## CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>An outline of the experiment 3.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>NATURE OF INTELLIGENCE</td>
<td>8</td>
</tr>
<tr>
<td>Historical background</td>
<td>8</td>
</tr>
<tr>
<td>Galton and his early tests</td>
<td>9</td>
</tr>
<tr>
<td>Cattell and the early mental tests</td>
<td>9</td>
</tr>
<tr>
<td>Early German tests</td>
<td>10</td>
</tr>
<tr>
<td>The foundation stone of Intelligence tests</td>
<td>11</td>
</tr>
<tr>
<td>Revisions of Binet-Simon tests</td>
<td>12</td>
</tr>
<tr>
<td>The Wechsler Scale</td>
<td>14</td>
</tr>
<tr>
<td>Performance tests</td>
<td>14</td>
</tr>
<tr>
<td>Group tests</td>
<td>15</td>
</tr>
<tr>
<td>Group tests in India</td>
<td>16</td>
</tr>
<tr>
<td>The concept of Intelligence</td>
<td>16</td>
</tr>
<tr>
<td>Concepts of Biologists</td>
<td>17</td>
</tr>
<tr>
<td>Doctrines of Intelligence</td>
<td>17</td>
</tr>
<tr>
<td>Monarchic Doctrine of Intelligence</td>
<td>18</td>
</tr>
<tr>
<td>Oligarchic Doctrine of Faculties and types</td>
<td>18</td>
</tr>
<tr>
<td>Anarchic Doctrine of Independent elements</td>
<td>19</td>
</tr>
</tbody>
</table>
The principles of Noegenesis

Genetic approach

Piaget's conception of Intelligence

Definitions of Intelligence

Biological
Educational
Faculty
Empirical

Attributes of Intelligence

Three kinds of Intelligence

Wechsler's Comprehensive definition of Intelligence

Stoddard's definition

Nature and Nurture

Theories of trait organization

The two factor theory
Criticism against the two factor theory
Group factor theory
The Sampling theory
The Multiple-Factor theory
Holzinger's Bi-factor theory

Types of Models

Hierarchical Models of Factors
Burt Model
Vormon Model
Evaluation of Hierarchical Models
Morphological Model
The Structure of Intellect Model
Overview of the Model
Categories in the Structure of Intellect

The present experiment
DESIGNING THE TEST

The range of applicability 58.
  Schooling 59.
  Age 60.
  Cultural background 61.
  Sex 63.

The type of tests 63.
  Testing in group or testing individually 64.
  Sampling the behaviour to be tested 64.
  Selected media for testing the sample behaviour 66.

Review of the literature 68.
Selection of the tests 81.
  Principle followed in the selection of the tests 81.
  Sub-tests selected 83.
  Similarities (Test 1) 84.
  Classification (Test 2) 84.
  Analogies (Test 3) 85.
  Series (Test 4) 85.
  Conditions (Test 5) 86.
  Matrices (Test 6) 86.

Arrangement of the tests 88.
  Discrete Method 88.
  Omnibus Method 88.

The Present selection 89.
  The inclusion of the practice-test 90.
  Separate Answer-sheets 90.

THE EMPIRICAL TRYOUT OF THE TESTS 91
  The first tryout 91.
  The second tryout 98.
Item-Analysis 103.

Facility Value 104.

Discriminative index 106.

Item Analysis against continuous 107.

Item-Analysis against dichotomized groups 107.

Item-Analysis with extreme groups 108.

Selection of items for final testing 117.

Facility value of the items 117.

Discriminative indices of the items 118.

Preparation of the final test 121.

Instructions 121.

Arrangement of test items 122.

5 THE FINAL TRYOUT 125

Selection of the sample 126.

Random sampling 127.

Stratified sampling 128.

Incidental sampling 128.

Purposive sampling 129.

Cluster sampling 129.

The design used 130.

Area for testing 131.

Administration of the tests 133.

Co-operation received 145.

Information about pupils 146.

6 INTERPRETING THE TEST SCORES 147

Establishing test norms 148.

Type of norms 149.

Grade norms 150.

Age norms 151.

Modal Age norms 154.
The norm group selected is 65.
Calculation of norms 158.
Fixing the modal age 169.
Calculation of grade norms 174.
Calculation of age norms 178.
Measure of brightness 195.
Mental age 197.
Intelligence quotient 198.
Percentile rank 200.
Standard scores 201.
The deviation IQ 203.
The calculations of IQs 207.
Distribution of IQs 213.
Classification of pupils according to their IQs 221.

THE RELIABILITY AND VALIDITY OF THE TEST 226

Reliability 227.
Factors affecting reliability estimates 230.
Methods of estimating reliability 232.
The reliability of the present test 233.
Standard error of measurement 245.
Index of reliability 246.
Test-wise reliability 248.

Validity 266.
Kinds of validity 267.
Validity of the present test 271.
Construct validity and factorial validity 284.
Assumptions of factor analysis 287.
Factor analysis and variance 288.
Conditions affecting factor matrix 289.
Methods for extracting factors 290.
Principal factor model 291.

CONCLUSIONS

Evaluation 297.
Limitations 298.
Uses 298.
Further studies 301.

BIBLIOGRAPHY 304