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0521544785 - Measuring Intelligence: Facts and Fallacies

David J. Bartholomew

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Measuring Intelligence

The testing of intelligence has a long and controversial history. Claims that it is a pseudo-science or a weapon of ideological warfare have been commonplace and there is not even a consensus as to whether intelligence exists and, if it does, whether it can be measured. As a result the debate about it has centred on the nurture versus nature controversy and especially on alleged racial differences and the heritability of intelligence – all of which have major policy implications. This book aims to penetrate the mists of controversy, ideology and prejudice by providing a clear non-mathematical framework for the definition and measurement of intelligence derived from modern factor analysis. Building on this framework and drawing on everyday ideas the author addresses key controversies in a clear and accessible style and explores some of the claims made by well-known writers in the field such as Stephen Jay Gould and Michael Howe.

DAVID J. BARTHOLOMEW is Emeritus Professor of Statistics, London School of Economics, Fellow of the British Academy and a former president of the Royal Statistical Society. He is a member of the editorial board of various journals and has published numerous books and journal articles in the fields of statistics and social measurement.

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PUBLISHED BY THE PRESS SYNDICATE OF THE UNIVERSITY OF CAMBRIDGE
The Pitt Building, Trumpington Street, Cambridge, United Kingdom

CAMBRIDGE UNIVERSITY PRESS

The Edinburgh Building, Cambridge, CB2 2RU, UK

40 West 20th Street, New York, NY 10011-4211, USA

477 Williamstown Road, Port Melbourne, VIC 3207, Australia

Ruiz de Alarcón 13, 28014 Madrid, Spain

Dock House, The Waterfront, Cape Town 8001, South Africa

<http://www.cambridge.org>

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First published 2004

Printed in the United Kingdom at the University Press, Cambridge

Typeface Times 10/12 pt. *System* L^AT_EX 2_ε [TB]

A catalogue record for this book is available from the British Library

ISBN 0 521 83619 0 hardback

ISBN 0 521 54478 5 paperback

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Contents

<i>List of figures</i>	<i>page</i> ix
<i>Preface</i>	xi
<i>Acknowledgements</i>	xiv
1 The great intelligence debate: science or ideology?	1
2 Origins	14
3 The end of IQ?	27
4 First steps to g	35
5 Second steps to g	42
6 Extracting g	55
7 Factor analysis or principal components analysis?	68
8 One intelligence or many?	74
9 The Bell Curve: facts, fallacies and speculations	85
10 What is g ?	96
11 Are some groups more intelligent than others?	110
12 Is intelligence inherited?	126
13 Facts and fallacies	142
<i>Notes</i>	153
<i>References</i>	164
<i>Index</i>	168

Full contents

<i>List of figures</i>	<i>page</i> ix
<i>Preface</i>	xi
<i>Acknowledgements</i>	xiv
1 The great intelligence debate: science or ideology?	1
The noise of battle	1
Why such sensitivity?	3
What is intelligence?	4
Can intelligence be measured?	6
Do measures of intelligence have any use?	8
Ideology re-visited	9
Who are the experts?	10
Scylla and Charybdis	12
2 Origins	14
The two roots	14
Origins of IQ: Binet, Terman and Wechsler	14
Origins: Charles Spearman and factor analysis	18
Spurious correlation	19
Spearman's basic idea	20
Spearman's two-factor theory	21
Burt, Thurstone and Thomson	22
Hierarchical factor analysis	23
Early limitations of factor analysis	24
Modern factor analysis	24
Learning from history	25
3 The end of IQ?	27
The parting of the ways	27
Intelligence is not so much a 'thing' as a collective property	27
A collective property of what?	29
'Intelligence is what intelligence tests measure'	30
Definition by dialogue	31
Does IQ have a future?	33

Cambridge University Press

0521544785 - Measuring Intelligence: Facts and Fallacies

David J. Bartholomew

Frontmatter

[More information](#)

