NAME PLACEMENT ON MAPS

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Introduction

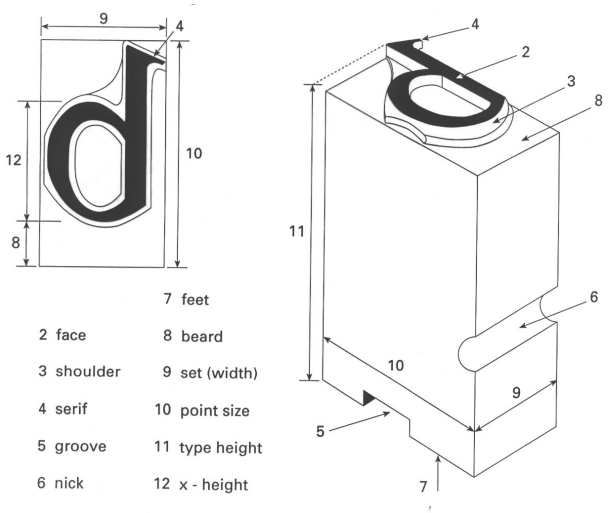
The notation system developed for our Roman alphabet developed from pictograms, in which each sign stood for an object, regardless of its pronunciation. Later on, these pictograms developed into phonograms, that is (combinations of) sounds, regardless of their meaning. When these signs were stylized, it developed into the logographic script, and the Egyptian hieroglyphs are a good example of this script. In Chinese the various signs still refer to specific objects, and that is why the Chinese script is a vehicle for understanding for the speakers of completely different languages, like Mandarin, Hakka, Cantonese or Japanese: it is the concepts that are exchanged and not the sounds.

Hiëro-gliefen	Sinaï-schrift	Fenicisch consonantenschrift (met Semitische namen van de letters, betekenis en getalwaarden)				West-grieks alfabet	Klassiek Grieks alfabet (met namen van de letters, klank- en getalwaarden)				Etruskisch alfabet (met betekenis)	Oud-latijns alfabet (met betekenis)	Modern Latijns alfabet
1	2	3				4	5				6	7	8
		ʾ	ʾāleph (rund)	ʾ	1	A a	Αα	alpha	a	1	A a	A a	A
		b	bēth (huis)	b	2	B b	Ββϐ	bēta	b	2		B b	B
		g	gīmel (kameel?)	g	3	^Γ g	Γγ	gamma	g	3	> k	C c, g	C
		d	dāleth (deur)	d	4	Δ d	Δδ	delta	d	4		D d	D
		h	hē (tralievenster?)	h	5	E h > e	Εε	ĕpsilon	ĕ	5	E e	E e	E
		w	wāw (haak, pen)	w	6	F v (vau)	(Ϝ	digamma	v)*	6	(] v)	F v, f	F
		z	zajin (wapen)	z	7	I z	Ζζ	dzēta	dz	7	I z		G
		ḥ	ḥēth (omheiding?)	ḥ (ch)	8	H h	Ηη	ēta	ē	8	H h	H h	H
		ṭ	ṭēth (klos, baal, buis?)	ṭ	9	⊙ th	Θθ	thēta	th	9	⊙ th		
		j	jōdh (hand)	j	10	| i	Ιι	iōta	i	10	| i	| i	I, J
		k	kaph (handpalm)	k	20	K k	Κκ	kappa	k	20	K k	K k	K

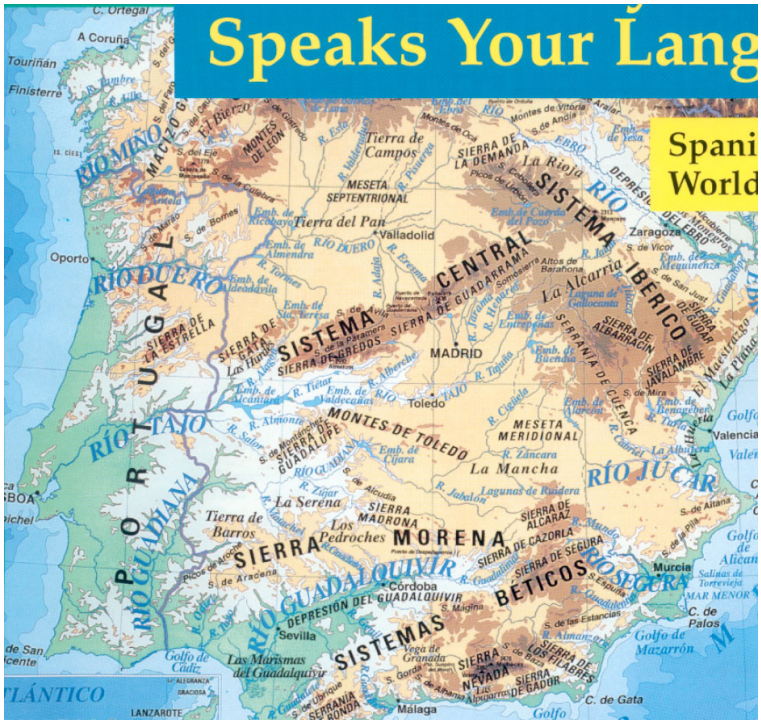
But our alphabet communicates sounds, and the first figure shows the development of our Roman script from the hieroglyphs. The Roman script had capital or upper case letters, but the subsequent development went in the direction of scripts that were easier to write by hand, and so, from the classical Roman script the "Roman" and "Italic" letter types developed, the "Roman" being a precursor of our lower case letter.

