

**CHAPTER FORTY ONE**

**GENERATIONS AHEAD OF HIS TIME—DAVID WECHSLER—THE INNOVATIVE PIONEER OF IQ ASSESSMENT**

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Dr. David Wechsler (1896-1981) has had a greater influence on intelligence testing than any other person in history. He pioneered the concept of clinical assessment and developed IQ tests that have stood the test of time and reigned supreme, not just in the United States, but throughout the world. He created a series of intelligence scales that became industry standards and underwent multiple revisions, beginning with the Wechsler-Bellevue (W-B; Wechsler, 1939), the Wechsler-Bellevue Form II (W-B II; Wechsler, 1946), the Wechsler Intelligence Scale for Children (WISC; Wechsler, 1949), the Wechsler Adult Intelligence Scale (WAIS; Wechsler, 1955), and the Wechsler Preschool and Primary Scale of Intelligence (WPPSI; Wechsler, 1967). The Wechsler scales surpassed the Stanford-Binet Intelligence Scale (Terman, 1916; Terman & Merrill, 1937, 1960, 1973) in popularity sometime in the 1960s according to various test usage surveys. That was an exciting era in education, psychology, and medicine as the nascent learning disabilities movement came of age and the field of neuropsychology was born. As a consequence, clinicians demanded a *profile* of scores, not just the general ability factor *g*, for effective diagnosis. Wechsler's various scales have never looked back. Some test authors have tried to end that reign, starting in the 1980s, with theory-based tests (Elliott, 1990; Kaufman & Kaufman, 1983; Naglieri & Das, 1997; Woodcock & Johnson, 1989); others tried to reclaim the crown for the Stanford-Binet (Roid, 2003; Thorndike, Hagen, & Sattler, 1986). However, none have succeeded. In the 2020s, the descendants of the 1939 Wechsler-Bellevue, namely the Wechsler Intelligence Scale for Children—Fifth Edition (WISC-V; Wechsler, 2014) and the Wechsler Adult Intelligence Scale—Fourth Edition (WAIS-IV; Wechsler, 2008), continue to dominate the assessment scene in clinical psychology, school psychology, and neuropsychology.

I have written a previous biography of Dr. Wechsler (Kaufman, 2013), as have others, such as brilliant psychologist-historian John Wasserman (2018); and I have co-authored a biography with John (Wasserman & Kaufman, 2015). I have also written tributes to Dr. Wechsler a quarter century apart (Kaufman, 1992, 2016), as well as a layperson's book (Kaufman, 2009) in which I recount various memories and anecdotes about him, mostly based on my collaboration with him from 1970-74 during the development and standardization of the Wechsler Intelligence Scale for Children—Revised

(WISC-R; Wechsler, 1974). In the course of this biography of David Wechsler, I will quote liberally from all of these sources.

David Wechsler was born on January 12, 1896, in Lespedi, Romania. His early life was filled with strife (Wasserman & Kaufman, 2015):

Wechsler was the youngest of three boys and four girls born to Moses Wechsler, a merchant, and Leah (Pascal) Wechsler, a shopkeeper. The Wechsler family emigrated from a virulently anti-Semitic Romania to New York when David was 6 years of age, and he lost both parents to cancer within 5 years of his arrival. He was effectively raised by an older brother, a physician who would become his role model as a practicing clinician, academician, and author of scholarly professional texts (p. 1).

He died at age 85 in New York City on May 2, 1981. In an *American Psychologist* obituary, Joseph Matarazzo (1981) wrote about Wechsler, “Probably the work of no other psychologists, including Freud or Pavlov, has so directly impinged upon the lives of so many people” (p. 1542). Based on multiple indices of accomplishment, Wechsler has been identified as one of the 100 most eminent psychologists of the twentieth century (Haggblom et al., 2002).

