

Letterletter 10

1	2	3	4	5	6	7	8	9	0	1
2	3	4	5	6	7	8	9	0	1	2
3	4	5	6	7	8	9	0	1	2	3
4	5	6	7	8	9	0	1	2	3	4
5	6	7	8	9	0	1	2	3	4	5
6	7	8	9	0	1	2	3	4	5	6
7	8	9	0	1	2	3	4	5	6	7

1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2
3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0
1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8

A matrix of writing

Numbers can be written in words or in numerals. When written in numerals numbers are ideographic. For the reader they might be rather logographic; German readers will read 92 as *zweiundneunzig* whereas French readers will read *quatre-vingt-douze*, but both expressions are addressing the same concept as the English expression *ninety-two* and in this respect our numeric system is a perfect and universal ideographic system. Universal understanding is only blotted by the separator between units and tenths which is written with a comma and sometimes with a point. This could become a real problem because in both traditions the other sign is used as the separator between thousands and hundreds. Of course, everybody could know that the Americans do not follow the Dutch, but few of us will be sure at what side the Polish, the Vietnamese, the Chilene and the Turks are standing.

When preparing this article I consulted a pile of the worlds most famous manuals on typography to make sure that they have nothing to say about numerals. The most amusing information is offered by Marshal Lee. In *Bookmaking* he says about numerals: ‘numbers are called figures’. This is an excellent argument to put the pile aside and to make a fresh start.

To start with I have made one arrangement of numerals accentuating the lines of writing with generous leading and another one looking like a matrix (by spacing the numerals widely). Now I have something to look at. The first impression is that the numerals in the lines are looking smaller than those in the matrix. Moreover the matrix makes the impression of greater clearness; the numerals in the matrix have the greatest 'magnitude'. This visual impression is merely an indication that the shapes of our numerals are fitting more naturally into the matrix than in the lines. There could be a demagogic

Numbernumber

aspect in my choice of the typeface. The designer (as I know him) is preoccupied with the conviction that numerals are only at home in a matrix and that their performance in a line is of secondary interest. However, numerals of such typefaces as Helvetica or Univers which obviously have been designed from a different point of view, are showing a similar increase of magnitude when composed in a matrix.

Perhaps the visual impression is reinforced by a mental twist. We are unconsciously expecting that a line of numerals should represent a number and this feeling makes us look for a clear order of units, tens, hundreds, thousands and so on. This searching is considerably supported by a clear separation of the meaningful vertical lines. It would do no harm if we would become consciously aware of this condition of numerals. The design of numeric data begins with this awareness.

As a teacher of design I had to rationalize my feelings about numerals. I know of colleagues who prefer to leave the students alone to make their own discoveries. For me this was not a practical method. I had only four or five years for an introduction to design and this period is too short for a student to discover anything of his own (apart from the great discovery that there is a trend, but that has nothing to do with design). So I decided to teach them. Because my teaching departed from handwriting I could start with the practical remark of Edward Johnston that numerals are written with a slanted pen. Slant has the effect of horizontal stress.[‡] Stress is modulating the writing line which means that in any straightforward writing the stress is perpendicular to the writing line. In the vertical lines of Chinese writing the stress on horizontal elements is much greater than in the horizontal lines of Arabic or Western writing. In the case of common numerals there is no reason to assume a special sophisticated kind of writing (such as in some styles of square Hebrew writing). So we might conclude that our numerals have been conceived as a vertical system of writing. Old text books on calculating are supporting this view. By avoiding numerals in lines of text old typographic and manuscript books are confirming my view in an opposite sense: because numerals did not match with horizontal lines, numbers in the text were always written in words or in letters (mcm lxxxviii is fitting more smoothly in a line of text than 1989).

The practice of writing numerals in vertical lines resulted in a canon of shapes which demanded to be written in vertical lines. They do not work well in the wrong direction just as letters do not accept a vertical arrangement. This implies that the combination of letters and numerals in one line will always be problematic and this

[‡] This seems to be in contradiction with the appearance of our italics. They are written with a slanted pen and are nevertheless retaining the vertical stress. This effect is, however, only achieved by suppressing horizontal elements in the forms of the letter. In our italics the horizontal curves are contracted to a sharp curve. Numerals do not show such a contraction.

incompatibility might have been the main reason for trying ranging numerals. The results are not encouraging me to join these attempts. It is more rewarding to accept the nature of writing than to aim at marvellous innovations which are violating natural conditions (which they call *laws* in science).