Fonts development

From 1450 onwards, these letters could be printed as well, as each text could be set in movable type and combined into larger, page-size units. Important of typesetting was the size or height of the letters, their "corps". This was expressed on continental Europe in Points or pointes Didot (0,376 mm each) and in Anglo-Saxon countries, which never had the benefit of being occupied by Napoleon, and therefore lacked standardization, in Pica, that is in units of 0.351 mm each. This lettersize, expressed in points or pica, indicates the maximum overall vertical space of the various letters of a particular font would need.



In the development of printing, a number of different fonts were designed. Some of these were Bodoni, Times, Nobel. Recently, more modern-looking fonts were designed, and these lacked the serifs that distinguished the older fonts. Though they look more streamlined, and few cartographers can resist them because although they look modern, their legibility is decidedly less than that of the serif fonts. So not all fonts are suitable for use on maps. Some take too much space, some are just not easy to read, some dominate too much in combination with others, or this combination might just look unbalanced. Some might monopolize the map user's attention and distract from the rest of the map contents. Cartographic applications set specific requirements to scripts, and the next image advertizes those requirements already: only small variations in fonts are permitted, no loud or fancy fonts, and the letters should not be too bold.



Font characteristics

Printed letters have a number of characteristics that allow them to present extra information. They may vary in boldness (bold/medium/light), in grey-value, in colour, in size, and in shape. In texts all these differences have a function, and it is important to check whether these functions also apply to maps. Apart from readability, maps require us to differentiate qualitatively and quantitatively. Moreover we would like the names on the maps to have a pleasant aspect, so they ought to have aesthetic qualities as well.

If we start with legibility, contrast is better in texts than in maps, as maps not always have a white background. Contrast is also less as letters on maps are not always black, but can also ne blue (for rivers) or red (for roads). The direction of letters in names in texts is always horizontal, whereas in maps they can have all kinds of directions. The different words in texts are all parallel to each other; those in maps are not, and may have various different curvatures as well. In texts, the letters appear all at the same, short distance of each other, but in maps these distances can vary for different names, and in one name can be fairly large. The letter-combinations in texts, that is the words of a language, will generally look familiar to the reader. The geographical names he is presented with , from Greenland or Kzachstan or wherever, will not. Letter sizes in texts are all the same while in maps they will be variable. The conclusion must be, that maps will be more difficult to read than texts. Especially so as the words on maps will tend to be combined with other graphic symbols.

Lisibility differences book texts vs names

Lisibility	Maps	Books
aspect	words	sentences
letter groups	unfamiliar names	familiar words
spacing	spaced lettering	no spaced lettering
direction	curved/oblique names	horizontal only
style	different type faces	homogeneous type
font size	different sizes,widths	homogeneous size,
lining	names crossing names or other map elements	text lines parallel
linkage	names denote map objects	words part of text
contrast	colourful background	white background
colour	black and coloured	only black letters

In order to get good legibility, the names on maps should be readible without a magnifying glass. That means that the upper-case or lower-case letters should at least be 1.5 mm high. For good recognition the central part of the letters (stem or trunk) should have 70% of the overall height, and the outgoing elements should be relatively short therefore. If serifs are used, they should be clear, and because of magnification and reduction, the differences between thick and thin parts of the letters should be minimal.