Wechsler developed his expertise in the field of intelligence testing at about the same time that Lewis Terman (1916) updated and standardized Alfred Binet’s test for use in the United States:

His experiences just before, during, and after America’s entry into World War I paved the way for him to become the world’s leading expert in intelligence testing and clinical assessment. In 1917, working with testing pioneer Robert S. Woodworth at Columbia University, Wechsler earned his M.A. in experimental psychopathology on retention in Korsakoff’s psychosis; that same year he also worked under E. G. Boring, scoring army intelligence tests, as a civilian volunteer. After induction, while serving in the army’s psychology division in Fort Logan, Texas, Corporal Wechsler administered individual intelligence tests, including the Stanford-Binet, to recruits who could not be validly assessed by the army group tests (e.g., illiterates, suspected malingerers). In 1919, as an army student at the University of London, he worked closely with Karl Pearson (who developed the coefficient of correlation) and Charles Spearman (who promoted the theory of general intelligence or ‘g’). He then studied at the Sorbonne for 2 years, specializing in experimental and physiological psychology (Edwards, 1994). By the time he earned his Ph.D. in 1925, under Woodworth at Columbia (on the measurement of emotional reactions via the galvanic skin response), his meteoric career was already on the rise (Kaufman, 2013, pp. 1365-66).

As Wasserman (2018) reported: “Columbia was one of the few major universities that provided graduate experimental psychology training with a willingness to address applied problems, termed experimental abnormal psychology by Woodworth” (p. 28).

Further, Wasserman (2018) made the following insightful observations, echoing again Wechsler's difficult childhood and his wartime experiences:

In many ways, David Wechsler was an unexpected success—coming to the United States as a child amid a flood of Eastern European immigrants, losing both parents by the age of 10, compiling a relatively ordinary academic record in high school and college (while graduating early), . . . and not having become a naturalized citizen by the time of the war. Even so, these risk factors may have been somewhat ameliorated by the guidance of his accomplished older brother (pioneering neurologist Israel S. Wechsler, who became his caretaker and role model); the opportunity to provide military service as an army mental test examiner, thereby quickly learning about assessment and making key professional contacts; and by receiving his graduate education and professional psychology training at an opportune time and place in the development of what eventually would become 'clinical' psychology (p. 29).

And David Wechsler was, in many ways, a pioneer through his work bridging experimental and applied psychology (Kaufman, 2013):

In the mid-1920s, Wechsler was in the first wave of clinical psychologists, a breed of scientist-practitioners that represented a notable departure from the purely academic and experimental tradition of the American Psychological Association (APA). He was among the first to set up a private clinical practice and, in 1932, became Chief Psychologist at Bellevue Psychiatric Hospital, a post he held until 1967. Concurrently (1933–1967), he was a faculty member at New York University College of Medicine (p. 3366).

Further, an inner-directed Wechsler even analyzed himself (Wasserman, 2018):

After completing his fellowship at the Sorbonne, Wechsler traveled through France, Switzerland, and Italy, before reluctantly returning to the United States. . . . His ambivalence about returning, as disclosed to Edwards (1974), was reflected in his 1922 paper on the psychopathology of indecision (Wasserman, p. 31).

His intelligence scales represented a huge step forward in IQ testing:

French pioneer Alfred Binet developed the first intelligence test in 1905 (the Binet-Simon) and Stanford psychologist Lewis Terman translated and adapted Binet's work within the United States to produce the Stanford-Binet Intelligence Scale in 1916. However, it was American psychologist David Wechsler who dramatically, and permanently, changed the face of intelligence testing when he published the Wechsler-Bellevue (W-B), for ages 7–69 years, in 1939 (known in the literature as the W-B Form I because Form II was published in 1946) (Kaufman, 2013, p. 1366).

Some might question Wechsler's creativity in view of his life-long approach to test development, as described by Wasserman (2018): "For his master's thesis completed in 1917, Wechsler patched together a clinical memory battery from existing published and unpublished tests [...] . . . a pattern he was later to follow with intelligence tests" (pp. 29-30). However, Wechsler was indeed creative.

His test development contributions include the innovative decision to combine verbal and nonverbal skills to produce a truly global measure of intelligence. This inspiration was first sparked during wartime when he scored the group-administered Army Alpha and Army Beta—verbal and nonverbal tests, respectively (Yoakum & Yerkes, 1920). His insight in combining verbal with nonverbal tasks was innovative; previously nonverbal tests were considered valuable only for special populations such as individuals with a hearing loss and non-English speaking individuals. His creativity was in realizing that verbal and nonverbal tests should be used to measure the general intelligence of *everyone*. That decision, along with his clinical approach to the assessment of intelligence, rank among the greatest innovations in applied psychology during the twentieth century. In the words of psychometric guru Lee J. Cronbach (1958), "His scale represents the highest flowering of the pragmatic mental testing initiated early in this century, rather than a break into any new understanding of intellectual processes" (p. 1133).

