



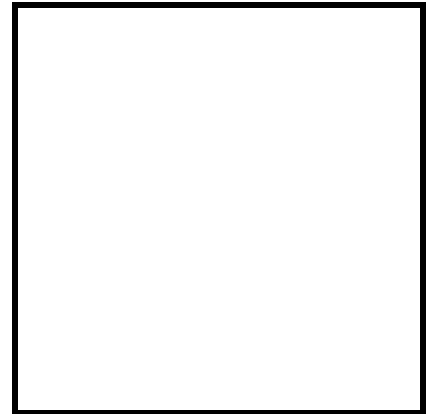
**Research Groups:
Acquisition, Representation and Use of Knowledge; and Representation of Space and Time in Cognitive Processes**

Visual analogical reasoning

Angela Nachtigall

Issue. Recent theories on analogical reasoning (Holyoak, 1989/95, Gentner, 1983/89) specify constraints (structure, surface properties and purpose) and steps (selection, mapping, evaluation, transfer, learning) during the process of analogical reasoning. Mostly they are concerned with solving verbal coded tasks.

In every day life and science, additional visual analogies play an important role, but no or minor attention has been deserved to them in existing models.



**In GrKK since 5/96
as Ph.D. student**

- **Goal:** Present work aims at modifying present theories about analogical reasoning in order to integrate visual analogies taking the advantages and disadvantages of pictures into consideration.
- **Method:** Experimental subjects have to solve some geometrical problems, for instance the farm-problem and the tree-planting-problem (Dreistadt, 1969). As a support in solving the problem, the subjects get one of 4 systematically varying pictures showing some/all aspects of problem structure.
- **Problems (optional):** It is most challenging to identify all relevant dimensions and to separate problem structure and surface properties.
- **Results (so far):** Not all aspects of the problem structure are equally relevant. Corresponding to this fact, the first experiment has shown that not every picture is equally helpful during the problem solving process. Moreover, it is more difficult than expected for the experimental subjects to identify mappable information, to transfer it and to solve the problems.