

Human abilities
in cultural context

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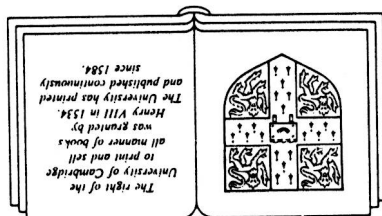
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Any collection runs the risk of becoming a collage that admits no firm focus. At the outset, therefore, we pursue the sharpness of image that all our contributors deserve as a setting for their own work. Consequently, the conceptual frames for the book are to be found in the first chapter, whose title, "The Abilities of Mankind," deliberately echoes Charles Spearman. Although that choice of words may provoke comparison with Spearman's great work *The Abilities of Man*, we beg to limit comparison to one aspect only. Spearman's book was restricted by its data base: Ours is expanded by it. The challenges he set 60 years ago have filled the scholarly journals with data from every continent. The richness and diversity of human ability have been demonstrated in every culture, but the literature is scarcely better known to the great majority of students of human abilities than it was to Spearman himself.

The work of the authors of this volume owes much to empirical sources that are unknown, neglected, and ignored in "mainstream" psychology. A realistic theory of the abilities of man can be founded only on evidence from all of mankind, not from one subgroup. Moreover, the pursuit of scientific truth in any field that has lacked theoretical closure and has consequently suffered an overabundance of speculation is not straightforward: But the effort has to be made if the measurement of individual differences in cognitive skills and abilities is to remain a psychological enterprise worthy of assessment as a contribution to the progress that must be registered when differential psychology comes to terms with both cultural context and cognitive theory: if not this century, then the next.

Early explanation of the structure and emphasis of the book's three parts and their individual chapters is certainly the reader's due, even if providing it proves to be a mild form of self-indulgence. This includes the perspective we sought when we first sketched the project some four years ago. None of our colleagues will be surprised to learn that it began with an ideal – that of having psychologists from all over the world contribute chapters about what they knew had been accomplished in their own countries, or in their own special frameworks, by measuring human abilities. We were able to count on people we had worked with in the field of cross-cultural psychology. We openly approached others whose theoretical advances we knew were

relevant to the appraisal, growth, and survival of tests and testing, even if we had been numbered among their critics. Consequently, many different avenues of research are brought together at last in one volume. Perhaps that uniqueness is its justification, but there is one other that we can think of. A gathering together of diverse points of view, often strongly held and from all over the world, presupposes scientific tolerance. All of our authors, irrespective of citizenship, ethnic origin, or scientific leaning, contribute to that ethos by agreeing to write alongside even those with whom they have sharply disagreed. We ask nothing of our readers except the exercise of that same spirit in their appraisal of the material.

Unfortunately, gaps in our regional coverage were forced on us; and we are well aware of them. There is no Eastern European author, and no South American contribution. These were sought, but eluded us for a number of reasons. But we did try. Moreover, the last manuscript arrived on my desk some considerable time after the first. The result is an unavoidable time warp in the material.

In the end, after tempering idealism with publishing foresight and exercising unaccustomed patience with latecomers, I count myself privileged to be able to work with so many able and original scientists. Above all, I have been fortunate to share the editorial burden with John Berry, whose efforts will be observed, by those who know him, in every part of the book. Much as I value his role as a partner, his friendship over the past twenty years has been irreplaceable.

As co-editors, we decided to present the contents in three sections. The first of these divisions included our attempt at integration: and that effort had to take an early position in support of the title *Human Abilities in Cultural Context*. Hence, in the very first chapter, we provide a revaluation of theory, setting our rationale to work by constructing a taxonomy of empirical data types. We then use it for systematic appraisal of findings. We describe this revaluation as a "metatheory," a set of *prescriptions* for theory construction to be applied whenever comparisons of human performance on tests or tasks is part of the database. In demonstrating how to apply a taxonomic approach to existing data we have tried to be as demanding of our own work as we have of others'.

Central to our argument is the proposition that *Spearman's law of positive correlation* among all intellectual tasks has to be reconciled with *Ferguson's law of cultural differentiation*. Ferguson's law predicts differences in human performance that are functions of ecological press to learn skills and strategies of adaptation. We consider the definition of ability to be incomplete without accounting for cultural and biological differences; and we judge the systematic analysis of the data we have at hand to be a major requirement in that definition.