Although he was a strong advocate for the value of intelligence testing, Wechsler openly acknowledged its limitations and tried to develop methods to measure the critical personal qualities that his pragmatic IQ tests did *not* measure:

One of the most significant limitations of intelligence tests, observed Wechsler, was that they fail to systematically capture the *non-intellective factors*, such as drive, persistence, and interest, that substantially influence test performance. Wechsler became convinced of the importance of non-intellective factors after recurrent findings that factor analyses of his intelligence tests never extracted more than 60–70% of the total variance, leading him to try (unsuccessfully) to develop tests for the remaining 30–40% (Wasserman & Kaufman, 2015, p. 3).

Despite the limitations inherent in what an IQ test can accurately assess, Wechsler consistently wanted to go beyond the numbers and interpret test profiles within a rich clinical context. He transformed IQ testing with his emphasis on assessing intelligence as an aspect of personality, points that he introduced to the world with eloquence in his landmark articles and books (e.g., Wechsler, 1928, 1930, 1935, 1939, 1944, 1950, 1958, 1971, 1975).

Wechsler's lasting imprint was as a test developer, not as a theorist. And, ultimately, his greatest contribution may have been his clinical approach to the measurement of intelligence. When the Stanford-Binet reigned supreme prior to the publication of the W-B, the main approach to test interpretation was psychometric, with the focus on the precise IQ, its percentile rank, the band of error surrounding the IQ, group differences in mean IQ (e.g., urban versus rural children); the main book on Stanford-Binet interpretation was written by

Quinn McNemar (1942), a statistician. Wechsler changed all that. He believed that intelligence was part of personality, and that personality variables affected how a person performed on an IQ test. He encouraged examiners to interpret the IQs and subtest scaled scores within the context of the clinical behaviors observed during the evaluation and the reasons for referral (emotional disturbance, dementia), and to interpret responses to specific items (e.g., verbal answers on social comprehension questions) in terms of their clinical content. Thanks in large part to his experiences as an examiner during wartime, his clinical acumen, and his responsibilities at Bellevue Hospital, which brought him into one-on-one contact with individual patients from diverse backgrounds with an array of diagnoses, Wechsler (in conjunction with innovators such as Rapaport, Gill, & Schafer, 1945) changed IQ measurement from psychometric testing to clinical assessment. That distinction still characterizes the training of clinical psychologists and neuropsychologists worldwide (p. 3367).

But Wechsler was more than just a “clinical” psychologist. He was also a superb psychometrician and statistician based on his apprenticeships with both Pearson and Spearman:

The Binet-Simon and Stanford-Binet offered a single score, global IQ, plus Mental Age (MA); the W-B offered Verbal, Performance, and Full Scale IQs, along with a profile of scaled scores on 11 separate subtests (one of which, Vocabulary, was an alternate and did not contribute to the IQs). The 1916 Stanford-Binet, and its subsequent editions were routinely administered to children, adolescents, and adults; however, they were never standardized (normed) on adult populations. Consequently, when Wechsler published the W-B, standardized on children and adults (including older adults), he effectively developed the first real test of adult intelligence [see Kaufman, 2010]. And, in 1939, he replaced the ratio IQ that had become a staple in the Binet scales with the ‘deviation IQ.’ Ratio IQs were based on an old formula that compared Mental Age to Chronological Age, and represented a ‘rubber yardstick’ because 1 year’s growth is quite different at age 5 or age 9 or age 15; the outmoded formula also was not applicable to adults. By contrast, deviation IQs are standard scores with mean = 100 and standard deviation (SD) = 15 for all three IQs at all ages. They are derived from the concepts of the normal curve and standard deviations, which avoid problems associated with ratio IQs (Kaufman, 2013, pp. 3366-67).

