

## *An example for a chapter of web cartography course -*

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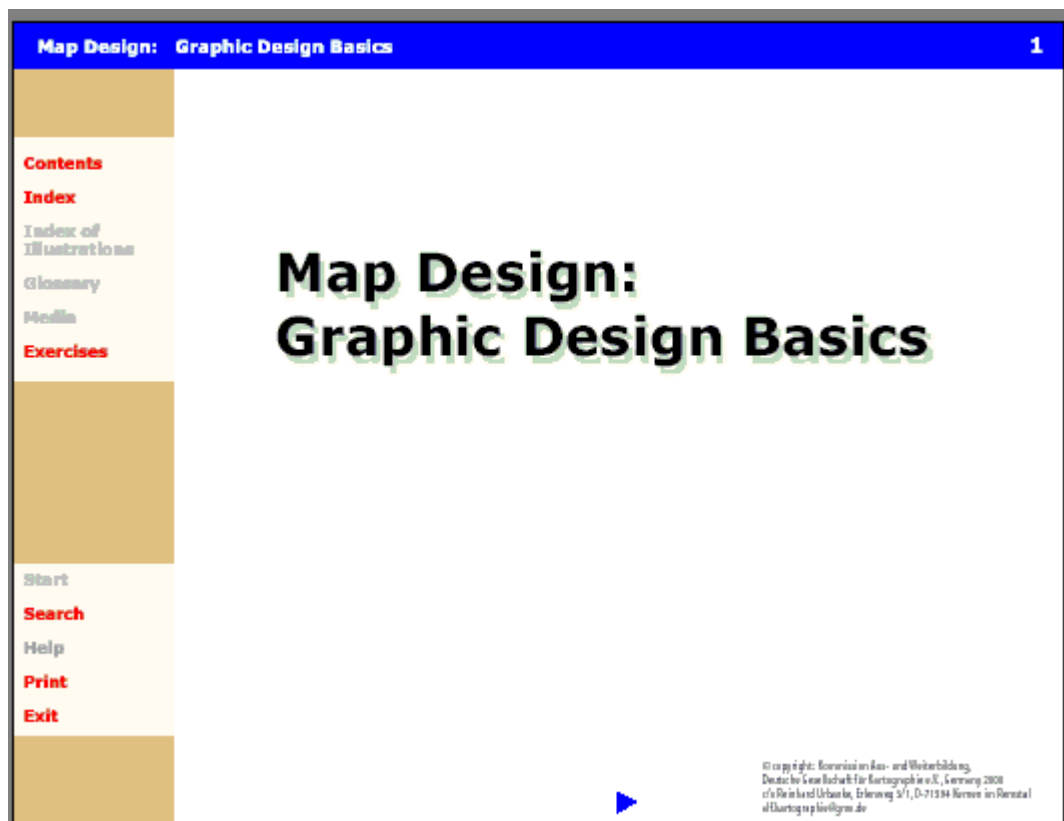
In the nineties the Commission on Education and Training of the German Association of Cartography developed a manual for the Training of Cartographers.

The set-up of this manual is modular and it consists of theoretical and practical constituents. You can get it on CD and it can be started on a normal configuration of Windows or MacIntosh by Acrobat Reader.

The aim is to create equal opportunities for all cartographers in the different federal states of Germany. It wants to be an actual, practical trainer.

To give you an impression how the manual works. Here is one constituent as example for the conceptional and as regards content structure.

The topic of my example is: *Map design - Graphic design basics.*



Cartographers and design both use visual inter-human communication. But to understand the communication process, first of all we have to speak about human perception.

Well, primarily people perceive their environment - the outer world. They see, hear, touch, smell and taste it. For that purpose they have perceptual organs. Humans also permanently experience themselves, their inner world.

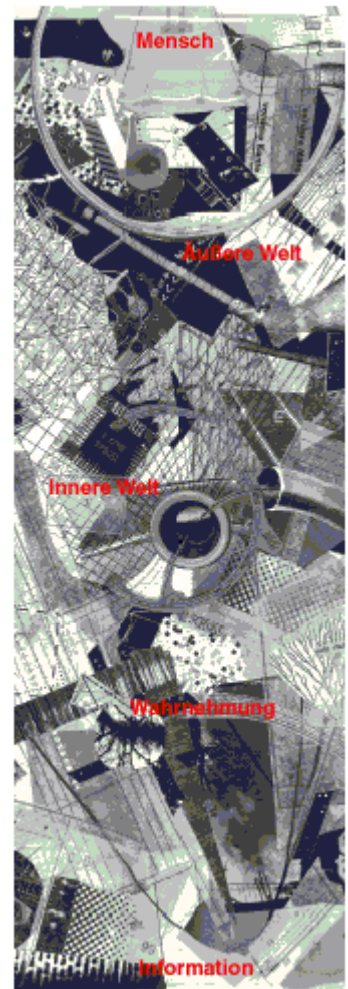
### Perception overload

People's inner and outer worlds impact upon them simultaneously and are perceived in conjunction.

### Selection

The biggest part of all incoming stimuli is perceived subconsciously and this part decisively shapes us.

To shield from a stimuli overflow people can try to perceive part of all information consciously, just big enough to be digested separately (selection).



## Communication

A simplified scheme of (visual) communication looks as follows:

The transmitter (the designer) communicates with the receiver (the viewer) by sending messages with the help of a language. For that end he uses codes to transmit his message effectively.

### Code

The code encodes messages. The receiver has to know.

