ISSN 0249 9185

cahiers de psychologie cognitive

VOLUME 5 N°3/4 JUIN/AOÛT 1985

ISSBD

INTERNATIONAL SOCIETY FOR THE STUDY OF BEHAVIORAL DEVELOPMENT

Eighth Biennial Meetings
July 6-10 1985
Tours, France

ABSTRACTS
POSTER PRESENTATIONS

FUNCTIONAL REASONING AND DECALAGE IN THE DEVELOPMENT OF TRANSITIVITY

(Le raisonnement fonctionnel et les décalages dans le développement de la transitivité)

U. Lindenberger & M. Chapman

Max Planck Institute for Human Development and Education, Lentzeallee 94, 1000 Berlin 33, FRG.

Numerous experiments have demonstrated that if concrete operational tasks are simplified with respect to certain "performance factors", children can solve them at an earlier age than otherwise.

But one might question the assumption that the performance demands of the tasks in question were modified without also affecting their structural requirements. Drawing on Piaget's research on the prevailence of functions and correspondences in preoperational thought, the present study is based on the hypothesis that some attempts to reduce the performance demands of concrete operational tasks may have allowed children to solve those tasks with functional, rather than operational reasoning. This hypothesis was tested by administering two previously-used versions of the familiar transitivity task to 120 children aged 6-9. In the standard Piagetian version of the task, comparison objects were presented only two at a time, while in the modified version, all objects were visible during questioning (but too far apart for differences in length to be seen). Transitivity of length and weight was assessed with both versions, and the number of comparison objects was varied from 3 to 5. Following Chapman's model of structural working memory, it was predicted: (a) that the standard version of the transitivity task would force an operatory solution (e.g., A is longer than B, B is longer than C, therefore A is longer than C), whereas the modified version would allow children to recode relations of length or weight as a function of spatial relations (e.g., "longer" as a function of "further to the right"); (b) that the functional solution would develop at an earlier age than the operatory solution for length as for weight, although the typical decalage between length and weight would also be observed. The results were consistent with these predictions. The role of working memory in producing these decalages was investigated by analyzing the ordinal relations among performances involving transitivity of length and weight with different numbers of comparison objects.