

## The seven-times table

Devising a historical framework is easy. You only have to omit those historical facts that would not fit in it. It will anyhow be necessary to leave out the vast majority of facts, so why not help history a little. History is the art of impressing people by putting carefully selected facts into an order that seems to make sense. The sense depends on our actual situation. The history as told by Burckhardt is still good reading as civilized literature but its historical meaning depended on the optimist feeling of the sixties of the nineteenth century which is not our feeling. Accordingly the history of typefaces as told by Stanley Morison belongs to a period when typefaces were still there and when there were no designers (apart from the work of a few nonconformists such as W.A.Dwiggins and Jan van Krimpen typedesign was a matter of facelift). Now we know that we will never again be certain what a typeface is and we do have many designers who do not need other people's first principles. This requires a new framework for devising history. I like this one.

Fourteenth century B.C. (Eighteenth dynasty of Egypt): Invention of the broad pen and invention of the alphabet.

Seventh century B.C.: Explosion of the Semitic civilization; the alphabet penetrates India and the Mediterranean.

The century of Christ: Roman writing comes of age (invention of the minuscule).

Seventh century A.D. (Ireland): Beginning of the Western civilization with the invention of the word. The Irish civilization spreads over Europe until it clashes with the Arabs at Poitiers.

(Arabia): Beginning of the Islamic civilization with the invention of the word. This civilization spreads over North Africa and penetrates Europe until it clashes with the Western civilization at Poitiers.

Fifteenth century: Explosion of the Western civilization. (The printed book. End of the classic attitude. 'Modern' times begin.)

Twentieth century: End of the classicist attitude. (This time table could be a sign of it at least.)

This table offers satisfaction to all kinds of prejudices. A faithful marxist might fill it with such social changes as would have been considered important by the master himself and anthroposophists might use it to confirm the learning of Rudolf Steiner who was very fond of seven years intervals; he might have liked intervals of seven centuries as well. To help the latter a little I call the framework *The seven-times table*. I did not intentionally make seven entries. There is one important entry missing (which would really bring the number of entries to seven):

*Xth century*: Invention of the Chinese brush. I would be grateful for the proper substitution of my *x*.

The statements of the table are intended to raise questions. Some questions would give no problems. If one would ask 'Where are the Greek in this table?' I could reply 'nowhere'. Other questions could be more tricky. There is a striking parallel between the missionary expansion of the Islamic civilization and that of the Irish civilization, it even looks like a conjunction. Both movements introduce the same new element in alphabetic writing, the word. The difference is that the Western word links the letters with white space and that the Arabic word links the letters with black shapes, but even this difference is in a way not a difference. Now the question might arise: When did Arabs and Irish exchange their great idea? This question is dangerous, because it is used in the established literature to show that speculations about the common aspects of Irish and Arabic ornament can go as far as assuming cultural contacts between both civilizations. We are supposed to understand at once how ridiculous such an assumption must be. It is very ridiculous indeed, but is it less ridiculous to accept that Arabs and Irish invented exactly the same marvelous trick independently, whereas moreover the splendid results were decorated with the same kind of abstract ornament? Or should I be satisfied with the belief that such things are bestowed automatically to faithful believers? I am a great believer myself, but sometimes my doubts are shining through.

Once the Greek are neatly put aside I can forget the worn story of boustrophedonal writing and consider a more important question: Why changed Semitic writing its direction when it came in foreign hands? (Its is not only the Western offspring of Semitic writing that goes from left to right but the Indian as well.)

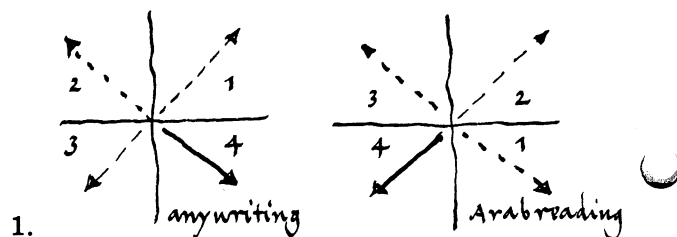
The two great original civilizations, the Semitic

