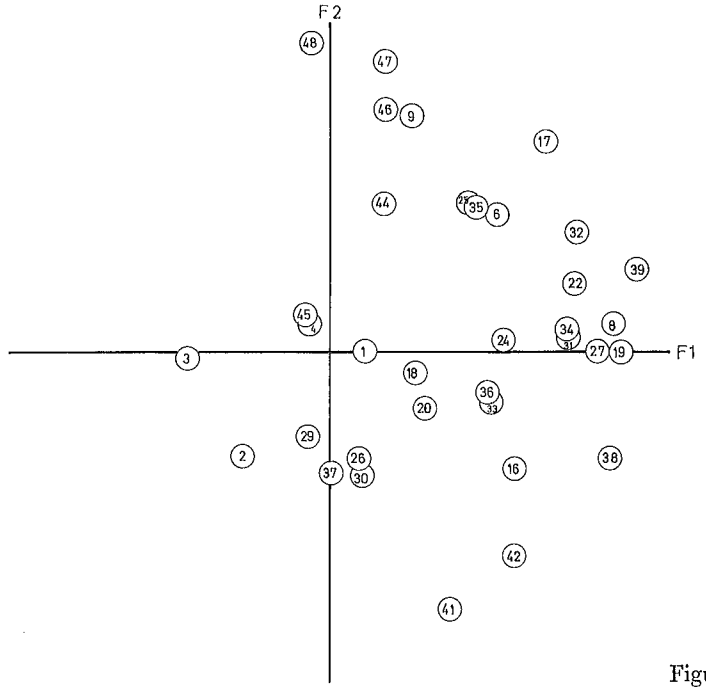


Figure 7

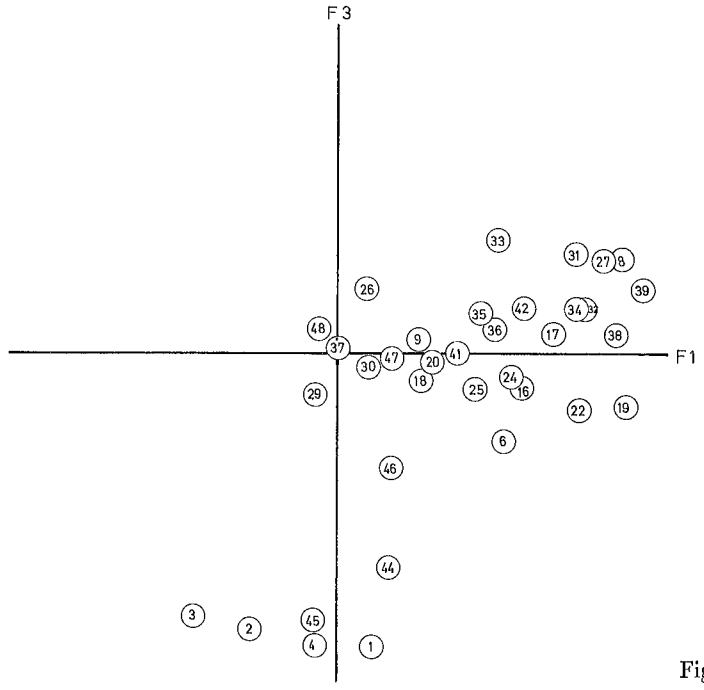


Figure 8

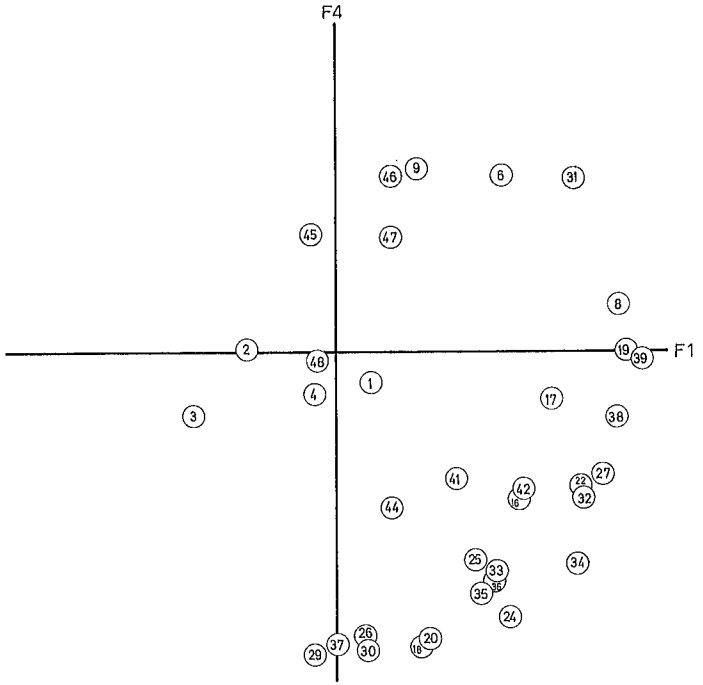


Figure 9

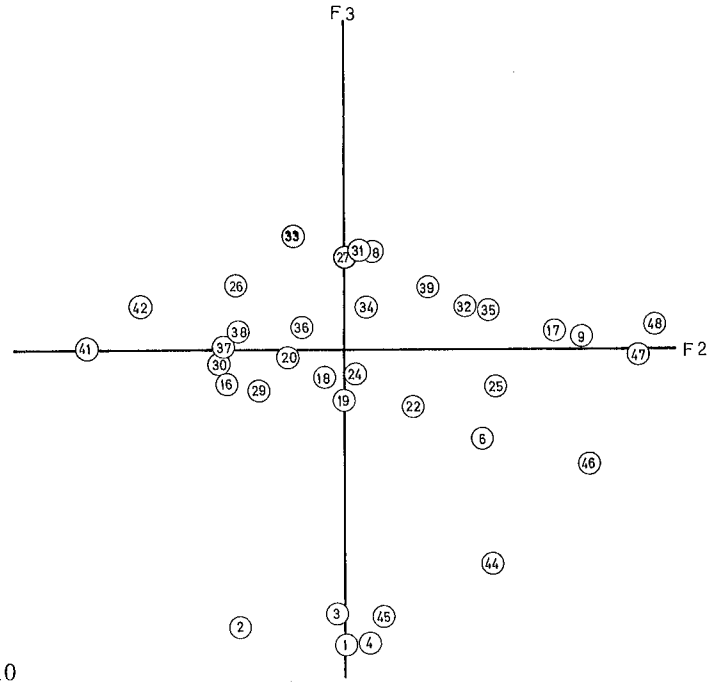


Figure 10

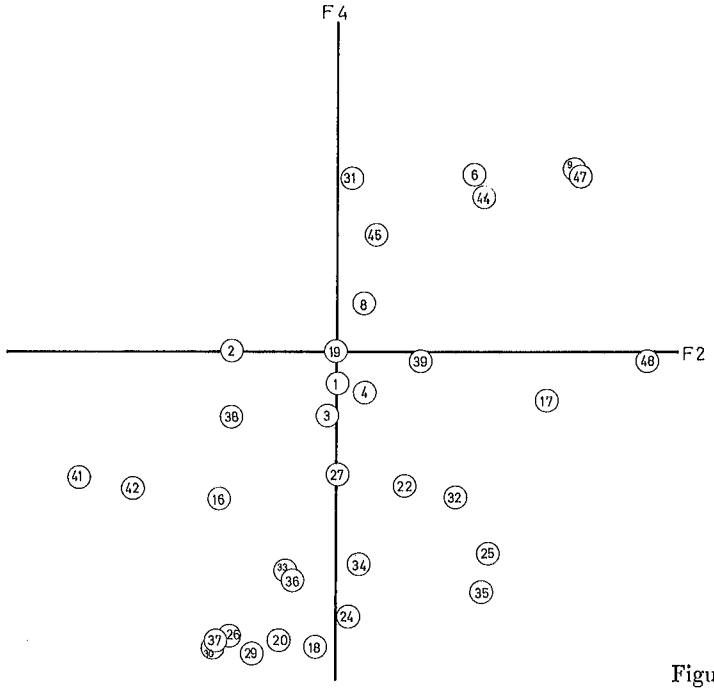


Figure 11

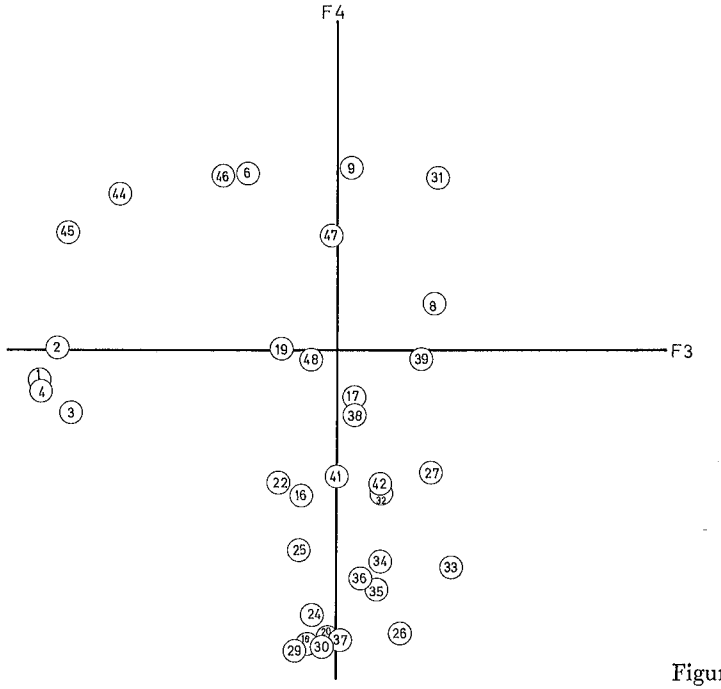


Figure 12

Factor F4 is again of a more general kind, like factor F1. It is characterized (at its negative end, but the sign does not matter in this kind of analysis) by the typefaces (18), (20), (24), (26), (29), (30), (37) (loadings ≥ .8), and (35) (loading ≥ .7). All these typefaces are bold or extra-bold, and this factor can easily be recognized as the aspect of boldness in judging typefaces. These bold typefaces are considered *ruhig* (calm), *ordentlich* (orderly, organized), *plump* (clumsy, bulky), *weltlich* (secular, profane), *schwer* (heavy), *steif* (stiff, rigid), *zuversichtlich* (confident), *kraftvoll* (vigorous, powerful), *männlich* (male), and *langweilig* (boring). In short, the bold faces give the impression of something solid but not very interesting.

Factor analyses give us locations of objects in a semantic space, the dimensionality of which corresponds to the number of independent (uncorrelated) aspects of differentiating a given multitude of objects. As we mentioned above, additional cluster analyses have been performed on these data. Cluster analyses show how objects group together by mutual similarity as judged on the semantic differential. The clusters do not have to be uncorrelated. Thus, in Hofstätter's three-dimensional semantic space we found seven clusters (Table II).

Cluster 1 contains many regular typefaces of the kind mostly used to transmit technical and day-to-day information. (0) and (SA) (orderliness and tidiness) are also included in this cluster, showing how these typefaces are perceived.

Cluster 2 is made up exclusively by extra-bold typefaces.

Cluster 3 contains the two very narrow Futura fonts (41) and (42), and the verbal concept of *Tod* (death), indicating that these typefaces are closely associated with this verbal concept (correlations .75 and .70). This is a discovery which probably not every typographer would have noticed intuitively.

Cluster 4 consists of the verbal concepts *männlich* (male), *Fortschritt* (progress), and *Held* (hero), and the typeface (35). The verbal concepts closely associated with this font give a good indication of the impression it makes upon a reader, and where it could be used.

Cluster 5 contains only cursive typefaces, and the verbal con-

TABLE II. *Clusters of Typefaces and Verbal Concepts Based on Hofstätter's Semantic Differential*

Cluster 1
(33), (16), (34), (36), (31), (18), (27), (0) (order), (SA) (tidiness)
Cluster 2
(26), (20), (30), (29), (37)
Cluster 3
(41), (42), (TO) (death)
Cluster 4
(35), (MA) (male), (F) (progress), (H) (hero)
Cluster 5
(9), (45), (46), (44), (KO) (consumer)
Cluster 6
(6), (GM) (feeling), (W) (female)
Cluster 7
(22), (17), (GL) (luck), (LI) (love), (M) (mother)

TABLE III. *Clusters of Typefaces Based on the Special Semantic Differential*

Cluster 1
(33), (36), (34), (24)
Cluster 2
(30), (37), (29), (26), (20), (18)
Cluster 3
(42), (41), (16)

TABLE IV. *Clusters of Typefaces Occurring in Both Analyses*

Cluster 1
(33), (34), (36)
Cluster 2
(30), (37), (29), (20), (26)
Cluster 3
(41), (42)

cept *Konsument* (consumer). The German consumer image on the semantic differential is very weak, passive, feminine, and receptive, and so are the cursive typefaces perceived by the subjects.

Cluster 6 indicated that the typeface (6) is strongly associated with *weiblich* (female) and *Gemüt* (feeling), i.e., it has a strong emotional component.

Cluster 7 is made up of some italics, and *Glück* (luck, fortune), *Liebe* (love), and *Mutter* (mother).

The first three of these clusters occur again in the analysis of the special semantic differential. Here, by the use of a more specific list of antonym attributes especially aimed at the differentiation of typefaces, we actually are able to discriminate better among them: only three clusters show up (Table III). Of course, this decrease in number of clusters is partly due to the fact that verbal concepts are not included in this analysis; in other words, clusters mainly made of verbal concepts such as 4 and 6 would not occur. The three clusters from the analysis of the special semantic differential in Table III can be given almost the same interpretation as those in Table II. Cluster 1 is now restricted to technically looking bold typefaces. In cluster 2, (18) joins the extra-bold fonts, although it is only moderately bold, and in cluster 3, (16) joins the narrow Futuras.

As mentioned above, these interpretations must be considered with some caution, and we do not want to go too far into them. The presentation of typefaces on alphabet cards may give a false impression; the English translations of the attributes in the semantic differentials and of the verbal concepts are possibly inadequate. Furthermore, these impressions of typefaces are those obtained from naive readers which might differ from those of experts, as Wrolstad (1960), Brinton (1961), and Tannenbaum, Jacobson, and Norris (1964) have shown.

However, it has been shown that semantic differentials can be used successfully to obtain quantitative measures of similarity between typefaces, and between typefaces and other objects. By this means, congeniality, or feeling tone, can be explored on a more objective than intuitive basis. Thus, the technique of the semantic differential may prove helpful in the selection of typefaces and similar problems. More generally, it could be applied not only to typefaces but also to layouts and other typographic variables.

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SIMPLE CHANGE IN ARRANGEMENT

Sir,—The letter from Frank Quelon (9 March) makes a good case for the introduction of dedecorated English. He points out that there would be a worthwhile saving in space, and that learning would be easier, but the system leaves out of account altogether the question of reading time. An obvious method of achieving a reduction in reading time is to eliminate the time required to return the centre of vision to the left hand margin of the text after reading each line and before reading the next. This can be readily and logically achieved by printing English in a left—right—left direction.

The saving in reading time which would in change simple this from result arrangement may be expected to be and ,cent per one than more considerably in addition one gets the worthwhile bonus continuous more a ,practice little a after ,of perception of the text, uninterrupted by the beginning the to back gaze the swing to need of the line before reading the next. Possibly so and ,place their lose may readers some read the lines one out of phase. The simple place to is problem this to solution brackets at the ends of lines where (problem Another .sequence in are they (is the convention to be adopted when a (In ,line a of end the at occurs hyphen (well set type however these are (avoided be can probably and uncommon (altogether. The ultimate extension of (of use the course of is system this (mirror writing in alternate lines but (egatnavda eht si ereht hguoht neve (that the reversed lines show up. The (tbuod on era smelborp lacihpargopyt (considerable.

Max Whisson
Chester Beatty Research Institute
Institute of Cancer Research: Royal Cancer Hosptial,
Fulham Road,
London, SW3.

SMELBORP ON ALL SIDES

Sir,—Your correspondent Max Whisson ("Letters", 23 March) advocates an ingenious arrangement for economy in reading time. He has, however, been anticipated by some 25 centuries. In Greece, the method was used in the sixth century BC and before. In Athens, the Laws of Solon were inscribed in this manner, which was known as "boustrophedon", or, as we might say, ploughwise. You wrote a line from left to right, and at the end turned like an ox drawing a plough, and wrote the next line backwards. As we know, the Greeks had a word for most things.

But Orestes, even when hunted by the Furies, never dreamt of "smelborp". There you have a word which evokes the whole quintessence of the prestressed radioactive space age, including modern sculpture. Doubtless avant-garde poets, were they but likely to scan the pages of *New Scientist*, would avail themselves of its subtle atmospheric undertones to conjure up a whole nightmare of serial infinity. Fortunately they have no smelborp with semyhr.

R. L. Gwynne

81 Claremont Road
Wallasey
Cheshire

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The Design of Egyptian 505

André Gürtler

In 1965 the Visual Graphics Corporation organized an international competition for new typeface designs. The author directed his typography class at the Kunstgewerbeschule, Basel, Switzerland, in designing a class-project entry: Egyptian 505. The students' training for type design is described together with the specific development of Egyptian 505 for photocomposition. Art school education for script and type design is discussed.

In the fall of 1965 the Visual Graphics Corporation of New York and Miami, Florida, organized an international competition for the design of new typefaces.[1] Since the vocational education offered in art and design schools is rarely practically oriented, I wanted to take advantage of the opportunity for our students at the Kunstgewerbeschule to participate in such a competition. The directors of the school agreed, and the students took up the project with great enthusiasm.

A student who has never had a brush in his hand and who has never given any thought to the shape of a letter would scarcely be able to cope with the design of a typeface. The students in the class who undertook the project were in their third semester of the graphic art course; the entire study takes five years or ten semesters. Script instruction had been a part of their first-year curriculum. In this earlier instruction the students experienced a strict training in the basic elements of lettering, which was to be continued on a higher level when they enter the classes designed specifically to train graphic artists. The studies are divided into

1. A booklet on the 1966 International Typeface Design Competition, "15 Award-winning Typeface Designs," is available from Visual Graphics Corporation, 1398 NE 125th Street, North Miami, Florida 33161.

three parts: elements of letter design, penmanship, and the history of writing and lettering.

Our interests in the third-semester course concentrate on the design of different typefaces. For the novice it is very difficult to draw the shape of any letter correctly; one has to know them before one can draw them. He must, in the beginning, get the feel of the individual form of a letter. The student usually begins by designing the two lower-case letters n and o of a sans-serif style:

Figure 1.

We have found that this is the simplest and the most effective exercise in training the eye for the individual shape of a letter. There are neither serifs nor hairlines to confuse the issue, and the n and the o contain the important standard elements of any typeface. The n is the basic letter for the vertical line measure; with it the shape of the arch is determined. The o is the basic form for all round letters and with it the thickness of the horizontal line is determined; the vertical roundness must be tuned to the vertical part of the n; the shape of the arch must make a unit with the n. When the basic forms for n and o are in accordance with each other, all other letters can be developed.

Students are allowed only to do free-hand drawing from the very beginning. No mechanical expedients are permitted; only later in the education, the ruler can be used for measurements.

First come the other simple letters, then the more complicated ones:

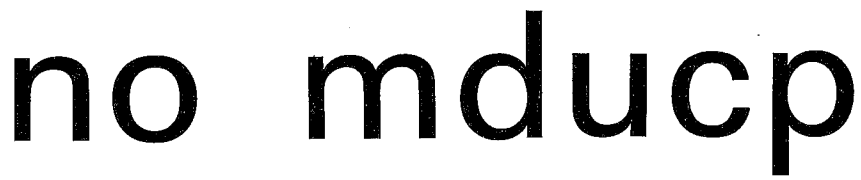


Figure 2.

Finally, the alphabet is complete:

Figure 3.

The student is now so far advanced that the capital letters can be drawn in accordance with the minuscules without great trouble:

Figure 4.

It would be ideal if the student could develop a complete type series in his course of study—including the numerals and punctuation marks—but this is only possible if he works at it on his own time:

Figure 5.

Only the essentials of letterform design can be taught, as the students have to be introduced to other exercises in developing a total feeling for form. The program, therefore, also deals with the refinement and the boldness of typefaces. For example, when the letter gets changed from its standard form—either thinned out or thickened—it changes the proportions of stem, width, and the inner spaces:

Figure 6.

Other important problems include differentiation between the horizontal spread and the boldness of letterforms:

Figure 7.

