

Assessing Adolescent and Adult Intelligence

Third Edition

Alan S. Kaufman

Elizabeth O. Lichtenberger



JOHN WILEY & SONS, INC

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For Nadeen, For Always

La Bohème, Act IV

MIMI:

Sono andati? Fingevo di dormire
perchè volli con te sola restare.
Ho tante cose che ti voglio dire,
o una sola,
ma grande come il mare,
come il mare profonda ed infinita.
Sei il mio amor e tutta la mia vita.

Have they left us? I was pretending to sleep
to be alone with you.
So many things to tell you,
but really just one,
that is as huge as the ocean,
and as deep and infinite.
You are my love and my whole life.

RODOLFO:

O mia bella Mimi!

My beautiful Mimi!

MIMI:

Son bella ancora?

Am I still beautiful?

RODOLFO:

Bella come un'aurora.

Beautiful as the dawn in Springtime.

A. S. K.

For Mike, for everything

For everyone on this earth,
there will always be
one special someone to love.
For me,
there will always be
You.

E. O. L.

C O N T E N T S

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PREFACE TO THE THIRD EDITION

The Second Edition of *Assessing Adolescent and Adult Intelligence*, published in 2002, was a thorough revision of the original 1990 text. A comprehensive revision of the 1990 text was necessary because the Wechsler scale featured in the First Edition (the WAIS-R) was replaced on the clinical scene by the WAIS-III, and because much pertinent research had been conducted in the 12 years that elapsed between the two editions. In contrast, this Third Edition, published only four years after the previous edition, represents only a slight revision of the text. The WAIS-III is still the most recent version of Wechsler's adult scales and continues to be featured in this edition. Indeed, the 15 chapters that composed the Second Edition are retained intact in the Third Edition. However, four Appendixes have been added to the book, all of which concern the interpretation of the WAIS-III.

Flanagan and Kaufman (2004) developed a new theory-based approach to the interpretation of the WISC-IV that they featured in their book *Essentials of WISC-IV Assessment*. Several of our colleagues inquired whether this new method of profile interpretation, developed from Cattell-Horn-Carroll (CHC) theory, could be applied to the WAIS-III. The answer was "Yes," but a translation of the new system to the WAIS-III required reconceptualization (because the WISC-IV and WAIS-III contain different sets of sub-

tests), review of the recent WAIS-III literature on test interpretation, and the development of new interpretive and norms tables. We decided to do the work necessary to translate the WISC-IV system to the WAIS-III, and to append the new interpretive system to the existing set of chapters.

Appendixes A, B, C, and D are included in the Third Edition to provide examiners with an alternative system for interpreting the WAIS-III—specifically an analog of the CHC approach that Flanagan and Kaufman developed for the WISC-IV. The "sequential" and "simultaneous" interpretive approaches that we developed for the WAIS-III in the Second Edition of this book are still featured in Chapters 11 and 12 and remain viable systems for interpreting the WAIS-III. However, the new theory-based method that is presented in depth in the Appendixes provides a useful alternative approach, one that examiners may use instead of—or as a supplement to—the more traditional methods described in Chapters 11 and 12. The Appendixes in the Third Edition of this book incorporate important research conducted by Flanagan and Kaufman, Tulsy and his colleagues, and Longman, and deals with a vital aspect of Wechsler assessment—namely theory-based profile interpretation. The Third Edition, therefore, reflects an important enhancement of the previous edition of this text.

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ALAN S. KAUFMAN
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IQ Tests: Their History, Use, Validity, and Intelligent Interpretation

The field of intelligence, particularly of adolescent and adult mental development, has dominated the psychological literature for decades, and now encompasses a diversity of domains within cognitive psychology, clinical psychology, psychobiology, behavioral genetics, education, school psychology, sociology, neuropsychology, and everyday life. Excellent handbooks are available with chapters written by experts in many aspects of intellectual theory, measurement, and development (e.g., Flanagan, Genshaft, & Harrison, 1997; Groth-Marnat, 2000), and even these texts cover only a portion of the territory and quickly become outdated. Consequently, in writing this text on the assessment of adolescent and adult intelligence, we have had to make several decisions about which areas to include and how thoroughly to cover each topic.