Robert Sternberg's chapter on triarchic theory accompanies, and illuminates, that part of the volume given to holistic theory construction. Holistic theories stress the need to understand the logic of ability constructs. Hence, Sternberg's latest attempt to relate his own contributions to cross-cultural

contexts is an important recognition that as we approach the end of the twentieth century, mental measurement has at long last had to accommodate cultural pluralism. Context has come in from the cold.

Part I has two further emphases. One of these, provided by Arthur Jensen and Hans Eysenck, is called *biometric fundamentalism* because it represents a consistent quest for a set of measures of ability with an emphasis on physiological functions. Both writers seek to extend the range of measures of ability by assessing the speed of information transmission in the cortex. This focus, exemplified by Jensen and Eysenck but by no means unique to them, on physiological measures has been controversial and not without emotion. We contribute to the discussion by juxtaposing paradigm and inferential differences in a fast-growing field where resolution can be achieved by considering the evidence on its scientific merits, and only on its merits. The target of those who pursue physiological paradigms is an *alternative method* of measuring intelligence; and a multimethod frame is a prerequisite of construct validity. A verdict on present claims for the success of any new method will take time and patient science.

The rest of the theoretical section is devoted to psychometric explanations of how intellect structures have been mapped. We are much indebted to a comprehensive essay on the traditional factor-analytic approach to abilities by Joseph Royce. The reliance on domain studies that have used factor analysis has characterised the theory construction since Spearman and Thurstone first debated the meaning of correlation matrices. One could hardly hope to have a more scholarly explanation of the strengths and weaknesses of inference from correlations. Type Poortinga also outlines a structuralist approach to test use by concentrating not on test totals but on *test items as stimuli*. On the surface, the chapter on *item bias* is about items that fail to behave consistently. Across cultures and within them, the identification of "rogue" items becomes an implicit statement about cognitive differences. The goal is to turn that implication into an explicit cognitive theory. In that pursuit, Poortinga and van der Flier represent a distinguished Dutch school of psychometrics in which the names of Martin Ippel, Cees Groot, Gideon Mellenbergh, and Fons van de Vijver are well known.

Significantly, Poortinga began his investigations into item behaviour in Southern Africa, and, note well, on *choice reaction times* long before their present vogue. That he did so is no small tribute to the vision, steadfastly held, of one of his mentors, Helmut Reuning, whose laboratory housed Poortinga's definitive work. Reuning's experimental rigour is apparent in Chapter 17 on Kalahari Bushmen, which appears in Part III. Their early awareness of the complexity of the "simplest" stimuli has been marked by a sensitivity to the pitfalls of psychometric measurement that one wishes could be transferred to every test user in every culture. Poortinga's unheralded African work on reaction times and item bias is today no longer a curiosity: It is a paradigm for theory construction based on the precise identification of any stimuli for which equivalence between groups may not be assumed.

A movement from theoretical frames of reference to *operational defini-*



tions can be observed in Parts II and III. In Part II the emphasis is on *the mainstream response to testing on a regional or national basis*. Paul Kline attempts to assess the rise and fall of a scientific subculture exerting strong influence on psychometrics in Britain; and he realistically asks where the psychologists of today are to be trained in the skills of human assessment if the major departments of psychology in his country hardly acknowledge its existence. In a psychological world exclusively of cognitive experiments, individual differences are consigned to the error term. Tony Vernon, with Douglas Jackson and Sam Messick, traces the thinking that has defined the American approach to culture in testing. No neglect of individual differences research has been witnessed there. One realises that the centre of gravity of North American cultural studies has been in what we call "enclave" research. The main difference between this and cross-cultural testing is the application of unaltered or unadapted instruments to enclaves. In cross-cultural test studies the major effort of the investigator is directed at altering standard methods or devising new ones in pursuit of construct validity. Meanwhile, the United States remains the world's largest user, and exporter, of tests and test products.