At a further stage the student must come to grips with problems other than those concerned only with form sensibility. In drawing his letters, he must also consider the meaning of the words his letterforms spell out. The individual letterform and the word structure often must visually convey the sense of a given word:

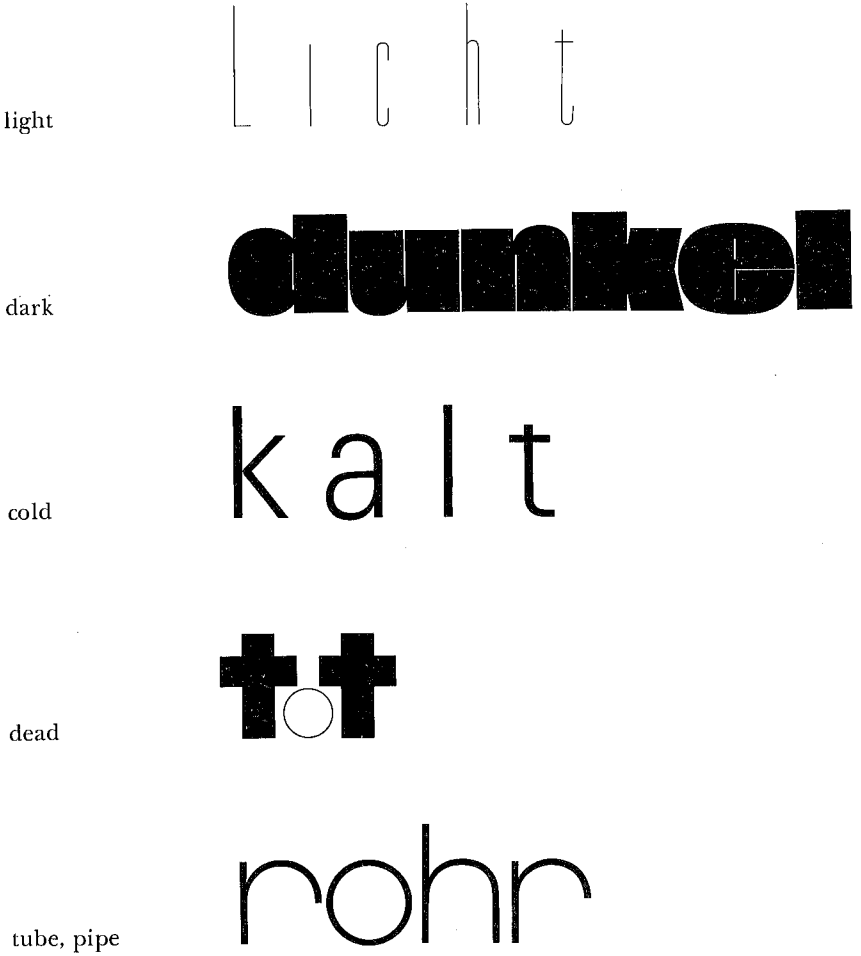


Figure 8.

Slowly the student's technical and formal skills develop, providing (in part) the basis for practical application.

The Competition

Because of the limitations in the background of the ten students and on account of the time limit—four months—I decided to make the design of the alphabet a project for the entire class. No single student could have done it in that period of time, and I

did not want to change the regular course of study. The students especially liked the challenge that, if successful, their design would be put into practice, plus the fact that the work would be their own and could be done by teamwork.

It was decided that an egyptian-style typeface would be attempted, primarily because few new egyptian faces have been done in recent years. The development of an egyptian typeface is also a more natural continuation of the previously-practiced sans-serif letterforms than would be an old-style or modern type style. We had, however, to determine which two principal kinds of the egyptian style to design: (a) with squared-off angular serifs, or (b) with serifs connected to the stroke of the letter with a bracket or fillet:

n n

Figure 9, a & b.

The students were divided into two groups and the respective designs compared (Fig. 10).

After some deliberation, it was decided to create an egyptian typeface of the second category. As before, the next step was the execution of finished drawings of the lower-case letters n and o (Fig. 11).

Ten photocopies were made of these original drawings for use by each student in developing his own work. The two basic letters did not give a complete picture of the alphabet. Only the addition of other letters and their composition into words could finally convince us that we were on the right track. With the designs for the letters a, g, h, m, n, o, and p we could compose some imaginary words. It would be possible then not only to judge the appearance of the contemplated type, but also to adjust the letter- and word-spacing for the entire projected alphabet:

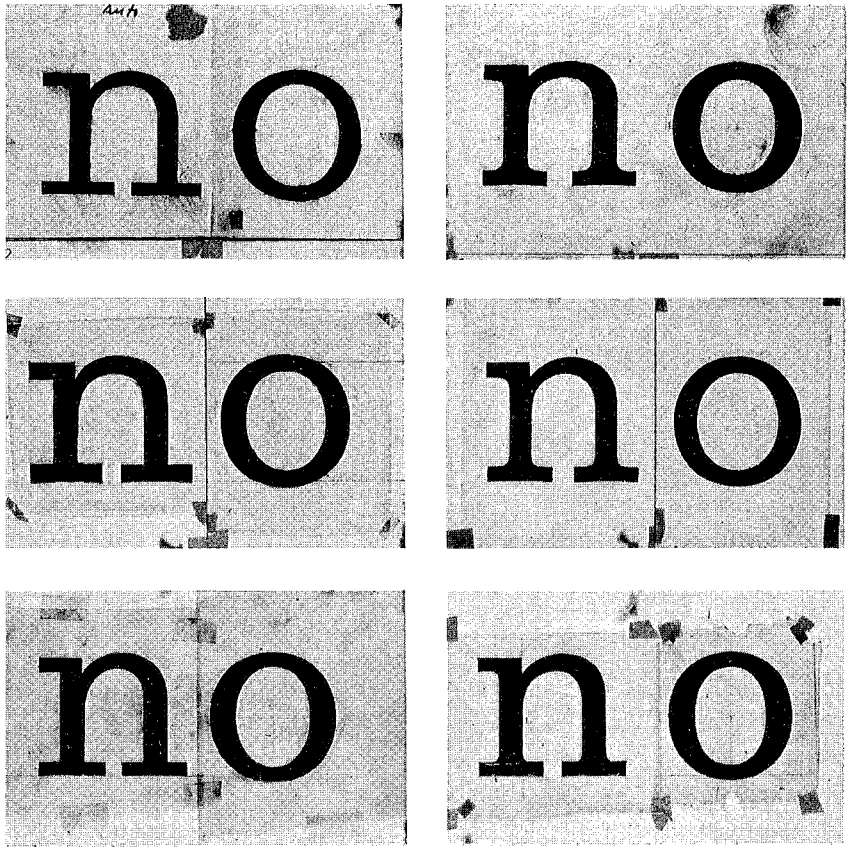


Figure 10.

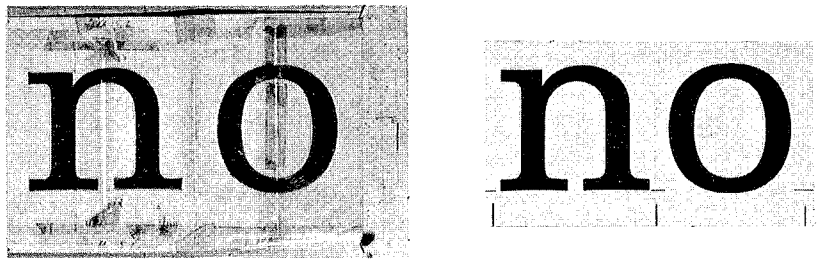


Figure 11.

Haven gehmn mwnev pegman poom hwvh

Figure 12.

Having now the preliminary work out of the way, we started to design the remainder of the alphabet. Each student was assigned a certain number of letters which he had to draw in relation to the basic letters already designed. This was done on tracing paper with a lead pencil:

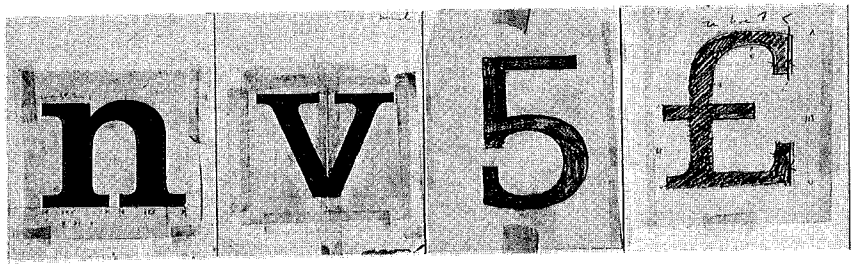
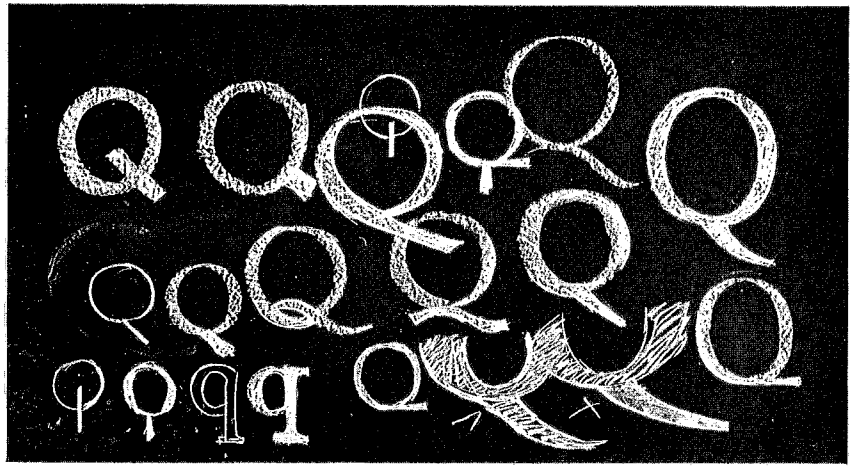


Figure 13.

When the individual form of each letter was considered finished, it was neatly executed. Teamwork was essential, as all participants were designing a single typeface. It was necessary for each student to confer with his fellow students and continually compare the individual designs, always bearing in mind that the entire alphabet had to be of an integrated uniformity. Nothing could be left to just one individual's decision. The entire class, for instance, worked on the capital Q and on the ampersand (Figs. 14 and 15). Much controversy arose around the lower-case g (see Fig. 6).



Q

Figure 14.

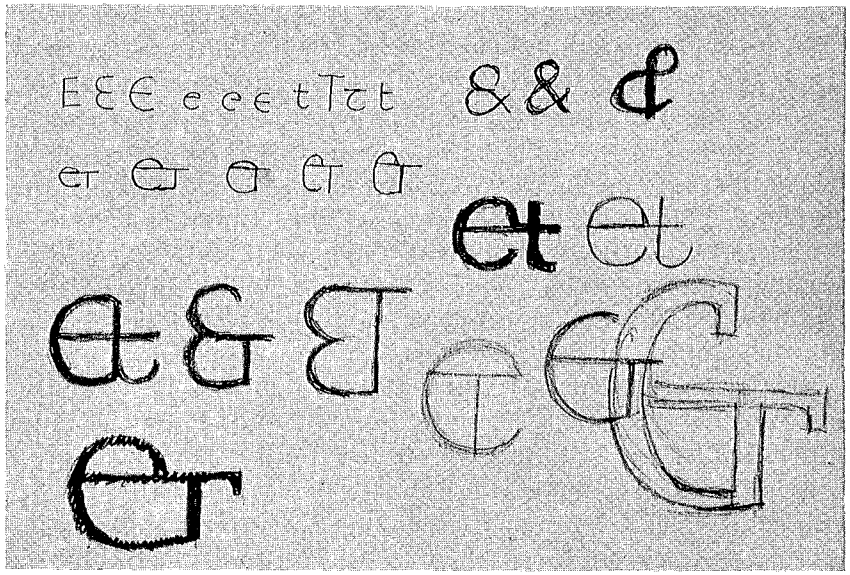


Figure 15.

Calligraphically, it is a good form; but its peculiar shape often causes a break in the appearance of the word. For this reason we changed the traditional form.

Slowly Egyptian 505 evolved. First we finished all of the lower-case letters; then we did the capitals, the numbers, and the punctuation marks.

Comparing Egyptian 505 with a Clarendon face (Fig. 16), one should particularly notice the uniform serif treatment in the former. The minuscule serifs correspond with those of the

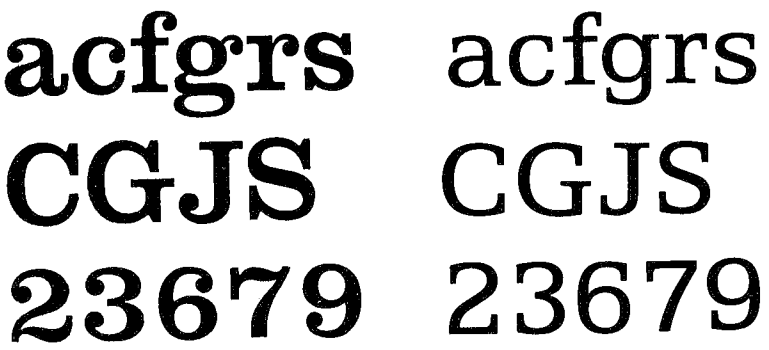


Figure 16.

majuscules; the numerals, the question mark, and the ampersand all have similar elements. In the Clarendon round, drop-like serifs are mixed with rectangular ones. Capital letters have their origin in Roman inscriptions; the lower-case letters in Medieval handwriting. We tried to overcome this dualism by giving both the same kind of serif.

Having finished the design of the entire alphabet, we were still not quite convinced that we were absolutely right with regard to individual letters. Therefore, we reduced the letters photographically in order to compose sample words in reader-face size. Letters are originally designed on an enlarged scale for ease in design and for accuracy, but it is in their reduced form that many mistakes are discovered. We, too, had our surprises; for example, the graduation of thickness in the vertical strokes had to be straightened out, sizes had to be equalized, and spaces between letters had

to be adjusted. At the last minute we had to correct a major mistake: we had the impression that the horizontals of the serifs were overshadowed by the round shape of the minuscules. We cut the drawing apart and made the necessary corrections with brush and paint. Finally, we were ready to make the finished reproductions of our design (Figs. 17, 18, and 19). We named our typeface Egyptian 505 for our workshop: lettering classroom 505.

In the first week of July, 1966, the prize winners were announced; there were 777 entries from 35 countries. Naturally we were very proud to receive first prize. When we entered the competition we had decided that in case we should be given a prize, the money would be used jointly for a class project. We spent three-quarters of the money for a study trip and the other quarter on some furnishings in our lettering classroom.

Summarizing our experience, we come to these conclusions: From the beginning I definitely had in mind to design a typeface which could be used in all composition and printing processes. This meant it had to be extremely precise, which, in turn, required the combination of great discipline with aesthetic feeling. It would be impossible for each student to exercise all of the necessary skills and details for such precision in one script course. Although each student would not have been capable of designing a complete alphabet, he was made familiar with all of the problems confronted in such an undertaking. He was forced to find an individual solution as part of the team. As all questions were discussed with the entire class and since single design elements were executed by all students, each one shared equal responsibility for Egyptian 505 and each one, therefore, shared the satisfaction of having successfully accomplished the job.

OVERLEAF
Figures 17, 18, and 19.

Egyptian 505

abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890
(.,:;'"¨!?/-—*$¢&&)

The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog. The quick brown fox jumps over the lazy dog the quick brown fox jumps over the lazy dog. He stands still fixing

THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG. THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG. THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG. HE STANDS STILL FIXING

Having the practical use of Egyptian 505 in mind, two students have also worked on an italic version, Egyptian 506, and on a bold version, Egyptian 507:

kanapee sack never

nimm pool bald goal

Figure 20.,
Figure 21.

A typeface meets with better success when it is available in a variety of forms; therefore, the work will be continued. By the end of 1968 we will have available the roman, italic, and bold plus a bold-italic version—all for use in photocomposition.

A Look into the Future

Script is a very great field. Wherever we are, we meet it in different forms—as type, as sign, and as symbol; not only in book printing and advertising, but on the highways and in the streets, in airports, on merchandise, for the computer, on neon signs. The revolution in photocomposition is indeed a great blessing of technology; composition can be done in a minimum of time with relatively low expense. The reproduction of new type designs takes place directly on film without the intermediary steps needed in the hot-metal process. But this ease in facilities can also have its dangers. Photography permits exact reproduction of whatever is produced by the stroke of a brush. Where formerly the copper, steel, or lead plates restrained our possibilities, there are today few barriers to individual whims:

Figure 22.

The need for variety can be met much better by improvements in clarity and legibility of scripts. There are now commercial concerns offering up to 5,000 different alphabets in photocomposition. One enterprise which specializes in script design and typography has been asked to annually develop up to 300 new alphabets. Considering the fact that perhaps only 15 to 20 alphabets can meet proper aesthetic and economic standards and have any hope of survival during the next 50 years, present mass production of new typefaces is surely in adverse ratio to its artistic value.

A graphic art school which has as its primary goal the raising of a new generation of competent craftsmen should not be sidetracked by these new developments. To teach the basic fundamentals is still its most important task; only then will it make the student adaptable to later environmental needs.

Cooperation between art schools, industry, and craft unions is essential. No school can afford to ignore the developments in science and technology. Besides the educational purpose, a school must also serve as a place of research and experimentation. Our participation in this competition has demonstrated that a single class in a school of graphic art can do work of international importance. In this respect, one might also discuss the question of whether such a school should limit itself to local activities. All over the world people have to meet more or less the same prob-

lems. Today the resources for training, research, and production are fragmented. If it were somehow possible to concentrate these resources, schools and research institutes could move into key positions.

Instruction in lettering and typeface design in today's art schools is often insufficient and only skims the surface. There are still many unsolved problems. Plans are underway to establish a special advanced program for lettering at the Kunstgewerbeschule in Basel. A comprehensive study of all facets of script design would be offered; research and experiments would take up a major part of the training program. As today's script problems are of international importance, the special program in lettering is to become an internationally-oriented training center.

Words in Color: Two Experimental Studies

Lillian R. Hinds and William G. Dodds

Development of the use of color as an initial added dimension in beginning-level reading is discussed, including the exploratory studies of the Gattegno Words in Color approach. Two experimental studies tested Words in Color: the Dodds study with primary-school children describes significantly superior scores in vocabulary and spelling; the Hinds study reports superior vocabulary and comprehension gains with inner-city illiterate adults.

The use of color in teaching is not new. As early as 1900, Nellie Dale in England employed color to highlight the language sounds: "red for vowels—important people; blue for voice-less consonants; black for voiced consonants."[1] By the mid-fifties, Hay and Wingo had popularized color to identify vowel sounds in a phonics program designed for use as an adjunct to a basal reader approach.[2]

In 1965 Kenneth Jones described the results of an investigation into the value of color as an aid to the visual discrimination of words and letters.[3] One hundred ten pre-school children were given four tests: (1) colored-letter test, (2) black-letter test, (3) colored-word test, and (4) black-word test. Half the children received the colored tests first then the black tests; the other half were first given the black tests and then the colored tests. All children were asked which they liked best, the colored or black

1. Morris, Ronald, *Success and Failure in Learning to Read* (London: Oldbourne Book Company, 1963), p. 47.

2. MacKintosh, Helen K., "Current Approaches to Teaching Reading," *NEA Journal,* LIV (December, 1965), 18.

3. Jones, Kenneth, "Colour As an Aid to Visual Perception in Early Reading," *British Journal of Educational Psychology,* XXXV (February, 1965), 21-27.

letters and words. The test results showed that matching the black letters and black words was at least three times harder than matching the colored letters and words. The superiority of scores in the color task was highly significant, and many children achieved the maximum score in color while only random scores were achieved in black. In addition, there was a strong preference in favor of the colored test material which undoubtedly affected test motivation. Neither age nor sex affected the results. The color alone was the critical factor here.

Teachers have also relied upon color as a stimulus for focusing attention of distractable children. The writers have seen teachers use this technique effectively. Petty and Burns used colored letters to introduce stories to tots of nursery-school age in England.[4]

Cuisenaire rods are a mathematical approach to learning in which color helps children to see the relationship between intensity in dimension and number value.[5] In fact, there is a planned relationship between the intensity of the color and the dimension of the rod. The colored rods enable the children inductively to learn quantitative relationships. This approach develops an awareness of process, freeing the learner to make discoveries through manipulation of colored rods of varying sizes.

Dr. Caleb Gattegno saw the possibilities of the impact upon learning and employed this concept to the sound-symbol language relationship. He initiated an approach to beginning level reading which was named Words in Color.[6] He tried to capture the same memory principle that Cuisenaire had applied to arithmetic relationships. This same principle is used by poets, musicians, and artists to recapture images. Wordsworth, for example, in discussing thoughts recollected in tranquility, described this phenomenon in reference to the garden of daffodils:

4. Petty, Walter T. and Burns, Paul C., "A Summary of Investigations Relating to the English Language Arts in Elementary Education: 1965," *Elementary English,* XLIII (March, 1966), 258.

5. Sisters Mary Judith and Marie Anthony, Cuisenaire Company of America, Inc., 1962.

6. Gattegno, Caleb, *Teacher's Guide, Words in Color* (Chicago: Encyclopedia Britannica Press, 1963).

For oft when on my couch I lie
In vacant or in pensive mood,
They flash upon that inward eye
Which is the bliss of solitude;
And then my heart with pleasure fills,
And dances with the daffodils.

Words in Color, by presenting the words in the multi-colors which make up the whole word, stimulates the total recall of the colored image as one recalls the graceful, swaying yellow daffodils. This is visual imagery recall.

As opposed to the pure memory recall employed when one remembers a telephone number, Gattegno was seizing upon the idea of a holistic or gestalt approach to aid the kind of recall to which Wordsworth referred. In addition, Gattegno employed color cues which permit a visual image recall of a scene, which in this case is words. In this case, unlike the Cuisenaire rods, the particular choice of color followed no special plan or rationale. Individual color selections were significant as the yellow in "u" and a similar but deeper yellow in the schwa which is the unstressed "uh."

Words in Color employs color to codify 47 sounds of our language. It does this without in any way altering the basic structure of the language. In contrast to i.t.a., no artificial symbols are used to substitute for non-phonetic spellings of the language. Color serves as the initial visual cue to trigger the response in the mind of the learner; with i.t.a. 16 contrived characters are used.

Eight wall charts present in color the 47 sounds and over 270 graphemes of the phonic code. For example, the a appears in white on the first phonic code, column one. The irregular spellings for this same sound also appear in white. Color, then, reduces to a phonic consistency the sounds of the English language, for color here replaces the need to change spellings or to introduce diacritical markings.

