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THE DEVELOPMENT OF CLASSIFICATORY BEHAVIOUR IN CHILDREN

Karyl Jennifer Rosenberg

A thesis submitted for the
Degree of Doctor of Philosophy
in the Australian National University

Canberra, December 1973

This thesis describes original research carried out by the author during the tenure of an Australian National University Research Scholarship in the Department of Psychology of the Australian National University from September 1970 to December 1973.

Jennifer Rosenberg.

K.J. Rosenberg

ACKNOWLEDGEMENTS

I gratefully acknowledge the contribution made to this study by my supervisor, Professor G.N. Seagrim. At every stage from the first tentative hypothesis, to the final assessment of the finished work, he has provided continuous encouragement and assistance.

I would also like to thank Dr. M.L. Cook for many valuable discussions, and I am grateful for the support and assistance I have received from members of the Psychology Department.

I am indebted to the N.S.W. Department of Education, and to the Headmaster and Staff of each of the schools whose pupils were used as subjects. I received willing co-operation at all the schools I visited, and the interest of the staff, together with the enthusiasm of the children, made my work a pleasure.

I wish to express my thanks to Miss Norma Chin for typing this thesis and for offering many constructive suggestions concerning its presentation.

Finally, I wish to thank my husband, Barry, for his constant help and support. He has played a dual role of providing intellectual as well as emotional support. He has taken a great interest in, and has offered many conceptual insights to, the theory developed in this thesis.

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ABSTRACT

This thesis is concerned with the development of classificatory behaviour in children between five and eleven years. The first experiment investigates the difference between two opposing views on the role of language in classification.

Inhelder and Piaget [1964] argue that language is dependent on cognitive structures, while Bruner [1966] maintains that classificatory ability is dependent on linguistic competence. He argues that children who fail to classify logically do not have the requisite hierarchically ordered semantic features. Experiment 1 showed that children who failed logically to classify pictures of items belonging to various taxonomic classes nevertheless showed a build-up of, and release from, proactive inhibition when items belonging to those classes were manipulated in the short-term-memory task developed by Wickens [1970]. This result indicated that these children had the appropriate semantic features for their classifications, and hence a theory such as Piaget's is required to account for the appreciation of similarity at different levels of thought.

Piaget's theory of knowledge is discussed, and it is concluded that while Piaget has been concerned with elucidating the structural nature of operational thought, he has not concentrated on the exact relationship between the form of operational thought and the content from which it is progressively dissociated. For this reason there is some confusion concerning the role of "horizontal décalages" in a theory which postulates "structures d'ensemble".

This issue motivated the main work for this thesis. It was hypothesised that the development of classification is dependent on

understanding the materials being manipulated as well as on abstracting the classificatory schemes.

To investigate this hypothesis, materials were constructed which enabled measurements to be made of the child's comprehension of the relationships between part and whole of an individual item, as well as his ability to classify a number of such items.

The child's performance when completing 3×3 matrices in which the lower right corner was removed, was classified into one of six stages. The child's performance on a series of other tasks presented at the same time showed that his stage of classification was related to his understanding of the relationships within an individual item. The application of scale analysis indicated a unidimensional sequence of development on all these tasks, and hence validated the stages of classification developed and their relationship to the child's understanding of the materials.

The final experiment involved an investigation of the abstraction of the classificatory schemes themselves. It was hypothesised that classifications using similarities and those using differences are generated by the same internal structures, and hence there should be the same sequence of development for both, with simultaneous occurrence of the corresponding stages. The experimental results supported this hypothesis and also threw light on the development of the meaning of "same" and "different".

Thus both understanding the materials and abstraction of the classificatory schemes were found to be important in the development of classification. A theoretical model is presented which relates these two factors and attempts to specify the progressive abstractions responsible for development through the six stages of classification.