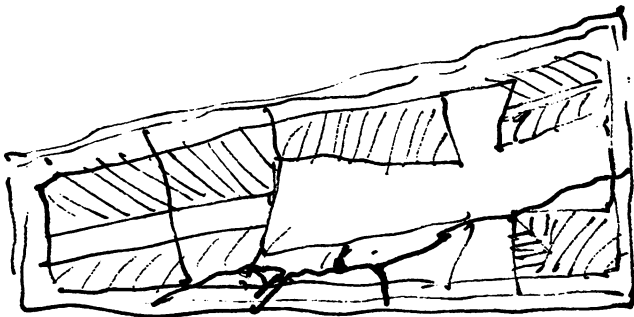
The first example from a financial report is more or less in line with common practice of pushing the numerals into horizontal lines:

grondstoffen.....	3618
lopend werk	15998
produkt.....	65794
handelsvoorraden.....	1420
	86830

The second arrangement evokes the vertical lines of units, tens, hundreds etc. on which the value of the numerals is depending. Because the numeric convention demands that these lines are arranged from right to left it is only natural to reverse the order of numbers and captions as well:

3618	grondstoffen
15998	lopend werk
65794	produkt
1420	handelsvoorraden
86830	

The value of the numerals is attributed by the columns of the matrix. It is the column which decides whether 2 has to be understood as two, twenty or two hundred. The circle of 0 is used to indicate an empty place in the column. Originally the 0 was written as a point. This practice is surviving in arithmetics. The emptiness could be polished off by using o for 0, but this little deviation from the numeric tradition does not improve clarity. It could be renounced as undue esthetics.



1989

The students who kept running the third ATypI working seminar of 1978 in The Hague enjoyed the international atmosphere. Eveline was notably impressed by the friendly old man who always carried a bottle of whiskey in his left pocket. I suggested her to ask him what he had in his right pocket. This is how she learned to know Berthold Wolpe and the little book printed in his own hand-cut Hyperion and how Berthold Wolpe learned to know the Dutch students. From now on the oldest participant of the seminar could always be seen in the company of some of the youngest participants. Berthold was delighted to rediscover the ideals of his youth in the designers of the

future. [*One member of ATypI would not like to see a widow.*]

At our seminar in Reading, two years earlier, I attended the demonstrations in calligraphy by Berthold Wolpe. It was a sensation to see him write on the blackboard with a brush and a suspension of chalk the trembling strokes which had been the characteristic of the book covers of Faber & Faber for decades. In his stroke the white shape was slowly finding its way between the black shapes it evoked. There was no virtuosity in his calligraphy but only mastership, beauty, consistency and integrity.

This is what we could learn of Berthold Wolpe. We will remember 1989 as the year of his death.

Anagnorisis

It is the greatest problem of the literature on writing (and perhaps of cultural history generally) that it does not distinguish the history of pretensions from observable facts. There is no doubt that the humanists of the fifteenth century pretended a renaissance of Antiquity and this pretension deserves an important place in history, but do not forget the quotes. However, an analysis of the pretensions would reduce the renaissance to a label of the inferiority complex of Italian scholars who could not keep pace with the scientific and cultural achievements of transalpine Europe. This made them believe really that the cursive style of writing which they adopted from northern Europe was an invention of their own.

The facts do not need belief: they can still be observed in our libraries. From the library of Trinity College, Dublin I obtained the picture for the puzzle in *Letterletter* 8. I reproduced a fragment, 3.5 times enlarged, of folio 33 recto of the book written in 807 by Ferdomnach for Torbach, abbot of Armagh. From the names of *Matham* and *Iacob* experienced readers should have recognized the first chapter of the Gospel of Matthew. I have selected this fragment because it does not reveal its origin at once by such typical insular shapes as *e*, *r*, *s*. I expected that the uncial shape of *t* which has disappeared from book hands in the twelfth century could be an indication for the solution of the puzzle. Were it not for this *t*, Max Caflisch wrote, he could have taken the writing for a mannerist hand in Arrighi's style. This was exactly my feeling which I wanted to submit to a test in the puzzle. The puzzle demonstrates how our observations can be overruled by the mystifications of our classic literature.