2 and the Chinese, are both writing from right to left. If it should be the natural way (if there is any natural at all in the cultural achievement of writing) to write from right to left, the part of stone cutting should be considered. A righthanded craftsman draws a tool in his right hand from left to right, but he pushes it from right to left. So the natural direction of a stroke made by drawing a pen, a brush or another tool with the right hand is from left to right. A right handed stonecutter, however, holds his tool in the left hand, pushing it from right to left with the blow of the hammer in his right hand. If the first stage in the development of writing has been a stage of stone cutting it would be quite evident why both original civilizations started by writing from right to left. But if you would hesitate to accept that all writing started as stone cutting you have me on your side. Why should a complicated technique of working stone with 2 tools in 2 hands precede the simple technique of 2 fingers writing in the dust.

Between hammer driven cutting and drawn strokes there is the technique of engraving. A right handed engraver pushes his tool from right to left, but the direction of an engraving is difficult to analyze. Engravers turn the plate in any direction to make all strokes, even the sharpest curve, as straight strokes running from right to left. Engraving is the most sophisticated technique I know and supposing any influence of engraving on any writing would violate commonsense. This is a rather strong argument for throwing away the literature on writing. And if you would nevertheless annoy me by referring to conclusions from these piles of compiled nonsense I shall do my best to tear you into pieces.

This is one example of the meaning of my historical framework. As such it is not better or worse than any other time table, nor does it supply better answers, but from a craftsman's point of view it evokes far better questions. Wrapped in questions about the origin of civilization is the question about my control of my hands. It is in fact the question about your and my personal civilization.

Because I dislike to separate theology, craftsmanship, literature and technology from other aspects of metaphysics (which should not be misunderstood as the holistic chimaera) I consider civilization as the attitude which is reflected by all we feel, believe, think and do. In this view it is convenient to summarize a complicated story about man as the centre of his reading and writing in a set of cartesian axes.



We are used to write in the fourth quadrant: from left to right and from top to bottom. Until the seventh century B.C. any writing seemed to be restricted to the third quadrant: from right to left and from top to bottom. There is, however, a complication which can be revealed by analyzing the sequence of strokes in ancient writing on clay tablets. The dissertation by Gerrit van der Kooij, *Early N.W. Semitic script traditions*, Leiden 1986, discusses many examples of ancient Semitic writing showing that the strokes of each letter were made from left to right and from top to bottom. This means that there is no difference between our way of writing a letter and the ancient way. In this respect nothing has changed since 3000 years. The difference is only in the mutual position of the letters. We put the second letter at the right side of the first one whereas our Semitic ancestors would have put it on the left side. I am inclined to consider this difference as superficial.

Ever seen Arabs writing? They swing their writing pad, turning the cartesian system ninety degrees and then they draw their strokes from left to right and from top to bottom. To read the result they swing the cartesian system back in its original position so that the result appears to be in the third quadrant. In fact the sequence and the direction of the strokes in Arabic writing are essentially the same as in Western writing. The different direction is not in writing but in reading.

Reading, what is that? In the modern sense of the word reading depends on the perception of word images. What was reading in antiquity is now spelling: collecting letters and combining them to words. In spelling the letters are perceived and the words are thought. In reading the words are perceived immediately. Elementary teaching of reading would be an introduction to *perceptual unities* of word images. Our educational system only teaches *logical sequences* of letters which is spelling but is advertised as reading. By ignoring this categorical difference between spelling and reading the schools of the Western civilization are destructive for the logic of children. They make children stupid or dyslectic. Nevertheless many children learn reading, but they do this in the same way as they learned

walking, talking and (to a degree) how to behave. They are learning despite of the school.

There is no direction in the perception of a word, therefore I should have written *spelling* (which is dynamic) rather than *reading* (which is static) as the last word of the previous paragraph. Typographers do know what reading is, but nobody seems to know when modern reading was invented. From comparing pictures of manuscripts I conclude that our way of reading was invented in Ireland in the first quarter of the seventh century and that the Arabic way of reading was invented in the same period. This is the end of antiquity, the beginning of the Middle ages and the start of Western civilization. Even if this invention could not be considered as the most important historical event after the invention of the broad pen and the soft brush, it would still deserve a place in my time table. When a history of writing that neglects the invention of the word is not relevant, you would have another good reason to throw away your library. If you have plenty of space, you could keep your books for the pictures. Though they have been selected from an irrelevant point of view, they might contain useful material for a new approach.