Wechsler did not “invent” the deviation IQ. Wasserman (2018) points out that, “Wechsler deserves credit for popularizing the deviation IQ, although the Otis Self-Administering Tests and the Otis Group Intelligence Scale had already used similar deviation-based composite scores in the 1920s” (p. 33).

And he was amazingly modest about his in-depth grasp of statistics and methodology:

He trusted me in all aspects of test construction and deferred to my knowledge of psychometrics; when he questioned a statistical decision, he would usually give in, saying, 'I'm just a clinician.' It wasn't until the WISC-R was nearing publication that I found out from someone else that Dr. Wechsler had studied statistics under Charles Spearman and Karl Pearson in London after World War I (Kaufman, 2016, p. 718; originally from Kaufman, 1992).

Though not widely heralded as a theorist, Wechsler's (1939) definition of intelligence has been widely quoted:

Intelligence is the aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with [their] environment. It is global because it characterizes the individual's behavior as a whole; it is an aggregate because it is composed of elements or abilities which, though not entirely independent, are qualitatively differentiable. By measurement of these abilities, we ultimately evaluate intelligence. But intelligence is not identical with the mere sum of these abilities, however inclusive (p. 3).

This definition shows the influence of Spearman's *g* on his theory, but also advances the notion that there is more to intelligence than *g*.

Wechsler later specified that this definition was intended to reflect Charles Spearman's general intelligence factor ('global capacity'), L. L. Thurstone's group factors ('elements or abilities'), Lewis M. Terman's capacity for 'abstract thinking' ('to think rationally'), and Alfred Binet's emphasis on adaptation ('to deal effectively with one's environment'). . . . [He] considered verbal and nonverbal tasks as equally adequate measures of general intelligence, and he emphasized the importance of assessing people "in as many different modalities as possible" (Wechsler, Doppelt, & Lennon, 1975, p. 55) (Wasserman & Kaufman, 2015, pp. 2-3).

But Wechsler's psychometric and clinical contributions do not minimize the importance of his departure from the single score, a global IQ, yielded by the Binet. In fact:

An immediate benefit of the Wechsler approach to IQ testing was the large number of reliable and valid scores yielded by his tests – three IQs and an array of a dozen or so scaled scores on separate subtests. The Full Scale IQ provides a global measure of intelligence (as was provided by the Stanford-Binet). However, the addition of separate Verbal and Performance IQs allowed examiners to determine whether a person was better able to express his or her intelligence via verbal comprehension and expression, or nonverbally via the manipulation of concrete materials. And the subtest scaled scores – standard scores with a mean of 10 and SD of 3 for all subtests at all ages – permitted clinicians to examine a person's profile of strengths and weaknesses on cognitive tasks such as Information, Similarities, Block Design, and Picture Arrangement (Kaufman, 2013, p. 3368).

As early as 1932, Wechsler saw the importance of profiling an individual's pattern of strengths and weaknesses, and his books included extensive case studies built from test score profiles:

The separate IQs and the profile of scaled scores provided a breakthrough for researchers and clinicians who needed to go beyond a single, global IQ to better understand a person's abilities and disabilities. The global IQ masked areas of strength and weakness. The W-B, and later the 1949 Wechsler Intelligence Scale for Children (WISC) and 1955 Wechsler Adult Intelligence Scale (WAIS), spawned state-of-the-art research with patients diagnosed with neurological impairment in the left versus right hemisphere (Reitan, 1955; Meyer & Jones, 1957), with children and adolescents referred for reading and learning disabilities (Bannatyne, 1971), and with individuals diagnosed with autism (Murata, Nawa, & Okuma, 1974; Wassing, 1965). The comparison of Verbal IQ with Performance IQ (V-P discrepancy) was especially crucial for understanding the strengths and weaknesses of individuals with left-hemisphere damage ( $P > V$ ), right-hemisphere damage ( $V > P$ ), and autism ( $P > V$ ). The separate IQs also contributed mightily to understanding the differential effects of aging on intelligence (Feingold, 1950; Jarvik, Kallman, & Falek, 1962) and to the theory of fluid and crystallized intelligence (Horn & Cattell, 1966) (Kaufman, 2013, p. 3368).

