

Cambridge University Press
978-0-521-88778-6 - Personality Traits, Third Edition
Gerald Matthews, Ian J. Deary and Martha C. Whiteman
Frontmatter
[More information](#)

Personality Traits

Now in its third edition, this dynamic textbook analyses the traits fundamental to human personality: what they are, why they matter, their biological and social foundations, how they play out in human life and their consequences for cognition, stress and physical and mental health. The text also considers the applications of personality assessment in clinical, educational and occupational settings, providing the reader with a detailed understanding of the whole field of personality traits. This edition, now in 2-colour with improved student features, includes the latest research from behavioural genetics, neuroscience, social psychology and cognitive science, assesses the impact of new research techniques like brain imagery, and provides additional content on positive aspects of traits and practical uses of personality assessment. This is an essential textbook for students taking courses in Personality and Individual Differences and also provides researchers and practitioners with a coherent, up-to-date survey of this significant area.

GERALD MATTHEWS is Professor of Psychology at the University of Cincinnati and has previously held faculty positions at the Universities of Aston and Dundee. He has co-authored several volumes, including *Attention and Emotion: a Clinical Perspective* (1994) which won the 1998 British Psychological Society Book Award, and has published many articles in the area of personality research.

IAN J. DEARY is Professor of Differential Psychology at the University of Edinburgh, and Director of the University of Edinburgh Centre for Cognitive Ageing and Cognitive Epidemiology. He is a Fellow of the Royal College of Psychiatrists, has written extensively on personality and intelligence and won the 2002 British Psychological Society Book Award for *Looking Down on Human Intelligence* (2000).

MARTHA C. WHITEMAN is Honorary Fellow in Psychology at the University of Edinburgh. Her research and teaching are directed towards interpersonal aspects of personality, health and well-being, and the circumstances which may affect upward-moving or downward-moving health trajectories. She has contributed chapters to personality and health textbooks, while journal publications include articles in *The Lancet* and *Psychosomatic Medicine*.

Cambridge University Press
978-0-521-88778-6 - Personality Traits, Third Edition
Gerald Matthews, Ian J. Deary and Martha C. Whiteman
Frontmatter
[More information](#)

Personality Traits

THIRD EDITION

Gerald Matthews

University of Cincinnati

Ian J. Deary

University of Edinburgh

Martha C. Whiteman

University of Edinburgh



Cambridge University Press
978-0-521-88778-6 - Personality Traits, Third Edition
Gerald Matthews, Ian J. Deary and Martha C. Whiteman
Frontmatter
[More information](#)

CAMBRIDGE UNIVERSITY PRESS

Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore, São Paulo, Delhi

Cambridge University Press
The Edinburgh Building, Cambridge CB2 8RU, UK

Published in the United States of America by Cambridge University Press, New York

www.cambridge.org

Information on this title: www.cambridge.org/9780521716222

First edition © Cambridge University Press 1998

Second edition © Cambridge University Press 2003

Third edition © Gerald Matthews, Ian J. Deary and Martha C. Whiteman 2009

This publication is in copyright. Subject to statutory exception and to the provisions of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press.

First published 1998

Second edition 2003

Third edition 2009

Printed in the United Kingdom at the University Press, Cambridge

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

Library of Congress Cataloging-in-Publication Data

Matthews, Gerald.

Personality traits / Gerald Matthews, Ian J. Deary, Martha C. Whiteman. – 3rd ed.

p. cm.

Includes bibliographical references and index.

ISBN 978-0-521-88778-6 (hbk.)

I. Personality. I. Deary, Ian J. II. Whiteman, Martha C. III. Title.

BF698.M3434 2009

155.2'32–dc22 2009010747

ISBN 978-0-521-88778-6 hardback

ISBN 978-0-521-71622-2 paperback

While every effort has been made to contact and acknowledge copyright holders of third party materials included in the book, it has proven difficult to track down a small minority. Please contact Cambridge University Press if you believe the book includes material of yours that has not been acknowledged, and every effort will be made to correct this in future reprintings.

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-party internet websites referred to in this publication and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.

Cambridge University Press
978-0-521-88778-6 - Personality Traits, Third Edition
Gerald Matthews, Ian J. Deary and Martha C. Whiteman
Frontmatter
[More information](#)

To my wife, Diana – GM

To my parents,
Hugh and Isobelle Deary – IJD

To my parents – MCW

Contents

<i>List of figures</i>	page xi
<i>List of tables</i>	xviii
<i>List of boxes</i>	xxiv
<i>Preface to the third edition</i>	xxv
<i>Preface to the second edition</i>	xxviii
<i>Preface to the first edition</i>	xxx
Part I The nature of personality traits	1
1 The trait concept and personality theory	3
Introduction: conceptions of traits	3
A brief history of traits	8
Psychometric approaches to identifying personality dimensions	12
Primary factors of personality: the 16PF and other questionnaires	19
Higher-order factors: the ‘Big Five’ or the ‘Gigantic Three’?	23
Current conceptions of personality structure	26
Conclusions	40
2 Persons, situations and interactionism	42
Traits and situations	42
Are traits universal across cultures?	55
Conclusions	62
3 Personality across the life span	63
Trait stability	63
Temperament	70
Temperament, personality and stability: longitudinal studies	78
Conclusions	83
4 Stable traits and transient states	85
Introduction: the place of states in trait theory	85
Trait-state models	86
State dimensions: affect, mood and self-report arousal	91

Beyond mood: additional state domains	101
Traits and states: empirical studies	104
Conclusions	118
5 Alternative views of personality: challenges to trait theory	121
Traits in psychodynamic theory	122
The unconscious: contemporary studies	128
Assessment of implicit traits	133
Humanistic and phenomenological approaches	139
Conclusions	148
Part II Causes of personality traits	151
6 Genes, environments and personality traits	153
Introduction	153
Twin studies	159
Other research designs	164
Genes, environment and multiple personality traits	168
Further issues in genetic research	171
Molecular genetic studies of personality	181
Conclusions	185
7 The psychobiology of traits	187
Introduction: neuropsychological approaches to personality	187
Ground-plans for neuropsychological theory	189
Psychophysiological techniques: an outline and examples	196
Personality and brain imaging	203
Personality and arousal: towards an integrated theory?	209
Personality and sensitivity to motivational stimuli	219
Psychophysiology: where next?	226
Conclusions	228
8 The social psychology of traits	231
Introduction: personality and social behaviour	231
Personality development: social-psychological perspectives	236
Consistencies in social knowledge and cognition	248
Traits and processes: agreeableness and social behaviour	254
‘Social-psychological’ traits	257
A rapprochement between social psychology and trait theory?	261
Conclusions	264