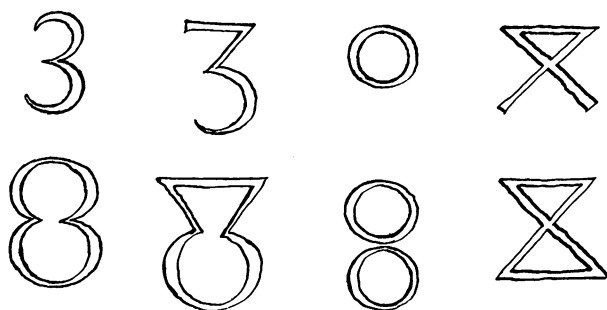
Five years ago Bernard Meehan, Keeper of Manuscripts of Trinity College, wrote me: 'There is no doubt that a great deal of work remains to be done on the palaeography of the early Irish manuscripts'. Yes indeed, and the work that has been done remains to be done again.

In her description of the Book of Kells, for instance, Françoise Henry concludes that the delicate decorations of interlacing strokes required a brush of a quality that can only be made of sable. In the four pages of the Book of Kells I have ever seen I did not see painted lines but pen strokes; I cannot make such sharp ledges of colour with a brush because the load of colour would open the tip of the brush. The thickness of the thin ridges cannot be seen in common reproductions. The study of the technique in reproduction would require stereoscopic macro-photos at least but the scope of any study is necessarily limited to the skills of the scholar as well: the scholar has to study craftsmanship and physics first.

To make such fine ridges as in the Book of Kells I prepare a gum tempera (or if you would not mind, a pigmented acrylic dispersion) with a high surface tension to avoid spreading of the strokes. They would still spread if the pen would be dipped into the colour. The essential trick is to keep the pen clean and dry on one side by applying the colour to the pen with a brush. The rest is as simple and difficult as any handwriting. We will never know whether this interpretation of the observable reality is the truth about the Book of Kells. If other interpretations would ever come closer to the truth, the discussion about the cradle of Western civilization will be a technological discussion anyhow. Historians may listen.

The numerals of Sint Jan

Men of letters did not look at numerals. Their pride were the Liberal Arts which they kept for themselves in esoteric writings put in an artificial language which common people did not understand. Theirs was the alphabet. Numerals were for merchants, craftsmen and scientists, the low breed speaking its mother tongue, the civilians of a barbarous northern culture.



Everything that was written about the home-made divine proportions of writing was about letters only. Even the proportions of the word were neglected because the word was a barbarous invention as well; it did not belong to the would-be heritage of the would-be civilization that had to be considered as the real civilization.

Completely ignored by the scholars the shapes of our numerals could fluctuate freely in the hands of workmen. How they fluctuated cannot be found in books, for they are still ignored by scholars. Little has been written about the history of numerals; every amateur can still invent his own history of this subject.

Ten years ago I designed a calendar for a printer of stationery. I designed a set of numerals for the job and I added a matching alphabet. I could recommend this reverse of common practice as an exercise for type designers who want to escape from the narrow minded humanistic code. It could give you a feeling of how the Western civilization could look like without its tarnish of humanistic gossip. And if you happen to like that kind of humbug as much as I do it might yet be nice to look at it from below for a moment.

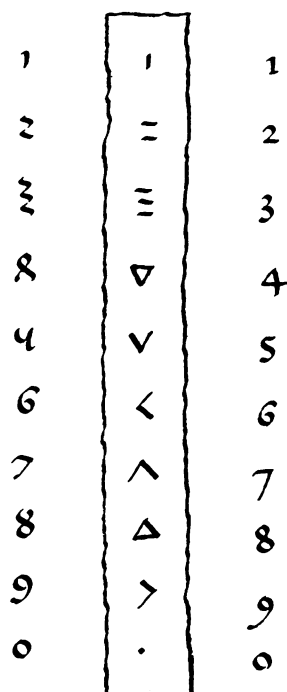
I illustrated my calendar with numerals from tombstones in the cathedral of Sint Jan in 's-Hertogenbosch covering the period between 1585 and 1630 when the town was a Spanish fortress becoming increasingly isolated in the part of Brabant that had become a hunting field of the Republic.