First, this book focuses on the clinical assessment of intelligence, and every topic must bear, either directly or indirectly, on the clinical aspect of mental measurement. Because clinical assessment within the fields of neuropsychology, special

education, and clinical, school, and counseling psychology involves individual evaluations, research on group-administered tests is subordinated to the more pertinent research on individual intelligence tests. The 1990 version of this text covered group-administered intelligence tests to some extent. However, the adolescent and adult assessment scene has changed during this past decade, with clinicians having options beyond Wechsler's tests. Whereas the Wechsler Adult Intelligence Scale—Third Edition (WAIS-III; Psychological Corporation, 1997; Wechsler, 1997) is still the most used test, and is clearly the featured instrument in this revised text, the availability of a variety of new in-depth and brief intelligence tests, and a proliferation of research on these instruments, has impelled us to focus on individually administered intelligence tests.

For example, the monumental efforts of Schaie (1958, 1983b, 1994) and his colleagues (Hertzog & Schaie, 1988; Schaie & Labouvie-Vief, 1974; Schaie & Strother, 1968; Schaie & Willis, 1993) to understand the development of

adult intelligence have been based on the group-administered Primary Mental Abilities Test. The key findings from these innovative cross-sequential studies are of interest to psychology in general, but have limited applicability to the work of clinical and neuropsychological practitioners. Consequently, investigations by Schaie will only be discussed in the context of aging studies on clinical instruments (e.g., Kaufman, 2000b, 2001; Kaufman & Horn, 1996), especially the WAIS-III, WAIS-R (Wechsler, 1981) and Kaufman Adolescent and Adult Intelligence Test (KAIT; Kaufman & Kaufman, 1993).

Consistent with the focus on clinical tests of intelligence, we have also eliminated sections and chapters from the first edition on clinical tools that are only tangentially related to IQ assessment, most notably neuropsychological instruments, adaptive behavior surveys, and individual achievement tests.

OUTLINE OF THE BOOK

Assessing Adolescent and Adult Intelligence (2nd ed.) has five parts:

- I. Introduction to the Assessment of Adolescent and Adult Intelligence (Chapters 1–3)
- II. Individual Differences on Age, Socioeconomic Status, and Other Key Variables (Chapters 4–5)
- III. Integration and Application of WAIS-III Research (Chapters 6–9)
- IV. Interpretation of the WAIS-III Profile: IQs, Factor Indexes, and Subtest Scaled Scores (Chapters 10–12)
- V. Additional Measures of Adolescent and Adult IQ (Chapters 13–15)

Part I includes: Chapter 1, which discusses pertinent historical information, issues regarding validation of the IQ construct, and our philosophy of intelligent testing; Chapter 2, which discusses pressing issues and challenges to the IQ concept (e.g., heritability and malleability of the

IQ); and Chapter 3, which provides the rationale for the WAIS-III subtests for adolescents and adults and traces the empirical and logical continuity from the Wechsler-Bellevue to the WAIS to the WAIS-R and to the WAIS-III.

Part II presents research on individual differences in intelligence associated with pertinent background variables on the WAIS-III and other instruments, notably gender, ethnicity, socioeconomic status, and urban–rural residence (all treated in Chapter 4), and aging across the adult lifespan (Chapter 5).

Parts III and IV are devoted to the WAIS-III and, occasionally, its predecessors (e.g., WAIS-R) or “alternate-form” at age 16 (WISC-III). In Part III, the focus is on research, delving into topics such as administration and scoring (Chapter 6), factor analysis (Chapter 7), and Verbal Performance (V-P) IQ differences, especially as they pertain to lateralized brain lesions (Chapter 8) and other clinical disorders (Chapter 9). The three chapters of Part IV (Chapters 10, 11, and 12) are all devoted to an empirical and clinical approach to interpretation of the WAIS-III multiscore profile.

Part V is composed of three chapters; each focuses exclusively on additional (non-Wechsler) measures for adolescent and adult assessment and integrates them with the WAIS-III: the KAIT (Chapter 13), the Woodcock-Johnson—Third Edition or WJ III (Chapter 14, authored by McGrew, Woodcock, and Ford), and a variety of brief tests of intelligence (Chapter 15). The tests discussed in the latter chapter, for example, the Peabody Picture Vocabulary Test—Third Edition (PPVT-III), the Kaufman Brief Intelligence Test (K-BIT), and the Wechsler Abbreviated Scale of Intelligence (WASI), may be used as supplements to the WAIS-III, KAIT, or WJ III, or may be used instead of comprehensive intelligence tests in certain circumstances (e.g., screening or research purposes).