Part III Consequences and applications	267
9 Stress	269
Introduction: the nature of stress	269
Stress and physiological reactivity	271
Neuroticism and stress vulnerability	273
Transactional perspectives on personality and stress: mediator and moderator hypotheses	281
Neuroticism, stress and emotional disorders: a self-regulative perspective	292
Conclusions	299
10 Traits and health	301
Introduction	301
Heart disease	304
Cancer	308
Neuroticism as a risk factor for multiple diseases	310
Stress and health	312
Traits and health-related behaviours	317
Life course approaches to personality, stress and illness	318
Models of psychosomatic illness	319
Conclusions	321
11 Abnormal personality traits?	323
Personality disorders: concept and classification	324
Problems with personality disorders in current categorical systems	329
Are there abnormal personality traits?	336
Personality disorders and models of normal personality: integrating psychiatry and differential psychology?	347
Conclusions	354
12 Personality, performance and information processing	357
Performance studies and trait theory	357
Theories of personality and performance	361
Extraversion–introversion and performance	367
Trait anxiety, neuroticism and performance	377
Personality and intelligence	385
Conclusions	390
13 Applications of personality assessment	392
Principles of trait assessment	392
Educational and clinical applications	405

Cambridge University Press
978-0-521-88778-6 - Personality Traits, Third Edition
Gerald Matthews, Ian J. Deary and Martha C. Whiteman
Frontmatter
[More information](#)

Personality and job performance	411
Organisational psychology: further applications	416
Emotional intelligence	421
Conclusions	427
14 Conclusions	430
Achievements of trait research	430
Towards a theory of traits	436
Traits and the coherence of personality theory	447
Conclusions	450
<i>References</i>	452
<i>Author index</i>	547
<i>Subject index</i>	555

Figures

1.1 Humoral schemes of temperament proposed by (a) Kant and (b) Wundt	page 10
1.2 Mean scores obtained on the 16PF by three occupational groups	21
1.3 A hierarchy of factor solutions (three, four, five and six factor analyses) with factor score correlations across levels	35
Reprinted from <i>Personality and Individual Differences</i> , Vol. 12, Zuckerman, M., Kuhlman, D. M., Thornquist, M. and Kiers, H., 'Five (or three) robust questionnaire scale factors of personality without culture', pp. 929–41, 1991, with permission from Elsevier.	
2.1 Mischel and Shoda's (1995) Cognitive-Affective Personality System (CAPS)	44
From Mischel, W. and Shoda, Y. (1995) A cognitive-affective system theory of personality: reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. <i>Psychological Review</i> , 102, 246–68. Published by the American Psychological Association. Reprinted with permission.	
3.1 Decline in reliability over time of traits	68
From Schuerger, J. M., Zarella, K. L. and Hotz, A. S. (1989) Factors that influence the temporal stability of personality by questionnaire. <i>Journal of Personality and Social Psychology</i> , 56, 777–83. Published by the American Psychological Association. Reprinted with permission.	
4.1 A state-trait model for detrimental effects of anxiety on information processing and performance	88
Adapted from Eysenck, M. W. (1982) <i>Attention and arousal: cognition and performance</i> . New York: Springer. © Springer.	
4.2 Schematic outlines of alternative cognitive science explanations for personality-emotion associations	92
From Matthews, G., Derryberry, D. and Siegle, G. J. (2000) Personality and emotion: cognitive science perspectives. In S. E. Hampson (ed.), <i>Advances in personality psychology</i> , pp. 199–237. London: Routledge.	
4.3 Two-dimensional models of mood	96
4.4 A three-dimensional model of mood	97

Cambridge University Press

978-0-521-88778-6 - Personality Traits, Third Edition

Gerald Matthews, Ian J. Deary and Martha C. Whiteman

Frontmatter

[More information](#)

xii

FIGURES

4.5	A multidimensional state-trait anxiety model Reprinted from <i>Journal of Anxiety Disorders</i> , Vol. 15, Endler, N. S. and Kocovski, N. L., 'State and trait anxiety revisited', pp. 231–45, 2001, with permission from Elsevier.	99
4.6	Personality effects on induced mood From Larsen, R. J. and Ketelaar, T. (1991) Personality and susceptibility to positive and negative emotional states. <i>Journal of Personality and Social Psychology</i> , 61, 132–40. Published by the American Psychological Association. Reprinted with permission.	112
B.4.2.1	A path model for extraversion effects on happiness Reprinted from <i>Personality and Individual Differences</i> , Vol. II, Argyle, M., and Lu, L., 'Happiness and social skills', pp. 1011–18, 1990, with permission from Elsevier.	115
5.1	IAT stimuli that might be used in a study of implicit preferences for cats versus dogs	135
6.1	A model of the contributions of genetic (A), common environment (C) and unshared environment (E) factors to phenotypic personality trait scores, in MZ and DZ twins	160
B.6.3.1	Means on a composite index of antisocial behaviour as a function of monoamine oxidase A (MAOA) activity – based on genotype – and a history of maltreatment in childhood Caspi, A., McClay, J., Moffitt, T. E., Mill, J., Martin, J., Craig, I. W., Taylor, A. and Poulton, R. (2002) Role of genotype in the cycle of violence in maltreated children. <i>Science</i> , 297, 851–4. Reprinted with permission from the American Association for the Advancement of Science.	173
6.2	Environmental (E) and genetic (G) mediators of phenotypic (P) change and stability from time 1 to time 2 From <i>Journal of Personality</i> . Plomin R. and Nesselroade, J. R. (1990) Behavioral genetics and personality change, 58, 191–219. Copyright © 1990. Reproduced with permission of Blackwell Publishing Ltd.	178
6.3	Path diagram showing latent genetic and environmental influences (circles) on the measured phenotypes (rectangles) of cigarette smoking, monoamine oxidase activity and neuroticism From <i>American Journal of Medical Genetics (Neuropsychiatric Genetics)</i> , 'Genetic covariation of neuroticism with monoamine oxidase activity and smoking', Vol. 105, 2001, pp. 700–706. Copyright 2001, John Wiley & Sons, Inc. Reprinted with permission of John Wiley & Sons, Inc.	180
7.1	Some causal paths assumed by biological theories of personality From Gray, J. A. (1981) A critique of Eysenck's theory of personality. In H. J. Eysenck (ed.), <i>A model for personality</i> . Berlin: Springer. © Springer.	189

Cambridge University Press

978-0-521-88778-6 - Personality Traits, Third Edition

Gerald Matthews, Ian J. Deary and Martha C. Whiteman

Frontmatter

[More information](#)