The person who is confused by the many spellings for a single sound and the many sounds for a single spelling can sort out the forms and sounds by his initial color cue. Color reinforces both his auditory and visual imageries; for example, the underlined parts of the following words all appear in white since the learner

emits the same sound in spite of the different spellings: pat, laugh, plaid.

When the child encounters the yellow color, he is stimulated to say ŭ. Here again, the phonic code presents first the regular and then the irregular spellings as in the underlined portions of bug, done, does, young, flood, and was.

The pink ĭ column present ĭt. This is a lengthy column as it includes among its many forms, busy, women, sieve, marriage, village, captain and been.

Light blue which evokes the short ĕ presented in the same color in the fourth column of the first phonic code is the underlined portions of the following words: pet, any, says, bury, said, and head.

The gold or short ŏ sound presented in the last column of the first phonic code begins with the regular form as in pot. Also included are John, honor, and knowledge.

Some sounds are presented in two colors. In the articulation of the word ouch, the speaker must say ah plus w; in this case he is blending two sounds, the purple ah and the blue-green w. The letter x appears in three different columns in various color combinations. These distinctions force the learner to be aware of precisely what sounds he is uttering; for example, the x which is yellow on top and apple-green on the bottom is the sound present in the word box. The x in exaggerate is gray on top and purple on the bottom. The x in anxious appears as yellow on top and blue on the bottom. Here, then, color insures the integration of the visual and auditory.

It is important to note, too, that color not only gives vivid cues to the learner, but it also serves to program systematically the learning in a structured and sequential way. The organized morphological approach provides the teacher with a planned sequence of lessons for presentation.

Vision specialists and educators agree that the morphology gives the learner a stable and unchanging code of organization and sequence, which helps lend security in the learning process. Color, through its stimulation, rivets and holds the attention of the learner. Among culturally disadvantaged people, where there is absence of color in their drab lives, the addition of color has a highly motivating effect.

What about the color-blind person? A totally color-blind individual sees distinctions even if only in gradations of gray—in different color intensity and proportion from the norm. Eight percent of all white males are color weak. Only two percent are totally color deficient. It is a sex-linked characteristic; girls carry the weakness, but possibly less than one percent of the females have poor color perception.

It is not the purpose of this paper to go into other psychological phenomena; we have limited our discussion to the typographical implications. What have been the results found with students initially learning by color as contrasted with approaches that do not use color? In Words in Color the problem of overdependence upon color is anticipated at the outset. Each sound group, printed in a separate color on the phonic code, is reproduced in the pupils' books in black and white. The pupils do written work in black on white. Color is used only as the initial cue. These cues are reinforced, however, by practice using colored chalk on black construction paper as new sounds are introduced. Thus, with consistent clues, images are evoked and maintained at the center of awareness.

In Words in Color the learner does not become dependent upon guessing words from context, a popular technique of the basal reader program. Nor is there dependence on picture clues; there are no pictures in the paper booklets that accompany the program. It should be noted, too, that letter names for the alphabet are not taught at the outset. This is postponed until the learner has a good understanding through color coding of the grapheme-phoneme relationships. Consonants are never sounded in isolation, as this also is contrary to Gattegno's approach. He emphasizes that by definition consonant means "to sound with."

Research Designs

Each of the writers employed Words in Color in studies to measure the effectiveness of this teaching method. One study was concerned with children at the kindergarten-primary levels; the other was with illiterate adults. Both were doctoral studies completed at Case Western Reserve University, Cleveland, Ohio, under the aegis of Dr. Mary C. Austin. Lillian Hinds' study is

"An Evaluation of Words in Color or Morphologico-Algebraic Approach to Teaching Reading to Functionally Illiterate Adults."[7] The study by William Dodds is "A Longitudinal Study of Two Beginning Reading Programs—Words in Color and Traditional Basal Readers."[8]

Hypotheses were stated in null form and evidence gathered to disprove the null hypotheses. The two-tailed tests were used because the writers did not wish to predict more than that there would be a difference. Because these were both exploratory studies, the interest was one of testing for difference—in any direction. The t tests were used to determine the significance of the difference between the means.

Conventional methods were used for instructing the control groups. In the kindergarten-primary study this was the popular traditional basal reader approach that is used in most American schools. The other study, with illiterate adults, used as its control a conventional method of teaching.

Evaluation

Statistical tests showed Words in Color to be a more effective language arts program. Highly significant differences were found by Dodds in word recognition skills and in spelling at the end of first grade (Tables I and II). These differences tapered off somewhat during the second grade but continued to be statistically significant. Mean comprehension scores for the Words in Color pupils were in every case higher than for those in the traditional program, although statistically significant differences did not appear in terms of comprehension skills with the primary children. In the study with adults, Hinds reported statistically significant differences for both mean vocabulary and comprehension scores in favor of the Words in Color group (Table III).

One of the most encouraging results of the kindergarten-primary study was the range of achievement of the Words in Color pupils at the end of first grade and again at the end of second grade. The bottom of the range was considerably higher

7. Unpublished Ph.D. dissertation, Case Western Reserve University, 1966.

8. Unpublished Ed.D. dissertation, Case Western Reserve University, 1966.

TABLE I. *Factors considered in a Comparison of 19 Elementary Pupils in Experimental Group and 19 Pupils in Control Group*

	Experimental Group—Words in Color	*Control Group Basal Reader*	*Standard Error of Means*	*t*	*Probability Level*
Chronological age (Months)	70.05	71.00	1.04	0.91	.40*
Reading Readiness (Percentiles)	90.89	92.28	3.42	0.40	.50*
Days of Attendance					
Kindergarten	174.15	189.38	1.90	2.52	.015
Grade One	178.42	179.63	2.49	0.49	.50*
Grade Two	176.18	174.86	1.42	0.93	.40
Intelligence Quotient	121.42	120.15	4.06	0.31	.50

**Difference favored Control Group*

TABLE II. *Mean Scores on the California Lower Primary Achievement Test at the End of Grade One for the Experimental Group and the Control Group*

	Experimental Group—Words in Color	*Control Group Basal Readers*	*Standard Error of Means*	*t*	*Probability Level*
Reading Vocabulary	3.00	2.50	.166	3.01	.002
Reading Comprehension	2.81	2.68	.246	0.53	.5
Reading Total	3.02	2.58	.186	2.42	.01
Spelling	3.82	2.84	.206	4.75	.0001

each time for the Words in Color pupils. For example, at the end of first grade, on the California Lower Primary Reading Test, the Words in Color range was 2.1 to 3.7 while the range of the control group with the traditional approach was 1.4 to 3.8. The simultaneous learning to read, to write, and to spell was clearly evident in the superior performance of the Words in Color students. Table IV shows that at the end of grade two, on an alternate form of the same test, the reading range was 2.5 to 4.0 for Words in Color and 1.9 to 4.0 for the traditional group. The test ceiling was 4.0. On a more difficult instrument, the California Upper

TABLE III. *Summary of Contrast and Experimental Illiterate Adult Group Changes as Measured by the California Reading Test*

	Contrast Gain	*Experimental Gain*	*t Value within Contrast Group*	*t value within Experimental Group*
Dependent Variable, Reading				
Raw Scores:				
Vocabulary	—1.085	7.774	—.491	4.111[b]
Comprehension	—1.657	1.709	—2.031	3.664[b]
Total	—2.742	9.483	—1.620	4.450[b]
Grade Level Scores:				
Vocabulary	— .3027	.1363	—1.557	1.390
Comprehension	— .4648	.5454	—2.362[a]	4.096[b]
Total	— .354	.1696	—1.883	1.847
Chi Square Gain				

Difference between contrast and experimental group $X^2 = 7.207$, df 1, $p < .01$

Notes:
a = < .05
b = < .001

TABLE IV. *Mean Scores on the California Lower Primary Achievement Test at the End of Second Grade for the Experimental Group and the Control Group*

	Experimental Group—Words in Color	*Control Group Basal Readers*	*Standard Error of Means*	*t*	*Probability Level*
Reading Vocabulary	3.40	2.95	.162	2.84	.004
Reading Comprehension	3.38	3.25	.224	0.58	.5
Reading Total	3.48	3.04	.148	2.97	.005
Spelling	3.93	3.52	.132	3.10	.003

TABLE V. *Mean Scores on Color Upper Primary Test at End of Second Grade for Experimental and Control Groups*

Test Section	*Experimental Groups*	*Control Group*	*Standard Error of Means*	*t*	*Probability Level*
Reading Vocabulary	4.52	3.94	.166	3.49	.0008
Reading Comprehension	4.15	3.97	.128	1.41	.08
Reading Total	4.25	3.99	.131	1.98	.03
Spelling	4.33	4.03	.151	1.99	.05

Primary Tests, also given at the end of second grade, the range of reading achievement for the Words in Color group was 3.6 to 4.6; for the traditional group the range was 3.1 to 4.7. See Table V.

Words in Color proved to be a highly successful beginning reading program that opened the door to learning for adults of the inner city of Cleveland. See Tables VI and VII. Poignant comments were made by some of these adults who described their deep satisfaction in learning to read. In terms of self-concept it would be difficult to measure what this achievement meant to these people.

The visual imagery and attention-holding assets of Words in Color at the initial stages of decoding, together with its constancy of columnar organization, helped to produce the significantly superior scores of elementary-age and adult students. In the case of the former, word recognition and spelling skills were significantly superior. Among the latter, word recognition and comprehension skills were significantly superior. No tests in spelling were given on the adult level. From a typography/visual standpoint, the added dimension of color appears to simplify the decoding-encoding process.

TABLE VI. *Difference between Contrast and Experimental Illiterate Adult Groups*

	Pass		*Fail*		*Total*	
	No.	*%*	*No.*	*%*	*No.*	*%*
Contrast Group	16	43.2	21	56.8	37	100.0
Experimental Group	25	75.8	8	24.2	33	100.0
Total	41		29		N=70	

$X^2 = 7.207$, df 1, $p < .01$

TABLE VII. *Differences between Contrast and Experimental Illiterate Adult Groups on Measures of Intelligence, Auditory Discrimination, and Visual Function*

Variable	*Contrast Group*		*Experimental Group*		*Significance of Difference*
	No.	%	*No.*	%	
Intelligence					
IQ under 80	6	35.3	23	69.7	$X^2 = 5.437$, df 1,
IQ above 80	11	64.7	10	30.3	$p < .02$
Total	17	100.0	33	100.0	
Auditory Discrimination					
More than 4 errors (poor)	8	28.5	8	36.3	n.s.
4 errors or less (passable)	20	71.4	14	63.6	
Total	28	99.9	22	99.9	
Visual Function-Fusion					
Score 5 or less (fail)	5	15.6	12	36.3	$X^2 = 3.593$, df, 1,
Score over 5 (doubtful to pass)	27	84.4	21	63.7	p approximately .05 (.05 = 3.84)
Total	32	100.0	33	100.0	
Visual Function-Phoria					
Score 5 or less (fail)	15	45.4	14	42.4	n.s.
Score over 5 (doubtful to pass)	18	54.6	19	57.6	
Total	33	100.0	33	100.0	
Visual Function-Cheiroscope					
Score under 5 (fail)	9	26.5	7	22.5	n.s.
Score 5 or more (doubtful to pass)	25	73.5	24	77.5	
Total	34	100.0	31	100.0	
Color Blindness					
Score 2 and over (defective)	9	36.0	7	25.0	n.s.
Score 1 (normal)	16	64.0	21	75.0	
Total	25	100.0	28	100.0	

A Research Report on Colour Story Reading

J. Kenneth Jones

While use of color in the various visual media has increased enormously, typography remains essentially black and white. Colour Story Reading was developed to make use of color in helping children learn to read. The theory and practice of Colour Story Reading is discussed, including two studies testing this approach: one showing children's preferences and better performance, and another showing superior reading attainment in black and white after initial reading with color.

In visual media there has recently been a tremendous movement away from black, white, and grey—and into color. This can be seen in photography, films, television, advertising, and book illustrations.

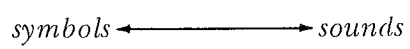
Typography is the tortoise. The largest areas covered by typography remain black and white. Only in the field of display and advertising material has color made any real impact. Yet here the advance is impressive. To glance at a selection of book jackets is to see the extent to which colored print or colored backgrounds have taken over from black and white.

In September, 1967, Thomas Nelson and Sons, London, published Colour Story Reading (Jones, 1967b). This was an event which may be of even more significance to typography than the invasion of color into advertising. For the first time, schools and parents were able to obtain children's reading books in which the entire text is in a phonetic color code. Instead of children learning to read with black print, they learn with colored print. The basic educational idea, of course, is to help children to learn to read in black print. This is done by making the initial learning processes more enjoyable and helpful by adding color to shape.

Colour Story Reading material includes 19 stories which are

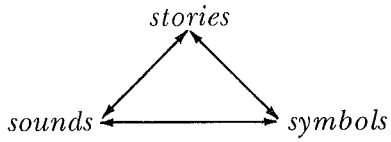
read to the children by the teacher (or played on a recording) so as to conceptualize all of the sounds. Psychologically, this is an important advance from the inefficient paired-associate learning systems in use at present.

Paired-associate learning is the linking of one item with another. In the case of reading it is linking the squiggles the child sees on paper with the sounds of speech. This can be represented diagrammatically as follows:



In the customary "look and say" method, the symbols are the sentences and the words, which are linked purely by convention with the sounds of these words and sentences. In the phonic method the learning situation is the same, but in this case the symbols are individual letter shapes, and the sounds are individual letter sounds. This is a highly inefficient learning strategy, as there is no natural or logical connection between a squiggle and a sound.

In Colour Story Reading, the learning situation might be termed "triangular discovery" as represented in the following diagram.



The three parts of the triangle interact, giving the child sufficient cues for him to use the material to help himself to learn to read. The teacher's task is not to "teach" reading, but to present the materials in such a way that the child is able to answer his own questions and solve his own problems. This brings learning to read into line with current educational practice in other fields, where great stress is laid on helping children to discover and learn for themselves.

How does Colour Story Reading work in practice? It is very difficult to describe adequately in a few words owing to the na-

ture of its conception. People judge things by previous experiences; in this case their previous experiences are in black typography.

However, the basic phonetic rule is that when a letter changes its sound it changes its color. Also, letters which have the same sound have the same color. Letter z is blue. Letter s is blue in such words as "his" because it has the z sound. When s has the hiss sound, as in "this," it is red. Letter c is also red when it has the hiss sound, as in "nice," but is normally blue, as in "cat."

The colored letters are augmented by nine colored backgrounds which vary in color (red, blue, and green) and shape (circle, square, and triangle). Letters are printed on the backgrounds in black, although when the teacher writes them, it is easier to use an outline. All the backgrounds represent particular sounds, except for the blue circle which represents silent letters. Only three colors are used in the whole code: red, blue, and green—plus black.

Here are a few examples of conceptualization. One of the 19 stories contains an incident at a pet shop where there is a red snake called Sam, who hisses, and a blue snake called Des, who is asleep and snores (making the "z" sound). In another story there is a boy called Ernest who is seen letting off fireworks. He appears to be standing in a round cloud of red firework smoke. He cannot answer questions, and keeps saying "er . . . er . . . er."

Some of the children's reading books are concerned entirely with these 19 stories. These books contain pictures of Sam (in an "s" shape) with the red letter s coming from his mouth, and Des, also in an "s" shape, with the blue letter s coming from his mouth. In the name Sam, the s is red, and in Des it is blue. The books also contain pictures of Ernest in his round cloud of red firework smoke. In the name Ernest, the first two letters are printed in a red circle.

Many other letters, apart from "er" can be written in a red circle, including "ear" in early, and even, if one wished to use such a word, "olo" in colonel.

Because color is used to give additional and accurate phonetic information, this does not imply that every child sounds out every letter of every word. In the colored reading books, the colored

words are written in sentences. The sentences have contexts. The contexts help the children to no less an extent than in black and white.

Also, the words have a visual wholeness. Just as it is easier to identify individual people because they wear clothes of different colors, so it is easier to identify individual words. Identical words are identical in color as well as identical in shape; different words are different in color as well as in shape. If everyone wore a black uniform it would be more difficult to differentiate between people. If each person always wore clothes in a particular color coding (heaven forbid), it would be even easier to identify people.

To help visual discrimination, letters which have similar shape have different colors: letter d is green, and letter b is blue, and so on.

Of course, when adults first see Colour Story Reading, their first impression is that it is confusing and bewildering. This is simply because adults have been so thoroughly programmed to responding to black print stimuli. Young children have not. They find color a tremendous help as a visual aid.

In order to be absolutely sure on this point, the author carried out an experiment with 110 nursery school children aged between 3½ and 5 years (1965). The children were given visual matching tests, and the scores indicated that they found the black material three times as difficult as the Colour Story Reading material. The overwhelming majority of these children said after the tests that they preferred the colored material. Many of them could not explain this, and when asked why, said "Because I did." But others said "Because it is pretty," "It's nicer," and so on. No child mentioned anything about scores. In fact, the handful of children who said they preferred the black material had just as high scores in color as the children who said they preferred the colored material. It should not be assumed, however, that similar results could necessarily be obtained by using other schemes in phonetic color.

Colored print for children need not necessarily be phonetic. It could be grammatical. Words could be coded in color according to the parts of speech, an idea which goes back at least as far as Hastings' "Exercises for Parsing in Color" (1905). Even earlier,

The following three pages are reproduced from a promotional booklet, "Colour Story Reading," through the kind permission of Thomas Nelson & Sons Ltd., London.

HOW COLOUR HELPS

Colour is purposefully used to overcome the problem of a language which is not consistently phonetic, in order to provide a one-for-one relationship between a spoken sound and its written symbol.*

county	county
country	country
cough	cough
course	course
coupon	coupon
could	could

The words on the left begin with the same three letters, but there is little indication in black how they should be pronounced. In colour, the difference is immediately apparent.

In the columns on the right, each word ending is spelt differently but pronounced the same. Colour too, makes this obvious.

Because colour is used in a consistent and meaningful way, it is a reliable guide to discrimination, identification and pronunciation. You can see how with a knowledge of the colour symbols, the child is in possession of a tool which he can use to read any word within his oral vocabulary.

*All the phonetic structures in this scheme are based on the standard work, Daniel Jones' "English Pronouncing Dictionary".

do	do
two	two
woo	woo
drew	drew
true	true
shoe	shoe

The ram runs.
The ram runs at Lemon.
The ram runs at the dustman.

Help!
Help!
Help!

FROM A PUPIL'S AND THE TEACHER'S BOOK

On the right is part of a story which the teacher reads to the children, introducing the dustman and the ram—the mnemonics for the letters d and r. The relevant page from the child's reading book, Mr. Nen and his Friends, Part 1, is on the left. The lively illustrations reinforce the child's imagery and they also provide a positive background to aid the recognition of the new letters.

All the words used in the reading books are simple and appropriate, and because of the colours are distinctive and memorable. The child will read many of these words by the usual process of recognizing and remembering them as wholes, but if he should stumble on a word, there is the added invaluable clue of the imagery which the component letters of the word can suggest.

At that moment, Lemon saw the dustman coming down the lane towards the farm. He was wearing new green overalls, with a green cap on his head.

"Poor dustman," said Lemon, "He keeps saying 'd . . d.' because he always has a cold in his nose."

Ink said, "I expect he has the cold because of all the dust."

The dustman came up and said, "d.d.dello. d.d.dice to see you," and gave a big sniff.

But as he turned to talk to the friends, the dustbin he was carrying knocked open the gate to the field. The friends saw a flash of red, and there was the ram, standing with his head down, ready to run at them. "Help!" they shouted.

The ram went, "r.r.r.", and began to run towards them.

The dustman knew what to do. He shouted, "d.d.. open up, Umbrella, quickly." And just as quickly, Umbrella opened himself up, with a great flapping noise, right in the face of the ram.

The coloured backgrounds

To preserve phonetic consistency without introducing unnecessary additional symbols or colours, three background shapes are used. Each of these shapes, in the three colours, indicates a specific sound which can be represented by many different spellings. On the opposite page, the red triangle indicates the "uh" sound which is spelled differently but pronounced the same in the words "the", "dustman", and "Lemon". The list of words in colour two pages back in this brochure demonstrates the use of another background, the green circle, which indicates that several differently spelled words all contain an "oo" sound.

in 1899, the first reading book ever printed entirely in color was produced by Nellie Dale, which used color to indicate articulation of consonants—one color for voiced consonants, one for voiceless consonants and one for silent consonants. This was not always phonetic, for g being voiced in both "get" and "gem" had the same color, despite representing a different sound.

As children so obviously enjoy color and as it is a great visual aid, what rational reply can be given to a parent who asks, "Why must my child be taught to read in black and white which is so unsuitable to his natural interests and needs?" Why indeed! It may be objected that children have always learned to read by black print materials, but this says nothing more than "What is, is" and does not justify the practice.

Expense is not an objection, because children's reading books already use color for illustrations; and, as Colour Story Reading has shown, the actual reading books in color are not expensive. The main objection would be if learning to read in color made it more difficult to read in black at a later stage.

In Britain, the Department of Education and Science financed a large-scale investigation into this question. The experiment was carried out by the author in association with the Reading Research Unit of the University of London Institute of Education (Jones, 1967a). Colour Story Reading was chosen as representing those schemes which use colored print. Sufficient books in color were printed to last the average child about one year, and the investigation was carried on into a second year to see what happened to the subsequent level of attainment, and to see to what extent the teachers could use the color symbol code to help the children tackle their black print reading and spelling problems.