The technology that was perfected within the limits of postwar theory has dominated the world's operational use of tests. One of the most apt examples of the dependence of the rest of the world on American technology is available in the chapter by Hagtvet and Undheim on the Norwegian experience of testing. Wechsler has become a household word among Norway's psychometricians. Scientific enquiry proceeds, nevertheless, almost in spite of its instruments. When they break down in translation, theory is put at risk. As theoretical clarification has been sought in the modification of imported tests, the Norwegian work has given cautious definition to modern cultural contexts that qualify the meaning of test scores in cross-national comparisons.

From the North Sea to the Bosphorus, the American influence is dominant, only Piagetian enquiry emerging as a different, and consistently European, accent. The Norwegian and Mediterranean cultural heritages and ecologies are very different, but they are linked by their reliance on North American tests. In a chapter of meticulous scholarship and balance, Cigdem Kagitcibasi and Isik Savasir have, perhaps wisely, invoked Piaget as often as Wechsler in the first fully comprehensive account of work in the Eastern Mediterranean. This developmental approach is nicely contrasted with classical psychometrics in the chapter by Daphne and John Keats, whose account of developments in Australia adds to the already formidable contribution of Australian psychology. An identity, perhaps even a positive self-concept, is emerging in a subcontinent whose very size will dictate an adaptation of the tools of testing to its regional needs and ethnic pluralism. Those who wish to complete this picture of Australian progress should read Chapter 16, by Zpys Klich, on psychological research among Australian aborigines.

The contribution of research among Africa's peoples south of the Sahara to defining the limits of psychological measurement has already been marked, although much of it initially stemmed from the interests of expansion, A vast natural laboratory of custom, language, habit, and tribal migrations, Africa has nurtured for centuries an extended range of human variability. This heterogeneity has been captured in the publications of those who have used tests and tasks on that continent. So extensive is the African bibliography on ability testing that current problems in measurement among minorities in America and Europe can be seen to have surfaced in Africa decades ago, with sustained attempts at resolution that have been ignored or overlooked.

Because of this extensive but sparsely acknowledged legacy of work in measurement, Ian Kendall, Mary Ann Verster, and Jorrie Von Mollendorff have been able, in their chapter on the abilities of the peoples of Africa south of the Sahara, to create a work of significance for psychology as a whole. They show that when industrial technology has been exported from the West, the test technology that predicts worker success in that industrial context always transfers across cultures. Field-tested adaptations to test procedures and renorming are usually needed; but the test constructs survive transplantation. This finding says as much about western work organisations and school systems as it does about the nature of human abilities. And with clarity of hindsight from literature that goes back seventy years, Kendall reminds the reader that one should not seek to explain test results as if they were unalloyed functions of basic human skills in Africa, or indeed any other place. The social context of assessment is central to the meaning of the test score.

No book on human abilities written since 1940 could be said to be complete without reference to, or better still a contribution from, the late Phillip Vernon. Testimony to his complete range of interests and powers of synthesis can be found in his collaboration with the distinguished Japanese psychologist Saburo Iwawaki, and also with Jimmy Chan, whose influence on assessment in Hong Kong has been consistent and pervasive. The result of these partnerships is a comprehensive statement of the consequences of administering psychological tests to dominant Asian cultures that have undergone swift technological change. The consistencies in the outcomes of testing Chinese and Japanese subjects underline the need for sound theory and construction when replications survive experimental idiosyncrasies to merit a causal explanation.

Part III deals with the outer limits of testing, in minorities or in groups threatened by cultural extinction who have survived through group maintenance rather than incorporation by the majority. Cross-cultural psychologists have come to realise that standard western psychological tests are not good fits for the psychology of the groups undergoing ecological threat. They represent attempts by psychologists to construct a cognitive universe with a limited sample of measures, on groups whose adaptation to stressful en-

vironments has demanded behavioural patterns that stretch the limits of human survival. Thus stated, it reads like weak science. Nevertheless, the chapters given to us in Part III do show one consistent trend. Minority cultures, or cultures for whom test adaptations or translations have to be made, always reveal "deficits" when test averages are compared. Although this may not be out of the ordinary when minority status is confounded with clear ethnic differences, Chapter 20, by John Verster and Roelf Prinsloo, shows that the Afrikaans-speaking minority test performance was not always on a par with that of its English-speaking peers, and for no obvious reason. Almost a mini-book by itself, Part III is perhaps the most powerful scientific commentary in print dealing with the common practice of equating deficits with differences in test performance by indigenous and migrant minorities.