7.2 Eysenck's (1967) model for the hypothetical physiological basis of extraversion (reticular formation–cortical arousal) and neuroticism (limbic system or visceral brain)	191
Eysenck, H. J. (1967). <i>The biological basis of personality</i> . Springfield, IL: Thomas.	
7.3 Gray's axes as aligned with Eysenck's axes	192
7.4 Functional properties of Gray's (1982) behavioural inhibition system	193
From Gray, J. A. (1982) <i>The neuropsychology of anxiety: an enquiry into the functions of the septohippocampal system</i> . Oxford: Oxford University Press. By permission of Oxford University Press.	
7.5 Zuckerman's (1991) psychobiological model for personality	194
From Zuckerman, M. (1991) <i>Psychobiology of personality</i> . Cambridge: Cambridge University Press. By permission of Cambridge University Press.	
7.6 Normal adult EEG. Note the alpha rhythm which is prominent over the rear parts of the head when the eyes are closed	196
Pryse-Phillips, W. (1969). <i>Epilepsy</i> . Bristol: John Wright.	
7.7 Brain waves classified by frequency	197
7.8 Early components of the auditory event-related potential recorded at central electrode (Cz), showing effects of attention on N1 and P2 waves	198
From Coles, M. G. H., Gratton, G. and Fabiani, M. (1990) Event-related brain potentials. In J. T. Cacioppo and L. G. Tassinary (eds.), <i>Principles of psychophysiology: physical, social and inferential elements</i> , pp. 413–55. Cambridge: Cambridge University Press. By permission of Cambridge University Press.	
7.9 Electrodermal response amplitude as a function of sensation seeking and stimulus intensity level, for initial stimuli (left panel), and all stimuli (right panel)	200
Reprinted from <i>Personality and Individual Differences</i> , Vol. 10, Smith, B. D., Davidson, R. A., Smith, D. L., Goldstein, H. and Perlstein, W., 'Sensation seeking and arousal: effects of strong stimulation on electrodermal activation and memory task performance', pp. 671–9, 1989, with permission from Elsevier.	
7.10 Mean heart rate (z -scores) for children at each of four assessments	202
From Kagan, J., Reznick, J. S. and Snidman, N. (1988) Biological bases of childhood shyness. <i>Science</i> , 240, 167–71. Reprinted with permission of the American Association for the Advancement of Science.	

-
- 7.11 Areas of the brain investigated by SPET scan by Ebmeier et al. (1994), shown in two horizontal sections 204
 Reprinted from *Personality and Individual Differences*, Vol. 17, Ebmeier, K. P., Deary, I. J., O'Carroll, R. E., Prentice, N., Moffoott, A. P. R. and Goodwin, G. M., 'Personality associations with the uptake of the cerebral blood flow marker ^{99m}Tc -exametazine estimated with single photon emission tomography', pp. 587–95, 1994, with permission from Elsevier.
- 7.12 Negative emotional stimuli, the 5-HTTLPR allele, the anterior cingulate and the amygdala 209
 Reprinted from *Nature Neuroscience*, Vol. 8, Hamann, S., 'Blue genes: wiring the brain for depression', pp. 701–3, 2005, with permission from Macmillan Publishers Ltd.
- 7.13 The effect of high (8 KHz) and low (0.5 KHz) 80 dB tones on the auditory evoked potentials of introvert, middle and extravert subjects 213
 Reprinted from *Journal of Personality*, Vol. 58, Stelmack, R. M., 'Biological bases of extraversion: psychophysiological evidence', pp. 293–311, 1990, with permission from Elsevier.
- 7.14 The interactive effect of caffeine dosage and extraversion on initial electrodermal response amplitude 215
 Reprinted from *Psychophysiology*, Vol. 20, Smith, B. D., Wilson, R. J. and Jones, B. E. 'Extraversion and Multiple levels of caffeine-induced arousal: effects of overhabituation and dishabituation', pp. 29–34, 1983, with permission from Wiley-Blackwell.
- 7.15 Effects of trait anxiety (Anx) and impulsivity (Imp) on EMG eyeblink response 225
 Reprinted from *Personality and Individual Differences*, Vol. 33, Corr, P. J., 'J. A. Gray's Reinforcement Sensitivity Theory: tests of the joint subsystem hypothesis of anxiety and impulsivity', pp. 511–32, 2002, with permission from Elsevier.
- B.8.1.1 Levels of emotional development 240
 From Smith, B. D., Wilson, R. J. and Jones, B. E. (1983) Extraversion and multiple levels of caffeine-induced arousal: effects of overhabituation and dishabituation. *Psychophysiology*, 20, 29–34. By permission of S. Karger AG, Basel.
- 8.1 Triadic reciprocal relationships between behaviour (B), interpersonal factors (P), and the external environment (E), according to Bandura (1999) 242
 From Social cognitive theory of personality by Bandura, A. In: D. Cervone and Y. Shoda (eds.), *The coherence of*

- personality: social-cognitive bases of consistency, variability, and organization*, pp. 185–241. Copyright 1999 by Guilford Publications, Inc. Reproduced with permission of Guilford Publications, Inc. in the format Textbook via Copyright Clearance Center.
- 8.2 Bandura's distinction between outcome expectations and self-efficacy perceptions 242
 From Social cognitive theory of personality by Bandura, A. In: D. Cervone and Y. Shoda (eds.), *The coherence of personality: social-cognitive bases of consistency, variability, and organization*, pp. 185–241. Copyright 1999 by Guilford Publications, Inc. Reproduced with permission of Guilford Publications, Inc. in the format Textbook via Copyright Clearance Center
- 9.1 Emotional distress resulting from various everyday stressors in high and low neuroticism subjects 276
 From Bolger, E. A. and Schilling, E. A. (1991) Personality and the problems of everyday life: the role of neuroticism in exposure and reactivity to daily stressors. *Journal of Personality*, 59, 335–86. Copyright © Blackwell Publishing Ltd., 1991. Reproduced with permission of Blackwell Publishing Ltd.
- 9.2 Personality characteristics of people diagnosed with emotional disorders 277
 From Trull, J. J. and Sher, K. J. (1994) Relationship between the five-factor model of personality and Axis I disorders in a nonclinical sample. *Journal of Abnormal Psychology*, 103, 350–60. Published by the American Psychological Association. Reprinted with permission.
- 9.3 Part of a causal model of the effects of neuroticism and negative life events on psychological distress 280
 From Ormel, J. and Wohlfarth, T. (1991) How neuroticism, long-term difficulties, and life situation change influence psychological distress: a longitudinal model. *Journal of Personality and Social Psychology*, 60, 744–55. Published by the American Psychological Association. Reprinted with permission.
- 9.4 The transactional model of stress: symptoms result from negative appraisals and ineffective coping 282
- 9.5 Examples of mediation and moderation hypotheses in research on traits and stress 285
- 9.6 A structural model for effects of neuroticism and cognitive process variables on stress outcomes 288