The discussion of non-Wechsler tests in Part IV is essential to round out the cognitive assessment scene, but the WAIS-III, like the WAIS-R, WAIS, and Wechsler-Bellevue before it, remains the key tool for clinical and neuropsychological evaluation of adolescents and adults and, hence,

the focus of all sections of the book. The chapters on clinical applications of intelligence tests, along with the previous parts of the book, place the focus of this text squarely on the WAIS-III.

Wechsler's Scales

Even a casual observer of the clinical or neuropsychological assessment scene is aware that Wechsler's scales are uncontested as the primary cognitive measures of adolescent and adult intelligence. Individuals in their teens and adults of all ages are invariably administered the Wechsler Intelligence Scale for Children—Third Edition (WISC-III; Wechsler, 1991) or the WAIS-III when they are referred to a competent professional for a thorough assessment of their intellectual abilities, usually as part of a clinical, vocational, neuropsychological, or psychoeducational evaluation. The WISC-III is used for adolescents as old as 16 years, while the WAIS-III is used for individuals aged 16 to 89. Therefore, they overlap at age 16, giving clinicians a choice of Wechsler test for that age group.

Using the WISC-III as a clinical and psychometric tool has been discussed elsewhere in a comprehensive text (Kaufman, 1994a). For practical purposes, then, this book is primarily devoted to the WAIS-III, child of the WAIS-R (Wechsler, 1981), grandchild of the WAIS (Wechsler, 1955), and great-grandchild of the Wechsler-Bellevue Form I (Wechsler, 1939).

Clinical Relevance of Theory

To be included in this book in any depth, a topic needs to contribute to a psychologist's understanding of intelligence in the clinical arena, not in the laboratory. For example, the Cattell-Horn-Carroll (CHC; McGrew & Flanagan, 1998) theory—an amalgam of Horn's (1989) expansion of Horn-Cattell Gf-Gc theory and Carroll's (1993, 1997) model of intelligence—is treated throughout the book because it is instrumental in explaining changes in verbal and nonverbal abilities with advancing age, and it (or Horn-Cattell theory) underlies three tests of adolescent and adult in-

telligence: the Woodcock Johnson Psycho-Educational Battery—Third Edition (WJ III; Woodcock, McGrew, & Mather, 2000), the Stanford-Binet Intelligence Scale, Form IV (Thorndike, Hagen, & Sattler, 1986a), and the KAIT (Kaufman & Kaufman, 1993). In contrast, Sternberg's (1985) three-pronged triarchic theory of intelligence, though popular and widely discussed, is not emphasized because of its limited application to clinical assessment and the interpretation of the WAIS-III and other individual intelligence tests. Currently the Sternberg Triarchic Abilities Test (Sternberg, 1993), a group-administered measure, is available as an unpublished research instrument available from its author. However, if it is ever adapted as an individually administered, commercially published, standardized measure that translates laboratory principles to the domain of the clinical psychologist, neuroclinician, and psychoeducational diagnostician, the theory may become even more popular.

In addition, other theories of intelligence such as Gardner's (1993a, 1993b) theory of multiple intelligences—which defines intelligence as the ability to solve problems, or to create products, that are valued within one or more cultural settings—is also not emphasized in this book. The theory of multiple intelligences calls for measuring intelligences by asking individuals to solve problems in the contexts in which they naturally occur. Although the multiple intelligences theory has attracted much attention in the fields of cognition and education (Kornhaber & Krechevsky, 1995), thus far its practical application to clinical assessment and the interpretation of the WAIS-III and other major standardized individual intelligence tests is limited.

A SHORT HISTORY OF IQ TESTS

The history of intellectual assessment is largely a history of the measurement of the intelligence of children or retarded adults. Sir Francis Galton (1869, 1883) studied adults and was interested in

giftedness when he developed what is often considered the first comprehensive individual test of intelligence (Kaufman, 2000a). But despite Galton's role as the father of the testing movement (Shouksmith, 1970), he did not succeed in constructing a true intelligence test. His measures of simple reaction time, strength of squeeze, or keenness of sight proved to assess sensory and motor abilities, skills that relate poorly to mental ability, and that are far removed from the type of tasks that constitute contemporary intelligence tests.