Nineteen schools were involved, with more than 400 children in the control group using ordinary materials, and a similar number using Colour Story Reading.

Children enter school at the age of five in England, and all 800 children in the experiment were tested at the end of their first year and at the end of their second year.

The test of reading attainment was in black print for both groups. This meant that the experimental group was never tested on its ability to read in color, but the children were tested on their

"transferred" ability in black print. The results showed substantial and significant gains for the experimental group using Colour Story Reading. By the end of the first year they were 5½ months ahead of the control group in reading attainment, and maintained this lead when tested at the end of the second year.

Of the 19 schools, 14 chose to use Colour Story Reading as a supplementary scheme to normal black print reading being used in the schools. In five schools, however, the teachers used Colour Story Reading as the main scheme in the early stages. In these five schools the experimental children were, on average, more than 12 months ahead in reading attainment at the end of the first year when compared with the control classes in the same schools. By the end of the second year, their lead over the control group in these five schools had increased to 13½ months. The more the teachers used colored reading, the more the children were able to read in black print.

There appears to be no doubt at all. Colored typography has entered children's reading books, and it has come to stay.

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Adjustment to Unjustified Composition on the *Rotterdamsch Nieuwsblad*

C. H. Evers

On February 6, 1967, *Rotterdamsch Nieuwsblad* introduced unjustified composition throughout the newspaper. The advantages and disadvantages of unjustified newspaper composition are discussed. The history of its innovation in Rotterdam is described and illustrated—including the problems, benefits, and reception by readers. This article has been adapted from a report to a conference of the International Federation of Newspaper Publishers in Paris last fall.

Why Unjustified Lines?

A staunch champion of unjustified typesetting is always tempted to answer this question with a counter-question: Why do we go through all kinds of trouble, using vulnerable and expensive spacebands, complicating our perforating and casting operations, buying expensive computers, etc., just so that the beginning and the end of our lines of type run vertically parallel?

There appears to be no other reason for justification than the fact that we have traditionally composed type this way. The tradition dates back to a time when classical symmetry, now a shibboleth from a bygone age, was divine law. Symmetry—a concept long since abandoned in the arts—involves a similarity in size, shape, and position that we try very hard to avoid in the make-up of our newspaper pages for fear of becoming dull and uninteresting. The traditionalist may also claim that justified lines of type are easier to read because the variable length of the unjustified lines is very tiring to the eyes. However, only a very small percentage of our readers is able to perceive a newspaper column line in a single eye fixation. The faculty and habit of the vast majority requires several fixations per line. Of greater importance is the regular and even spacing between the words plus a logical,

not artificially elongated, end to the line of type. Of course, the fixed, beginning reference point remains on the left side of the lines. Research is inconclusive on the point, but there is every evidence that unjustified setting is as easy to read.[1]

The claim remains that unjustified typesetting is not pleasing to the eye—a subjective aesthetic appraisal which is difficult to evaluate or to discuss. I agree, of course, that a column made up of badly-composed unjustified lines (where the keyboard operator has not put as many characters as possible on the line) looks ugly with its exaggerated ragged-right edge. However, a column made up of well-composed unjustified lines avoids these annoying gaps at the end of the lines and is, at a glance, hardly distinguishable from justified type.

Leaving tradition, legibility, and aesthetics for what they are, unjustified typesetting provides very definite advantages in the field of production: considerable savings in the composing room, a production benefit of 13.5% in the perforating department, and (less clear-cut and to less extent) appreciable savings in the casting department. The benefits of this functional method of line-composition are such that consideration of its potentials should not be abandoned for reasons of mere conservatism!

Previous Experience

Two years prior to the introduction of unjustified lines in the composition of straight editorial matter, we started to do away with justification on the narrow lines (nine columns of 40 mm.) of the classified advertisements. Simultaneously, the body type was changed from 6-point Excelsior to 5-point Delia. This caused a lot of angry comment from readers, although the 5-point Delia had already been used without complaint for some time in our shipping notices. After a fortnight of complaints, we went back to the 6-point Excelsior—without, however, falling back on justification of the lines. The clamor subsided and nobody, advertiser or

1. Fabrizio, R., Kaplan, I., Teal, G. "Readability as a Function of the Straightness of Right-hand Margins," *Journal of Typographic Research,* I (January 1967), 90-95.

General Data

Rotterdamsch Nieuwsblad is a local evening newspaper, published in Rotterdam, Holland; founded in 1878.

Combined circulation: 80,000.

Average number of pages: 24.

Page size: 39 x 56 cm. (1 cm. is 0.39 inch).

Printed surface: 37.4 x 52.7 cm.

Body type: 8-point Intertype Berlin (unit) on 7½-point slug.

News page: seven columns of 11.5 cicero (5.1 cm.) with six 3-point column rules (1 cicero is approx. 13 points).

Advertising page: nine columns of 9 cicero (4 cm.), with eight 3-point column rules.

Composing machines for the production of straight-matter: (1) seven tape-operated linecasters (with operating units and quadders)—one Intertype Model A, one Intertype Model B, four Intertype High Speed, one Linotype Elektron; (2) eight manually-operated machines (partly used for straight-matter)—one Linotype Model 5, four Linotype Model A, one Intertype Model C2. More than 70% of all straight-matter is produced on the tape-operated linecasters.

Perforator department: tape is produced on nine Fairchild Standard perforators.

Quadders: types of quadders in use—Star quadder F4-4, Intertype Dual Duty quadder, and Linotype Hydraquadder. We prefer the hydraulically-operated type of quadder to the mechanical type for reasons of matrix wear.

Production: straight-matter production of unjustified type in an average week is approximately 75,000 lines.

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reader, seemed to care about the unjustified composition. Classified lineage kept increasing.

Although at that time we did not have the opportunity to perform any precise measurements on production advantages, we felt certain that a positive gain was made. In the perforator room we considered the time saved to be less than 10% (later proven to be too pessimistic). On the casting machines (equipped with quad-

ders) we reasoned that, considering loose-lines as a cause of frequent stops a thing of the past, production would improve here as well.

A very important discovery was that unjustified lines do not require more space. In other words, unjustified typesetting is not wasteful of newsprint. On the contrary, we found that a perforator operator can be encouraged to try and put more characters on a line if he does not have to space evenly.

What Made Rotterdamsch Nieuwsblad *Change to Unjustified Lines?*

The answer to this question is rather complicated and more or less a matter of "what was there first: the chicken or the egg?" Did we adapt the layout of our newspaper to the unjustified line, or is the unjustified line a result of our revised layout?

In our case, we had decided on a radical change in layout before opting for unjustified composition. For some time the need had been felt for a rejuvenation of our existing "face," which we considered provincial, haphazard, and with little appeal for the younger generation. Rotterdam is a very modern city, especially in its town-planning and architecture. A town of such young contemporary design merits a local newspaper that is up to the same standards in its typographical design.

After extensive internal discussion on the management and editorial levels, it was decided not to perform this face-lifting all by ourselves, but to enlist the services of an outside expert on newspaper typography. We consider ourselves fortunate to have found this expert in Jan van Keulen, typographic designer and teacher at the Royal Academy of Design in The Hague.

It was our intention to make a blueprint for a revised layout of the *Rotterdamsch Nieuwsblad,* which in due time would be adapted and executed by our own people. Of course, ample discussions were necessary to advise the designer about the background, readership, etc., of the publication as well as the available material (e.g., type specimens and sizes) and to what limits of unconventional design he was allowed to go.

During one of those preliminary discussions, the matter of unjustified typesetting was brought up. This, of course, was not en-

tirely new to us and, apart from our own experiments and classified typesetting, we were acquainted with the most remarkable experimental pages that Mr. Spruyt of the *Arbeiderspers* had produced and we had heard about the partly unjustified typesetting of *The Denver Post* in the U.S.A. So Van Keulen got the green light to integrate unjustified composition into his new design of *Rotterdamsch Nieuwsblad,* open to final approval by publisher and editor.

In short, the assignment read like this: to devise a new formula of page make-up, appealing and intriguing to the modern eye but, most important, functional and easy to produce in the composing room and with a maximum of flexibility for last-minute changes. The major changes finally decided upon were:

—New masthead with new RN symbol.
—Change from six columns of 59 mm. each, to seven columns of 51 mm.
—Unjustified lines of type.
—All headlines flush left with a more systematic headline schedule.
—More white space to create more "light" on the pages.
—Abolishment of most vertical box and border lines, except column rules.

We then started on the experimental stage. The experimentation could be divided into two categories. (1) The resetting and remaking of the existing standard pages—front, comic, radio/TV, and general news pages. On each re-made page, we found we had room to spare. (2) Our weekly Saturday supplement (there are no Sunday papers in Holland) was made the testing ground for the new make-up. We changed to seven columns of 51 mm. here, and made it a rule to run at least two pages with unjustified lines in each issue. Hardly anybody, except the insiders, seemed to notice this. Technically we had to make preparations to set on the new column width and to provide all TTS casters with quadding equipment.

Finally, after less than a year of experiment, we felt that all conditions had been set up so that we could fix the date for the introduction of our new layout.

Introduction and Reaction

During the period of preparation and experimentation we discussed whether or not the change in layout and composition should be gradually and cautiously introduced to the readers. Eventually it was decided to give some publicity to an immediate change. For ten days previous to first publication, we prepared readers by telling them to expect the most modern, most readable newspaper in existence.

We received more written reactions from our subscribers than we originally expected, most of them negative. A superficial analysis revealed that the vast majority of the negative reaction came from people 50 years old and over. The positive reactions came, without exception, from the younger people.

Generally speaking there were two major complaints: (1) "The newspaper looks so basically different that I don't recognize it any more, and I find it difficult to find my way." This has not much to do with the unjustified lines and would be a disadvantage in any change of layout. (2) "I like the light in your layout, but I find the newspaper very difficult and tiring to read. Why did you reduce the typeface?" We were, in fact, using exactly the same face as before (7-point Excelsior on 8-point slug), but we reluctantly had to agree with these readers that the type gave the impression of being smaller than formerly. Feeling the necessity to act quickly here, we fortunately could change to a bigger type within eight weeks—from the 7-point Linotype Excelsior on an 8-point slug to an 8-point Intertype Berlin on a 7½-point slug. This enlargement put an end to all complaints about a reduction in type size.

It is remarkable that very few readers actually noticed that they were reading unjustified type. We received only two letters from people who complained that they were not going to read "poetry," as they called it. We assumed that approximately 800 subscribers (less than 1%) cancelled their subscriptions on account of the change in appearance. It is impossible to give an exact figure since some other changes in editions, etc., took place at the same time. Whether this new layout is, in fact, a selling point and will appeal especially to the younger reader, is a matter that will have to be proven during the coming years.

Finally, design and typography form an integral part of the journalistic contents of a newspaper. They do more than provide a "wrapping-up" of the articles. It is my sincere belief that an up-to-date formula of newspaper design can actually condition and improve the impact of the articles to which it is applied. Especially in this visual age of television, a newspaper publisher should try to be aware of the changing habits and perhaps subconscious cravings of his potential readership.

Advantages of Unjustified Typesetting

Before considering the advantages, it should be pointed out in what way the production of unjustified lines differs from justified composition.

Perforator: Justified—code-punch for spacebands between words. If the line is short, the tape is turned back and codes for additional white are punched between the words. Unjustified—code-punch for spacebands between words. If the line is short, the quadder on the linecaster will provide the additional white required, at the end of the line. No code-punch is needed for "quad left" as the quadder is automatically put into operation by the elevator code.

Manually-operated composing machines: Justified—spacebands between words. If the line is short, additional white is distributed between words by hand. Unjustified—spacebands between words. If the line is short, additional white is added mechanically at the end of the line. The manually-operated machines, partly used for straight-matter composition, are not equipped with quadders.

The following six pages show pairs of examples (the front page and a same-size section) from three numbers of the *Rotterdamsch Nieuwsblad:* (1) January 12, 1967 (prior to change), (2) February 8, 1967 (first week of change), and (3) November 22, 1967 (after modification).

rdag 12 januari 1967

Directie:
). Broeren (Gedel. Comm.)
Mr. C. H. Evers
redacteur H. W. Eldermans
ou Schiedamsevest 1, Rotterdam
lefoon 144.144 (12 lijnen)
11000 Postbus 959

ROTTERDAMSCH NIEUWSBLAD

89ste Jaargang no. 26764

Abonnementsprijs ƒ 0.93 per week, ƒ 4.01 per maand, ƒ 11.80 per kwartaal. Per post maand ƒ 4.29; kwartaal ƒ 12.55.
Losse nummers 20 cent.
Verschijnt dagelijks behalve op zon- en feestdagen.

ERBERICHT

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zwaar bewolkt met plaatseegen of motregen. Matige ge wind uit westelijke richdnig verandering in tempe-

Akkoord over verandering van stelsel omzetbelasting

Verzet tegen beslissing over tarieven en vrijstellingen

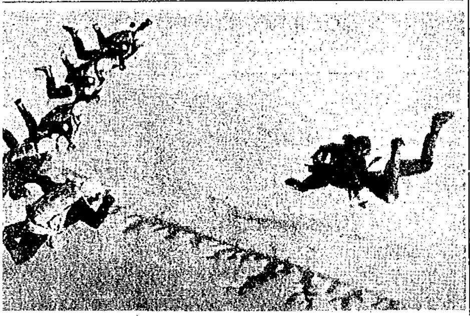
(Van onze parlementaire redacteur)

DEN HAAG, 12 jan. — De Tweede Kamer heeft geen bezwaar tegen de ingrijpende verandering in de omzetbelasting, die de Europese commissie heeft voorgesteld. Als dezer dagen ook de Eerste Kamer zijn fiat geeft, zal minister Zijlstra van Financiën aan het eind van deze maand naar de Europese ministerraad te Brussel kunnen gaan met de volmacht om mee te werken aan de invoering van deze verandering per 1 januari 1970.

De belangrijke verandering omvat een vervanging van het op het ogenblik in Nederland gebruikte „cumulatief cascade-stelsel" door het thans reeds in Frankrijk toegepaste stelsel, dat een aanzienlijk kleinere belastingopbrengst geeft dan het onze. Invoering van het nieuwe stelsel zal bij gelijkblijvende opbrengst leiden tot een stijging van de kosten van levensonderhoud van ongeveer 2,5 procent, die gecompenseerd zal kunnen worden door verlichtingen van de directe belastingen.

Kort voor de openbare behandeling van de begroting van Financiën heeft minister Zijlstra de Kamer gevraagd akkoord te gaan met een principiële aanvaarding van het nieuwe stelsel. Vorig jaar werd deze verandering voorgesteld door de Europese commissie. In mei 1966 besloot de Europese ministerraad uiterlijk 31 januari 1967 over dit voorstel te beslissen. De debatten in de Tweede Kamer werden gisteren overheerst door de grote vraag of het interim-kabinet-Zijlstra dit belangrijke onderwerp wel tot zijn verantwoordelijkheden mag rekenen. De Kamer week echter voor het argument van dr. Zijlstra, dat het weigeren van instemming op een poging de beslissing in Brussel uit te stellen, de Nederlandse belangen vermoedelijk slechts zullen schaden. Als de Europese ministerraad zonder Nederland toch tot een beslissing komt — en de kans daarop achtte minister Zijlstra zeer groot — dan loopt Nederland de kans zijn onderhandelingspositie bij de uitwerking van het nieuwe stelsel te verzwakken. Evenals de overgrote meerderheid van de Kamer achtte ook minister Zijlstra het verkeerd als op de komende bijeenkomst te Brussel ook meteen al beslissingen zouden vallen over de tarieven en eventuele vrijstellingen in het nieuwe systeem. Nederland zal zich daar dus tegen verzetten.

● Zie verder pagina 5



eden van een valschermteam e Britse luchtmacht zweven ven de Afrikaanse woestijn, zij hand in hand met een l van 180 kilometer per uur neden suizen. De zesde maeert zich met behulp van en benen naar het rijtje toe. werd door een parachutist t op 3000 tot 4000 meter de camera was op zijn helm gemonteerd.

● De Zweedse blondine Ulla Thorsell schuift haar trouwring aan de vinger van de lachende Charles Aznavour. Het paar trouwde gisteren in Las Vegas met als getuigen Sammy Davis en Petula Clark.

Oproep van Chinese partij: Vernietig de anti-Maoisten

Revolutiecomité van strijdkrachten wordt gereorganiseerd

PEKING, 12 jan. (Rtr./AFP/AP) — De Chinese communistische partijleiding heeft gisteren alle „revolutionaire krachten" — met inbegrip van de militairen — opgeroepen om de tegenstanders van Mao Tse-toeng te vernietigen. De bekendmaking, die klonk als een mobilisatiebevel, werd gezamenlijk uitgegeven door het centrale comité, de staatsraad, het militaire comité van de partij en de „voorvechters van de culturele revolutie".

Mao Tse-toeng heeft opdracht gegeven tot een algehele reorganisatie van het comité voor de culturele revolutie van de strijdkrachten van China. Dit werd meegedeeld in een radio-uitzending uit Peking die in Tokio werd beluisterd.

Waarnemers menen, dat deze reorganisatie, die volgt op Mao's haastige terugkeer naar Peking, zowel kan duiden op de rol die het leger gaat spelen in de burgerlijke aspecten van de culturele revolutie als op de verdeeldheid in het leger zelf.

Po I-po, vice-premier en een van de bekendste Chinese economen, is in Kanton gearresteerd. Hij is „onder geleide" naar Peking gebracht. Dat de economie in de huidige fase van de „culturele revolutie" een belangrijke rol speelt, blijkt ook uit het feit, dat de officiële organen die de koers van partijleider Mao Tse-toeng verdedigen „de staathuishoudkunde" veroordelen als „een instrument om het kapitalisme te herstellen". Radio-Peking gewaagde dezer dagen van „contra-revolutionaire economen".

Eerder hadden 32 revolutionaire groepen in Sjanghai in een plaatselijk dagblad een oproep gepubliceerd, waarin de arbeiders werden opgeroepen „zich te verzetten en afdoende maatregelen te nemen" tegen wat werd genoemd een complot van kapitalistische samenzweerders in het plaatselijk partijbestuur, die verzet pleegden tegen de leiding van Mao Tse-toeng. Deze samenzweerders waren van politieke tot economische agitatie overgegaan en trachtten de arbeiders om te kopen door hen loonsverhogingen en betere sociale voorzieningen te beloven, aldus de beschuldiging.

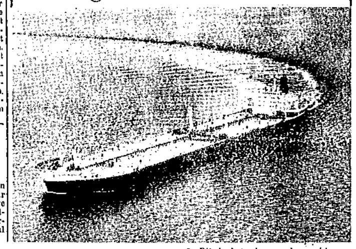
De „revolutionaire organisaties" in Sjanghai hadden nu het beheer over alle instellingen, organisaties en ondernemingen tot zich getrokken om de nationale economie te behoeden en de toeleg van de kapitalistische samenzweerders te verijdelen.

Het Russische partijblad Prawda heeft gemeld dat de partijafdelingen in het hele land het beleid van het Kremlin jegens China unaniem steunen. Negentien Russische leiders, onder wie premier Kosygin en president Podgorny reisden de afgelopen week het land af om de regeringspolitiek op bijeenkomsten in provinciesteden toe te lichten. De huidige toestand vereist volgens de Prawda verhoogde waakzaamheid en een nieuwe communistische wereldconferentie. Zonder China rechtstreeks te noemen verklaarde het blad dat een onverzoenlijke houding moet worden aangenomen tegen „vijandelijke ideologieën".

Koningin Juliana naar wintersport

DEN HAAG, 12 januari — Koningin Juliana is vanmorgen omstreeks tien uur van de vliegbasis Soesterberg met enige vriendinnen vertrokken naar Grindelwald in Zwitserland voor een wintersportvakantie die veertien dagen zal duren.

De grootste tot nu toe



● Dit is het nieuwe vlaggeschip van Shell Tankers NV, het 120.000 ton metende m.s. Niso, dat zondag op zijn eerste reis met een volle lading ruwe olie van de Perzische Golf in Europoort wordt verwacht. De Niso zal dan het grootste tankschip zijn dat tot dusver in Europoort is binnengekomen.

ej. mr. J. Zeelenberg.

Mej. mr. J. Zeelenberg lid Raad van State

AM, 12 jan. — Mej. mr. J. wethouder van Rotterdam en Eerste Kamer, is bij Koninklijk 11 januari met ingang van 1967 benoemd tot lid van de tate.

enberg is Rotterdamse van get zij de middelbare school had deerde zij rechten aan de uni-Leiden. Zij vestigde zich daarna en procureur in Rotterdam.

k terrein heeft mej. Zeelenberg eiten ontplooid. Al sinds 1946 voor de Partij van de Arbeid de Rotterdamse gemeenteraad. In 1958 volgde zij de heer J. van Tilburg op als wethouder van Financiën, waaraan later de portefeuille Kunstzaken werd toegevoegd. Bij haar afscheid van Rotterdam laat zij „haar Doelen" als een bekroning van haar loopbaan in onze stad achter.

Ook op landelijk niveau speelde zij een rol in de politiek. In 1952 werd zij gekozen als lid van de Tweede Kamer. In 1958 verruilde zij haar zetel in de Tweede Kamer voor een in de Eerste Kamer.