Cambridge University Press

978-0-521-88778-6 - Personality Traits, Third Edition

Gerald Matthews, Ian J. Deary and Martha C. Whiteman

Frontmatter

[More information](#)

xvi

FIGURES

	From Matthews, G., Derryberry, D. and Siegle, G. J. (2000) Personality and emotion: cognitive science perspectives. In S. E. Hampson (ed.), <i>Advances in Personality Psychology</i> (vol. 1, pp. 199–237). London: Routledge.	
9.7	An outline of the SREF model of emotional distress and self-regulation	295
10.1	Four causal models for associations between health and personality	302
10.2	A transactional model for vulnerability to cardiovascular disease: interaction of structural weakness and psychosocial vulnerability	320
	From Whiteman, M. C., Deary, I. J. and Fowkes, F. G. R. (1999) Psychological factors and peripheral arterial disease. © <i>Critical Ischaemia Journal</i> , 9, 14–19. By permission of Cambridge Medical Publications; and also from Whiteman, M. C., Deary, I. J. and Fowkes, F. G. R. (2000) Personality and health: cardiovascular disease. In S. Hampson (ed.), <i>Advances in Personality Psychology</i> , vol. 1. East Sussex: Psychology Press.	
12.1	The Yerkes-Dodson Law as an explanation for dependence of extraversion effects on task difficulty and level of environmental stimulation	362
12.2	Interactive effects of extraversion–introversion and sleep deprivation on tracking performance	371
12.3	Part of Humphrey and Revelle’s (1984) model of personality effects on performance	375
	From Humphreys, M. S. and Revelle, W. (1984) Personality, motivation and performance: a theory of the relationship between individual differences and information processing. <i>Psychological Review</i> , 91, 153–84. Published by the American Psychological Association. Reprinted with permission.	
12.4	Possible adaptive functions of the information-processing correlates of extraversion–introversion	377
12.5	An outline of Sarason’s model of test anxiety effects on performance	380
	Sarason, I. G. (1984). ‘Stress, anxiety, and cognitive interference: reactions to tests’. <i>Journal of Personality and Social Psychology</i> , 46, 929–38. Published by the American Psychological Association. Reprinted with permission.	
12.6	Possible adaptive benefits of emotional stability and anxiety	385
13.1	Four possible outcomes of clinical diagnosis, with costs and benefits	402
13.2	A sample item representing the face perception sub-test of the Multi-Factor Emotional Intelligence Scale	424

-
- From Mayer, J. D., Salovey, P. and Caruso, D. R. (2000)
 Competing models of emotional intelligence. In R. J. Sternberg
 (ed.), *Handbook of human intelligence*, 2nd edn. New York:
 Cambridge University Press.
- 14.1 A cognitive-adaptive framework for understanding the
 processing basis for traits 444
 Reprinted from *Cognitive science perspectives on personality
 and emotion*, Matthews, G. (ed.), 'Extraversion, emotion and
 performance: a cognitive adaptive model', pp. 339–442,
 copyright 1997, with permission from Elsevier.
- 14.2 A cognitive-adaptive model of extraversion 445
 Matthews, G. 'Personality and skill: a cognitive-adaptive
 framework'. In P. L. Ackerman, P. C. Kyllonen and R. D.
 Roberts (eds.), *The future of learning and individual differences
 research: processes, traits, and content*, pp. 251–70. American
 Psychological Association, Washington, D.C., 1999. Reprinted
 with permission.
- 14.3 A cognitive-adaptive model of neuroticism/trait anxiety 446
 Matthews, G. 'Personality and skill: a cognitive-adaptive
 framework'. In P. L. Ackerman, P. C. Kyllonen and R. D.
 Roberts (eds.), *The future of learning and individual differences
 research: processes, traits, and content*, pp. 251–70. American
 Psychological Association, Washington, D.C., 1999. Reprinted
 with permission.

Tables

1.1 Ratings of likeableness of some favourable, neutral and unfavourable traits	page 4
From Anderson, N. H. (1968). Likeableness ratings of 555 personality trait words. <i>Journal of Personality and Social Psychology</i> , 9, 272–9. Published by the American Psychological Association. Reprinted with permission.	
1.2 Examples of experimental studies showing correspondences between traits and objective behavioural measures	5
1.3 Correlations between trait descriptive adjectives thought to relate to conscientiousness, agreeableness and intellectance ($n = 1,010$)	15
Reprinted from <i>Personality and Individual Differences</i> , Vol. 15, Matthews, G. and Oddy, K., ‘Recovery of major personality dimensions from trait adjective data’, pp. 419–31, 1993, with permission from Elsevier.	
1.4 Factor solution obtained from correlational data of table 1.3	16
1.5 The fifteen personality traits assessed by the 16PF, with examples of famous individuals exemplifying the traits, and 16PF5 alpha coefficients	21
Adapted from <i>The 16PF Fifth Edition Practical Manual</i> Copyright © 1994 by the Institute for Personality and Ability Testing, Inc., Champaign, Illinois, USA. All rights reserved.	
1.6 Traits associated with the three dimensions of Eysenck’s model of personality	23
1.7 Trait facets associated with the five domains of the Costa and McCrae five factor model of personality	25
1.8 Studies of rating data demonstrating the Big Five	29
1.9 A new factor analysis of Webb’s (1915) trait rating data	30
From Deary, I. J. (1996). A (latent) big five personality model in 1915? A reanalysis of Webb’s data. <i>Journal of Personality and Social Psychology</i> , 71, 992–5. Published by the American Psychological Association. Reprinted with permission.	
1.10 Correspondences between primary traits in four systems	39
From Zuckerman, M. (1995) Good and bad humors: biochemical bases of personality and its disorders.	