The seven-times table is my cradle of questions. It is just a trick to urge you to reconsider everything you thought to think of writing, civilization, history and your own position. This position of yours is at drift. If you need a compass, try my table.

The following announcement is founded on some provisional notes by Roman Tomaszewski. There will be soon an official programme for the finer points of the subject. *The editor.*

## Roman Tomaszewski

### The challenge of signs

*Imagination is more important than knowledge.*  
Albert Einstein.

Every day new signs are invented for professional and public communication. Notably in scientific authors use them in combination with letters.

A small number of alphabetic signs is sufficient for worldwide communication. Problems arise from an additional number of some 20000 additional signs for mathematics, chemistry, biology, linguistics etc. No printer has more than 25% of these different

signs at his disposal. Special production of matrices is possible at an expense of time and money which may be prohibitive. When signs do not match with type faces typography is impaired by their application.

The typographic part of the problem challenges ATypI.

1. A structured list should be made of current signs.
2. Their basic shapes should be laid down.
3. The tolerances of standard proportions should be described.

With this task the members of ATypI would accept their responsibility for the communication in science, economy and technology. We engage in typedesign for the sake of typography, because signs are typographic elements as well we should extend our engagement to their increasing number.

#### *The seventh Working Seminar of ATypI in Gdansk 5-9 September 1988*

The seminar will deal with *Signs and symbols in typography*. The theme will be introduced by speakers from Federal Germany, England, France, Austria, Poland, Hungary and Switzerland. Adrian Frutiger, author of three volumes about man and his signs (*Der Mensch und seine Zeichen*) will be our guide into the realm of graphic signs. He will focus our attention on the design of signs.

There will be simultaneous translation of all speeches in German, English, French and Polish. The programme will include three exhibitions on related subjects and other activities of scientific and artistic interest.

The seminar will be held in a sea-side hotel. Participants pay DM 200.— per day for the seminar with full accommodation in double rooms. ATypI members will have a reduction of 10%.

Invitations with the complete programme will be mailed in December 1987.

#### *Personal Postscript*

As you know, I was seriously ill (cardiac arrest), however, now I feel better every day. I am convinced that that this seventh seminar will be as important for ATypI as its six predecessors and the 1975 ATypI Congress which I organized in Warsaw and Cracow.

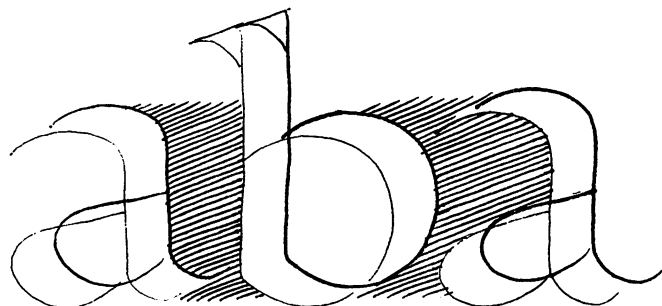
I look forward to hear from you. You may now confirm your participation. Address:

Roman Tomaszewski  
ul. Franciszkanska 4a/42  
PL 00 214 Warszawa  
Poland

With kind regards, yours, *Roman*

## 4 The puzzle

In *Letterletter 5* Nicolette Gray suggested that ATypI might publish suitable computer programmes to support education in letterforms. I tried to make a start. Please, publish your critical comment in *Letterletter* or present a better idea.



1.

figure 1 resembles an illustration in *Letterletter 3*. Writing a word and shading the countershapes of the letters is the best way to understand what a word is. The exercise is training of perception as the condition of reading. It seems difficult to talk with young children about the balance of the countershapes but the exercise makes it easy. When a child uses different colours you can ask him whether there is as much blue in his drawing as red and green.

The exercise turned out to be effective in the treatment of word blindness as well.

This is a simple method without any disadvantages but there is one serious problem. The method assumes some knowledge of handwriting which is completely beyond the scope of the school.