The Binet-Simon Scales

Alfred Binet and his colleagues (Binet & Henri, 1895; Binet & Simon, 1905, 1908) developed the tasks that survive to the present day in most tests of intelligence for children and adults. Binet (1890a, 1890b) mainly studied children; beginning with systematic developmental observations of his two young daughters, Madeleine and Alice, he concluded that simple tasks like those used by Galton did not discriminate between children and adults. In 1904, the Minister of Public Instruction in Paris appointed Binet to a committee to find a way to distinguish normal from retarded children. But 15 years of qualitative and quantitative investigation of individual differences in children—along with considerable theorizing about mental organization and the development of a specific set of complex, high-level tests to investigate these differences—preceded the “sudden” emergence of the landmark 1905 Binet-Simon intelligence scale (Murphy, 1968).

The 1908 scale was the first to include age levels, spanning the range from III to XIII. This important modification stemmed from Binet and Simon's unexpected discovery that their 1905 scale was useful for much more than classifying a child at one of the three levels of retardation: moron, imbecile, idiot (Matarazzo, 1972). Assessment of older adolescents and adults, however, was not built into the Binet-Simon system until the 1911 revision. That scale was extended to age level XV and included five ungraded adult

tests (Kite, 1916). This extension was not conducted with the rigor that characterized the construction of tests for children, and the primary applications of the scale were for use with school-age children (Binet, 1911).

Measuring the intelligence of adults, except those known to be mentally retarded, was almost an afterthought. But the increased applicability of the Binet-Simon tests for various child-assessment purposes dawned on Binet just prior to his untimely death in 1911: “By 1911 Binet began to foresee numerous uses for his method in child development, in education, in medicine, and in longitudinal studies predicting different occupational histories for children of different intellectual potential” (Matarazzo, 1972, p. 42).

Terman's Stanford-Binet

Lewis Terman was one of several people in the United States who translated and adapted the Binet-Simon scale for use in the United States, publishing a “tentative” revision (Terman & Childs, 1912) 4 years before releasing his painstakingly developed and carefully standardized Stanford Revision and Extension of the Binet-Simon Intelligence Scale (Terman, 1916). This landmark test, soon known simply as the Stanford-Binet, squashed competing tests developed earlier by Goddard, Kuhlmann, Wallin, and Yerkes. Terman's success was undoubtedly due in part to heeding the advice of practitioners whose demand “for more and more accurate diagnoses ... raised the whole question of the accurate placing of tests in the scale and the accurate evaluation of the responses made by the child” (Pintner & Patterson, 1925, p. 11).

But, like Binet, Terman (1916) saw intelligence tests useful primarily for the detection of mental deficiency or superiority in children and for the identification of “feeble-mindedness” in adults. He cited numerous studies of delinquent adolescents and adult criminals, all of which pointed to the high percentage of mentally deficient juvenile delinquents, prisoners, or prostitutes, and concluded that “there is no investigator who denies

the fearful role played by mental deficiency in the production of vice, crime, and delinquency” (p. 9). Terman also saw the potential for using intelligence tests with adults for determining “vocational fitness,” but, again, he emphasized employing “a psychologist...to weed out the unfit” or to “determine the minimum ‘intelligence quotient’ necessary for success in each leading occupation” (p. 17).

Perhaps because of this emphasis on the assessment of children or concern with the lower end of the intelligence distribution, Terman (1916) did not use a rigorous methodology for constructing his adult-level tasks. Tests below the 14-year level were administered to a fairly representative sample of about 1,000 children and early adolescents. To extend the scale above that level, data were obtained from 30 businessmen, 50 high school students, 150 adolescent delinquents, and 150 migrating unemployed men. Based on a frequency distribution of the mental ages of a mere 62 adults (the 30 businessmen and 32 of the high school students above age 16), Terman partitioned the graph into the following MA categories: 13–15 (inferior adults), 15–17 (average adults), and above 17 (superior adults).