Cambridge University Press

978-0-521-88778-6 - Personality Traits, Third Edition

Gerald Matthews, Ian J. Deary and Martha C. Whiteman

Frontmatter

[More information](#)

-
- Psychological Science*, 6, 325–32. By permission of Wiley-Blackwell.
- 2.1 Correlations between judgements of children and their social behaviour as a function of feature-centrality in the judgement and level of situation-competency demand 47
 From Wright, J. C., and Mischel, W. (1987). A conditional approach to dispositional constructs: the local predictability of social behaviour. *Journal of Personality and Social Psychology*, 53, 1159–77. Published by the American Psychological Association. Reprinted with permission.
- 2.2 Factors in an experimental situation that favour the importance of traits or manipulations in accounting for behaviour differences 49
 From Buss, A. H. (1989). Personality as traits. *American Psychologist*, 44, 1378–1388. Published by the American Psychological Association. Reprinted with permission.
- 2.3 Hierarchy of hypotheses from the person–situation controversy, arranged from most to least pessimistic 50
- 3.1 Inter-trait correlations obtained by Conley (1985) 66
 From Conley, J. J. (1985). Longitudinal stability of personality traits: a multitrait-multimethod-multioccasion analysis. *Journal of Personality and Social Psychology*, 49, 1266–82. Published by the American Psychological Association. Reprinted with permission.
- 3.2 Components of temperament described by Buss and Plomin (1984) 71
- 3.3 Strelau’s criteria for differentiating temperament and personality 75
 From Strelau, J. and Zawadski, B. (1995) The formal characteristics of the Behaviour Temperament Inventory (FCB-TI): validity studies. *European Journal of Personality*, 9, 207–29. By permission of Wiley-Blackwell.
- 3.4 Scales of the Formal Characteristics of the Behaviour-Temperament Inventory. 76
 From Strelau, J. and Zawadski, B. (1995) The formal characteristics of the Behaviour Temperament Inventory (FCB-TI): validity studies. *European Journal of Personality*, 9, 207–29. By permission of Wiley-Blackwell
- 3.5 Selected loadings of personality and temperament scales on five factors. 76
 From Strelau, J. and Zawadski, B. (1995) The formal characteristics of the Behaviour Temperament Inventory (FCB-TI): validity studies. *European Journal of Personality*, 9, 207–29. By permission of Wiley-Blackwell

3.6	Aspects of temperament measured by the Adult Temperament Questionnaire Reprinted from <i>Journal of Research in Personality</i> , Vol. 41, Evans, D. E., and Rothbart, M. K., 'Developing a model for adult temperament', pp. 868–88, 2007, with permission from Elsevier.	77
3.7	Correlations between ATQ factor scores and NEO-PI-R FFM scores Reprinted from <i>Journal of Research in Personality</i> , Vol. 41, Evans, D. E., and Rothbart, M. K., 'Developing a model for adult temperament', pp. 868–88, 2007, with permission from Elsevier.	77
4.1	Examples of how different types of factor relate to changes in energetic and tense arousal	100
4.2	Three secondary factors assessed by the Dundee Stress State Questionnaire (DSSQ)	103
4.3	Data from illustrative studies of personality and mood	108
5.1	Examples of empirical psychoanalytic research	127
5.2	A survey of idiographic methods	141
B.5.2.1	Statements describing hopes and fears relating to three motive domains From Sokoloski, K., Schmalt, H-D., Langens, T. A. and Puca, R. M. (2000) Assessing achievement, affiliation, and power motives all at once. The Multi-Motive Grid (MMG). <i>Journal of Personality Assessment</i> , 74, 126–45. By permission of Taylor & Francis Group.	146
6.1	Correlations between adopted children (age 16 years) and adopted, biological and control parents from the Colorado Adoption project From Plomin, R., Corley, R., Caspi, A., Fulker, D. W., and DeFries, J. C. (1998). Adoption results for self-reported personality: not much nature or nurture? <i>Journal of Personality and Social Psychology</i> , 75, 211–18. Published by the American Psychological Association. Reprinted with permission.	165
6.2	Extraversion correlations in four studies of separated twins From <i>Genes and Environment in Personality Development</i> by Loehlin, J. C. Copyright 1992 by Sage Publications, Inc. Books. Reproduced with permission of Sage Publications Inc. Books in the format Textbook via Copyright Clearance Centre.	167
6.3	Genetic and environmental influences of peer-rated personality trait scores in German monozygotic and dizygotic twins From Borkebau, P., Riemann, R., Angleitner, A., and Spinath, F. (2001). Genetic and environmental influences on observed personality: evidence from the German Observational Study of Adult Twins. <i>Journal of Personality and Social Psychology</i> , 80, 655–68. Published by the American Psychological Association. Reprinted with permission.	169

6.4 Genetic and environmental contribution (percentage variance) to the Big Five personality dimensions	169
From <i>Genes and Environment in Personality Development</i> by Loehlin, J. C. Copyright 1992 by Sage Publications, Inc. Books. Reproduced with permission of Sage Publications Inc. Books in the format Textbook via Copyright Clearance Centre.	
6.5 Broad heritabilities of self-report measures of the Big Five Factors	170
With kind permission from Springer Science + Business Media: <i>Behavior Genetics, Genes, evolution and personality</i> . Vol. 31, 2001, 243–73, Bouchard, T. J.	
6.6 Categories of environmental influences that cause children in the same family to differ	176
From Plomin, R., Asbury, K., Dunn, J. (2001) Why are the children in the same family so different? Nonshared environment a decade later. <i>Canadian Journal of Psychiatry</i> , 46, 225–43.	
7.1 A highly simplified description of some different systems for ‘arousal’	211
7.2 Two types of correlate of extraversion	227
Reprinted from <i>Personality and Individual Differences</i> , Vol. 26, Matthews, G., and Gilliland, K., ‘The personality theories of H. J. Eysenck and J. A. Gray: A comparative review’, pp. 583–626, 1999, with permission from Elsevier.	
8.1 Three aspects of personality coherence, within social-cognitive theory	234
From Cervone, D. and Shoda, Y. (1999) Beyond traits in the study of personality coherence. <i>Psychological Science</i> , 8, 27–32. By permission of Wiley-Blackwell.	
8.2 Stages of development of the social self	238
From <i>The Development of Emotional Competence</i> by Saarni, C. Copyright 1999 by Guilford Publications, Inc. Reproduced with permission of Guilford Publications, Inc. in the format Textbook via Copyright Clearance Center.	
8.3 Associations between four traits of the FFM and various aspects of social functioning identified by Jensen-Campbell et al. (2009)	239
8.4 Sample items for generalised self-efficacy	244
Reprinted from <i>Personality and Individual Differences</i> , Vol. 10, Jerusalem, M. and Schwarzer, R., ‘Anxiety and self-concept as antecedents of stress and coping: a longitudinal study with German and Turkish adolescents’, pp. 785–92, 1989, with permission from Elsevier.	
8.5 Use of the ‘strange situations’ paradigm to classify attachment style in young children	246
9.1 Correlations between neuroticism, extraversion and scales of the General Health Questionnaire, in two student samples	274