I made some attempts to design a puzzle of countershapes. Letters should only result from the juxtaposition of countershapes. It is, however, difficult to design manageable pieces of such different and complicated countershapes as those of figure 2 and 3.

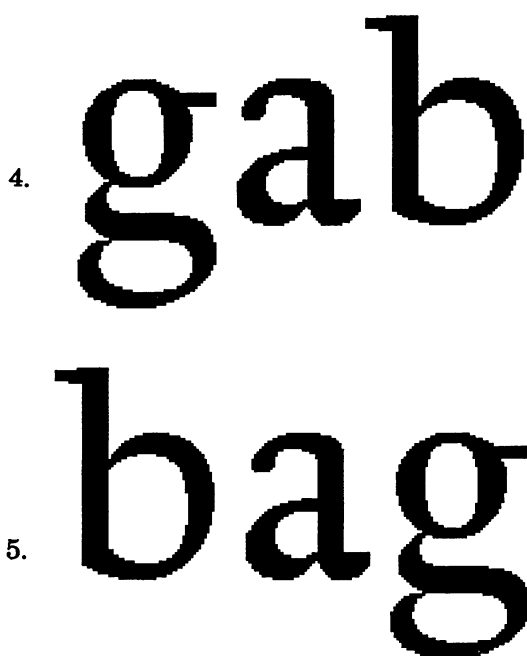
I had to drop the idea until the arrival of the computer but then it was easy to solve this problem. The related parts could be connected and pulled over the screen as a combination.



2.

3.

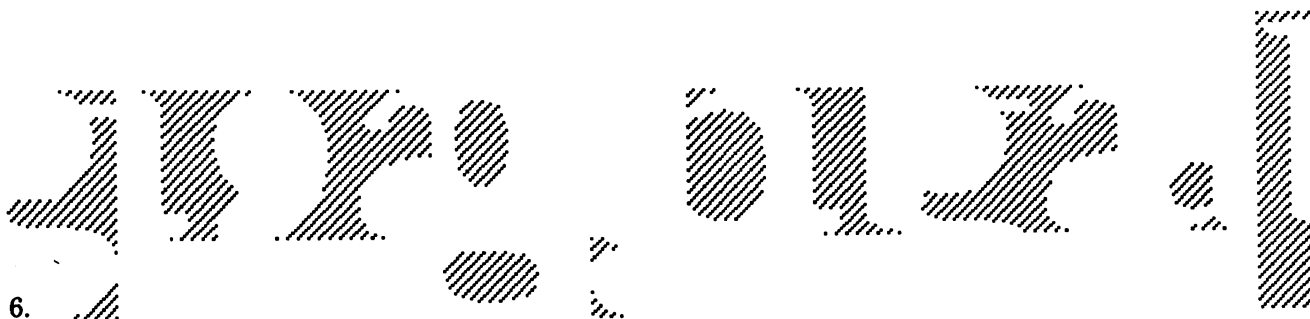
I started with 3 letters from which 2 different words can be composed (figure 4 and 5).



4.

5.

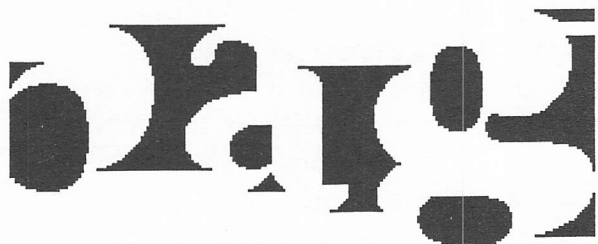
In the approach of the school both words are the same elements in the same sequence. Everything depends on our ability to see the inversion of this sequence. Because inversions never have a meaning for young children, education always fails when it is founded on their differences.



6.

For typographers it is essential to see the different elements of both words. It is as essential for children.

figure 6 is a collection of the elements. The puzzle starts with this collection in the top of the screen.



7.

The elements can be selected and dragged to a guiding line in the bottom of the screen. figure 7 shows 6 shapes on their way to the new position.



8.

In figure 8 the composition is nearly completed and only now something like a sequence of letters could be distinguished but it would be extremely stupid to mention or even to emphasize this sequence in front of a child.