The World War I Tests

The infant field of adult assessment grew rapidly with the onset of World War I, particularly after U.S. entry into the war in 1917 (Anastasi & Urbina, 1997; Vane & Motta, 1984). Psychologists saw with increasing clarity the applications of intelligence tests for selecting officers and placing enlisted men in different types of service, apart from their generation-old use for identifying the mentally unfit. Under the leadership of Robert Yerkes and the American Psychological Association, the most innovative psychologists of the day helped translate Binet’s tests to a group format. Arthur Otis, Terman’s student, was instrumental in leading the creative team that developed the Army Alpha, essentially a group-administered Stanford-Binet, and the Army

Beta, a novel group test composed of nonverbal tasks.

Yerkes (1917) opposed Binet’s age-scale approach and favored a point-scale methodology, one that advocates selection of tests of specified, important functions rather than a set of tasks that fluctuates greatly with age level and developmental stage. The Army group tests reflect a blend of Yerkes’s point-scale approach and Binet’s notions of the kind of skills that should be measured when assessing mental ability. The Army Alpha included the Binet-like tests of Directions or Commands, Practical Judgment, Arithmetical Problems, Synonym-Antonym, Disarranged Sentences, Analogies, and Information. Even the Army Beta had subtests resembling Stanford-Binet tasks: Maze, Cube Analysis, Pictorial Completion, and Geometrical Construction. The Beta also included novel measures like Digit Symbol, Number Checking, and X-O Series (Yoakum & Yerkes, 1920).

Never before or since have tests been normed and validated on samples so large; 1,726,966 men were tested (Vane & Motta, 1984)! Point-scores on the Army Alpha or Army Beta were converted to letter grades ranging from A to D- (the Beta was given only to illiterate and non-English-speaking candidates). Validity was demonstrated by examining the percent of A’s obtained by a variety of Army ranks, for example, recruits (7.4%), corporals (16.1%), sergeants (24.0%), and majors (64.4%). In perhaps the first empirical demonstration of the Peter Principle in action, second lieutenants (59.4% A’s) outperformed their direct superiors—first lieutenants (51.7%) and captains (53.4%)—while those with ranks above major performed slightly worse than majors (Yoakum & Yerkes, 1920, Table 1). Can there be any more compelling affirmation of the validity of the Army intelligence tests? Another intelligence scale was developed during the war, one that became an alternative for those who could not be tested validly by either the Alpha or Beta. This was the Army Performance Scale Examination, composed of tasks that would become the tools-of-trade for clinical psychologists, school psychologists, and

neuropsychologists into the twenty-first century: Picture Completion, Picture Arrangement, Digit Symbol, and Manikin and Feature Profile (Object Assembly). Except for Block Design (developed by Kohs in 1923), Wechsler's influential Performance Scale was added to the Army battery, "[t]o prove conclusively that a man was weakminded and not merely indifferent or malingering" (Yoakum & Yerkes, 1920, p. 10).

Wechsler's Creativity

David Wechsler assembled a test battery in the mid-1930s that comprised subtests developed primarily by Binet and World War I psychologists. His Verbal Scale was essentially a Yerkes point-scale adaptation of Stanford-Binet tasks; his Performance Scale, like other similar nonverbal batteries of the 1920s and 1930s (Cornell & Coxe, 1934; Pintner & Patterson, 1925), was a near replica of the tasks and items making up the individually administered Army Performance Scale Examination.

In essence, Wechsler took advantage of tasks developed by others for nonclinical purposes to develop a clinical test battery. He paired verbal tests that were fine-tuned to discriminate among children of different ages with nonverbal tests that were created for adult males who had flunked both the Alpha and Beta exams—nonverbal tests that were intended to distinguish between the nonmotivated and the hopelessly deficient. Like Terman, Wechsler had the same access to the available tests as did other psychologists; like Terman and Binet before him, Wechsler succeeded because he was a visionary, a man able to anticipate the needs of practitioners in the field.

While others hoped intelligence tests would be psychometric tools to subdivide retarded individuals into whatever number of categories was currently in vogue, Wechsler saw the tests as dynamic clinical instruments. While others looked concretely at intelligence tests as predictors of school success or guides to occupational choice, Wechsler looked abstractly at the tests as a mir-

ror to the hidden personality. With the Great War over, many psychologists returned to a focus on IQ testing as a means of childhood assessment; Wechsler (1939), however, developed the first form of the Wechsler-Bellevue exclusively for adolescents and adults.

