

# "Revised" ≠ Updated

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## Source Information

February 1989, [Volume34\(Issue2\)](#)Pages, p.140To - 141 -  
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**Book Reviewed:** Intelligence: Its Structure, Growth and Action. Raymond B. Cattell. Amsterdam: North-Holland, 1987 694 pp.. ISBN 0-444-87922-6

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This is a revised version, with a partly revised title, of Cattell's 1971 text, *Abilities: Their Structure, Growth and Action*, of which I have written a fairly extensive and generally laudatory review (Jensen, 1974). Since *Abilities* had gone out-of-print, a new edition of this major work by one of the world's leading psychologists was called for, and North-Holland has produced it with an entirely new and perhaps more attractive typesetting, but at a retail price more than five times that of the 1971 edition. Unfortunately, the reproduction of several figures (8.1, 9.2, 9.3, 10.1) that depend on variously shaded areas is markedly inferior to the original version, and in one case (8.1), this lack of the original shading results in actual error by indicating that the human brain's frontal lobes are "areas of stored sense impressions and associations" (p. 217).

Because the revised edition is essentially the same as the 1971 volume, the gist of what I stated in my 1974 review still stands. There is the remarkably broad coverage of the traditional topics in the field of abilities, such as factor structure, physiological and neurological bases of abilities, evolution, sex and age, heredity and environment, genius and creativity, artificial intelligence, race and culture, interaction with personality, and societal correlates of intelligence. In addition, we are given the fullest available, and obviously the most authoritative, exposition of Cattell's own contributions to research and theory in this field, mainly his formulation of fluid and crystallized intelligence, and his triadic "investment" theory of the origins and development of human abilities. Presumably, the present volume offers Cattell's latest word on these topics, and for future expositors of theory and research on human abilities, it will serve as the definitive reference to Cattell's contribution.

Although Cattell draws on an immense and diverse literature, his treatment of the subject cannot really be called eclectic. But anyone familiar with Cattell's major works would hardly expect the judiciously balanced eclecticism that some textbooks aim for. Cattell's own viewpoint predominates completely, and the wealth of psychological material gleaned from Cattell's vast knowledge of the

literature simply embellishes the overall picture like the myriad detailed brushwork of an artist's painting. The writing is a far cry from the often simple and didactic style of the typical textbook, but so much so, I fear, that its use as the main text, even in a graduate course, would seem inadvisable, besides the fact that as a textbook it is now too outdated, which the revision does almost nothing to remedy.

Cattell makes little concession to readers who lack a solid background in psychometrics and factor analysis. Even granted those prerequisites, students who have not previously acquired some conceptual map of this whole formidable seascape, or at least a few sturdy moorings, would likely flounder and sink, probably not far beyond the brief introductory chapter. But professionals in the field of abilities, advanced graduate students, and especially instructors in courses on intelligence and individual differences who read this book will encounter a wealth of thought-provoking information, speculation, and opinion about most of the traditional issues in this field. Even at points where one may disagree and feel compelled to argue, one gets the feeling of tangling with an amazingly rich and far-reaching intellect. Cattell's impressive erudition and experience in psychological research are, of course, legendary, and they were fully brought to bear in the original edition of this work.

The revised version, alas, can scarcely be called a revision in the sense suggested by its preface, which states that the 1971 book is "brought up to date by the events of recent years" (p. ix) and goes on to suggest that the revised edition brings a new emphasis to the physiology and anatomy of abilities. Mention is also made in the preface to the extension of ability studies by the followers of Piaget and to the work of Baltes and others at the Max Planck Institute about the "life curves" of intelligence. Indeed, there have been some important developments in all these areas since 1971. But strangely, no reference to them can be found in this revised edition. For example, the one chapter ("The Physiological and Neurological Bases of Intelligence") for which we are led to expect the most extensive revision contains only five new paragraphs and not a single cited reference to any research that was not previously referenced in the 1971 edition. There are no new references to anything about Piagetian theory, or to any of the prolific and impressive research of Baltes since 1968. Revision of the chapter on heredity and environment adds one page and one table of relatively unimportant material, yet retains the long since discredited heritability studies by Cyril Burt.

In this revision, the main topics of the field, aside from Cattell's own work, simply have not been updated in the least. The 36 pages of references contain only 25 new entries; all but 6 of them are to Cattell and his associates. The six new references are to peripheral issues and add virtually nothing substantively important. Conspicuously absent is acknowledgment of any of the significant developments in this field since 1971, a period of greater progress in intelligence research than at any previous time in the past 50 years. Only a single reference is made to anything that has appeared in the journal, *Intelligence* (the leading journal in the field since 1977), and there is not one reference to *Behavior Genetics* (published since 1970), or to any book (except two by Cattell) on abilities or intelligence that has appeared since 1970. Such prominent contributors to intelligence research as Bouchard, Detterman, Estes, Gustafsson, Pellegrino, Plomin, Scarr, Shepard, and Sternberg are not in the author index. A minor annoyance: Some recent studies are mentioned (e.g., Weyl, p. 213 and Flynn and Lynn, p. 568) but not referenced or indexed, and some of the "in press" references in the 1971 edition have not been updated.

I regret to conclude that the lack of a generally and genuinely updated revision of Cattell's volume unfortunately renders it too out-of-date in 1988 to serve as a satisfactory textbook on intelligence. As Cattell's fullest statement of his position, however, it will be regarded as one of the landmarks in the literature on human abilities.

## References

- | Number | Reference  |
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| 1.     | [Review of Abilities: Their structure, growth and action]. <i>American Journal of Psychology</i> , v.87, p.290, 1974, Jensen A. R.<br><a href="#">Read It Here</a> |