THE ROLE OF LOGIC IN THE EPistemology OF JEAN PIAGET

STUART FOWLER

A dissertation submitted to the Faculty of Arts and Philosophy
Potchefstroom University for Christian Higher Education
in partial fulfilment of the requirements for the degree of
Magister artium (Philosophy)

Supervisor: Prof. N.T. van der Merwe

Potchefstroom University for Christian Higher Education

Potchefstroom
December 1982
The number of those who have contributed, in one way or another, to this work are too many to mention. They include colleagues and students, friends, fellow church members, and family, including my parents who have not lived to see this work fulfilled. Any human work of significance, it seems to me, is always in a certain sense a communal product to which many have contributed in many, sometimes unseen, ways. In this case, however, there are some who must be mentioned more specifically.

First there is the Christian community of Potchefstroomse Universiteit vir Christelike Hoër Onderwys whose support has been so freely given; especially members of the administration who have consistently shown consideration, patience and understanding, and the members of the Philosophy Department who have given warm encouragement and constructively critical interaction.

My promoter, Professor N.T. (Theo) van der Merwe, through much personal trial and difficulty, has given invaluable support with constructive criticism and advice, constant encouragement and stimulus and a quality of Christian friendship that is invaluable.

The personnel of the Centre international d'Épistémologie génétique and the Fondation Archives Jean Piaget at the Université de Genève gave me and my wife the warmest of welcomes and every assistance during two months spent there in research. The secretary of the Centre, Sylvain Dionnet must be mentioned in particular for all he did beyond the call of duty.
Then there is my wife, Joy, who has been in every best sense of the word my partner with me in this work, not only contributing her unique gifts toward its presentation, but standing with me in constant encouragement and support throughout.

Finally while, for reasons that I give in the appendix, I have deliberately written the main text of this work as an exercise in philosophy without employing the terminology of Christian faith, it has been pursued throughout as an exercise of faith. I have been conscious constantly of the grace of God given in Jesus Christ with me as I have laboured over it. Whatever there is of worth in what I have written is the fruit of that grace.
# THE KNOWING SUBJECT

A PHILOSOPHICAL STUDY

WITH SPECIAL REFERENCE TO THE CONTRIBUTION OF JEAN PIAGET

## CONTENTS

### 1: THE PROBLEM IN HISTORICAL CONTEXT

1.1 Introduction
   1.1.1 The Aims of this Study 1
   1.1.2 Research Background 1
   1.1.3 The Special Importance of a Systematic Historical Orientation 3

1.2 Identifying the Contours of the Problem
   1.2.1 The Justificationist Problem 8
   1.2.2 The Problem of Evaluative Criteria 12
   1.2.3 The Problem of Intersubjective Universality 14
   1.2.4 The Role of the Knowing Subject 18

1.3 The Metaphysical Problem 21

1.4 Cognitive Status of Science 23

1.5 The Historical Background 26
   1.5.1 Knowing as Rational Apprehension of Universal Truth 27
   1.5.2 Knowing as Rational Abstraction from Sensory Experience 30
   1.5.3 Knowing as Rational Processing of Sensory Data 37
   1.5.4 Rationalism and Irrationalism, Intellectualism and Empiricism 40
   1.5.5 The Greek Heritage 44
   1.5.6 The Consolidation of the Rationalist Tradition 51
   1.5.7 The Divorce of Epistemology and Metaphysics 52
   1.5.8 Knowing as Rational Formation 55
   1.5.9 The Renewal of Empiricism 59
   1.5.10 Epistemology as Logical Analysis of Language 65
   1.5.11 The Development of a Constructivist Epistemology 70

1.6 Piaget, Popper and Polanyi - Convergence and a New Divergence 77

1.7 Summary 85

### 2: THE EPISTEMOLOGY OF JEAN PIAGET

2.1 Introduction
   2.1.1 A Major Epistemological Enterprise 89
   2.1.2 "Epistemology" and "Epistemologie" 92
   2.1.3 Why "genetique" 93
   2.1.4 Knowledge as Open-ended Activity 99
   2.1.5 Knowledge as a Progressive Spiral 100
   2.1.6 Scientific Epistemology and the Piagetian Vision 103
   2.1.7 The Need for a Systematic Review 108
   2.1.8 Questions of Terminology 109

2.2 Constructivism and Structuralism 110

2.3 Cognitive Abstraction 114

2.4 Cognitive Structures and Formal Systems 124

2.5 Cognition as Dialectical Process 128

2.6 Piaget, Hegel and Marx 134