Most psychologists saw little need for nonverbal tests when assessing English-speaking individuals other than illiterates. How could it be worth 2 or 3 minutes to administer a single puzzle or block-design item when 10 or 15 verbal items can be given in the same time? Some test developers (e.g., Cornell & Coxe, 1934) felt that Performance scales might be useful for normal, English-speaking people to provide "more varied situations than are provided by verbal tests" (p. 9), and to "test the hypothesis that there is a group factor underlying general concrete ability, which is of importance in the concept of general intelligence" (p. 10).

Wechsler was less inclined to wait a generation for data to accumulate. He followed his clinical instincts and not only advocated the administration of a standard battery of nonverbal tests to everyone but placed the Performance Scale on an equal footing with the more respected Verbal Scale. Both scales would constitute a complete Wechsler-Bellevue battery, and each would contribute equally to the overall intelligence score.

Wechsler also had the courage to challenge the Stanford-Binet monopoly, a boldness not unlike Binet's when the French scientist created his own forum (the journal *L'Année Psychologique*) to challenge the preferred but simplistic Galton sensorimotor approach to intelligence (Kaufman, 2000a). Wechsler met the same type of resistance as Binet, who had had to wait until the French Ministry of Public Instruction "published" his Binet-Simon Scale. When Wechsler's initial efforts to find a publisher for his two-pronged intelligence test met failure, he had no cabinet minister to turn to, so he took matters into his own hands. With a small team of colleagues, he standardized Form I of the Wechsler-Bellevue by himself. Realizing that stratification

on socioeconomic background was more crucial than obtaining regional representation, he managed to secure a well-stratified sample from Brooklyn, New York.

The Psychological Corporation agreed to publish Wechsler's battery once it had been standardized, and the rest is history. Although an alternative form of the Wechsler-Bellevue (Wechsler, 1946) was no more successful than Terman and Merrill's (1937) ill-fated Form M, a subsequent downward extension of Form II of the Wechsler-Bellevue (to cover the age range 5 to 15 instead of 10 to 59) produced the wildly successful WISC (Wechsler, 1949). Although the Wechsler scales did not initially surpass the Stanford-Binet in popularity, serving an apprenticeship to the master in the 1940s and 1950s, the WISC and the subsequent revision of the Wechsler-Bellevue, Form I (WAIS; Wechsler, 1955) triumphed in the 1960s. "With the increasing stress on the psychoeducational assessment of learning disabilities in the 1960s, and on neuropsychological evaluation in the 1970s, the Verbal-Performance (V-P) IQ discrepancies and subtest profiles yielded by Wechsler's scales were waiting and ready to overtake the one-score Binet" (Kaufman, 1983b, p. 107).

Irony runs throughout the history of testing. Galton developed statistics to study relationships between variables—statistics that proved to be forerunners of the coefficient of correlation, later perfected by his friend Karl Pearson (DuBois, 1970). The ultimate downfall of Galton's system of testing can be traced directly to coefficients of correlation, which were too low in some crucial (but, ironically, poorly designed) studies of the relationships among intellectual variables (Sharp, 1898–99; Wissler, 1901). Similarly, Terman succeeded with the Stanford-Binet while the Goddard-Binet (Goddard, 1911), the Herring-Binet (Herring, 1922), and other Binet-Simon adaptations failed because he was sensitive to practitioners' needs. He patiently withheld a final version of his Stanford revision until he was certain that each task was appropriately placed at an age level consistent with the typical

functioning of representative samples of U.S. children.

Terman continued his careful test development and standardization techniques with the first revised version of the Stanford-Binet (Terman & Merrill, 1937). But 4 years after his death in 1956, his legacy was devalued when the next revision of the Stanford-Binet comprised a merger of Forms L and M, *without a standardization* of the newly formed battery (Terman & Merrill, 1960). The following version saw a restandardization of the instrument, but without a revision of the placement of tasks at each age level (Terman & Merrill, 1973). Unfortunately for the Binet, the abilities of children and adolescents had changed fairly dramatically in the course of a generation, so the 5-year level of tasks (for example) was now passed by the average 4½-year-old!