That is all.

The puzzle offers even illiterate teachers the instrument to approach reading at a high level of design. He could use the puzzle to introduce a much more important task. Children will now understand what a word is. They could make another word by cutting its countershapes and pasting them in a well balanced composition. Criticism can be left to the children by stimulating them to help each other. The task might be varied with different scripts (but no capitals, of course) and different techniques such as drawing and painting and, perhaps, actual writing of the elements of letters in double strokes.

I observed children of different ages and abilities in the execution of the puzzle. All of them found the puzzle difficult but fascinating. When they did not always arrive at the perfect result of figure 8, they still understood the meaning of the puzzle. This could be concluded from successive drawing and writing exercises. I also observed puzzling grownups. Choosing the shapes seemed to be more difficult to them than to children.

The puzzle is new. I cannot say much more about its effects. The test case will be a common classroom with a common teacher who would have to leave his children alone in solving the problem.

Is this the business of ATypI or should we restrict our educational activities to students of typographic design? This proposal is the great opportunity for my distinguished opponents to explain the essential difference between professional design and simple handwriting. I cannot see such a difference. It would be sufficient to make clear that my puzzle has nothing to do with the conditions of elementary teaching or with the foundations of design.

I am convinced that it is impossible to give such a demonstration. I conclude with a confession which could explain this conviction. I imported the attention for countershapes into elementary teaching from my course of type design at the Academy in The Hague. Even the idea of devising a puzzle has its origin at the Academy. To check the understanding of my students I asked them to design a device which could be used to demonstrate the interaction of white and black shapes in the word image. And it were word blind students who urged me to use exercises with countershapes to solve their reading problems. Their impressive achievements are the final justification of this approach.

This article is an introduction to the puzzle. It does not cover all aspects of dyslexia. For a discussion of this subject I could refer to the issues of March and September 1987 of the *Scientific American* or still better, to *Letterletter 3*.

Most publications on 'reading sickness' insist that we should say *dyslexia* instead of *word blindness* because the handicap does not imply impaired vision. I decided to return to the English word which is sufficiently different from the English word *blindness*. If the authors in question do have any authority at all, they do not seem to be entitled to devise priggish 'improvements' of common English.

## 6 New wings for Ikarus

A typeface is not a filled outline but a balance of shapes. It is, however, common practice in type production to describe the shapes of a typeface in outlines which are only filled by the composing machine. Defining a shape by drawing its outline is exactly as difficult as adjusting a balance with the scales removed; the draughtsman is making and changing shapes without actually seeing them.

Digitizing of typefaces is still more difficult. In his book on digitizing (announced in *Letterletter 5* and now also available in English) Peter Karow makes clear that the position and the number of marking points have other influences on the shapes which cannot be foreseen in all their effects.

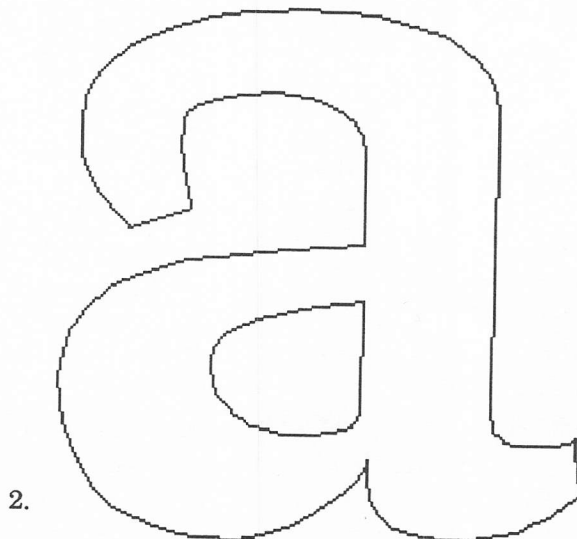
In the actual custom the designer makes the shapes. Somebody else interprets the shapes in outlines and again somebody else defines the shapes by digitizing the outlines. Then the designer is invited to comment trial compositions (in fact scanned bitmaps). This is the moment of mutual frustration.