The design of the numerals was governed by different associations. The stone cutter could consider the shape of 8 as a composition derived from 0, 3 or 4. Because the second 3 was quite frequent I tried to find the second 8 as well. Finally the sexton asked me what I was looking for. I made him a sketch of my hypothetical 8. He nodded and

guided me through the aisle to a bench in the front of the nave. He drew the bench aside and the 8 showed up which completed my collection of photographs.

The shape of numerals seems to have moved around a concept of formal numerals. This concept can only be shown in a hypothetical reconstruction as formal numerals did not exist beyond the well-known typographic set. The oldest appearance I know of the typographic range 1-2-3-4-5-6-7-8-9-0 is from about 1520. I do not know its origin. In my hypothetical canon I devised shapes that can explain all varieties. The different shapes of 5, for instance, can be understood as deviations from the different shapes of v (u and u, minuscule versions of v, included).

The hypothetical link helps me to understand the shapes of sixteenth century epigraphic numerals which are very common too in the work of print-makers (Albrecht Dürer and Lucas van Leyden) and of cartographers.



Addenda to the 1989 ATypI Calendar

I would like to encourage all ATypI members to copy this addenda and keep it with their calendars. I have not noted literal errors or other small matters that seem unlikely to lead to misunderstanding.

Nicolas Barker, Roy Millington, and Berthold Wolpe were inadvertently omitted from the acknowledgements. If I have missed any others, I hope they will accept my apologies.

The texts for two typefaces were modified significantly at the time of typesetting: The introductory paragraph for Today Sans, and the introduction and main text for Favrire therefore differ from what I wrote.

The illustrations and English captions for Renaissance do not appear as intended:

The three italic fs should have shown Linotype Palatino, in which the terminals cannot overhang the body at all; Stempel foundry Palatino, in which the termi-

nals overhang slightly; and Renaissance, in which they overhang further. The last sentence of that caption should have begun, 'Both discouraged tight italic letterspacing'.

In the words 'hamburgefon', the left-hand sample should show the duplexed Linotype Palatino Italic, in which each letter must match the width of the roman.

The illustration at the top right shows (from top to bottom) a large size of foundry Palatino, a small size of foundry Palatino, a large size of Renaissance, and a small size of Renaissance, enlarged and reduced to the same x-height.

John A Lane, April 1989

The addenda was intended to be published in Letterletter 9, but when the disk arrived the number was already printed. However, John Lane's information will still be fresh in 1990 when the calendar will survive as an inspiring book on type design.

The editor, Oktober 1989



Philippe Bel 1268 - 1314



Berthe 1783

The numerals of the alphabet

Mainly with the help of common dictionaries I have made up a table with the names of the Hebrew and the Greek numerals. The Hebrew column contains the names of nine units, nine tens and four hundreds, as far as the alphabet reaches. The Greek column contains five more names which are completing the set of nine hundreds.

Hebrew		Greek
1 alef	1 A	alpha
2 beth	2 B	beta
3 gimel	3 Γ	gamma
4 dalet	4 Δ	delta
5 he	5 E	e psilon
6 waw	6 (F)	vau [digamma]
7 zajin	7 Z	zeta
8 heth	8 H	eta
9 teth	9 Θ	theta
10 jod	10 I	jota
20 kaph	20 K	kappa
30 lamed	30 Λ	lambda
40 mem	40 M	mu
50 nun	50 N	nu
60 samech	60 Ξ	ksi
70 ajin	70 O	o micron
80 pe	80 Π	pi
90 sadhe	900 (*)	sampi
100 koph	90 (Q)	koph
200 res	100 P	ro
300 sin	200 Σ	sigma
400 tau	300 T	tau
—	400 Y	y psilon
—	500 Φ	phi
—	600 X	chi
—	700 Ψ	psi
—	800 Q	o mega

To appreciate the columns we have to distinguish between numerals and numbers. This is difficult with our numerals because they have the same names as ten natural numbers. In the table the distinction is easier. The number five is *penta* in Greek and it can be written with the numeral *epsilon*. When we want to write the number ten we make a composition of the numerals 0 and 1. In Hebrew and Greek the number could be written with the numeral ten (*jod* and *jota* in the table). To illustrate the use of Greek numerals with an example from classic literature: in most manuscripts the apocalyptic number 666 is written as six hundred sixty six. Some manuscripts, however, have this number written in numerals: XCF.