Terman's methods had been ignored by his successors. The ironic outcome was that Wechsler's approach to assessment triumphed, at least in part because the editions of the Stanford-Binet in the 1960s and 1970s were beset by the same type of flaws as Terman's competitors in the 1910s. The newest Stanford-Binet (Thorndike, Hagen, & Sattler, 1986a, 1986b) attempted to correct these problems and even adopted Wechsler's multisubtest, multiscale format. However, these changes in the Fourth Edition of the Binet were too little and too late to be much threat to the popularity of the Wechsler scales, to offer much contribution to the field of intelligence testing, or to merit the linkage with the Binet tradition.

SURVEYS OF TEST USAGE FOR ADULTS

Surveys of test use in the United States have appeared increasingly in the literature in the past decade. These surveys are usually based on data from clinical agencies and hospitals (Lubin, Larsen, & Matarazzo, 1984; Petrowski & Keller, 1989), school systems (Goh, Teslow, & Fuller,

1981; Hutton, Dubes, & Muir, 1992; Wilson & Reschly, 1996), industry (Swenson & Lindgren, 1952), military settings (Lubin, Larsen, Matarazzo, & Seever, 1986), forensic settings (Lees-Hayley, Smith, Williams, & Dunn, 1996), or private practitioners (Archer, Maruish, Imhof, & Piotrowski, 1991; Camara, Nathan, & Puente, 2000; Harrison et al., 1988; Lubin et al., 1986; Watkins, Campbell, Nieberding, & Hallmark, 1995). Data from such studies of test use are becoming increasingly important in light of the role that managed-care companies play in reimbursement for assessment services. Data from surveys that help determine which are the typical instruments used for various types of assessment and the amount of time practitioners usually spend on an assessment may serve a function in setting standard approved rates for practitioner compensation by managed-care companies. Thus, we reviewed the recent literature to attempt to discover which instruments are most commonly used by practitioners with a variety of backgrounds and find out how much time is typically spent on assessments.

Has Test Use Changed over the Years?

Overall, little substantive change has occurred in the most popular instruments used in the last several decades (Camara et al., 2000). Test usage was first documented by Louttit and Brown (1947), with data collected spanning the mid-1930s to the mid-1940s. Since that early survey, subsequent surveys have shown that the most commonly used tests have not changed much over the years. The Wechsler family of tests has remained on the top of the assessment list for most psychologists, across a variety of settings (Ball, Archer, & Imhof, 1994; Brown & McGuire, 1976; Camara et al., 2000; Harrison et al., 1988; Lubin et al., 1971). The WAIS and WAIS-R have consistently been mentioned in surveys as the most often used adult intelligence tests by clinical psychologists, school psychologists, neu-

ropsychologists, and forensic psychologists, and the WAIS-III will surely follow suit in future surveys.

Many studies of test usage lump together tests from all areas of assessment, including intellectual assessment, personality assessment, adaptive functioning assessment, achievement assessment, and neuropsychological assessment. Nonetheless, even when considering all these different types of assessment, the Wechsler tests remain ranked in the top 10.

Because the WAIS-III is fairly new, we were unable to find any published surveys that reported on the latest adult Wechsler test. The most recent survey at the time that this book went to press had a 2000 publication date, but the authors collected their data in late 1994, before the WAIS-R was revised (Camara et al., 2000). However, it is safe to assume that the WAIS-III will maintain the high ranking enjoyed by the WAIS-R.

Test Usage of 1,500 Psychologists and Neuropsychologists

Camara et al.'s (2000) collected survey data on test usage and assessment from 933 clinical psychologists and 567 neuropsychologists who were randomly selected from the American Psychological Association (APA) and the National Association of Neuropsychology (NAN). The authors were interested in data from practitioners who conducted assessments on a regular basis, so they ultimately conducted their analyses on data from respondents who engaged in 5 or more hours per week of assessment-related services. Thus, the final sample used for ranking test usage comprised 179 clinical psychologists (19% of the clinical psychologist respondents) and 447 neuropsychologists (79% of the neuropsychologist respondents). Table 1.1 displays the hours spent administering, scoring, and interpreting psychological tests during a typical week, for the total number of respondents to the survey ($N = 1,500$).