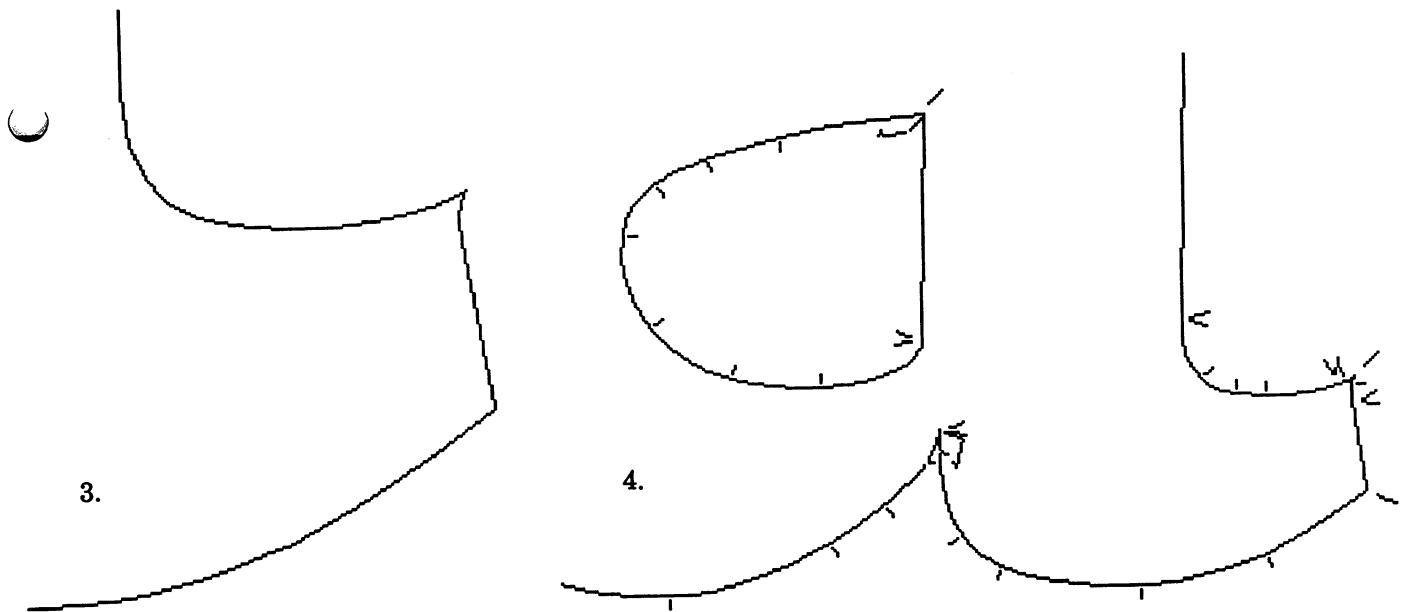
Now there is Mac Ikarus. I made the reproduced drawings on the screen of a Macintosh computer with a provisional version of this software. The programme allows continuous switching from shapes (figure 1) to outline (figure 2) and between different sizes (figure 3). The shapes are made by manipulating marking points (figure 4) which can be made invisible as in figures 1, 2 and 3. By this integration of digitizing and design Mac Ikarus returns the responsibility for the design to the designer.

The position of the marking points is not just a basis for smooth outlines, it is the principle which governs the shapes of interpolated modifications. In fact Mac Ikarus enables the designer to control the contrast of strokes before making them. This is not metaphysics, it is a principal decision of the same kind as choosing a pen in handwriting, which defines the kind of contrast of the strokes that will be made.

Mac Ikarus belongs to the category of drawing software but in its finer points it is a tool for type-designers devised by a typedesigner. It is in this respect that the user of the programme recognizes the hand of his colleague Petr van Blokland who cooperated with Peter Karow in developing Mac Ikarus.

Readers of Peter Karow's book may notice that I did not organize my drawings conform to his rules for digitizing. My pictures are just trials. This announcement of Mac Ikarus is neither a review doing justice to this remarkable innovation. Such a review will have to wait for the complete programme which will be one of the great events of 1988.