Kelner doodgestoken na hooglopende twist

Dader kwam vrijwillig naar politiebureau

(Van onze correspondent)

DEN HAAG, 12 jan. — De 40-jarige Voorburgse kelner F.K. is gistermiddag op het trottoir voor een warenhuis in Den Haag met een kleine sierdolk in de hartstreek gestoken. De man deed strompelend nog een paar passen opzij, zakte door de knieën en stierf. De kelner was gehuwd en was vader van vijf kinderen.

De vermoedelijke dader is de 20-jarige ongehuwde Haagse lasser A. G. R. E. G. J. Hij vluchtte, maar meldde zich ruim een half uur later vrijwillig op het politiebureau. Na een kort eerste verhoor op het hoofdbureau werd hij ingesloten. De politie deelde mee, dat beide mannen elkaar niet kenden. Beiden waren niet eerder met politie of justitie in aanraking geweest. Omtrent de juiste toedracht van oorzaak en aard van het misdrijf bestaat nog steeds geen zekerheid.

De lasser zat met twee vrienden aan een van de tafeltjes in een snelbuffet. De drie mannen kregen ruzie met de langs hun tafeltje komende kelner, die wat gedronken zou hebben. De ruzie liep hoog op. Terwijl personeel van het warenhuis de politie om hulp belde kwam de bedrijfsleider tussenbeide. Hij stuurde de lasser door de zij-ingang naar buiten en hij hielp de kelner door een andere zij-uitgang de straat op.

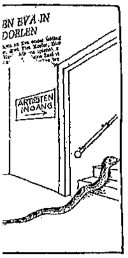
Eenmaal buiten zou de kelner echter toch weer ruzie hebben gezocht en hij trok er zijn jas en zijn colbertjasje voor uit. Voor zover bekend kreeg de lasser er even van langs, toen de kelner hem met de vuisten te lijf ging. Of de lasser terugsloeg is niet bekend. Wel zou hij de kelner met de sierdolk in de hartstreek hebben gestoten.

Vrachtauto ramt woning

ASSEN, 12 jan. — Ten gevolge van de gladheid is vanmorgen om vier uur een zware trekker met oplegger van een transportbedrijf uit Oude-Pekela de woning van de hoofdagent van gemeentepolitie de heer H. J. R. Brink in Assen binnengedrongen. Net voordat de kabine van de auto de woning binnenschoof, konden de chauffeur en zijn bijrijder eruit springen. Zij liepen daarbij lichte verwondingen op. Het huis is zwaar beschadigd. Toen de heer Brink de klap van de botsing hoorde, dacht hij in eerste instantie dat twee treinen tegen elkaar waren gereden. Zijn huis staat 'nl in de directe omgeving van de spoorlijn Meppel-Assen.

OP ANDERE PAGINA'S

● Een nieuwe wet schrijft voor dat alle Duitse taxi's voor 7 januari 1968 moeten zijn voorzien van een veiligheidsafscheiding achter de chauffeur. De klant zal dan moeten betalen via een schuifje zoals dat wel bij bioscoopkoketten gebruikt wordt. De eerste honderd van de 3700 taxi's in West-Duitsland zullen nog in de komende week worden voorzien van het schot met kogelvrij glas.



Rumoer om de Gijsbrecht

Vondels barokke poëzie vaak onverstaanbaar

Jeugdvoorstelling gestaakt

Het gehele probleem van de al dan niet onsterfelijkheid van Vondels versen, zijn Gijsbreght en de speelbaarheid van dat stuk, en het vraagstuk van de wijze waarop de jeugd met onze toneelliteratuur en speciaal Vondel in contact moet worden gebracht heeft gisteren in de Schouwburg een onverwacht scherp kantje gekregen. Voor de (openbare) voorstelling van de Gijsbreght door de Nederlandse Comedie werd gisteravond namens het gezelschap medegedeeld, dat de (besloten) jeugdvoorstelling van gistermiddag door het optreden van het jeugdige publiek had moeten worden gestaakt, maar dat het gezelschap die avond toch zijn beste krachten aan de vertolking zou gaan wijden. Dat was een ongebruikelijke en overbodige mededeling.

Het publiek in een openbare voorstelling betaalt zijn goede geld om de beste voorstelling te zien, die het gezelschap kan geven: het is volstrekt niet geïnteresseerd in de psychische of andere problemen van de acteurs en actrices. Wanneer die mededeling als waarschuwing was bedoeld voor de vijfhonderd jongelui, die zich onder auspiciën van de stichting „Kunst voor de Jeugd" onder het publiek bevonden, was de waarschuwing zowel voor deze jongeren als voor het gewone publiek overbodig en dus incorrect: zeker dit publiek had geen enkele aanleiding gegeven tot een dergelijk optreden van de kant van het gezelschap. We hebben ten slotte sterk de indruk dat het gezelschap aan het incident tijdens de middag-jeugdvoorstelling wat zwaar heeft getild. Tot de pauze was er volgens verantwoordelijke ouderen niets aan de hand; kort na de pauze dreigde de overleden Arend van Aemstel van het schild te glijden, waarop hij van het toneel werd gedragen; in doodsangst klemde de overledene zich aan zijn draagbaar vast, en de zaal schoot in de lach. Daarop staakte het gezelschap de voorstelling.

Die bevrijdende lach is echt wel begrijpelijk van een groot gezelschap jongelui, dat een paar uur lang naar de barokke verzen van Vondel moet luisteren in een middelmatige voorstelling. Het min-

BOZE BRIEF NAAR DE NEDERLANDSE COMEDIE

Drs. G. Ch. Dupuis, leraar Nederlands aan het Charloise Lyceum, heeft mede namens zijn vakgenoot de heer G. van Mourik, een boze brief gestuurd aan de directie van de Nederlandse Comedie naar aanleiding van het voortijdig afbreken van de uitvoering van de Gijsbreght in de Rotterdamse Schouwburg.

Hij vestigt er de aandacht op, dat het uit leerlingen van middelbare scholen bestaande publiek zich tot aan de pauze correct heeft gedragen, „wat meer was", aldus de heer Dupuis in zijn brief, „dan het gezelschap verdiende. „Naar zijn mening was de wijze waarop de Nederlandse Comedie het toneelstuk heeft gepresenteerd beneden peil. Van de zijde van de Nederlandse Comedie, zo zegt hij, heeft de nodige zorgvuldigheid ten opzichte van Vondels drama en het publiek ten enenmale ontbroken.

De heer Dupuis stelt met nadruk, dat ook na de pauze een voorbeeldige rust in de zaal heerste wanneer iets werd geboden dat werkelijk goed was. Kennelijk is voor uw gezelschap de Gijsbreght-traditie een noodzakelijk kwaad, zo gaat de brief verder. Graag zou ik willen weten of André van den Heuvels woorden, dat hij en de zijnen hun best hadden gedaan, door een duidelijke meerderheid der spelers met de hand op het hart zou worden bevestigd. Het vermoeden zou kunnen rijzen, zo zegt de heer Dupuis verder in zijn brief, dat naar „de provincie" enkele reserves zijn afgevaardigd.

Hij meent, dat de voorstelling, alle tekortkomingen ten spijt, normaal zou zijn voltooid, „als niet de zojuist gestor-

KOR

● BEELD

TTERDAMSCH NIEUWSBLAD.

FEBRUARI 1967 — 89ste jaargang no. 26787

lietoelagenregels:
·uiming voor
ers en gehuwden

oe normen voor roepingen"

espondent

— Minister Die- erwijs) heeft Generaal een ng voorgelegd ling van studie- het studiejaar moet het thans gangsbeleid steunt geheel op rapport van de sen. Daardoor rij groot aantal in de toelage-regeling van kracht waarvan de belangrijkste zijn:

1. Verhoging van de maximum toelage van f 4000 tot f 4100 per jaar, vervanging van integrale renteloze voorschotten door een gemengde toelage (deels voorschot, deels beurs) en het stellen van een limiet van f 10.000 aan totale studieschuld.
2. Vaststelling voor alle vormen van onderwijs in één tabel van de financiële draagkracht van de ouders van studerenden.
3. Gunstiger regeling voor de eigen verdiensten van de studerenden en van de gehuwde student.
4. Uitbetaling van de studietoelagen in drie (in plaats van in twee) gelijke termijnen en wel in september, januari en april.

De normen voor het toekennen van een toelage aan hen die na hun 21ste jaar met de studie beginnen, zijn verscherpt. De cijferlijst van het eindexamen zal dan gemiddeld zeven moeten zijn of een test moet uitwijzen dat de student bepaald aanleg heeft voor de studie.
Boven de 27 jaar zal bij aanvang van de studie in het algemeen geen rijksstudietoelage worden verstrekt — tenzij aanleg en belangstelling bijzonder uitgesproken zijn.

Zie verder pagina 3

SVB: veel te laag en veel te laat

AMSTERDAM. — De Studentenvakbeweging is uitermate verontwaardigd over de normen voor het rijksstudietoelagesysteem 1967-1968 die minister Diepenhorst heeft bekendgemaakt. Zij acht, blijkens haar commentaar, de regeling in haar geheel teleurstellend. Het feit dat er nu gelijke normering is voor alle studerenden is het enige positieve punt.

Zo zijn de bedragen voor levensonderhoud van de ouders naar de mening van de SVB veel te laag evenals de verhoging van het beursmaximum.

Ook is de SVB uitermate teleurgesteld dat het tijdstip van indienen zodanig is dat toch weer buiten de Tweede Kamer om een regeling die de studenten voor minstens een jaar dupeert is getroffen, zonder dat de Tweede Kamer daarover in discussie kan treden.

De honderdduizend viel op 025115

DEN HAAG — In de 577ste staatsloterij (vierde klas) is de 100.000 gevallen op 025115. De winnende loten zijn verwacht in Rotterdam, Gouda, Hilversum, Groningen en Nijmegen.

heekoppen

Onder luid hoongelach en gejoel van leden van de Rode Garde en soldaten van het communistisch Chinese leger worden hier jonge Chinezen, die ervan beschuldigd worden „anti-revolutionair" te zijn, op een vrachtwagen door de straten van Peking gevoerd. Op hun hoofden moeten zij puntmutsen dragen, waar hun naam op staat.

Zie verder pagina 3

Marseille snel op weg Europoort van het Zuiden te worden

In 1968 reeds 200.000 tonners

PARIJS — Maandag is het officiële besluit genomen Marseille uit te bouwen tot Europoort van het zuiden. De Franse regering heeft het plan voor de aanleg van een industrie- en havengebied van ruim 50 vierkante kilometer rond de Golfe de Fos, op veertig kilometer ten westen van de „oude haven", bij de monding van de Rhône, goedgekeurd.

Volgend jaar zullen hier al tankschepen van 200.000 ton kunnen worden ontvangen, over enkele jaren die van 500.000 ton.
Met de werken, die dit jaar in uitvoering zullen worden genomen, zal in totaal een bedrag van 240 miljoen francs zijn gemoeid. Ook zal spoedig worden begonnen met het aanbrengen van de infrastructuur voor een heel industrie- en woongebied, dat tussen L'Etang de Berre en de Rhône zal ontstaan en waar over twintig jaar ruim een half miljoen mensen zullen wonen.
Dit gebied zal de vierhoek afsluiten, die verder wordt begrensd door Marseille, Aix-en-Provence-Gardanne en Arles, waar zich in het bijzonder petrochemische industrieën, aluminium-, en de ijzer- en staalindustrieën zullen kunnen vestigen benevens tal van verwerkende industrieën. Marseille zal tot Lyon en Grenoble-Chambery met het achterland worden verbonden door het dal van de Rhône en dat van de Isère, terwijl de rivier-, spoorweg- en wegverbinding van de Middellandse Zee naar de Noordzee, die zal komen tussen Rhône en Rijn door de Elzas enerzijds en de Moesel anderzijds de haven zal verbinden met de grote industriegebieden van Noordwest Europa.

Ook de Humber

In de allernaaste toekomst zullen ook 200.000 tonners kunnen worden ontvangen aan de boorden van de Humber. Modelonderzoekingen die sinds enkele jaren aan de gang zijn, hebben geresulteerd in de conclusie dat tankers van deze grootte zonder moeite reeds gebruik kunnen maken van het bestaande diepe vaarwater binnen Spurn Point. Een aansluitend vaarwater kan zonder al te grote uitgaven worden gebaggerd. Tussen Spurn Point en Sunk-eiland kan een oppervlakte van 15 vierkante mijlen „Uiterwaard" bouwrijp worden gemaakt voor nieuwe havens en industrieën. Twee jaar geleden coördineerden de Dock Board en de Humber Conservancy Board hun plannen voor de havens aan de Humber en lieten zij een proefvak baggeren.

Franz-Paul Decker naar Montreal

Franz-Paul Decker, dirigent van het Rotterdams Philharmonisch Orkest sinds 1962, is benoemd tot leider van het Symfonie-orkest van Montreal.

Decker wordt de opvolger van Zubin Menta, die zes jaar het orkest van Montreal heeft geleid.

Daders nog onvindbaar

Voor een ton juwelen geroofd uit etalage

AMSTERDAM — Twee of drie jongemannen van 25 tot 32 jaar hebben dinsdagavond bij de juwelierszaak Siebel op de hoek van de Kalverstraat en Taksteeg in Amsterdam een grote partij sieraden uit de etalage geroofd. De waarde wordt voorlopig geschat op 60 a 100.000 gulden.

Volgens getuigen, die zich in een nabijgelegen café bevonden, kwam omstreeks tien uur een witte grote Citroën met een blauw schuifdak vanuit de richting Rokin achteruit de Taksteeg in rijden. De wagen stopte bij een van de etalages in de steeg, waarna twee mannen uitstapten. Een van hen gooide met twee straatstenen een gat van twee meter bij een meter vijftig in een etalageruit, graaide de sieraden bij elkaar en stopte de buit in een kartonnen doos. De ander had zich inmiddels op de hoek bij de Kalverstraat geposteerd, waar hij zwaaiend met een stuk ijzer — mogelijk een stengun — nieuwsgierigen op een afstand hield.
Na de roof reden zij met grote snelheid dezelfde weg terug en verdwenen over het Rokin in zuidelijke richting. De auto, die even tevoren gestolen was op het 's-Gravenlandse Veer bij de Amstel werd omstreeks half een teruggevonden voor het Amstelhotel op het Prof. Tulpplein. Van de daders ontbreekt nog elk spoor.

Niet alles

In de haast moesten de rovers een deel van de 105 ringen die zich in de etalage bevonden achterlaten. Zij werden buiten en in de winkel teruggevonden. Volgens een voorlopige opgave bestond de buit uit 69 merendeels wit gouden ringen, wit en geel gouden colliers, broches, corsages en armbanden. Met uitzondering van de armbanden waren alle sieraden bezet met briljanten.
Eén van de getuige meende, dat de daders met hun drieën waren, omdat de twee rovers achter in de wagen sprongen en er dus nog een bestuurder moet zijn geweest. De mogelijkheid bestaat dat de mannen Duitsers waren omdat een van hen met een sterk Duits accent tegen enkele nieuwsgierigen „ga weg" had geroepen.
Het is de 26ste keer sinds de oorlog, dat een etalage van de zaak van Siebel aan de Kalverstraat werd geplunderd.

Prinses Irene en prins Carel Hugo hebben een nieuwe vrijstaande villa aan de rand van Madrid betrokken, waarmede zij nu toch wel definitief afscheid hebben genomen van hun flat aan de Calle Hermanos Bequer. Onze correspondent in Madrid is in de nieuwe woning een kijkje gaan nemen en zijn bevindingen vindt u in woord en beeld op pagina 5 van vandaag.

Bredase kassier verduisterde 40.000 gulden

BREDA — De Bredase recherche heeft de 44-jarige kassier van de gemeenteontvanger, P. van de W. gearresteerd. De man wordt ervan verdacht vorig jaar f 40.000 te hebben verduisterd.
Het betreft 'n bedrag aan ingehouden salarisgelden van het gemeentepersoneel, dat aan de belastingen had moeten worden afgedragen. Bij accountantsonderzoek kwam aan het licht, dat de post niet geboekt was en dat de betreffende bescheiden ontbraken. De man heeft bekend. Het geld is opgegaan aan feesten en plezierochtjes.

OP ANDERE PAGINA'S

WEERBERICHT

Zelfde temperaturen

Weersverwachting, van het KNMI, geldig van woensdag- tot donderdagavond, opgemaakt te 11.15 uur.

Wisselend bewolkt met enkele verspreid voorkomende buien. Matige tot vrij krachtige noordwestelijke wind en weinig verandering in temperatuur.

ROTTERDAMSCH NIEUWSBLAD

Kapervlag gehesen

Vandaag extra aandacht voor twee berichten, die onafhankelijk van elkaar binnen zijn gekomen: Marseille heeft besloten de Europoort voor het zuiden te worden; de Humber is gemakkelijk bevaarbaar te maken voor schepen tot 200.000 ton.

Wie de Rotterdamse haast met het baggeren van de oliegeul op de Noordzee tot nu toe met enig schouderophalen en een „het zal zo'n vaart niet lopen" heeft beantwoord, moet nu toch wel voorgoed genezen zijn. De kapers op de Hollandse kust hebben de strijdvlag gehesen. De concurrentiestrijd om de tankers in de klasse 225.000 ton is in volle hevigheid losgebarsten. Waar zoveel nationale belangen op het spel staan zal het een moordende wedloop worden.

Het is onvoorstelbaar hoeveel kracht vooral de Fransen zetten achter hun streven het olieverwerkende centrum voor Europa te worden. De plannen voor Marseille (volgend jaar al geschikt voor 200.000 tonners, over enkele jaren 500.000 tonners) zijn het bewijs. En dan te denken dat ook Le Havre vrij gemakkelijk voor de mammoetschepen geschikt te maken is. Ook de Engelsen hebben het gevaar onderkend en proberen te voorkomen, dat hun bevoorrading afhankelijk wordt van een continentale haven. De Europese havens zitten elkaar dus wel heel dicht op de hielen.

We weten, dat er hard aan de bestudering van de mogelijkheden van de Rotterdamse oliegeul wordt gewerkt. Sterker, op grond van allerlei uitlatingen mag men zelfs aannemen, dat de beslissing voor de Rotterdamse haven positief zal uitvallen. Als iedereen dus zo van de noodzaak overtuigd is en als men geen praktische bezwaren ziet, dan wordt het de hoogste tijd, dat in een officiële verklaring het baggeren van de geul voor de Nieuwe Waterweg wordt aangekondigd.
Nog heeft Rotterdam bij de oliemaatschappijen een pré, nog willen de concerns Rotterdam de kans geven. Maar men moet zo langzamerhand zeker weten waaraan men toe is.

Rotterdammer Weier maakt hoge

Je moet wat hel anders kun je v

Studio voor politicien captains of industry

„We hebben het gezien met Koekoek. Televisie is bel en .... gevaarlijk. Het plaatje op de beeldbuis, onthouden de mensen. Heus, een ingewikkeld vakj dat verstaan de kijkers niet. Je moet je een goede ho weten te geven, die aanslaat, of die sympathie wekt. hoef je werkelijk niet zoveel kennis van zaken te hebb

Dat is misschien wel schandalig, maar de praktijk heeft uitgewezen dat het nou eenmaal zo is. Je moet wat hebben op dat scherm. En anders kun je volgens mij wel gaan. De een heeft het altijd gehad; de ander moet het worden aangeleerd, zo goed en zo kwaad als het kan.

Koekoek was het grote voorbeeld van iemand, die dadelijk de kijkers op zijn hand had, omdat hij zichzelf was. Wat je noemt een natuurtalent ,al groeide er een demagoog uit. Toch heeft hij bewerkstelligt dat de andere partijen wakker zijn geworden. Ze zijn eenvoudiger, begrijpelijker gaan praten. Voor iedereen".

De man, die zijn brood verdient met het televisiegenieker maken van politici, grootindustriëlen, vertegenwoordigers en andere personen, die verwachten binnenkort voor de camera te moeten verschijnen, heet

een reisbioscoop, de provin Men zou kunnen zeggen da celluloid hem met de paple ingegoten. Maar als bedrijf van het Rotterdamse artho scoopje 't Venster —„het is lijk opboksen tegen de t.v." zag hij in, dat hij naarstig zoeken naar nóg een been te staan. Hij sloeg de genoe beeldbandrecorder in, maar nog niet precies overzien w er allemaal mee kon doen.

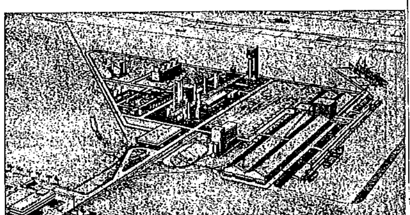
Een aantal toepassingen z natuurlijk wel. Hij ver en kreeg opdrachten van g drijven om reportages te m Zo werd er kort geleden in re Smilde een zaak geopen de landelijke pers wegens onmogelijk naar toe kon. „ ik naar jullie", moet toen c tie hebben geroepen, die de Weier een video-reportage

[...]aal project in Europoort

[Ess]o's kunstmestfabriek [...]t begin volgend [...] al proefdraaien

- Esso's kunstmest-[...]opoort gaat begin [p]roefdraaien. Tien [...] moet het kapitale [...] stikstofkunstmest-[...] bedrijf zijn. De [...]gt dan 456.000 ton [...]00 ton ureum, [...]eterzuur en 335.000 [...]alpeter per jaar.

[...]n telt thans zeven-[...]fabrieken, waar-[...]idden-Amerika en [...] gebied en drie in [...]dam, Thessaloniki, [...]wee jaar wordt de [...] op ruim één mil-[...]sstof (het gewichts-[...]vere stikstof, fosfa-[...] jaar geschat. Dat [...]vee procent van de



De fabricage van kunstmestprodukten door Esso begon pas zeven jaar geleden. Sindsdien heeft het concern in zijn fabrieken al meer dan één miljard gulden geïnvesteerd!