In order to be useful on maps, fonts should especially provide a clear distinction between:

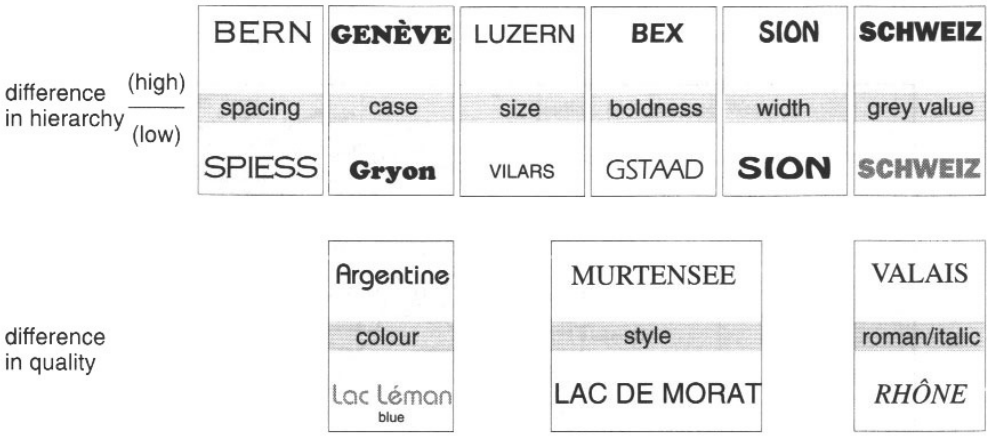
c and e
u and v
a and u
3, 5 and 8
1 and 7

Cartographic requirements

As we should be able to differentiate between categories of geographical objects (that is, indicate nominal or qualitative differences) on maps, a variety of fonts can be used, but never more than 3. Each single category of names should have its own, single font type.

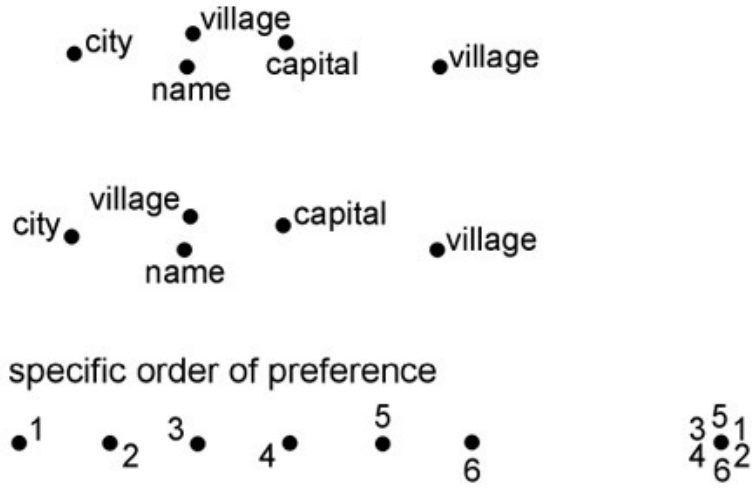
Quantitative differences can be expressed :

a) by variation between lower and upper case (upper case names would be more important)
b) by a variation in boldness (bold-medium-light)
c) by variations in spacing between different names
d) by variations in size (but size differences would only be noticeable if each subsequent type would at least be 20% larger than the previous one)
e) variations in grey value.



Map lettering proper

When applying names to the map, one should differentiate between point-, line- and area-objects. Point objects would be phenomena on the map indicated by a point symbol. Examples are small settlements or mountain tops. There is a specific order of preference of the location of the name relative to the named point symbol: the favourite position is to its upper right, the location beneath the symbol is considered decidedly less effective, and a location of the name on the same line as the symbol, either to its right or to its left, is considered anathema.



Line objects that are to be named, such as rivers, roads or railway lines, should have the names follow the object, and be parallel to it as much as possible. Rather than have the letters spaced out too much, the name should be repeated.

Names of areas, such as forests, administrative areas, seas, should as much as possible convey an idea to the map reader of the size or extension of the named object. The direction of the name should as much as possible follow the major axis of the area, if there is one. Names of point locations in an area should as much as possible fall into that area, otherwise the reader might attribute them to neighbouring areas.

For linear objects or areas with a non-horizontal extension, there are some guidelines whether the names should be tilted upwards or downwards. These guidelines should be applied flexibly, however.

All the above considerations apply to geographical names. Not all names on the map face consist of geographical names, however. A number of them would consist of designations (like "factory", "cemetery", etc) or abbreviations (Sch. for school or Res. for reservoir) or letter symbols (like T for Telephone or P for Pub or Public House). Preferably, these non-geographical names on the map should be indicated in a distinctly separate font.

Final production aspects

Names nowadays are typeset in an (electronic) phototypesetter on special thin clear film, called stripping film, which is then pasted on to a supporting film with wax. A negative is made from this positive, in order to remove all the dust that has adhered to the film because of the wax.
In order to set of names against their background and improve the contrast, a sort of vignetting technique is used, by which the immediate background of the letters is cleared of other symbols or lines, so that contrast is improved.