

SOME DESIGN CONDITIONS MUST BE DELETED

There is no doubt that designers use the results of empirical research intensively, but their own work differs fundamentally from that of their suppliers. A researcher searches for truth, probability and sometimes desirability. A designer looks for possibilities, as far as they are not yet true or probable, and even not necessarily desired consciously by anyone.

A designer and particularly a designer of multifunctional facilities,

a The fact that 'truth' itself is a modality is contrary to prevailing views in modal logic (p49). Modal logic would take a completely different form if truth (according to Fig. 3 p12) would be taken as a limited and limiting part of possibility.

In the current 'alethic' modal logic the truth logic is valid in all possible worlds and thus a limitation of possibilities.

Of these, the laws of nature are a ('nomological') part and also universally 'necessary'. However, they are both part of our language ('analytical possibility') and our sense of existence ('metaphysical possibility'), which in the alethic vision are also included as necessary in all possible worlds.

The 'possibility' that I hold here concerns (more broadly than alethically) the possible worlds in which 'actions' are possible, changes that can be set in motion by someone or something. I call that 'practical' modality with 'practical' conditions.

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1 SCIENCE SUPPOSES DESIGN, NOT THE REVERSE

- 1 should not isolate a singular problem from a field of problems that can be solved together;
- 2 is not allowed to isolate a singular goal from a field of diverging objectives for diverging interests;
- 3 does not only work in a goal-oriented way, but also in a means-oriented way (looks at what is possible);
- 4 can not formulate a research object before it has been designed, before the work is done: that object varies in thought and gradually develops from vague to concrete by looking, sketching, calculating, reading and writing;
- 5 has as its starting point only a context with many variables on different levels of scale;
- 6 brings together explicit and unspoken administrative, cultural, economic, technical, ecological and physical problems, objectives and means from this context in a concept, a representation or proposal in which more stakeholders can project and weigh their own (sometimes unforeseen and unspoken) objectives;
- 7 such a concept produces a general hypothesis that is hardly worth mentioning: 'This will work';
- 8 therefore has starting points different from a clear object definition, problem definition, objective, hypothesis, a representation of how facts must be collected, arranged and related to each other;
- 9 has many methods to arrive at a concept: from material, form, structure, function or intention, in all conceivable orders and intensities of this series;
- 10 has more references than written text: images, forms, types, models and other concepts;
- 11 uses notions that are generalized or not in everyday language as words, in more meanings,
- 12 that change meanings per scale level and per unique context.

This does not correspond to the current assumptions of (conditions for) valid and reliable science. How, for example, do you start without a clear problem and objective, even without a clear object of research? The beginning is before all that. Those common assumptions have an order that deserves doubt. What does a problem, a goal, an object itself actually mean?

The target field aims at solving different problems simultaneously, if at least (with the means that language and drawing offer us) a possibility of solution is conceivable. Problem signaling, however, does not escape an analysis of missing conditions. As a result, the *coherence* of problems becomes design-relevant. The target field stands out as a system of realizable conditions, hypotheses in which some goals even seem to have been realized already in a solution.

You can not keep problem, goal, means and hypothesis separate as in classical scientific research.

More or less in the order of the above 12 points I will give below my preliminary

§ 4 CONDITIONS MAKE POSSIBLE AND IMPOSSIBLE

analysis of the usual assumptions that play a role here. They then form a problem field for the following chapters.