9.2 Empirical demonstrations of negative appraisals in neurotic and trait anxious individuals	287
10.1 Common psychosomatic conditions as reviewed by Kellner (1991)	320
11.1 Titles of personality disorders recognised in the DSM-IV and ICD10 classification systems	326
11.2 DSM-IV clusters of personality disorders	326
11.3 Brief definitions of the DSM-IV personality disorders	327
11.4 Diagnostic criteria for schizotypal, antisocial and dependent personality disorders	328
11.5 Suggestions for revising the current categorical (e.g., DSM and ICD) systems for classifying personality disorders	333
11.6 Conjoint factor analysis of personality disorder scales and factors from the Eysenck Personality Questionnaire-Revised (EPQ-R) and the NEO-PI-R (after Austin and Deary, 2000; Larstone et al., 2002) Adapted from <i>Personality and Individual Differences</i> , Vol. 28, Austin, E. J., and Deary, I. J., 'The 'four As': a common framework for normal and abnormal personality?', pp. 977–95, 2000, and from <i>Personality and Individual Differences</i> , Vol. 33, Larstone, R. M., Jang, K. L., Livesley, W. J., Vernon, P. A. and Wolf, H. 'The relationship between Eysenck's P-E-N model of personality, and traits delineating personality dysfunction', pp. 25–37, 2002, both with permission from Elsevier.	343
11.7 Items from Hare's Psychopathy Checklist-Revised From Cooke, D. J., and Michie, C. (1997). An item response theory evaluation of Hare's Psychopathy Checklist. <i>Psychological Assessment</i> , 9, 2–13. Published by the American Psychological Association. Reprinted with permission.	345
11.8 A combined analysis of the NEO-PI five factor model of normal personality traits and the DAPP-BQ sixteen factor model of personality disorders From Schroeder, M. L., Wormsworth, J. A., and Livesley, W. J. (1992). Dimensions of personality disorder and their relationships to the big five dimensions of personality. <i>Psychological Assessment</i> , 4, 47–53. Published by the American Psychological Association. Reprinted with permission.	348
11.9 Brain systems associated with Cloninger's three-dimensional system for normal and abnormal personality	351
12.1 Cognitive patterning of extraversion–introversion effects on performance	369
13.1 Definitions of reliability and stability	395
13.2 Definitions of validity	396
13.3 Some common response styles	398

13.4	Two kinds of self-favouring bias identified by Paulhus and John (1998) From <i>Journal of Personality</i> , Paulhaus, D. L., and John, O. P. (1998). Egoistic and moralistic biases in self-perception. The interplay of self-deceptive styles with basic traits and motives, 66, 1025–60. Copyright © 1998. Reproduced with permission of Blackwell Publishing Ltd.	400
13.5	Some implications of the APA Ethics Code for assessment of personality traits	404
13.6	Some personality characteristics of various childhood disorders (see Kamphaus et al., 1995)	406
13.7	Selected correlational data from three meta-analytic reviews of associations between the Big Five and occupational criteria	413
13.8	Four trait complexes identified by Ackerman and Heggestad (1997) From Ackerman, P. L., and Heggestad, E. D. (1997). Intelligence, personality and interests: evidence for overlapping traits. <i>Psychological Bulletin</i> , 121, 19–45. Published by the American Psychological Association. Reprinted with permission.	418
14.1	Three levels of explanation for trait psychology	440
14.2	Empirical findings regarding extraversion–introversion, allocated to different levels of explanation	441
14.3	Empirical findings regarding neuroticism–emotional stability, allocated to different levels of explanation	441

Boxes

1.1 Instruments for measuring the Big Five	<i>page</i> 33
2.1 Taxonomies of situations: towards measurement models?	54
2.2 Are there sex differences in personality traits?	58
3.1 Personality and ADHD	73
3.2 Does personality change in old age?	79
3.3 Early temperament and criminal behaviour	80
4.1 Secrets of happiness: subjective well-being	105
4.2 Extraversion, social activity and positive mood	115
5.1 Dreams: royal road or blind alley?	126
5.2 Measurement of individual differences in basic needs	145
6.1 Towards an evolutionary psychology of traits?	154
6.2 A twin family study	166
6.3 Gene–environment interaction and the cycle of violence in maltreated children	172
6.4 The nonshared environment in adolescent development (NEAD) project	177
7.1 Personality and emotional processing: a functional imaging study	206
7.2 Impulsivity: a problem variable for psychophysiology	220
8.1 Temperament and social learning: development of emotional competence	239
8.2 Social-psychological bases for shyness	252
9.1 A genetic contribution to coping?	273
9.2 Homesickness, stress and personality in students	275
10.1 Conscientious children live longer; cheerful children die younger	304
10.2 Hostility and cardiovascular disease	308
10.3 Recommendations for research into psychosocial factors and cancer	311
11.1 The effect of receiving a personality diagnosis label on the way patients are perceived by psychiatrists	330
11.2 Livesley and colleagues' research programme on the psychometric approach to personality disorder	339
12.1 Probing the cognitive architecture: extraversion and the response selection bottleneck	370
12.2 Jumping to conclusions? Anxiety and predictive inference	382
13.1 Alexithymia	409
13.2 Personality and leadership	414

Preface to the third edition

The first and second editions of *Personality Traits* explicated and consolidated our opinion that the science of personality could be built on a foundation of traits. The first edition had the job of defining the field. It grew out of the growing consensus regarding traits as entities, and particularly well-validated personality trait models. The second edition was more comfortable in the presence of its psychological neighbours. It absorbed the confidence building around traits and trait models and reached out to companion disciplines that could inform personality trait science and also benefit from it. That maturity and integration was the dual driving force for this third edition. It is no longer necessary primarily to be marking territory, to be showing what is and what is not trait land. In this third edition, with personality traits and their models more securely established and connected within psychology, there is more reaching out: to the revisionary critics, who have some interesting new ideas; to the fast-growing sciences that can offer explanations for trait differences; and to the applied fields that are increasingly enjoying the benefits of including personality trait variance in their models. The structure of the book has been retained. Readers will first find out about the distinctive characteristics of traits, then their biological and social foundations, and then how they play out into human life: what traits are and which ones there are, how differences in them come about, and why they matter. The book's message is that traits are tractable and important variants of the human condition. Those variants are still not fully understood, and we have tried to make it clear how much is well established and how much is mysterious. We avoid hand-waving to fill in the gaps. Where there are data we try to explain their meaning and implications clearly. Where there are gaps or chasms we point them out.

