

Principles of Cartographic Design

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The following principles were originally presented at a British Cartographic Society Design Group meeting at Glasgow University in 1999. They were not challenged.

I based my career on these principles and have revised some of the original notes based on my experience over the last two decades. Principles are differentiated from rules such as those for placement of type. While contributing to the design process, rules are not principles.

Three Statements of Cartographic Design

1. The purpose of cartographic design is to focus the attention of the map user.
2. The principles of cartographic design are timeless, the results are not.
3. The rules of cartographic design can be taught and learnt, principles and concepts have to be acquired.

The Five Principles of Cartographic Design

1. Concept before Compilation

- Grasp the Concept – Without a grasp of the concept, the whole of the design process is negated. The parts embarrass the whole. Once the concept is understood, no design or content feature will be included which does not fit it.
- Design the Whole before the Part – Design comes in two stages, concept and parameters, and detail in execution. Design once, revise, design again.
- User First, User Last – Design for the user, not the user. Ask yourself, what does the user want from this map? What can the user get from this map? Is that what they want or need? If a map were a building, it shouldn't fall over.

2. Hierarchy with Harmony

- Primary Map Elements – Important things must look important and the most important thing should look the most important.
- Support Map Elements – Lesser map elements have their place and should serve to compliment, but not conflict with, the important map element(s). All map elements from the whole to the part, and all the individual parts, contribute to the whole.
- Cartographic Harmony – Harmony is to do with the whole map being happy with itself. Successful harmony leads to repose. Perfect harmony of elements leads to a neutral bloom. Harmony is subliminal.

3. Simplicity from Sacrifice

- Great cartographic design tends towards simplicity. It's not what you put in that makes a great map, it's what you take out. The map design stage is complete when you can take nothing else out. Running the film of an explosion backwards, all possibilities rush to one point. They become the focal point. This is the cartographer's skill. Content may determine scale or scale may determine content, and each determines the level of generalization (sacrifice).

4. Maximum Information at Minimum Cost

- How much information can be gained from this map, at a glance?
- Functionality not utility. Proper design makes utility functional.
- All map design is compromise.
- The spark which makes a map special often only comes with then map is complete.

5. Engage the Emotion to Engage the Understanding

- Design with Emotion to Engage Emotion – Only by feeling what the user feels can we see what the user sees. Good designers use cartographic fictions, impressions, and illusions to make an effective map. These all have emotive contents.
- The Map is the Message – Good map design is a result of the tension between the environment (the facts) and the cartographer. Only when the map reader engages their emotion, their desire, will they be receptive to the map's message.
- Design Aesthetics – Design uses aesthetics but the principles of aesthetics are not those of design. We are not just “prettying” maps up. The philosophy is simple, beauty (aesthetics) focuses attention. Focusing the map user's attention is the ultimate purpose of map design!