Full contents	vii
4 First steps to g	35
More about collective and individual properties	35
Why stop at one collective property?	36
Why are we interested in things like size and shape?	37
Are size and shape real?	38
The case of athletic ability	39
More examples	40
5 Second steps to g	42
Manifest and latent variables	42
Models	43
Variation and correlation	46
Dimensions and dimensionality	47
The measuring instrument and the measurement	48
Levels of measurement	49
The g -factor	50
A dual measure?	52
Back to definitions	54
6 Extracting g	55
The strategy	55
An informal approach	55
Sufficiency: a key idea	58
An embarrassment of solutions!	60
The classical approach	62
Item response theory	65
Some practical issues	67
7 Factor analysis or principal components analysis?	68
What is principal components analysis?	68
Gould's version	69
Principal components analysis is not factor analysis	71
How did this situation arise?	72
Gould's error	73
8 One intelligence or many?	74
The background	74
Thurstone's multiple factor idea	75
A hierarchy of factors?	76
Variation in two dimensions	76
Variation in more dimensions: a dominant dimension	78
Finding the dominant dimension	80
Rotation	80
Does rotation dispose of g ?	82
Frames of mind	83
9 The Bell Curve: facts, fallacies and speculations	85
Status of the Curve	85
What is the Bell Curve?	86
Why is the Bell Curve so important?	87

viii	Full contents	
	Why might IQ or g be treated as normal?	90
	Intuitions on the spacing of individuals	93
10	What is g ?	96
	Introduction	96
	A broader framework: latent structure models	96
	Factor (or g)-scores	99
	Factor loadings	101
	Validity	102
	Reliability	105
	The identity of g	106
	IQ versus g	107
11	Are some groups more intelligent than others?	110
	The big question	110
	Group differences	111
	Examples of group differences	112
	Group differences in IQ	113
	The Flynn effect	118
	Explaining group differences	119
	Confounding	120
	Can we ever explain the black/white difference in IQ?	122
12	Is intelligence inherited?	126
	What is the argument about?	126
	Some rudimentary genetics	128
	Heritability	129
	How can we measure heritability?	131
	How can we estimate heritability?	134
	The index of heritability depends on the population	134
	Confounding, covariation and interaction	135
	The Flynn effect re-visited	138
	The heritability of g	140
13	Facts and fallacies	142
	Terminology	142
	Principal conclusions about IQ and g	143
	Gould's five points	144
	Similar points made by others	146
	Howe's twelve 'facts' which are not true	147
	Science and pseudo-science	151
	<i>Notes</i>	153
	<i>References</i>	164
	<i>Index</i>	168

Figures

5.1	Illustrating a fixed and an uncertain link between two variables.	<i>page 45</i>
9.1	The normal distribution or ‘Bell Curve’.	86
9.2	Two normal distributions with different locations.	87
9.3	Two normal distributions with different spreads.	88
9.4	Showing the mixing of two normal distributions.	93
9.5	Showing how a normal distribution can be stretched and squeezed to make it rectangular.	94
10.1	A normal distribution and a ‘two-point’ distribution for a latent variable.	98
10.2	Illustrating how the composition of an indicator may vary. In the second case the indicator is more strongly influenced by the dominant factor.	101
11.1	Showing how a shift in the location of the distribution indicates a shift in the whole distribution.	113
11.2(a)	Comparison of location when spread and shape are the same.	114
11.2(b)	Comparison of spread when location and shape are the same.	114
11.2(c)	Normal distributions with different locations and different spreads.	114
11.2(d)	Two distributions with the same location and spread but different shape.	114
11.3	Typical locations of black Americans on scale of white Americans.	116
11.4	Showing how changes over time may differ. On the left-hand side only the location changes; on the right, location and spread change.	119

Cambridge University Press

0521544785 - Measuring Intelligence: Facts and Fallacies

David J. Bartholomew

Frontmatter

[More information](#)

Preface

Human intelligence is one of the most important yet controversial topics in the whole field of the human sciences. It is not even agreed whether it can be measured or, if it can, whether it should be measured. The literature is enormous and much of it is highly partisan and, often, far from accurate.

To justify a further incursion into this field it may help to think of the sporting analogy provided by professional football, of whatever code. There are many people who take a passing interest in the game; they may look up scores in the newspaper, but have little specialist interest and they would certainly not feel deprived if they were cut off from the game altogether. Then there are those we may call spectators, who follow the game closely. They may attend matches and watch games on television. Some will be violently partisan, cheering on their own team, failing to see the fouls on their opponents and hurling occasional abuse at the referee. Others will be connoisseurs who understand the niceties of the game and delight in the skills and artistry of the players. Only a few people will actually be engaged in the game as players. They are the ones who have a good technical knowledge of the rules but, more importantly, have the outstanding skills which enable them to perform well at the professional level. For them it is more than just a game, it is also the source of their livelihood. Finally, there are one or more referees, by whatever name, whose job is to see that the game is played according to the rules without advantage to either side.