Voor haar project in Europoort legt Esso Chemie NV, Nederlandse dochter van Esso Chemical Company Inc. te New York, 250 miljoen gulden op tafel. De kosten van de uitbreiding van de aromatenfabriek in de Botlek meegerekend, investeert Esso in een gering aantal jaren ongeveer 330 miljoen gulden in haar Nederlandse chemische bedrijven.

Het complex in het westelijke havengebied van Rotterdam, waarvan de bouw tot de helft is gevorderd, bestaat uit een ammoniakfabriek (de grootste enkelvoudige produktie-eenheid ter wereld) en een ureum-, salpeterzuur- en kalkammonsalpeterfabriek. Verreweg het grootste deel van de produktie is bestemd voor de export naar landen buiten Europa.

Hiermee gaat Esso Chemie een bijdrage van tientallen miljoenen guldens leveren aan de handelsbalans. Voorts heeft het concern een langlopend contract met een dochteronderneming van de ENCK te Vlaardingen voor de levering van ammoniak en kalkammonsalpeter. De afzet van kunstmeststoffen naar Europese landen is slechts gering.

Aardgas

BELANGRIJKSTE GRONDSTOF voor het produktieproces is het aardgas uit Slochteren. Esso Chemie zal per dag ongeveer 1.1 miljoen m3 betrekken. Kalksteen is de tweede grondstof. Met binnenschepen zal per jaar 120.000 ton worden aangevoerd in de speciaal voor het bedrijf gegraven haven, waar ook aanlegplaatsen worden geconstrueerd voor zeeschepen (tot 15.000 ton) en kustvaarders voor de afvoer van de produkten.

Voor het laden van de schepen zijn speciale installaties ontworpen. Op het bedrijf worden opslagfaciliteiten gebouwd voor 75.000 ton gestort produkt, 36.000 ton vloeibaar produkt en 10.000 ton verpakt produkt (in jute, papieren of plastic zakken). Voor de afvoer van kunstmeststoffen speculeert Esso Chemie op het grote overschot aan ladingruimte in zeegaande schepen.

Het fabriekscomplex zal voor zeventig procent geautomatiseerd functioneren. In de toekomst wordt het geheel geautomatiseerd via een computer in één controlekamer. De personeelsbezetting zal vierhonderd man bedragen, van wie tien procent academici. De werving is al in volle gang. Alle werknemers krijgen een opleiding voor hun specialistische taak.

De behoefte aan kunstmest houdt direct verband met de groei van de wereldbevolking en met de noodzaak, het gemiddelde voedingsniveau op een hoger plan te brengen. In 1900 was de consumptie van kunstmest nog betrekkelijk gering. Voor het jaar 2000 (wereldbevolking zeven miljard zielen) wordt de vraag geschat op één miljard ton voedingsstof.

Moeilijkheden

OP HET OGENBLIK doet zich de merkwaardige situatie voor, dat praktisch alle grote kunstmestproducenten met enorme voorraden zitten opgescheept. Zij hebben de grootste moeite, hun produkten af te zetten naar (ontwikkelings)landen, waar er de meeste behoefte aan bestaat. Struikelblokken zijn de gebrekkige infrastructurele voorzieningen, eenvoudige landbouwtechnieken en de onvoldoende transport- en distributiemogelijkheden in die landen.

Bij de bouw zijn alle noodzakelijke voorzieningen getroffen voor de bestrijding van lucht- en waterverontreiniging. De maatstaven, die Esso zichzelf heeft gesteld, zijn strenger dan die door de overheid worden geëist.

Van de 86 ha, die Esso Chemie in Europoort ter beschikking heeft, wordt ongeveer een kwart bebouwd. Zij heeft dus nog ruime uitbreidingsmogelijkheden. Jaarlijks betaalt het concern één miljoen gulden huur aan Rotterdam.

Zestienhonderd werknemers, van Fluor Nederland te Haarlem en van vijftien à twintig onderaannemers, zijn dagelijks bij de bouw betrokken. Zij doen mee aan veiligheidsacties, waarvoor aantrekkelijke prijzen worden uitgeloofd. Aan het einde van elke week-zonder-ongelukken krijgen alle arbeiders op de bouwplaats een „veiligheidssigaar".

Zo zal Esso's kunstmestproject in Europoort er volgend aar november uitzien.

Nieuwe blikvanger in het Waterweggebied is de „prill"-toren van de ureumfabriek.

Prof. Christiaanse: „Ik ben misschien gekozen om mijn ondeskundigheid".

Nieuwe voorzitter Ned. Jeugdgemeenschap

Prof. Christiaanse: Eigenlijk ben ik ook al te oud

Jongeren moeten in 't bestuur

Door Paul Hollaar

„ER ZIJN VOLGENS MIJ MAAR TWEE REDENEN WAAROM MEN MIJ TOT VOORZITTER VAN DE NEDERLANDSE JEUGD GEMEENSCHAP HEEFT GEKOZEN. Dat zijn mijn ondeskundigheid en het feit dat ik buitenstaander ben", zegt prof. dr. J. H. Christiaanse, 35 jaar en hoogleraar in het belastingrecht aan de Nederlandse Economische Hogeschool in Rotterdam. „Ik spreek het vakjargon niet. De laatste acht jaar heb ik me met jeugdwerk bijna niet meer beziggehouden. Daardoor heb ik misschien een wat andere kijk op de zaken. De grotere ontwikkelingen interesseren me bijzonder. Bovendien kan ik die door de afstand die ik tot de materie heb gemakkelijk naar buiten uitdragen".

Zelf aan 't werk

De nieuwe voorzitter, die afkomstig is uit de Nederlandse Christelijke Sportunie, heeft inmiddels al contacten gelegd en gesprekken gevoerd met de Nederlandse Sportfederatie. „We moeten proberen de jeugd- en de sportorganisaties tot een betere samenwerking te brengen. Maar tevens moeten we de verantwoordelijkheid willen dragen voor de vrijere jeugdorganisatie. De overheid moet al dit soort zaken niet zelf oplossen. De particuliere organisaties moeten zelf aan het werk.

Dat heeft ook minister Klompé me gezegd. Er is behoefte aan een sterk plaatselijk beleid. De overheid moet kunnen werken met behulp van de georganiseerde jeugd".

„Ook is het van belang dat die verantwoordelijkheid door de jonge mensen zelf gedragen wordt. Op het ogenblik ben ik de jongste in het bestuur van de N.J.G. Ik ben 35 jaar. Eigenlijk ben ik al te oud. De ouderen hebben indertijd heel veel goeds gedaan in het jeugdwerk. Die tijd is echter voorbij. De jongeren moeten zelf de leiding van het jeugdwerk op zich nemen".

Ook levensbeschouwing

„Levensbeschouwelijke invloed op het jeugdwerk waardeer ik nadrukkelijk positief. Maar de mensen moeten het natuurlijk zelf maken. Een eigentijdse vormgeving is ook voor dit soort jeugdwerk broodnodig. Dat levensbeschouwelijk jeugdwerk nodig is en dat het moet samenwerken is duidelijk. Ik geloof in veelvormigheid. Als alle verschillende vormen zouden samengaan zou dit nivellering veroorzaken, ook in de N.J.G. De verschillen mogen best tot hun recht komen".

„Zelfversterking"

„Als doel van de jeugdorganisatie zie ik, ook al is de uitdrukking niet origineel, de „zelfversterking" van de mensen", zegt prof. Christiaanse. „Ze moeten zich kunnen uitleven in de sport en in hun verenigingen of sociëteiten. Er wordt wel gezegd dat er een gebrek aan creativiteit bestaat. Wel, men moet de mensen brengen tot een behoorlijke besteding van hun vrije tijd. Ik bedoel niet dat dit slecht slapen tot gevolg zou moeten hebben, of het zichzelf afbreken door medicamenten in te nemen".

Aan de weg timmeren

Een bezwaar van de N.J.G., de overkoepelende organisatie van alle jeugdwerk in het land, is dat ze te weinig aan de weg timmert, vindt de nieuwe voorzitter. „Ik denk maar aan het schrijven over de jeugdwerkloosheid en de ontwikkelingshulp. Daar gaan we wat aan doen. Betrekkingen naar buiten zijn voor ons bijzonder belangrijk. We zijn ook de gesprekspartner van de regering. We moeten onszelf beter proberen te verkopen.

Daaruit zou nog duidelijker kunnen blijken dat de jeugd werkelijk idealistisch is. Vraag ze maar eens naar hun gedachten over internationale vraagstukken. Daaruit zal dan wel blijken dat ze duidelijk geëngageerd is. maar napraten is een andere zaak. Ook dat is iets goeds", vindt prof. Christaanse.

Ongelukken in de haven

ROTTERDAM — De havenarbeider D. van der Slik (37) uit Middelharnis is gisteren met een beschadigde schedel in het Havenziekenhuis opgenomen. Tijdens het lossen van boomstammen uit het Zwitserse schip Calanda stootte hij met zijn hoofd tegen een runnerhaak.

In de Botlek ontstond gisteren in dichte mist een aanvaring tussen het Noorse m.s. Fossum en de binnenvaartschepen Spirit, Anne Berith en Rijn, die bij de Sint Laurenshaven afgemeerd lagen. De grootte van de schade is nog niet vastgesteld; persoonlijke ongelukken deden zich niet voor.

Ms Waalekerk van stapel

ROTTERDAM — Op de werf van P. Smit Jr. wordt woensdag 29 november het vrachtschip Waalekerk — in aanbouw voor de VNSM in Den Haag — te water gelaten. Mevrouw B. B. Marsman-Aingworth zal de doopplechtigheid verrichten.

Rotterdam, grotere D.C. 9, in Nederland

SCHIPHOL — De eerste KLM DC-9-30, genaamd Rotterdam, is gistermiddag uit Keulen op Schiphol geland. Het toestel, dat 4½ meter langer is dan de voorgaande versies van de DC-9 zou oorspronkelijk gistermorgen om 4 uur uit Long Beach in California op Schiphol aangekomen.

Door de mist werd het vliegtuig echter gedwongen uit te wijken naar Keulen.

Ongeluk met brommer na bierestafette

Anderhalf jaar ontzegging geëist

ROTTERDAM — Anderhalf jaar ontzegging van de rijbevoegdheid en honderd gulden boete of tien dagen hechtenis was de eis van mr. P. A. H. Bos gistermiddag tegen J. van der S. (19), student. Van der S. had enige maanden geleden op de Rotterdamse Dijk de macht over zijn bromfiets verloren en was tegen een verkeerspaal opgereden. Zijn vriend, die achterop zat, bleef bewusteloos op de weg liggen en bleek achteraf een zware hersenschudding te hebben.

De twee studenten kwamen van hun sociëteit in Rotterdam, waar ze een bierestafette hadden meegemaakt. Op de vraag, hoeveel hij had gedronken, antwoordde Van der S., dat hij vermoedde een glas of vijf, zes naar binnen te hebben geslagen. Tijdens de estafette had hij geprobeerd zo veel mogelijk bier langs zijn kin inplaats van in zijn slokdarm te laten lopen. Zijn vriend zou dronken zijn geweest.

De politiemannen die Van der S. na het ongeluk mee naar het bureau namen, vonden de verdachte wel zodanig onder invloed, dat hij niet in staat moest worden geacht een motorrijtuig naar behoren te besturen. Zijn wat zenuwachtige reacties op het bureau wijtte Van der S. echter aan de schrik. Hij was overstuur, toen hij zijn vriend op het wegdek zag liggen. De raadsman van Van der S. wees de rechtbank erop, dat de wet de mogelijkheid openlaat, iemand voor een dergelijk vergrijp te straffen met een berisping.

Groente-export vangt devaluatie pond zonder paniek op

ROTTERDAM — De devaluatie van het Engelse pond heeft de groenten- en fruitexport geen grote schade berokkend. Dit bleek vandaag uit mededelingen van exporteurs. Voor slechts een grote exportonderneming ligt de zaak slechter. Dit bedrijf zou voor meer dan 20.000 pond vorderingen in Engeland hebben uitstaan. Deze vorderingen verminderde het afgelopen weekeinde ruwweg met 28.000 gulden. Voor vele anderen echter betekent de devaluatie een onverwacht — tijdelijk — voordeeltje.

De meeste bedrijven leveren de Nederlandse tuinbouwprodukten aan hun Engelse afnemers op termijn. Deze bedrijven hadden al bij voorbaat hun ponden laten dekken. Hierdoor zijn leveringen die nog moeten plaatshebben in „zware" ponden betaald.

Het exportbedrijf Zwaan in Rotterdam heeft de zaak goed doorstaan. „Wanneer de devaluatie in de zomer was gekomen zou het harder zijn aangekomen". meende men. In de zomer zou men tevens de concurrentie van Spanje en de Canarische Eilanden moeten weerstaan. Zoals bekend heeft Spanje tegelijkertijd met Engeland zijn valuta gedevalueerd.

„Het zal wel een paar weken duren voordat men weer rust op de markt heeft", zei men ons bij de N. J. Mulder N.V. „Voorlopig is bijvoorbeeld de aanvoer van inlandse uien in Engeland groot genoeg voor de eigen consumptie. Tegen de helft van december heeft men hiervoor pas weer import nodig. De concurrentie van Spanje en de Canarische Eilanden is trouwens zeer betrekkelijk. Heel belangrijk is dat Nederland zijn havens het dichtst bij Engeland heeft". meende men.

„We verwachten geen rampzalige gevolgen. De prijs was toch al niet erg hoog en de meeste bedrijven hadden hun ponden gedekt. Tegen het begin van volgend jaar zullen de prijzen zich waarschijnlijk weer op een reëel niveau gestabiliseerd hebben.- Tegen die tijd is ook de eigen Engelse produktie ongeveer verkocht", zei men bij Jac. van As N.V.

De exporteurs zijn in elk geval door de devaluatie niet uit het veld geslagen. „Veel collega's hebben de bui zien hangen en hebben van tevoren al maatregelen getroffen", zei men op de veiling Noord.

Veiling Berkel en Rodenrijs

VEILING BERKEL EN RODEN[RIJS] RODENRIJS, 21 nov. — glassla [...] 19.00; II 9,50—13,50, C 8.00; tomat[en] 7.00—7.30, B 6,50, C 5,50—5,70; to[...] A-B'land 2.40—2,50, B 3.20; sprui[...] Heden werden aangevoerd 7000 [...] maten en 134.000 st glassla.

DE PLOEG van het extra-sportle[...] merk Smiths voor het seizoen 19[...] volgt samengesteld: Planckaert, [...] den Berghe, Van Vlierberghe, De[...] ver, Van de Rysse, Brusselmans, [...] Sweeveld, Claes, Brands, Monty [...] België), Dolman, Zoet, Duyndam [...] wer, Heynig, Du Bois en Hooger[...] (allen Nederland).

Verzoek aan mi[...]

Verolme [...] arbeiders

ROTTERDAM — Verol[me] heeft minister Roolvink ([...] le zaken) toestemming g[...] vraagd om driehonderd S[...] se werknemers aan te tre[...]

De bewindsman heeft n[...] geen beslissing genomen[...]

Uit het verzoek blijkt, da[...] wervingsactie voor nieuw p[...] neel tot nu toe niet het gew[...] resultaat hebben gehad.

Volgens het ministerie doe[...] van bedrijven nog regelm[...] een beroep op buitenlands[...]

SCHEEPVAART

ROTTERDAM AANGEKOMEN 21 NOVEMBER

VESTEROY, Noor, Br. Columbia, Maashaven, N.Z., pulp, Furness
KYLIX, Ned., Thameshaven, Shell 32, ledig, Van Ommeren
UNKASS, Dts., Bergen, Koningin Wilhelminahaven Vlaardingen, olie, Furness
KULMERLAND, Dts., Marseille, Merwehaven, stg., Muller
HEINZ HORN, Dts., Kingslijn, Beatrixhaven ledig, Muller
WAKEFIELD, Eng., Hull, Beatrixhaven, stg., Humber Diensten
ESTRELLA, Noor, Santos, 2e Eemhaven, [...]
2de Pethaven, Chevron, ldg, Muller
BISMARCKSTEIN, Dts., Londen, Spoorhaven, stg., Sanara
STEINHOFT, Dts., Antw., Beatrixhaven, stg., James Smith
SCHOONEBEEK, Ned., Rauma, Rijnhaven, Molukken, stg., Spliethoff
BARGUZIN, Rus, Kalingrad, Waalhaven, pier 6, stg., PHM
NORWIND, Ned., Hull, Beneluxhaven, stg., Noordzee Veerdiensten
SPIRALITY, Eng., Colchester, Parkkade, ldg, Wagenborg
DORIS, Dts . Hamburg, Zwijndrecht, olie, Alg. Vrachtk.
ISIS Ned Londen
AFOUNDRIA Am Bremen
POOL FISHER Eng Felixstowe
ELSA ESSBERGER Dts Bremerhaven

VERTROKKEN 22 NOVEMBER

ANDROMEDA, Ned., Mostaganem
PORTRIEUX, Frans, Klaipeda
CRESTA, Ned., Goole
NICOLE, Ned., Waterford
OELTANK 1, Dts., Hamburg
SEESCHWALBE, Dts., Drogheda
BRITTENBURGH. Ned., Newcastle
EASTWOOD, Eng., Hull
KRAFTCA, Ned., Antw.
VITREA, Ned., Hamburg
NOROIT. Frans, Port Jerome
KORALLE, Dts., Hango
BITUMA, Deen, Kopenhagen
TANK DUCHESS, Noor, Falmouth
JOHN HELLESKOV, Deen, Vasto
GRETKE OLDENDORFF, Dts., Rostock
WINERTOR, Dts., Emden
ESSO FLAME, Fin., Fawley
STOLT AVENIR, Ital., Aarhus
ANVERS, Belg, Antw.
DEREN, Eng., Londen

Bianca 22 te Ipswich
Blitar 21 70 m OZO [...]
Boekanier 22 te Lond[en]
Bonafide 20 te Roche[...]
Bontekoe 21 175 m [...]
Bontekoning 23 te Su[...]
Boreas 21 v Malaga [...]
Borelly 21 v Delfzijl [...]
Borneo 21 op 60 m [...]
Bornrif 22 te Honfle[ur]
Bothnia 21 v Umea [...]
Bovenkerk 21 420 m [...]na
Brandaris 22 te Ham[...]
Breewijk p 21 IJmui[den ...]burg
Brinda 22 te IJmuide[n]
Brinio 21 te Helsing[...]
Britsum 21 360 m O[...]folk
Brittenburgh 22 v Ro[...]

Cadans 22 te Londen
Calamares 21 v Tela
Camerounkust 22 te [...]
Capricornus 22 te Li[...]
Caranan 20 v Leixoes
Carebeka 2, 21 v Ya[...] Hartlepool

It should be pointed out that there is also a difference in method of composition between our operation and *The Denver Post* (U.S.A.), the only other newspaper that makes use of some form of unjustified. Lines that have enough spacebands between words are allowed to become justified lines at the *Post*. Only when a line is short is quad-left used. This implies that, in comparison with our method, an extra code for quad-left has to be punched on the tape. In our operation quad-left is automatically activated by the elevator code and is thereby used on *every* line produced on tape-operated linecasters. This means that the spacebands are never used to their full capacity and that hardly any line is without some white at the end. The system of the *Post* has the advantage that the ragged effect, necessarily connected with unjustified typesetting, is less evident. On the other hand, the production advantages of our system are evident.

The foremost advantage of unjustified typesetting lies in the ability of the keyboard operator to improve his speed of production, because he does not have to worry about the time-consuming problem of letter- and word-spacing to make his lines "full." In theory, the keyboard operator should be able to reach the same production speed—as if he were perforating endless tape for computer-use—if he did not have to hyphenate and punch the elevator code. However, this provides a natural break in the monotony of his operation. A monotony, I have been informed, that has a slackening influence on the over-all production speed when producing endless tape.

We were fortunate in interesting the Institute for Time Standards in the Graphic Industry in the Netherlands (V.T.N.D.) in our project. They have conducted time and motion studies in our perforator room. Our keyboard operators have been instructed to get as many characters on a line as possible. They hyphenate when necessary. Every line is quadded left. In the time study production speeds in our perforator department were compared with the standard of tape production set by the Institute. Gain in production time when producing unjustified lines depends on the number of characters in the line (see Table I).

As we hardly ever, on single-column width, have to put more than 29 characters on a line (neither with the 8-point type on a

TABLE I. *Production-time Gains for Different Numbers of Characters-per-line in Unjustified Newspaper Composition*

Characters-per-line	*% Gain in Production Time*	*Characters-per-line*	*% Gain in Production Time*
29	13.5	44	6.7
30	13.2	46	5.8
32	12.2	48	4.9
34	11.3	50	3.9
36	10.4	52	3.0
38	9.5	54	2.0
40	8.6	56	1.0
42	7.6	58	0.0

52-mm. column nor with the 6-point type on a 40-mm. classified column), we claim the optimum result of this method of line-composition. The relatively inexperienced keyboard operator especially appreciates the advantage of not having to bother any more about typographical complications, such as spacing and justification. The same is experienced in the production of endless tape. In short, the time study indicated: (1) given our average column width in combination with our average type size, a production increase of 13.5% is effected by the abolishment of justification; (2) there is a definite relation between the number of characters in a line (column width) and the proportional production increase caused by the abolishment of justification. The more characters there are in the line, the smaller the advantage of unjustified typesetting is going to be.

