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Leonard Verhoef (1950) performed research on human thinking. As a psychologist he was involved in the development of several systems (electronic mail, traffic control, process control, public transport, public information, software design, web).

He also investigated how to apply psychological knowledge in the design process (master thesis: "Why designers can't understand their users, development of a systematic approach using cognitive psychology).

Now he is working on "How to unenslave Windows users" and "How to organise our lives in a technical future".

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**From Putting Data in Statistics to Controlling Conclusions –
Decision-making with your eyes only.**

Abstract:

Numbers in text is the first phase in the evolution of the presentations of data. The next phase uses tables and the third puts the table in a graph. In less time, less experienced users should perform better with more complex systems. To accomplish this, virtual reality technology might be used to present yet unknown cognitive realities. There are five cognitive psychological requirements to meet.

- The scales should not be absolute: left point zero and right some maximal value. Point zero should be relative, the focus of the user (e.g. no economic changes and the set point of a process operator).
- Three dimensional problems are known and solved now. It should be possible to present more (than three) dimensional relations.
- The presentation should not be lower level technical measurements (euros, number of people, time in minutes) but higher level task concepts (e.g. showing trade-offs, reliability, thresholds).
- The presentation should suggest the type of actions to perform. One degree temperature increase can mean nothing or can mean an explosion. This last degree should be presented differently and the conclusion should be: "Action now!"
- The user should be able to play with these requirements.

We will present examples of decision making graphs of all phases, of all requirements and for several domains (economics, public information systems, technical process control). Even when phase one or two is common practice in the domain, we will present phase three and four examples.