Essentially the Greek names are the Hebrew names adapted to the Greek preference for ending a word with a vowel but from *pi* onwards the meaning of the Greek names is one position back to the meaning of the Hebrew names. One might think that the Greek adopted an incomplete set of letters first and added *koph* and *sampi* only later to complete the set of numerals. The latter signs are not in the dictionary; they were not used in Greek orthography. (In untidy linguistic speech: these letters were not needed in Greek language.) However, *vau* has always been the sixth letter in the Greek alphabet though it has only one entry in my dictionary: the numeral six. Here one might think that the Greek adopted the set of Hebrew numerals first of all.

To the believers of linguistic simplifications the Greek alphabet contains more letters than the Hebrew alphabet to meet the needs of Greek language. This belief is in contradiction with the facts. German and French are written with more signs than Dutch and English, not because the German and the French language require diacritical marks, but only because the current German and French orthographies are prescribing them. If we wanted we could clean up any orthography by removing all diacritical marks and some letters (e.g. *j*, *y*, *q*, *x*) as well.

Orthographic anomalies cannot be explained from linguistic particularities but from another point of view the Greek anomaly can be understood: The Greek have completed the set of hundreds by extending the alphabet with *v*, *ψ*, *χ*, *ψ* and *ω*. If completing the set of numerals could have motivated the Greek extension we would have to invent a new history of the alphabet.

It might be rewarding to consider the possibility that the alphabet has its origin in a set of numerals. Linguistic authors only see the thrilling idea of an analytic orthographic system which allowed to compose any word with a small number of signs. The invention of a practical system of signs for writing numbers would have required a more modest level of abstraction. If the system of orthographic signs could be considered as a next step the invention of the alphabet would be easier to understand.

The Bible (my eternal example of ancient Semitic literature) can in many respects be understood as propaganda for a religious and cultural independence of West (Egypt) and East (Babylon). Psalm 75 is a poetic expression of this balance. It is expressed as well by the preference of some authors for the duodecimal numeric system of Babylon whereas others prefer the Egyptian decimal system. In this cultural balance the alphabet is on the decimal side. Comments in the (Babylonian) Talmud are often showing a duodecimal preference.

In many places the Bible uses numeric allusions to the message of the text. In Exodus 2:10 Moses is baptized as

waterman: he was called Moses because he was found in the water. Water and 40 are two meanings of the name of the letter M and the story of Moses is told in three periods of 40 years. His successor is Joshua (*Jesus* in the Greek version of the Bible), the son of Nun (fish). The letter *Nun*, the successor to *Mem*, has the numeric meaning of 50. Pentecost (50), the fiftieth day of Easter, is celebrated as the fulfilment of the voyage of 40 years through the desert. Guided by the the fish-man, the son of 50, Israel crosses the Jordan.

If 'being 50' has been an euphemism for having died (much like 'crossing Jordan') the episode of John 8:57 becomes a new dimension. With the sarcastic expression 'You are not fifty and you should have seen Abraham' (wait until you die) the gospel relies on our awareness of the connection between the number and the name of the numeral: Jesus (Joshua) has always been the man of 50 (the son of Nun) indeed. Many other instances could be found where the propaganda of the Bible is wrapped in a play with the numeric meaning of the alphabet. Behold: *The Messianic symbol of the fish (50) is thousand years older than art historians believe.*

This looks like an esoteric game but that might be an optical illusion. We have been successfully trained to neglect the ambiguity of the Bible and to take it or to leave it as a collection of simple stories though we might have felt that it cannot have been a very primitive story that swept away the extremely sophisticated Hellenistic civilization within a few decades. In its literary play with numerals the Bible takes full profit of the mnemonic power of numerals in a world where books and reading were rare. This support for memory is not very esoteric if we have learnt the rules of the game.