Although all minorities seem to suffer when their test scores are compared with those of majorities, native, or indigenous, cultures are particularly vulnerable. Chapter 15, by Damian McShane and John Berry, is comprehensive and to the point. Their exhaustive review of the research into North American Native test performance shows that any group failure to approach the Euramerican norms provided in the test manual has been interpreted as part of a generalised "D" or deficit model, implying a lack of cognitive competence for a variety of reasons. The assumptions that lead to "D" models of Native achievement are never stated, let alone satisfied, in the design of the experiments themselves. Consequently, McShane and Berry set no great store by many of the published sources as hard evidence for theory construction: and they are not alone in their vote of no confidence in much of the enclave research conducted in America and Europe. Inferential leaps from performance differences to cognitive deficits have been made in the literature routinely and erroneously.

Almost all of the chapters in Part III are written by psychologists with "insider" experience of the groups they represent, either by membership or through long periods of fieldwork and training in the cultures they write about. J. P. Das and Amulya Kanti Satpathy Khurana give first-hand accounts of their recent work on caste and cognition in India; and Gajendra Verma surveys, as a long-time resident in Britain, the social and educational contexts of the achievements of migrants from the subcontinent of India and from the Caribbean. Zpys Klich, in spite of a heavy field commitment, provides a key statement on the claims for specialised aptitudes among Australian Aborigines. His direct and readable chapter portends lively debate in the resolution of the issues he raises. In similar vein, there is a retrospective by Helmut Reuning on the experimental programme he pioneered among the Kalahari Bushmen. His rigorous approach, without equal in the cognitive literature on vanishing groups of mankind, has been in print for almost a quarter of a century but has yet to be integrated into theories of ability through exposure in prestigious journals. His achievements, and their challenges, speak for themselves.

We welcome just as keenly the sober and balanced critique and review

of the literature on the testing of white minorities in South Africa by John Verster and Roelf Prinsloo. The bitter scientific debates of the 1950s and 1960s within South Africa about the material they so cogently present should remind us all that time has to pass before the wounds that science may inadvertently inflict on society heal well enough for progress to be made. The United States is still too close to the anti-test sentiment aroused by publicity given to minority testing in the late 1960s and early 1970s for a dispassionate evaluation of the work carried out in those years. The time will soon be ripe, nevertheless; and one suspects that a judgment on that decade is already forecast in Verster's conclusions about the South African controversies.

Our own fieldwork and background predispose us to a general (and probably biased) conclusion. The African experience of tests, since the early years of the century, is a microcosm of what the rest of the world endures whenever testing becomes too closely allied with power to decide the education and work prospects of the citizens of any country. The late Alec Rodger concluded that tests had to be technically sound, administratively convenient, and politically defensible. While scientific efforts are directed towards satisfying the first of these criteria, people judge tests by whether they exercise undue political control over their opportunities and aspirations. The evidence from the book's comprehensive coverage of test use in enclaves and minorities requires that test use in groups who have no power to moderate the political consequences of testing be fully justified. That has not always happened in the past. We can only hope that future research in cultural contexts will be more enlightened.

Finally, we have dedicated this book to five grown-ups whom only yesterday we thought of as our children. Thus we complete the family circle, a context that we emphasised above all when we dedicated our first joint volume, *Human Abilities and Cultural Factors*, to Margaret and Joan.

S.I. and J.B.

Plymouth, Devon
March 1988

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Much of the gratitude we wish to express is implicit in what has been already been written in the Preface by way of introduction to our authors. We thank our contributors from all five continents for their patience over the past four years. Without their efforts we could not have realised our aim of letting them write for themselves about the abilities of mankind. They take any credit that is due, and we willingly accept blame for any errors in representing them to their readers.

It is no accident, either, that this volume has been produced in a supportive and tolerant Department of Psychology within an institution of higher technological education committed to promoting the discipline in spite of hard times in the social sciences. My colleagues in Plymouth Polytechnic have received no mention until now, but I hope they will have good reason to believe that my desire to publish has neither damned their reputation nor perished their kindness.

S.I. and J.B.
March 1988

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