The staples of the book's first part have not changed. The principals of traits and the major models are covered and updated. There are interesting challenges. There are still urges to increase traits beyond the still-in-favour five (perhaps plus or minus two). New looks have taken place at higher-order trait variance, with more discussion about the possibility of even a single general personality trait, and what that could mean. There is more emphasis on the lesson that traits are tendencies that play out in situations. Accordingly, the section on interactionism explains how traits act differently depending on the situation, and how understanding more about situations that trigger destructive behaviours opens up potential to help treat psychological problems. A distinctive part of the book that we have

developed is the treatment of psychological states and moods. It is important both to distinguish them from traits and to explain their associations with them. In this new edition there is further articulation of neural bases for emotions. We cover the growing evidence that multiple paths may link traits to individual differences in emotional states. We still think it is important to alert the reader to accounts that are complementary to trait approaches and we highlight new interest in unconscious processes and the development and evaluation of implicit trait measures.

Part two – the causes of personality traits – caused excitement and concern, especially with regard to the biological section. In previous editions, the biological basis of traits has largely meant the behaviour genetics and psychophysiology of traits. Those are still covered in detail, and part of the updating has reflected the increasing prominence of reinforcement sensitivity theory (RST) in personality trait science; the interest from the investment made by Jeffrey Gray. But the real changes have come in the pace of the research on molecular genetics and brain imaging as applied to traits. Both are exciting, and both brought problems. Obvious excitement lies in possibly realising molecular mechanisms and neural networks that provide foundations for trait differences. The problems lie in the facts that the genetic studies have small effect sizes and problems of replication, and that the brain imaging studies can have relatively small numbers of subjects and few attempted replications. One major avenue towards the biological basis of traits are studies that conduct genetically-informed brain imaging examinations using validated cognitive paradigms, such as emotional and social stimulus processing. Examples of this new approach are described and explained. Social foundations of traits are considered too. There is growing evidence for relationships between traits and key social-psychological processes including attachment, self-knowledge and self-regulative motivations.

Part three has grown, reflecting the increasing evidence that traits matter: to mental health professionals, to health psychologists, to cognitive psychologists, and others. Each of these, it is increasingly obvious, will do disservice to their clients and participants – and they will be acting, advising and experimenting suboptimally – if they ignore trait variation. There is more in this edition on research into stress-buffering traits such as optimism, hope and spirituality. New approaches to treat depression, such as mindfulness-based therapies, show promise that a wider set of tools is available for psychologists and other practitioners to help bring about lasting change in levels of distress. The growing evidence for the importance of conscientiousness as a health-related trait is covered. Psychobiological research is showing that emotional triggers, together with biological risk factors, play a role in the triggering of heart attacks. There is further understanding of the place of personality traits in the multiple pathways of risk across the whole life course for complex illnesses such as cardiovascular disease and cancer. We have tried to capture the fascinating development of personality disorders. For decades, the evidence that personality disorder can be captured in continua has been growing. Coverage of this evidence has been a

Cambridge University Press

978-0-521-88778-6 - Personality Traits, Third Edition

Gerald Matthews, Ian J. Deary and Martha C. Whiteman

Frontmatter

[More information](#)

distinctive aspect of all editions of this book. Now, with the evidence becoming more and more solid, we see the dimensional approach to personality disorder waiting in the wings to see if it will appear when the curtain goes up on the fifth revision of the Diagnostic and Statistical Manual for Mental Disorders (DSM-V). Our opinion is that some compromise will emerge between traits and syndrome labels. Applied to human performance, there are increasingly successful information-processing models, especially for anxiety. We are also seeing – as was the case with the brain-imaging studies that are informed by personality variation – that there is more application to traits of theories and methods from cognitive neuroscience. In applied psychology there is increasing acceptance of dimensional models in various fields. There are accumulating data supporting the use of trait-based meta-analyses, especially in organisational settings. There is continued interest in new trait constructs – notably emotional intelligence – which do not always fulfil their initial promise.

This third edition, then, finds traits in rude health and increasing their social networks. The health is ensured by the continued work of able trait mechanics-psychometricians who optimise construct content and measurement. The social networks are growing: because a greater range of biological, neuroscience, psychological, and social scientists are applying themselves to explaining trait variation; and because a diverse range of scientists and practitioners are benefiting from taking trait variation into account. These new partners mean that the reader of *Personality Traits* has to cope with concepts and their interactions from an increasing range of scientific disciplines. There's no escaping that; the human condition lives in a multivariate world.

Gerald Matthews
Ian Deary
Martha Whiteman

Preface to the second edition

The first edition of this book was motivated by the authors' perception that research on personality traits had reached a 'critical mass' that would justify a textbook focusing on the trait as an organising construct for understanding personality. We are gratified by the success of the first edition, which satisfied the need for a book on personality based on modern scientific research. Since the publication of the first edition, other authors appear to be distancing themselves from the traditional Hall of Fame text that we criticised initially. It is a relief to see the Hall of Fame approach receding into the distance so that the teaching of personality can be based on empirical data rather than historical relics.

We appreciate the feedback that we received from colleagues concerning the first edition. These comments helped to shape both the content and organisation of this new edition. We encourage academic faculty, practitioners and students to continue to share their opinions of the text with us. So far as content is concerned, the challenge has been to keep pace with the surge of new data and theorising on traits. In consequence, all chapters have been updated, and readers will note that a high proportion of the studies cited are recent. To better keep up with new developments, we invited a new author to join the original duo: Dr Whiteman brings expertise in health, epidemiology and lifespan aspects of personality.

Recent research confirms our original contention that trait research is becoming ever more interwoven into mainstream psychology. Focal topics as diverse as behaviour genetics, stress and abnormality simply cannot be understood without reference to traits. Several fields of inquiry have seen the extension and elaboration of research that we highlighted in the first edition. Recent psychometric studies largely take the Five Factor model as a reference point, even when seeking to fractionate or collapse its dimensions. The trend towards integration of trait psychology and social-cognitive psychology has accelerated, for example with the important new work on how Agreeableness relates to social behavior. We have also expanded our coverage of self-efficacy. In other cases, we have added much new material to develop more fully topics such as sex differences, brain-imaging studies, molecular genetics, psychopathy and traits in occupational psychology. We have added three new chapters to review in more depth personality across the lifespan, traits and health, and the practical applications of personality trait assessment. Other new research areas include psychophysiological studies inspired by recent work on reinforcement sensitivity, schizotypy, spirituality and the controversial but influential construct of emotional intelligence.

From its inception, the book has aimed to meet the needs of both the researcher requiring an introductory survey of traits, and the student of personality. Thus, we have also responded to feedback on the use of the book for teaching. The layout and structure are better geared to teaching needs: including summaries, space for notes, and more boxes on special topics. In addition, the new chapter on practical application is intended to emphasise the real-world utility of personality assessment (and its limitations) for the benefit of the practitioner.