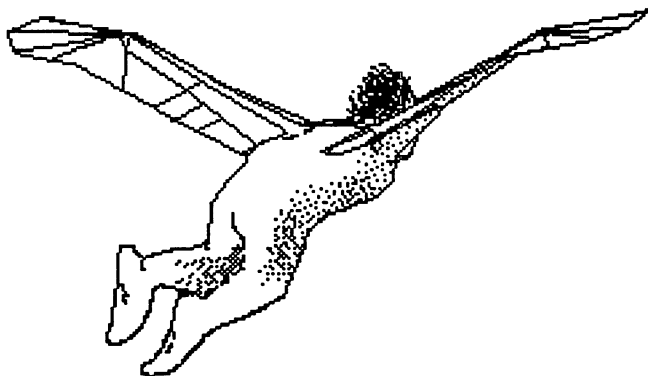
**Erik van Blokland** is a student of graphic design at the Academy of The Hague. For his brother's programme he wrote a routine of young Ikarus flying smoothly across the title screen of Mac Ikarus.

Erik designed the flapping wings as a translation of line segments. Translation is

described in Letterletter<sub>1</sub> as the first principle of Western handwriting. Erik's flying man carries the message of The Hague: Study handwriting and you can make anything.

# Mac Ikarus

U R W Harksheider Straße 102, D-2000 Hamburg 65, FRG



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**Editor** Gerrit Noordzij, Langstraat 11,  
4176 BC, The Netherlands.

Thanks to Petr van Blokland who transferred  
my floppy files to laser printed columns.

Committee on Research and Education of ATypI

## The meeting in New York 1987

In chair: Petr van Blokland (Netherlands)  
*Gdansk Seminar 1988*

Roman Tomaszewski cabled that he is organizing  
the Working Seminar for 5-9 September 1988. The  
main theme of the seminar will be the increasing  
number of non alphabetic signs in typography.  
[Roman contributed an introduction of the theme to  
this issue of *Letterletter*.]

### *Prix Charles Peignot*

The Committee on Research and Education dele-  
gates Peter Bartl (Canada) to the jury. The  
Committee will not suggest candidates for the prize.

### *Letterletter*

*Letterletter* is the only publication of ATypI. It is  
suggested that ATypI should make a better use of  
*Letterletter* for its public relations e.g. by extending  
the mailinglist to schools of graphic design.

The meeting appreciates the typographic produc-  
tion of *Letterletter* but it should continue to show  
handwriting as well. The confrontation of handwrit-  
ing and typography is the best way to illustrate their  
common aspects and their differences.

*Letterletter* evokes almost no reactions from  
Western members of ATypI. Petr van Blokland sug-  
gested an explanation: Readers agree completely  
with *Letterletter* and do not feel urged to react on its  
contents or readers do disagree completely and do  
not feel a reaction worth while. This suggestion did  
not evoke reactions.

## Signs as graphic pollution

In his friendly introduction to the theme of  
our seventh seminar Roman Tomaszewski  
formulates a threefold task for ATypI. First of  
all a 'structured list' of current signs should be  
made. I do not know a suitable structure for  
20000 signs which is much more than the  
number of Chinese characters in current use.

The structured list of Chinese characters is  
the dictionary. In the practice of handwriting  
we can learn the number of strokes in any  
character and this number is the structural  
basis of the dictionary.

The alphabetic dictionary is founded on the  
ordinal position of the characters in the alphabet.  
We can learn this position because there are only  
26 characters (which is only 3 times more than  
the number of basic strokes in Chinese!).

Nobody could ever learn the ordinal position  
of 20000 signs.

There is another difference with common  
Chinese. The Chinese characters belong to an  
open civilized convention whereas our signs  
are graphic slang of closed circles. I am  
generous enough to believe that they are  
intended to give communication but in fact  
they lay barriers in communication.

It is my duty to fight these clumps of  
semagraphic [signwriters'] pollution. The  
alphabetic convention has 26 letters, 10 numerals,  
± 10 punctuation marks and nothing else.

Thou shalt not make unto thee a graven image  
nor any form that is in heaven above, or that is  
in the earth beneath, or that is in the water  
under the earth: thou shalt not bow down  
thyself unto them, nor serve them. Exodus 20.