Summing Up

In the field of production it can safely be said that the change to unjustified typesetting is a success. It is more complicated to offer conclusions about readers' attitude towards unjustified composition. As has been mentioned before, our readers were confronted with more than unjustified typesetting alone. It is impossible to decide how much of the negative reaction should be blamed on the unjustified lines, and how much on the over-all change in layout. Newspaper design as the "shaping of the written word" is very much a matter of individual appreciation. It is almost impossible to obtain any clear-cut reactions, and every attempt to relate

response to marketing on this abstract subject only tends to confuse things.

Looking back, it can be said that a more gradual transformation (if possible) might have been preferable to the shock effect. We realize now that we may have tried too radical a departure from our old-fashioned image, making our layout overly functional and too clean, thereby losing much of the "snugness" a local newspaper should have. Our first practical efforts in this new style of layout were rightly described by an American colleague as: "nice looking but perhaps too aseptic."

We have, therefore, from the moment that we started to live with this new make-up, constantly been adapting and modifying—learning on the way. It would be assuming too self-satisfied an attitude to say that the initial layout was ahead of its time. However, we consider it desirable to turn back the clock a little, with the intention to steer a middle course between the functional and the snug. This modification (a justified concession to the reading public) finds expression in a general "darkening" of our pages by using less white in the headlines, more bold type, etc.—without, however, going back to the all-black and smudgy make-up of pre-February 6 days. Mention has already been made of the change to a bigger body type, which also made the columns more solid looking.

We over-estimated the skill of our operators to produce good unjustified lines. By good unjustified lines we mean composition with a minimum of white at the end of the lines—including as many characters as the column width will allow. Exaggerated short lines (where you can put a ruler to the right side and cut off one or two picas of white) tend to emphasize the ragged end and irritate the reader. However, improvement is noticeable and this deficiency is kept under close observation.

Ten months of experience with unjustified typesetting and a fundamentally-new layout is a comparatively short time to draw any definite conclusions. The obvious advantages of unjustified typesetting have been pointed out. At the moment we see no reason to withdraw, although we shall keep modifying and adapting for some time to come.

Author's Guide to the *Journal of Typographic Research*

INTRODUCTION

The research interests of the *Journal of Typographic Research* might be gathered together under the general heading of visible language. This wide and as yet ill-defined area—concerned with putting man's language into logical, understandable, and visible form—encompasses aspects of many disciplines; thus, the typographic research of the *Journal's* title can perhaps best be described as a "mixed bag." The psychologist, the linguist, and the computer theorist when concerned with typographic problems are not, in a very real sense, working in typographic research but are working in psychology, in linguistics, and in electronics. Each uses his own terminology, equipment, experimental design—and his own style of reporting his work. Typographic research methodology, per se, does not exist.

It is already apparent that a more consistent methodology is needed to help bring together the fragmented typographic research efforts—e.g., agreement on terminology and the form of research reports. Toward that end this manual attempts to provide guidelines for the preparation of manuscripts for the *Journal*. Following a general description of the contents and format of the *Journal*, the instructions for preparing the manuscript are divided into three major sections: the first on the typing style and appearance of the various parts of the manuscripts; the second on some aspects of presenting the material—organization and style; and the third on the procedure for submitting the finished article. A section of sample typewritten pages is included as a guide to typing style. Finally, an appendix treats special problems of graphic designers in preparing research articles.

Naturally, it would be impossible in a brief manual such as this to cover all points, so when in doubt use your good judgment. Check past numbers of the *Journal* to see if the point has been demonstrated. If you feel the point needs clarification, write the editor.

CONTENTS AND FORMAT OF THE JOURNAL

In general, the contents and format are similar to the usual scholarly journal. Approximately three-fourths of the total pages in each number are taken up by five or six major research articles; the remaining fourth is devoted to book reviews, abstracts, and other supplementary material.

Research Articles
The primary aim of the *Journal* is to concentrate on reports of specific research projects—not on more general reports covering larger research areas. There are, however, exceptions to this when the general reports survey areas particularly relevant to letterform research.

Historical Research articles are welcomed where the subject matter is directly related to typography and/or letterforms. Contributions which are mainly concerned with printing history are not carried. Historical articles should be well documented and normally directed to a specific research point.

Students are invited to contribute articles or other material when they meet the *Journal's* standards. Accompanying each such contribution should be an acknowledgement of the faculty person who advised the student (in a footnote, preferably), and the contribution should be checked with at least one faculty person before submission.

Speeches are not published as such. However, a speech may become the basis for an article and be rewritten in the form of an article.

Previously Published Material. In order to call attention to various peripheral areas of letterform research, a few pertinent articles are

reprinted, normally from periodicals with restricted circulation. Arrangements might also be made for such an article to be run concurrently, e.g., appearing the same month both in the *Journal* and in a technical electronics publication. Ordinarily, however, previously published material from another periodical of general circulation, or in a book, is not acceptable for publication. There are occasional exceptions, perhaps material from a forthcoming book.

Supplements or Monographs on the more important conferences, committee reports, etc., will be published from time to time. If you think the *Journal* should consider publication of such a supplement, please write the editor.

Other Material
As well as its own research articles, the *Journal* attempts to provide a clearing house for related research and source material. Authors are encouraged to submit contributions in addition to regular research reports, such as:

Reviews—on books, exhibitions, new typefaces. A sheet of suggestions for writing reviews is available from the *Journal*. Please write the editor if you would be willing to write reviews, and include a brief statement on your special interest areas.

Research in Progress—short reports on research topics currently being investigated. These reports may seek comment and additional information from other researchers interested in similar problems; or they may summarize investigative studies which suggest implications for further research.

Commentary—longer and more detailed comment on another person's *Journal* article than would be contained in a letter to the editor—including, where appropriate, illustrations, charts, etc.

Letters to the Editor—reader comment on any topic within the *Journal's* range. A clash of ideas is encouraged!

Miscellany—single-page features on any related material (used anywhere throughout the *Journal*)—e.g., pertinent quotations from outside sources, historical notes, unusual graphics, etc.

Style and preparation of manuscripts for these other editorial materials should correspond to that required for major articles. Note: An author submitting a review, research in progress report, commentary, or letter to the editor should include a short biographical note (see pages 85 and 98).

PREPARING THE MANUSCRIPT

Manuscripts should consist of the following parts, in the order listed:

1) Title page
2) Text pages
3) References (if used), begin on a new page
4) Footnotes (if used), begin on a new page
5) Tables (if used), each table on a page by itself
6) Illustrations (drawings and photographs; if used), each on a page by itself
7) Captions for illustrations, begin on a new page
8) Abstract of the article, begins on a new page
9) Biographical paragraph on the author, begins on a new page

This section describes and gives examples of the correct form and appearance of each of these parts. Organization of the text material and points of style are discussed in the following section.

Title Page

This should include the title, author's name, and beginning of the text. See the accompanying sample typed title page (page 94) for correct placement.

The title of the article should be brief and should convey precisely the subject matter of the article. Make the title interesting, but avoid general or "catchy" headlines more suited to popular magazines.

The name of the author or authors immediately precedes the first line of the article, flush to left margin. Do not include degrees, titles, or institutional connections.

Text

The basic rules for typing the manuscript are outlined below. Illustrations of most of these points may be found on the accompanying sample typed page (page 94).

Paper should be white, of good quality, approximately 8½ x 11 inches.

Margins of 1½ inches (4 cm.) should be left at the top, bottom, and both sides of all pages—to allow space for writing instructions to the printer.

Spacing. Double space throughout—including quoted material, footnotes, captions, tables, *everything!* Material to be set in smaller type or with other special handling can be so indicated in the margin. Make all such marginal notes in *pencil.*

Indent paragraphs five spaces. Exception: Do not indent the first paragraph in the article; do not indent the first paragraph after a sub-head or a paragraph beginning with a sub-head.

Number the pages consecutively at the upper left-hand corner of the page, followed by the author's last name: 5 Anderson.

Typewriter. Do not use a typewriter with all-capital letters. Do not economize on typewriter ribbons or carbons; copies should be in good black impression for the compositor.

Copies. Three copies of the manuscript are required: an original on good bond paper plus two other copies, either carbons or mimeographed or Xeroxed copies. (The extra copies will speed up the reviewing process, because your article can be reviewed simultaneously by several different editorial advisers.)

Divisions. When the article contains a number of sub-divisions, all of the same general importance or level, use an italic sub-head, upper- and lower-case. If secondary sub-heads under these are required, use italic, upper- and lower-case, run-in to paragraph; no indentation (as at the beginning of this paragraph).

Occasionally articles have two or three *major* sub-divisions which require more prominent heads than the above. In these cases use an all-capital line, flush left.

Examples of all three types of headings may be found on the typed sample page (page 94).

Corrections should be kept to a minimum. Avoid ambiguous typewriter strikeovers. Make corrections, additions, and deletions neatly and in ink, on all copies. Print or type all corrections; do not use handwriting, and do not print in all-capital letters. Never make additions or corrections on the back of the page or in the margins. Brief insertions or corrections should be made between the lines. Longer additions can be typed on a separate full sheet page and keyed to the correct place of insertion in the manuscript. Pages containing a considerable number of corrections should be retyped. If there is a section of several lines on a page with complicated corrections, retype these lines on a separate slip and carefully paste it completely over the original manuscript. Never staple slips to the page.

Length of the Manuscript. There are no limitations on the length of articles. Authors are expected to present their subject matter in an orderly, clear, and concise manner; every effort should be made to avoid repetition, excess wording, etc. An article which uses extensive illustrative material to develop its thesis may be quite brief. On the other hand, the *Journal* encourages the submission of comprehensive reports which develop a topic in depth and detail.

Acknowledgements. The author should, preferably in a footnote, give acknowledgements for financial assistance, major advisory assistance, special use of collections, etc.; but not for minor advisory assistance or such help as typing or computation. If the article is based on a dissertation, a chapter of a book, or a speech, this information should be given along with the acknowledgements.

Documentation

Because the *Journal* attracts articles from a number of different scholarly and scientific disciplines, it permits the use of *either* (1) footnotes, which are characteristic of historical and humanistic investigation, or (2) references, which are characteristic of scientific journals. In general, the latter style is encouraged.

Note: If the author elects to use the footnote style, he should restrict himself to that usage. If the author elects to use the reference style, however, a few footnotes may be required for incidental comments, cross-references, acknowledgements, etc.

It is of extreme importance that documentation—whether footnotes or references—be both clear and accurate. You are referring your reader to a specific source of information; you must include author, title, date, and place of publication. Check the accompanying style pages very carefully.

It is impossible to cover all decisions that must be made in the preparation of adequate footnotes and references. When in doubt about the proper style, choose the example that most closely fits your needs. If there is no exact example, include all the appropriate information in the best possible order.

Footnotes. All footnotes should be typed together double spaced, on a separate sheet of paper, not at the bottom of the text pages. See page 96 for correct style.

The introduction of a footnote in the text is indicated by a slightly elevated (about one-half space) arabic numeral, set after punctuation:

"This is an example of a footnote number."[1]

Footnotes should run in one series through the entire article. Do not begin a new series on each page or section of the article.

In general, do not repeat information given in the text; e.g., if the author's name and title of the book are given in the text close to the footnote number, do not repeat these in the footnote.

References. All references are listed on a separate page at the end of the article in alphabetical order—*not* in the order of their appearance in the text. They are not numbered. See page 95 for the typing style of reference listings.

Introduction of a reference in the text should be done within parentheses, including the author's last name and the year of publication. The reference should be placed before punctuation, with the exception of quotation marks:

This is an example (Smith, 1965).

"This is another example" (Smith and Long, 1965), and it. . . .

However, if the author's name is given in the text, include only the year of publication in the parentheses:

. . .cited by Smith (1965).

If you have more than one reference by the same author in one year, distinguish them as follows: (Smith, 1965a), (Smith, 1965b), etc.

Tables

In reporting research results, tables present statistical information in a concise, easily handled form. Since typographic research encompasses a variety of long-established disciplines, each with its own standard style for reporting statistics, the *Journal* does not insist upon a single style for tables, as long as the information is clearly presented. A general style guide may be found in the sample typed table on page 97. Keep in mind the following general rules:

Number the tables sequentially, using roman numerals.

Paper should be the same size as that used for typing the text. Use a separate sheet of paper for each table.

Double Space all material—title, sub-heads, data, and footnotes.

Titles should be kept short and to the point. Note the style for typing titles, as shown in the sample (page 97). All internal identification sub-heads are italicized.

Rules or lines between columns should not be used.

Reference in the Text to the table should be made in the most appropriate place. See the typed sample page (page 94) for the manner of reference.

Footnotes in tables are of two different types:

1) Content footnotes should be indicated with superior letters, e.g.:

Example[a] Example[b]

2) Footnotes of probability or statistical significance should be indicated by one asterisk * for the first footnote; two asterisks ** for the second; three asterisks *** for the third, etc.:

*$\underline{p} < .05$

**$\underline{p} < .01$

***$\underline{p} < .001$

Significance levels beyond .001 should be reported as .001.

Illustrations

Because typographic research lends itself well to visual treatment, the *Journal* encourages the use of illustrations— graphs, charts, diagrams, and sketches, as well as photographs. The *Journal* is printed by the offset lithographic process, so that all types of illustrations can be reproduced with good quality, so long as the clarity and detail of the original are good. Obtaining the illustrative material for an article is the responsibility of the author.

Size and Quality. Graphs, diagrams, etc., should be submitted as camera-ready copy. They should be at least the same size as the anticipated published version, or preferably slightly larger. Keep in mind the proportions of the *Journal's* type-page size: 26 x 41 picas (4¼ x 6¾ inches; 11 x 17.3 cm.). Lettering and type should be clean and uniform in size.

Photographs should be black and white, glossy finish prints, preferably 8 x 10-inch size. However, other photographs will be accepted if they are of good quality.

Identification. Identifying information should be written *lightly* in pencil on the back of photographs, near the edge. Give the figure number, author's name, and title of the article—not the full caption for the photograph, which is to be typed separately (see below for

style). *Never* use the typewriter to write on the back of photographs; *never* write on the front surface of the photograph.

Cropping. If only a section of a photograph should be used for an illustration, the appropriate area can be designated in one of two ways: 1) Hold the photograph up to the light, and with a pencil *very lightly* outline the area to be used on the back of the photograph. 2) Attach a thin overlay sheet on the photograph and outline the area to be used *lightly* in pencil. *Never* mark directly on the surface of the photograph.

Packing. In packing photographs and other illustrations, do not use paper clips, as they scratch and mar the surface of art work. If materials must be separated into groups, place in separate large envelopes or use rubber bands.

Placement in the Text. Figures should be numbered sequentially in arabic numerals. The text should refer to the figure at the most appropriate place, normally within parentheses, e.g.: "... as shown in the illustration (Fig. 1)." When a figure is mentioned in the running text it is not abbreviated, e.g.: "... please refer to Figure 1."

Layout. The organization of various illustrative materials on the printed page may be particularly important to the context of the article. In such cases the *Journal* invites sketches and suggestions for the most appropriate layout scheme. Wherever possible these ideas will be followed or will be discussed with the author during preparation of the final layout.

Captions. Every illustration must be accurately captioned. Check especially the correct spelling of names and places. Type all the captions together on a separate sheet of paper. Double space and leave extra space between captions. Examples:

Figure 1. Baskerville (top) and Spartan are shown in conditions of retinal degeneration. Spartan may be slightly easier to read even though both types are carefully spaced identically.

Figure 2. Detail of Figure 1.

Rights and Permissions. Certain laws must be considered in the publication of illustrations. If any of the illustrative material you plan to use is protected by copyright—or if you suspect that it is—you should obtain special *written* permission from the copyright owners. When the material is sent to the *Journal,* you must include a note on the copyright notice, together with copy giving the exact wording of the credit line which should accompany the printed material in the *Journal,* e.g.:

Excerpted by special permission from ...
Reprinted with permission of ...
©Copyright 1966 by *The New York Times.*

Note: Permission to reprint should also be obtained when copyrighted material is used as subject matter to illustrate various typographic points. Also involved here is what lawyers call "fair use" of limited amounts of copyright material. If you have any doubts about your own material, raise the question with the editor in an accompanying letter.

Abstract

Articles must be accompanied by an abstract approximately 150 words in length. The abstract should be typed as a single paragraph on a separate page, double spaced. It should include (1) a brief statement of the problem, (2) the method of research, (3) the results, and (4) a general conclusion.

Biographical Note

Every article must be accompanied by a brief (about 100 words) biographical paragraph on the author. It should be typed double spaced on a separate page. The first sentence should begin with the author's name and include his present position and mailing address.

The balance of the paragraph should develop a concise description of his training and background, degrees and institutions, a few recent publications, plus any other pertinent information that gives his special qualifications for writing the article. Please refer to the sample biography on page 98 for correct style.

Biographical paragraphs accompanying an article written by two or more authors should begin with a description of the senior author. Each new author's data should begin a new line.

ORGANIZATION AND STYLE

This manual does not attempt to cover all the basic, standard rules for writing research reports. A few brief, general suggestions for organizing the material are offered below, but there are many excellent, readily available publications which offer a more detailed explication. (Designers, whose research reports present some special problems, are referred to the Appendix to this manual, page 99.)

General Organization

Method of Approach. When writing a research report, concentrate first on communicating what you want to say to the reader—as clearly, effectively, and directly as you possibly can. In general, write according to the following outline:

1) What was the problem?
2) What did you do?
3) What did you find out?
4) What is the significance of your findings?
5) How can these findings be used?

Once the work is down on paper, go over it carefully to make the final manuscript conform to the rules of style outlined in this manual. Reread the completed manuscript as objectively as you can; try to put yourself in the place of a fellow researcher interested in knowing exactly what you did and what you found out. If you feel unsure of the article after it is completed, you might try two things:

1) Read it aloud. How does it sound? Is it understandable?
2) Have someone else read it who is not an expert on your topic. Does he understand it, without laborious concentration? What improvements can he suggest?

Writing Style. Manuscripts should be written in the third person—i.e., avoid the use of I, me, my, we, us, our, etc. Actual style, of course, is an individual matter, but try to keep in mind the following goals:

Completeness. Don't hoard your facts! Authors are often so close to their material that they innocently withhold information that would clarify statements which are otherwise hazy or incomplete. Facts which seem so familiar to you that you take them for granted may be needed by the reader in a related field.

Simplicity and clarity. Simple writing is the most forceful and the most effective. Don't use a four-syllable word when a one-syllable term will work. Watch for wordiness—unnecessary adjectives, repetition, cliches, vogue words ("design-wise"). Check that your transitions between ideas are clear.

Accuracy. Check all quotations and dates for accuracy. Be sure you know and have a record of the exact source from which you have quoted—author, title, date, and publisher.

Consistency. Have you been consistent in spelling, capitalization, punctuation, and the use of italics? *Note:* If you have a special preference for a specific usage, attach a note to the editor onto your manuscript.

Special Points of Style

Using Technical Terms. Because the *Journal* reports research from a variety of research areas, difficulties may arise with the use of technical or trade terms which are familiar to the author's usual audience but may not be to many of his readers in the *Journal.* The *Journal* does not discourage the use of technical terms; in fact, one of the by-products of its interdisciplinary approach should be to help researchers develop a familiarity with technical terms in all

related areas. When technical terms are used the first time they should be explained in either of two ways:

(1) If the term or abbreviation is to be used repeatedly throughout the article and can be quickly explained, use this style:

First mention: the Cathode Ray Tube (CRT) which . . . .

Later mention: The CRT face . . . .

(2) If the term needs more explanation, use a sentence or two of description, e.g.:

. . . Cathode Ray Tube. This may briefly be described as . . . .

On the other hand, authors from fields outside the graphic arts often may not be familiar with standard typographic terminology. In such cases the *Journal* may change the article's wording to the generally accepted typographic term, e.g.: "non-serified type" to "sans-serif type."

Note: In reporting experiments the *Journal* does not use the abbreviation *S*, for subjects. The entire word should be written out.

Personal Names. When an individual's name is used for the first time, include the entire name, plus degree if available. Do *not* use Mr. or Miss before the name. Examples: Dr. John Jones, Eleanor A. Brown, Mrs. John Smith. On subsequent mention of the name (whether a man or a woman), include only the last name: Smith reports that . . . .

Where there are two individuals of the same name, differentiate them by use of an initial: I. Smith and M. Smith.

Quotations. Run all quotations into the text, no matter what length. Do not set quoted material off by extra space; do not indent from left margin, *never* type it single spaced.

Always use *double* quotation marks around quoted material, no matter what length. Single quotes should be used only for a quotation inside a quotation: "He said 'No.'"

Always put a period or comma inside the quotation marks, whether or not it is part of the quotation. Other punctuation goes inside the quotes only if it is part of the quoted material.

Letters of the Alphabet when mentioned in the text should not be set off by any special punctuation. Do *not* use quotes or underline. Example: The letter o is wider than i, r, and t.

Numbers. In general, spell out all numbers through ten. However, always signify type measurements and page and figure numbers in numerals: 6-point type; 8-pica measure; see Figure 5 on page 9. Use arabic numerals for numbers over ten: 11, 85, 100,000. Numbers over a million should be rounded off: $3 million; 2.5 million characters.

Decades should be written as the 1930's, *not* the 'thirties.