They should persuade us to reconsider the commonplace notions about the alphabet as a phonographic system. I take my examples as an indication that the origin of the alphabet might have been closely connected with its numeric meaning.

This is almost as speculative as science. Its scientific value depends on its contribution to our understanding of the alphabet; it should solve some problems at least:

The consistency of the alphabetic order (for more than 3500 years) is an official problem in the official history of writing. Some scholars suggest that the conventional order was preserved in mnemonic songs. (So do Aaron Demsky and Meir Bar-Ilan in 'Writing in ancient Israel and early Judaism', in *Compendia Rerum Iudaicum ad Novum Testamentum: Mikra; Text, translation, reading and interpretation of the Hebrew Bible in ancient Judaism and early Christianity*, Assen, Maastricht, Philadelphia 1988.)

I do not need hypothetical songs as a preservative of cultural treasures. The order of the alphabet, the Hebrew alphabet as well as its Greek descendant, is as consistent as the order of 1, 2, 3 ..., a consistency requiring no further explanation.

Education

The Fachhochschule Hamburg needs a teacher of writing for its courses in illustration and graphic design. Write for information about the job:

Dem Präsidenten der Fachhochschule Hamburg
F 23 Kennziffer 468

Winterhuder Weg 29
2000 Hamburg 76

or call Germany (040) 2 91 88 - 35 93 (direct dialling).

This message was released on 13 October 1989.

Letterletter 10

Number-fetishism made me look back at the announcement of *Letterletter* 1: 'The future of writing in the widest sense of the word is the concern of all of us. I will propagate this view by editing *Letterletter* which will be necessarily informal and intentionally provocative. Please, be provoked and contribute your views to the next *Letterletter*.'

Afterwards this proud announcement has been extremely smart. Nothing could be easier than being faithful to these characteristics of *Letterletter* as I could always rely on the weakest points in the character of the editor himself. And the future of writing, even if nobody would care of it, is my concern. Of course, I have always known that real provocations never provoke: they are kept quiet. In one respect I have received more than I expected: *Letterletter* is read and some readers like it.

I am indebted to many members and friends of ATypI, notably to its secretary, Mrs. Roswitha Jung, who took care of the production and the mailing of all issues.

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Saint Denis

In Paris colleagues wanted to know when the number-number of *Letterletter* could be expected. I could only refer to the Spirit who would be waiting for me in Holland. But before going home I took the metro from Montparnasse to Saint Denis. Suger's basilica was still there, but what once might have been a great building was now reduced to an over-decorated plaything amidst over-sized apartment buildings. Inside a poster was encouraging me to admire a Gothic cathedral but to realize that it was nevertheless a place of reverence. What I saw was rather the view of Viollet le Duc at a Gothic cathedral.

After being beheaded on Montmartre St Denis walked, his head in his hands, to the place in Saint Denis which he had been chosen to be buried. He and his noisy company of singing angels would not likely be admitted again in his church where now everybody seemed to be determined to keep his head on. I got a ticket to have a look at the almost complete collection of dead kings and queens

around and under the choir. The stone faces, pointing to the West, smiled peacefully. I wrote a few faces and some of the nice little lions which supported the stone feet into my sketchbook. Then, standing at the tomb of Léon vi of Lusignan, my attention drifted away to the small inscription along the body:

lan de grace m. ccc. iij^{xx}. et xij. pries pour luy

This example of so called roman numerals has to be read logographically according to the rules of the French language:

mille trois cent quatre vingt [et] treize
1000 + 300 + 80 + 13

The sign for 80 was new to me. The Spirit I supposed to be waiting for me in Holland had dated me in Saint Denis.

/ / x x / / / /

m ccc iij et xij

1000 + 300 + 4 x 20 + 13

80

All about the trend

The end
of the trend
in 3 short
articles

Trend 1

Follow the
trend; join
the mob

Trend 2

This is not
the trend;
this is
design

Trend 3

In the
absence of
imagination
make for the
trend