As a closing thought, it is satisfying to see a valid edifice of personality psychology rising ever higher from its solid foundation in the rigorous assessment of stable traits. The flourishing dialogue between trait psychologists and social psychologists – traditional adversaries – is especially welcome: both sides have much to learn from one another. However, this undoubted success brings new challenges and issues. We have referred already to the potentially overwhelming volume of new research, which raises special difficulties for theory. How can we have a unified theory of personality traits that explains findings from so many disparate subdisciplines, ranging from molecular genetics to high-level social cognitive processes? We have sketched out some tentative suggestions for theory development in the concluding chapter. It is important also to maintain boundaries between core personality research and other disciplines. Social psychology and personality are often seen as a single field, but are there aspects of social psychology that should be sharply differentiated from personality? The possible evolutionary basis for human nature has been much debated of late, but perhaps it is unwise to merge evolutionary psychology with personality. We continue to anticipate the maturation of a trait-based personality science, but we also perceive a need for clarifying the scope of this science. We hope that this text continues to assist both students and working psychologists in grasping the basic principles and findings of research on personality traits.

Preface to the first edition

The stimuli for writing this book were private and public. In our conversations with colleagues in other areas of psychology we have noticed a lack of awareness of recent advances and retreats in personality psychology. In parallel with these conversations, we noticed that textbooks on personality and sections on personality in general psychology texts frequently failed to reflect what was happening in the research journals and at personality conferences. Many psychologists, we found, were under the impression either that traits had perished under Mischel's broadsword in 1968, or that trait theorists were still discussing how many angels were perched on their particular pinhead. Personality texts, more surprisingly, seemed stuck in an arcane formula, variously described as a Dutch Auction or a Hall of Fame. Thus, the typical book on personality has a number of more or less free-standing chapters on 'approaches to personality' handed down largely by great names: Freud, Jung, Maslow, Erikson, Horney, Sullivan, May, Kelly, Rogers. What many of these approaches shared was a lack of current, and often past, academic interest and a lack of empirical evidence or even testability. Within the Hall of Fame, traits appeared as one or two dusty portraits, neither more nor less distinguished than the other works on offer, though perhaps with a little less depth.

The typical book reviewing personality does not adequately represent current personality research. It offers a parallel world where knowledge does not progress and where stories pertaining to human personality are collected irrespective of their validity. The version of traits offered is frequently a straw man that entails a rigidity and narrowness not seen among living trait researchers. One still sees situationism and interactionism portrayed as alternatives to trait models, whereas the truth is that there are no credible situationists who deny the existence of traits and no trait theorists who deny the power of the situation. Situationism and trait theories are complementary, not alternatives, and interactionism is the description of the emergent approach consequent on recognising these truths. This does not deny that some researchers will devote their careers more to studying traits or situations, and there is more than one way to become an interactionist. It is a truism verging on cliché to say that behaviour is multifactorially determined and that there is a reciprocity between the person and the environment. However, this richness may only be captured by systematic empirical research that stakes out the lawful personological and situational (and interactional) factors influencing behaviour.

An accurate exposition of scientific research on personality must break the common mould from which many personality texts have been cast; it must explain to the reader why some personality theories and constructs should be dropped from our consideration, and others need to be recognised as having become married. This book is about contemporary personality research, one which is aware of the historical roots of the field but focuses on constructs with a future as well as a past. Although the treatment of personality is centred on traits, it recognises other empirical approaches. The book makes no expansionist claims for traits, but does assert that other aspects of research on personality may be seen from the vantage point of the trait theorist and may be used in tandem with traits.

The book is not wholly or even largely concerned with the narrow psychometrics of personality traits. As is the case with cognitive abilities, psychometric studies provide a possible classificatory scheme for personality traits that has to look elsewhere for validation. Therefore, whereas some attention must be given to the dimensionality of personality traits, most of the evidence for the validity of traits will come from what we call horizontal and vertical validation. Horizontal validation includes such efforts as finding the same factorial structure for a trait scheme in different groups (sexes, cultures, ages), and finding convergent and discriminant validity when the traits are compared with other related and unrelated psychometric constructs. Vertical validity may look up or down. Upward vertical validation involves finding real-life correlates of trait differences, such as occupational and other life successes and failures, social behaviours, and susceptibility to clinical conditions. Downward vertical validity concerns finding the psychological and biological underpinnings of traits, and involves a variety of approaches from cognitive to psychobiological. Therefore, the richness of psychological research involving traits includes differential, biological, cognitive and social techniques. Thus, whereas the sine qua non of the personality researcher must be a minimum level of psychometric knowledge, the personality researcher must be eclectic in validating traits.

The structure of the book reflects the validation structure outlined above. Part 1 of the book charts the trait domain and attempts to clarify the boundaries between the most agreed upon dimensions. It also examines the relationship between trait theory and its supposed alternatives in the domain of personality. Part 2 deals with the causes of traits, both biological and social. Part 3 concerns some of the consequences of trait differences. Again, it is important to emphasise that, whereas a replicable and generalisable psychometric structure for personality traits is necessary for a theory of personality, it is not sufficient. Sufficiency arises when the origins of traits have been established in valid constructs that lie outside the trait domain, and where there are replicable, significant and objective real-life outcomes of traits in terms of human behaviour. The book gives an idea of the empirical mass of trait theories of personality; compared with other psychological constructs we think that trait theory has come near to the status of a paradigm

in psychological research. Not the least impressive fact about traits is that their influence may be carried in the genetic material.

The book builds an eclectic picture of human personality around traits. It is a call to those interested in human individuality to come and stand on some 'solid ground on the wetlands of personality' (Costa and McCrae, 1995b); as such it welcomes all other empirical approaches to personality. Therefore, the reader will see an attempt to reconcile trait theory with the often-neglected work on abnormal personality, with state research, with social psychology, with situationism, and so forth. Because we have adopted an eclectic approach, some chapters or sections will begin with a description of the explanatory principles of an area of psychological research, and only then move on to the association of that area with trait theory. We contend that all empirical research on personality must ultimately be woven into a comprehensive account of the person, and that perhaps trait theory is a reasonable platform from which to begin. In the treatment of individual topics, the book, because of its breadth, is frequently selective, though never intentionally unrepresentative. Our aim has been to offer the general flavour of an area as well as a dip into some specific noteworthy studies. We have attempted to provide a comprehensive scientific account of contemporary personality research with traits centre stage, and with a strong supporting cast. This has been successfully accomplished in part elsewhere, though usually such books have been written at the level of the research monograph or have had a focus on a narrower range of traits (Eysenck, 1982; Eysenck and Eysenck, 1985; Brody, 1989; Zuckerman, 1991; Costa and McCrae, 1993). The level of the material has been pitched to appeal to interested senior undergraduates, postgraduate students, and career psychologists who wish to catch up on the contemporary scientific study of personality.