This book is written from the referee's point of view. Although many people take a general interest in intelligence testing and research, it plays no significant part in their lives. Fewer, whom we might call the spectators, take a close interest in what is happening, perhaps because it is relevant to their work. Some will be firm supporters of the pro- or anti-factions. Others will try to take a balanced view, acquainting themselves with the latest research. All will benefit from the fact that the spectator often sees more of the game. Neither group, nor the many in between, have the first hand acquaintance with the game which can only come from being a player. There are many books written by players for spectators and yet more by spectators for other spectators, and also for that much larger group who take a passing interest. The referee, however, is the expert on the rules and, although that role may be less glamorous, the livelihood of the players and

Cambridge University Press

0521544785 - Measuring Intelligence: Facts and Fallacies

David J. Bartholomew

Frontmatter

[More information](#)

xii Preface

the enjoyment of the spectators depends upon the job being done properly. The referee's view is much needed in the literature of the intelligence game and this book aims to provide it.

Measuring intelligence is no simple matter. If it were, the principal arguments would have been settled long ago. Measurement involves numbers and numeracy is not one of the strengths of contemporary culture. The aim of this book is to express quantitative ideas in words and the occasional diagram. This needs patience on the part of the reader and a willingness to give the material the detailed attention which it requires.

It is a sad fact that many of those who have written on the subject, especially in a polemical vein, have failed to fully understand the technicalities of the subject. Thus, for example, one book, which overlooked a fundamental distinction, was hailed by a reviewer as doing '... a clear and accurate hatchet job on the IQ test, which has been done before, but rarely to such good effect ...'. When such judgements are expressed by those who are only spectators, misunderstanding is bound to be perpetuated and magnified.

Anyone who ventures onto the field of play must watch their front and rear. From the front will come the criticisms of the players who have first hand knowledge of the game. They will be only too aware of the simplifications, even over-simplifications, which have had to be made. They may be resentful that much of the jargon of their trade has been abandoned and many of the familiar landmarks removed. They may even question the motives for doing this. From the rear comes the plaintive cry of those who feel that anything as important as measuring intelligence should be expressible in terms that the layperson can understand, without summoning up more intellectual effort than required by a crossword puzzle. It is with the latter group in mind that the following reading strategy is suggested.

For most readers, it will not be sufficient simply to read the book, as one would a novel, from beginning to end. The following steps are suggested.

First skim through the whole book quickly, from start to finish. In this way you will become aware of the contents, the style of treatment and some of the principal conclusions.

Secondly, go through it more slowly but, when you meet what seem to be insuperable difficulties, leave them for later and press on so that the thread of the argument is not lost.

Focus, next, on the chapters which contain the key ideas leaving the others for later. It is at this stage that the serious work begins. Everyone should start with chapters 1 and 2 which provide much of the background and terminology. Skipping to chapter 13 will then enable you to preview the main conclusions, even though these may not be fully comprehensible at this stage. The heart of the book is in chapters 4, 5 and 6. These attempt to explain the basic underlying ideas on which an adequate understanding of the measurement problem rests.

Cambridge University Press

0521544785 - Measuring Intelligence: Facts and Fallacies

David J. Bartholomew

Frontmatter

[More information](#)

Preface

xiii

They will need a good deal of attention and should be re-visited as your general understanding develops. Chapters 11 and 12 deal with two of the most highly controversial topics but are best left until last.

Finally, remember that many of the questions and criticisms which come to mind are probably dealt with somewhere even if they are not immediately recognisable.

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Frontmatter
[More information](#)

Acknowledgements

This book is the result of many years of reflection and reading and it would be impossible now adequately to acknowledge, by name, all those who have contributed. Two of my colleagues at the London School of Economics, Martin Knott and Jane Galbraith, read early drafts of some of the chapters but their influence is more pervasive. Pat Lovie gave me the benefit of her detailed knowledge of the early history of intelligence testing by reading an early draft of chapter 2. My old friend, Karl Schuessler, offered wise advice as well as detailed comments at an early stage when my ideas were beginning to crystallise. Arthur Jensen responded speedily and courteously to my enquiries about his own work and provided much useful material. Several anonymous reviewers gave me the benefit of their more detached viewpoints. In reading these pages there may be others who will recognise unacknowledged influences from long ago. To all of these, I extend my warmest thanks.

As always, my greatest debt is to my wife, Marian, who can justly claim to have read almost every word. Having gone through the book-writing process together many times, it has become increasingly evident that two heads really are better than one.