Spelling. Use American style rather than British. Examples:

program, not programme	color, not colour
minimize, not minimise	font of type, not fount
center, not centre	

Follow American punctuation usage, as well; for example, in the use of double quotation marks (see above), and the use of a period following abbreviations, e.g., Dr. John Jones, 5 cm. long.

There is often much confusion over the correct spelling of many typographic terms, especially as regards capitalization and hyphenation. Therefore, a few general rules and examples follow.

Do not capitalize names of styles of type, numerals, etc., even when derived from proper nouns, e.g.:

roman type; roman numeral	gothic letters
egyptian type family	arabic numerals

Names of typefaces, however, are capitalized, e.g., Times Roman, Baskerville, Caslon, News Gothic.

Generally speaking, most compound terms (nouns and verbs) are written either as two words, or, for more common terms, as one word without a hyphen. A hyphen is usually inserted only when a two-word compound is used as an adjective. A list of preferred spellings for some of the most common typographic terms follows.

bold-condensed
boldface
cast-metal type
cold type (noun)
cold-type composition (adj.)
covariance
extrabold
filmsetting
hand-lettered
hand lettering
handwriting
handwritten
hot type (noun)
hot-type (adj.)
layout
letterforms
letter spacing
letter width
lightface
light italic
lower-case letter (adj.)
makeup (of a page)
old-style (adj.)
photocomposition
photo-offset
phototypesetting
printout (computer)
sans-serif type (adj.)
semibold
typecase
type caster
type-casting (adj.)
type cutting
type-cutting (adj.)
type design
typeface
type font
typefounder
type gauge
type-high (adj.)
type matter
type measure
type metal
type page
typescript
typesetter
typesetting
type size
type slug
typewrite
upper-case letter (adj.)
word forms
word spacing
writing system
x-height

SUBMITTING THE MANUSCRIPT

Preliminary Stages

Unless there are extenuating circumstances, it is best to send a completed manuscript to the *Journal,* with an accompanying letter of comment if necessary. However, if there are preliminary matters that must be settled, the editor invites inquiries about prospective articles.

Manuscripts and inquiries should be addressed to:

Merald E. Wrolstad, Editor
The Journal of Typographic Research
c/o The Cleveland Museum of Art
Cleveland, Ohio, U.S.A., 44106

If possible, before sending the manuscript to the *Journal,* have a colleague read it.

An article submitted to the *Journal* should not be under consideration for publication by another periodical. If you have other publishing plans of any kind, bring the point up with the editor in a covering letter.

Acceptance Procedures

A manuscript is normally not accepted for publication until after it has been reviewed both by the editor and by various editorial advisers. The editor's decision whether or not to publish the article is influenced considerably by the judgments of these experts in special fields—e.g., bibliography, psychology, electronics.

You will be notified as soon as possible—normally within six weeks—whether or not your article can be published. If accepted, your article may not appear in the very next issue, however. Its publication date will be influenced by such factors as priorities of other manuscripts, timeliness of articles, and balancing the *Journal* to cover a number of different areas of research in each issue.

On notification of acceptance, you will receive information on publication date and directions for reading and returning galley proofs sent for your checking. With your galley proofs you will receive an order form for reprints of your article.

Revisions and Corrections

It is not uncommon for a manuscript accepted for publication to go through one or more revisions before it is sent to the printer. This may be for clarity or to insure consistency of style throughout the *Journal.* After the manuscript has been edited by the *Journal,* it may be returned to you in manuscript form with suggested minor —sometimes major—changes; or, if there are only a few minor changes (e.g., to conform with *Journal* style), it may be set in type and the galley proofs sent directly to you.

Please remember that the editors would not suggest changes unless they felt that they would improve your work. You may reject some of them, but before you do, consider them carefully, and discuss them with the editor if you are in doubt. He is as anxious to have the best possible presentation of your research as you are. Also, once the type has been set, changes become expensive and delaying.

Final Publication
Upon publication of his article an author receives: (1) Five complimentary copies of the *Journal* containing his article. (2) Twenty free reprints of his article. Additional reprints may be ordered when galley proofs are checked. (3) A complimentary year's subscription to the *Journal.*

Translation
Articles are encouraged from all countries of the world, but, if at all possible, they should be submitted in English. When an article is written in another language, translation into English is often more successful when the author works with a translator first-hand, rather than in the United States. However, translation is available where necessary; much depends on the languages involved, the availability of translators, etc. Foreign-language articles should be sent to the editor with an accompanying note explaining the translation arrangements or difficulties.

Sample Typed Title Page—page 94
The following sample typewritten title page has been condensed to include illustrations of several major stylistic points, such as placement of headings, paragraph indentation, use of quotation marks, and citing of footnotes, references, tables, and illustrations in the text. It should be used only as an example of correct typing style, *not* as a model for organizing and presenting the material. *Note:* This is an example of the use of the reference form of documentation, in which footnotes may be used for purposes of explanation, acknowledgements, etc.

Sample Typed References—page 95
The following references show the correct typing style for a few representative examples. Note that the references are listed alphabetically, by author's last name. They are not numbered. Only first initials are given for a man; a woman's full first name is cited. Only the first letter of a title is capitalized. Italics are used for book and journal titles, but quotation marks are not used. Journal titles are abbreviated.

Sample Typed Footnotes—page 96
The following sample page shows the correct typing style for a few representative footnotes. No attempt is made to cover all possible cases; for less common types of citations consult any standard reference work or use your good judgment. Note that superior numbers are used only for the footnote reference in the text, not when typing the footnote itself.

Sample Typed Table—page 97
See also the section on page 82.

Sample Typed Biographical Note—page 98
See also the section on page 85.

Readability of Typewritten Material

Donald E. Payne

Most research on different typefaces falls into two categories: legibility, "the ease with which one letter or numeral can be distinguished from others,"[1] and readability, "ease of recognition of groups of letters forming words, phrases, and sentences."[2] The remainder of the research has been concerned with specialized problems, such as "the design of alphanumeric characters of high 'visibility' for aircraft and radar displays" (McCormick, 1964), or Dr. Bror Zachrisson's (1965) studies of typefaces which seem appropriate for different types of editorial material.

The present study was designed to investigate differences in readability between two typewriter faces. In the standard face, Prestige Elite, all characters are designed to one basic width; e.g., the letter i would be the same width as W. In the proportionally-spaced face, Modern, characters are designed to four different widths; e.g., i would be one unit wide and W four units wide. Samples of typed material are shown in Figures 1 and 2.

STUDY I

Method

A total of 190 men and women were tested. The demographic characteristics of the sample are shown in Table I.

Testing Apparatus. The A.M.O. apparatus (Appareil à Mesure d'Observation) resembles a loose-leaf notebook (Fig. 3). The four

References

Alman, J.E., and White, D.M. Statistical methods in communication research. In R.O. Nafziger and D.M. White (eds.), Introduction to mass communications research. (2nd ed. rev.) Baton Rouge: Louisiana State University Press, 1963. Pp. 160-170.

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Bradley, S., Beatty, R.C., and Long, E.H. (eds.). The American tradition in literature. (3rd ed. rev) New York: W.W. Norton & Co., 1961. 2 vols.

Churchill, W. A history of the English-speaking peoples. Vol. 1. The Anglo-Saxons. New York: Holt, Rinehart & Winston, 1954.

McLuhan, M. Understanding media. London: Routledge, 1964.

Wright, E., and Collins, Jean. Vertical group exercises in graphic design. J. Typog. Res., 1967, 1, 387-389.

Footnotes

1. Marshall McLuhan, Understanding Media (London: Routledge, 1954), p. 25.

2. Sculley Bradley, Richmand Croom Beatty, and E. Hudson Long (eds.), The American Tradition in Literature (2 vols.; 3rd ed. rev.; New York: W.W. Norton & Co., 1961), I, 214.

3. Winston Churchill, A History of the English-Speaking Peoples, Vol. I: The Anglo-Saxons (New York: Holt, Rinehart, and Winston, 1954), p. 67.

4. John E. Alman and David M. White, "Statistical Methods in Communication Research," Introduction to Mass Communication Research, ed. Ralph O. Nafziger and David M. White (2nd ed. rev.; Baton Rouge: Louisiana State University Press, 1963), p. 161.

5. Edward Wright and Jean Collins, "Vertical Group Exercises in Graphic Design," Journal of Typographic Research, I (October 1967), 387-389.

6. American Medical Association, Medical Relations under Workmen's Compensation, A Report Prepared by the Bureau of Medical Economics (Chicago: American Medical Association, 1933), p. 3.

TABLE I: Analysis of Variance on 162 Observations for 3 Lower-case Alphabet Lengths (Typefaces) and 3 Line Lengths

Source of Variation	Degrees of Freedom	Sums of Squares	Mean Squares	F
Total	161	91,978		
R (Replications)	17	34,626	2,036.8	5.02***
A (Typefaces)	2	428	214.0	2.05*
B (Line Lengths)	2	1,508	754.0	4.86**
AB (Typefaces x Line Lengths)	4	257	64.3	
Error	136	55,159	405.6	

*$p < .05$

**$p < .01$

***$p < .001$

Biographical Note

Donald E. Payne is assistant professor in the department of communication, Michigan State University (East Lansing, Mich. 48823). He spent ten years as a professional communicator (wire service reporter, magazine editor, and TV art director and news editor) before completing his Ph.D. in communications at the University of Minnesota. Dr. Payne's research explores nonverbal communication, and he currently teaches courses in communication design, nonverbal communication, and information theory. His Communication and Non-communication, a critical study, will be published by Harvard University Press in the fall.

APPENDIX:
SPECIAL INSTRUCTIONS FOR DESIGNERS

Writing reports of their various investigations and experimentations is a strange practice for designers—and one that they would often rather avoid. One of the important aims of this *Journal,* however, is to help encourage and establish an exchange of ideas between designers and others interested in the development and role of letterforms in our communication processes. Certainly there has been little enough contact between those who actually work with letterforms and those who are interested in studying the effects and history of these letterforms. Both groups will benefit from a cross-fertilization of ideas, but for communication to take place, graphic designers must be willing to familiarize themselves with a few basic procedures for writing research reports, in order to present their ideas clearly and understandably.

Writing a research report is not difficult. You have an interesting and informative story; tell it simply and directly. There is an underlying logic to any research report, and you will probably find it easier to organize your ideas if you follow this general outline:

1. *State the problem.* You should not only describe clearly what you set out to do, but briefly tell what gave you the idea for your work and how you became interested in it. Research is an accumulative process; every researcher stands on the shoulders of his predecessors. For this reason others interested in the work you are doing will want to know the antecedent of your ideas.

2. *Describe your attack on the problem.* Did you use any books or magazine articles for reference to ideas or specific examples of other designers' work? If you did, jot down the necessary documentation information (see page 80). Did you utilize any information from conversations or correspondence with other designers? These, too, should be mentioned. Although it may seem like unnecessary detail work to you, the author of a research report must include specific information when explaining his procedures of investigation. Correct documentation takes only a little time and often provides vital facts for others interested in your research area.

3. *Present your results.* Remember, though, that one of the unique aspects of your type of research is that its value lies as much in the explanation of experimentation procedure as in the results. In this sense, what did *not* work is almost as important as what did. You should describe and explain your unsuccessful solutions as well as the one (s) finally adopted.

Until you have finished your report, keep all the materials you have used—sketches, examples, unsucessful trials—in a file for possible use as illustrations accompanying your article. You may not know in advance what critical research fact will need verification and illustration in your report.

4. *Discuss these results* in light of the problem you originally outlined.

5. *Summarize and place your research in perspective* with other related problems and on-going work.

Successful writing, of course, comes only through practice and revision, but if you organize your material into a logical sequence such as the above, you will find it much easier to communicate your ideas clearly and concisely. Try to follow the general suggestions for writing a research report outlined under "Organization and Style" (page 86).

For additional copies of this Author's Guide, write to the Journal of Typographic Research, *c/o The Cleveland Museum of Art, Cleveland, Ohio, U.S.A. 44106.*

Résumé des Articles

Traduction: Fernand Baudin

Les différentielles sémantiques appliquées aux caractères typographiques en vue d'en mesurer la convenance *par Dirk Wendt*

Les différentielles sémantiques tendent à trouver des descriptions communes à diverses catégories d'objets en vue d'en mesurer exactement le degré de similitude. Cette méthode est applicable en typographie et permet de situer les caractères dans un espace sémantique bien défini. Deux différentielles bien distinctes—l'une générale, l'autre plus particulière—ont permis, l'une, de délimiter des espaces sémantiques à trois ou quatre dimensions; l'autre, d'isoler des aspects distincts. Les résultats sont interprétés avec prudence. Mais l'essentiel de la démonstration, c'est que la méthode est bel et bien applicable en typographie.

La Création de l'Egyptienne 505, à la Kunstgewerbeschule, Bâle, *par André Gürtler*

La Visual Graphics Corp. a organisé en 1966 un concours international de création de caractères. L'auteur dirigeait, à la Kunstgewerbeschule, Bâle, le cours de typographie qui a soumis un projet collectif : l'Egyptienne 505. Il décrit comment les étudiants sont préparés à la création des caractères et plus spécialement comment l'Egyptienne a été conçue en vue de la photo composition. L'enseignement de l'écriture et du dessin des caractères dans les écoles d'art est également discuté.

Ecrire en couleurs : Deux enquêtes *par Lillian R. Hinds et William G. Dodds*

Les auteurs envisagent le cas où la couleur est introduite comme une donnée complémentaire dans l'enseignement de la lecture, au niveau élémentaire, et notamment dans la méthode Gattegno, connue aux USA sous la marque *Words in Color.* Deux enquêtes ont été menées. Dans les écoles primaires, Dodds a observé des résultats nettement favorables quant au vocabulaire et à l'orthographe. Dans les quartiers populeux, Hinds a noté des progrès en vocabulaire et en compréhension chez les adultes illettrés.

Rapport d'enquêtes sur la lecture en couleurs (Colour Story Reading) *par J. Kenneth Jones*

L'usage de la couleur s'est répandu considérablement dans les divers domaines de la communication visuelle. La typographie cependant s'en tient essentiellement au noir et blanc. La lecture en couleurs fut inventée pour faciliter aux en fants l'apprentissage de la lecture. L'auteur en examine la théorie et la pratique, ainsi que les résultats de deux enquêtes : l'une témoignant de la préférence marquée par les enfants et des meilleurs résultats obtenus; l'autre montrant une meilleure lecture en noir et blanc après un apprentissage en couleurs.

La composition en drapeau au *Rotterdamsch Nieuwsblad par C. H. Evers.*
Le 6 février 1967 le *Rotterdamsch Nieuwsblad* adoptait la justification en hampe de drapeau dans toutes ses rubriques. L'auteur en examine les avantages et les inconvénients pour la composition des quotidiens. Il en fait l'historique à Rotterdam, par le mot et par l'image—sans oublier les difficultés rencontrees, les profits, et l'accueil obtenu auprès du public. L'article est une adaptation d'après le texte d'un rapport soumis à la Fédération Internationale des Editeurs de journaux, à Paris, en automne dernier.

Kurzfassung der Beiträge

Übersetzung: Dirk Wendt

Polaritätsprofile als Methode zur Erforschung der Anmutungs-Qualitäten von Druckschriften *von Dirk Wendt*
Das Polaritätsprofil, eine Methode zur standardisierten Beschreibung aller möglichen Objekte mit dem Ziel quantitativer Ahnlichkeitsmaße zwischen diesen, kann erfolgreich dazu angewandt werden, um Unterschiede zwischen Druckschriften zu erfassen und um sie in einem semantischen Raum zu lokalisieren. Zwei verschiedene Polaritätsprofile – ein all-gemeineres und ein spezielles – lieferten semantische Räume von drei bzw. vier Dimensionen oder unabhängigen Aspekten. Die Ergebnisse werden kurz und mit einigem Vorbehalt interpretiert ; das wesentliche ist die Demonstration der Anwendbarkeit dieser Methode auf typografische Probleme.

Der Entwurf der Egyptian 505 an der Kunstgewerbeschule Basel *von André Gürtler*
Im Jahre 1966 organisierte die Visual Graphic Corporation einen internationalen Schriftentwurfswettbewerb. Der Verfasser veranlaßte seine Typographie-Klasse an der Kunstgewerbeschule Basel dazu, sich mit einem Klassenprojekt zu beteiligen : der Egyptian 505. Die Ausbildung der Studenten im Schriftentwurf wird zusammen mit der speziellen Entwicklung der Egyptian 505 für Lichtsatz dargestellt. Die Ausbildung für Entwurf von Schriften und Druckschriften an Kunstschulen wird diskutiert.

Words in Color : zwei experimentelle Untersuchungen *von Lillian R. Hinds und William G. Dodds*
Die Entwicklung der Verwendung von Farbe als anfängliche zusätzliche Dimension bei Lese-Anfängern wird diskutiert, einschließlich der Untersuchungen zum Gattegno *Words-in-Color*-Ansatzes. Zwie experimentelle Studien prüften die *Words-in-Color* : die Untersuchungen von Dodds mit Grundschul-Kindern berichtet signifikant höhere Meßwerte in Wortschatz und Rechtschreibung ; die Untersuchung von Hinds ergab größeren Wortschatz und Gewinne im Verständnis bei erwachsenen Analphabeten aus den Elendsvierteln von Großstädten.

Ein Forschungsbericht über Color Story Reading *von J. Kenneth Jones*
Die Anwendung von Farben in den verschiedenen optischen Medien hat gewaltig zugenommen, aber die Typographie ist im wesentlichen schwarz-weiß geblieben. Das Color Story Reading ist entwickelt worden, um mit Hilfe von Farben Kindern das Lesenlernen zu erleichtern. Theorie und Praxis des Color Story Reading werden diskutiert, einschließlich zwei Studien zur empirischen Über-prüfung dieses Ansatzes : eine zeigt die Bevorzugungen der Kinder und bessere Leistungen, die andere rascheren Anstieg der Leseleistungen in schwarz-weiß nach einem Anfangsunterricht in Farbe.

Erfahrungen mit Flattersatz beim Rotterdamsch Nieuwsblad *von C. H. Evers*
Am 6. Februar 1967 führte das *Rotterdamsch Nieuwsblad* den Flattersatz in seiner gesamten Ausgabe ein. Die Vorteile und Nachteile des Flattersatzes im Zeitungssatz werden diskutiert. Die Geschichte dieser Neuerung in Rotterdam wird beschrieben und diskutiert – einschließlich der Probleme, Voteile und der Aufnahme beim Leser. Dieser Aufsatz ist aus einem Bericht von einer Tagung der International Federation of Newspaper Publishers übernommen, die im Herbst letzten Jahres in Paris stattfand.

To the editor:

Frutiger's article in the July 1967 issue prompts the following warning.
He expresses his pride at having been concerned with the design of the IBM Selectric Composer version of Univers. The designer's task is to make new technologies his servant and he must not allow them to be his master; otherwise we are back in the darkest nineteenth century. If the electronic giants are given the chance to have their way, and if people like Frutiger allow themselves to be swept along by this juggernaut, then let us at least be honest and admit that the product of such an alliance cannot be good. All it can hope to be is less bad than if no capable designer at all had been involved. Every other claim is cant.

Hans Schmoller
Penguin Books, Ltd., England

This number of the Journal has been composed in Linotype and photocomposition Baskerville by Wm J Keller Inc, Buffalo, New York; printed by Great Lakes Lithograph Company, Cleveland; on 70-pound Mohawk Antique Book, Warm White, and 80-pound Mohawk Superfine Cover generously provided by Mohawk Paper Mills, Inc., Cohoes, New York. The Journal was designed by Jack Stauffacher of the Greenwood Press, San Francisco.

The Authors

Dirk Wendt received his Ph.D. in psychology at the University of Hamburg, Germany, where he is teaching and doing research work in the department of psychology. He became interested in typographical problems while working on the editorial staff of a local newspaper, and later extended this interest in a course on applied psychological research which resulted in the study presented here. In 1967–68 he spent a year teaching and doing research at the University of Michigan.

André Gürtler (Riehentorstrasse 28, Basel, Switzerland) is a teacher of typography at the Kunstgewerbeschule (art institute) in Basel. Besides teaching, he devotes much time to studies in the history of typography as well as to designing and developing new scripts for both letterpress and photocomposition. His education included an apprenticeship as a typesetter, formal training at the Kunstgewerbeschule in Basel, and he spent several years working with Adrian Frutiger in Paris.

J. Kenneth Jones (20 Roe Green Close, Hatfield, Herts., England), M.A. Oxon., is a BBC journalist for external broadcasting. He became interested in education when his children started school. Having devised Colour Story Reading in 1959, he carried out a long series of experiments, finally acting as Reading Research Officer at the University of London Institute of Education. His current research deals with "visual deafness"—the inability of adults to hear the sounds in certain words because they are put off by the visual image.

William G. Dodds, Jr., is assistant superintendent in charge of elementary education, Euclid Public Schools, Euclid, Ohio. He is a member of local, state, and national organizations concerned with the improvement of reading instruction. He is a member of the board of the Reading Improvement Council of Greater Cleveland.

Lillian R. Hinds is elementary supervisor of language arts, Euclid Public Schools, Euclid, Ohio. She is a past president of Ohio and Arizona units of the International Reading Association.

C. H. Evers is managing director and publisher of *Rotterdamsch Nieuwsblad* (Schiedamse Vest 1, Rotterdam, Holland). The fourth generation in the newspaper business, he worked with several Dutch newspapers after receiving the Doctorate of Laws from Leyden University. During 1959–60 he made an extensive trip to the USA where he worked for the *Boston Globe,* other newspapers, and the ANPA.