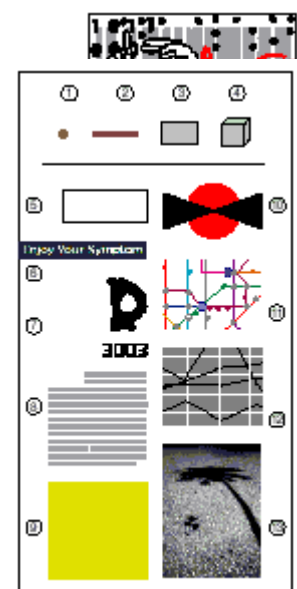


Sign-like pictures were combined to form sign language.

## Graphic elements

The elements can be simple, composite or complex:

### Sign



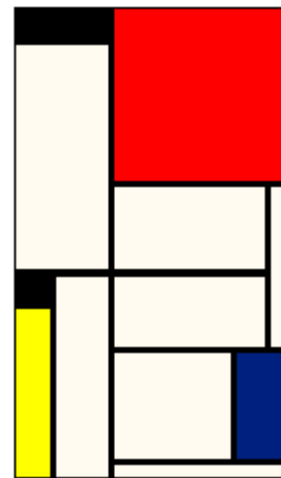
Writing  
Graphic  
Picture  
Background

### Design principles

It does not make sense to define rigid design rules because, graphic design is influenced by changing perceptions, changing communication methods and changing design goals.

But the following principles that guarantee a good and successful design should still be considered:

*Proportion*  
*Harmony*  
*Contrast*



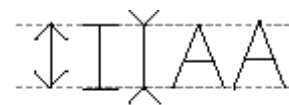
### Optical Illusions

Optical illusions are of particular interest due to their unexpected results and the effects thus achieved .

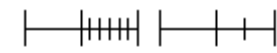
#### Lines

*Fig. 4a* demonstrates that vertical lines of the same length seem to differ in length if their added corners are changed. Subdivided lines seem longer than undivided. *Fig. 4b*

Thick narrow set lines appear shorter than the ones that are further.



4a

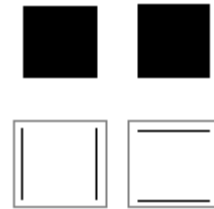


4b

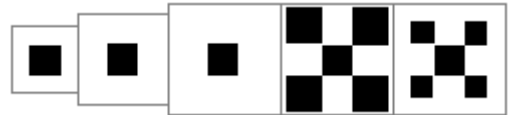


## Areas

A square optically seems wider than higher.



All central squares have the same size. Their apparent size (the other squares and the white space) is influenced by their surrounding.



## Tonal value

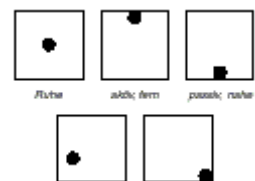
It is possible to create depth with the help of tonal values.

## The area

The area is the space for mounting the design.

## Empty space / white space

Some elements need a big area (empty space) to unfold. Empty spaces are fields of force.



## Effect

As a consequence elements get a certain meaning if they are located at a certain spot within the empty space.

## Area aesthetics

### Area subdivision

Depending on the size, the area can be subdivided according to the following principles, in view of the design purpose : Proportion, harmony and contrast. This results in a layout.

## Composition

The figure shows a composition with simple shapes and their variation possibilities.



## Colour

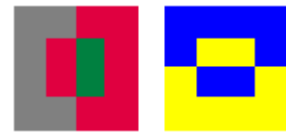
Colour is an important design element.

It has an immediate impact on the viewers and addresses their subconsciousness.

## Colour psychology

### Colour contrast

The relationship between colours is named colour contrast.



- Complementary contrast
- simultaneous contrast
- quality contrast
- quantity contrast
- cold-warm-contrast

## Type aesthetics

### Geometry

### Letter spacing



## Type composition

### Type face selection

Every type imparts associations.

Type faces should only be mixed if they have different functions.

## Compositions

Type faces can be varied by:

- type style and size,
- type shape (bold or italic),
- initials, headings and inserted headings,

unjustified setting and justified setting.



## Signs

A sign is a visual expression of information, of an idea, of an occasion or of a firm that has been reduced to the essential.

## Function

Signs can have different functions:

message, hint, warning (traffic sign, pictogram),  
product, service, image (trademark),  
tradition, origin, relationship (coat of arms, flag),  
association, reference (symbol, cartographic symbol).



## Trademarks

In our consumer society trademarks are not only identifiers for companies, their products or services. They also carry certain messages regarding lifestyle, social affiliation, sometimes even ideologies.



## Map symbols

A map is an information system; a complex combination of different symbols.

## Symbol system

Every map symbol contains information that is coded.

## Symbol types

Map symbols can be subdivided on the basis of their shape.

*point*

*line*

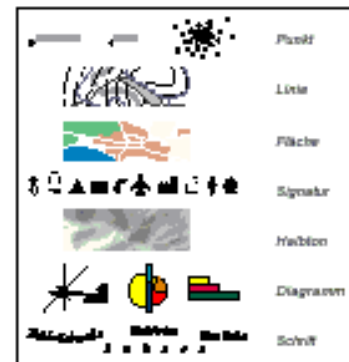
*area*

*map symbol*

*half-tone*

*diagram*

*type*



## Legibility

The combination of single elements most favourable for perception is the one that results in a *compact, stable, logical* and *simple overall shape* (terseness).

Concerning the legibility of the map the following principles have to be considered:

*Graphic differentiation*

*Graphic density*

*Contrast/object separation*

*Maintenance of the context*

*Habits/expectations* of the map reader



Maybe this example or another will find your interest for the web cartography course. The whole manual you can buy at the Commission on Education and Training of the German Association of Cartography.

The email-address is: [alf-kartographie@gmx.de](mailto:alf-kartographie@gmx.de)

The price is 98 DM (German Marks). But, it is written only in German.

Wolfgang Meißner, Germany

2001 - August