Despite the success of his tests both as clinical and research tools, and the fact that his 1939 definition never lost its popularity, he never stopped pondering the nature of intelligence and he continued to refine its definition. For example, at two APA meetings in the 1970s he emphasized that intelligence must be useful to society. He explained to a large audience at the 1973 APA symposium in Montreal—where we both talked about the forthcoming WISC-R (Kaufman & Wechsler, 2013): “Purpose and useful behavior—that's one aspect of intelligent behavior. You can't sit for 20 days on top of a telegraph pole like Shipwreck Kelly did when I was in college and claim that is an intelligent act. It has no purpose. It has no use.”

The next year, in an invited 1974 APA address that was later published in the *American Psychologist* as his most updated definition of intelligence, he continued on the same theme, explaining that intelligence is a multifaceted concept that must be interpreted within a sociocultural context (Wechsler, 1975): “[I]ntelligence cannot be equated with cognitive or intellectual ability. ... To be rated intelligent, behavior must not only be rational and purposeful; it must not only have meaning but it must also have value, it must be esteemed (p. 136).

Wechsler's array of tests began with the W-B Form I, from which all of his *adult* scales have ultimately descended, starting with the WAIS in 1955. Form II of the W-B (Wechsler, 1946) was not a commercial success and was replaced almost immediately with the WISC (Wechsler, 1949); in fact, the W-B II was the grandparent of all subsequent versions of WISC and WPPSI. Similarly Wechsler's widely used memory test for adolescents and adults, the Wechsler Memory Scale (WMS), which first appeared in a journal

article (Wechsler, 1945), is now in its fourth edition (WMS-IV; Wechsler, 2009).

From personal experience, it was evident that his genius and creativity did not diminish with age; when I collaborated with him on the revision of the WISC in the early 1970s,

he was in his mid-70s and as active and involved in his tests as ever. He showed me notebooks filled with new items, including comic strips he had cut out from newspapers to adapt for nonverbal test items. With his own tool kit, he had constructed a variety of wooden dolls and formboards, always in search of new ways of measuring mental ability” (Kaufman, 2009, p. 34).

And Wechsler’s creativity and intellect were matched by his uncanny vision into the future, a trait that John D. Rockefeller also possessed in abundance (Chernow, 2010). As I have written (Kaufman, 2013):

David Wechsler’s (1935) ideas were consistently decades, even generations, ahead of his time. He was an early advocate of measuring adaptive behavior skills, urging that daily behaviors, social demands, and functional living skills be considered alongside IQ test results before assigning a mental deficiency diagnosis. As J. D. Wasserman (personal communication, July 27, 2011) pointed out, Wechsler’s approach is ‘entirely congruent with even contemporary standards for diagnosing intellectual disability (Schalock and The AAIDD Ad Hoc Committee on Terminology and Classification, 2010).’ He also reflected current philosophies by urging caution and sensitivity about the consequences of applying labels such as mental deficiency and genius based solely on IQ, because, ‘Too much is at stake’ (Wechsler, 1971, p. 54) (p. 3369).

His vision also included cutting-edge research and theory yet to come (Kaufman, 2013):

In Wechsler’s lifetime, his scales were organized around the distinction between Verbal IQ (V-IQ) IQ and Performance IQ (P-IQ). Subsequent versions have emphasized four Indexes, two of which replaced V-IQ and P-IQ (Verbal Comprehension Index, or VCI, and Perceptual Reasoning, or PRI), and two of which were new: Working Memory Index (WMI) and Processing Speed Index (PSI). L. G. Weiss (personal communication, July 26, 2011) noted that Wechsler’s ‘early notions on the importance of mental manipulation (Arithmetic/Digit Span) and mental speed (Digit Symbol/Coding) were borne out by modern research and subsequently fleshed out into WMI and PSI, which increased his test’s sensitivity to clinical disorders and extended his influence well into the twenty-first century (p. 3369).

In the 1973 APA symposium where we co-presented about the WISC revision, Wechsler displayed his sense of humor, which was so much a part of his personality. After I finished my research-oriented part of our joint presentation, he started off by saying:

Alan, I didn't know how good a test it was until you came across with all this data! I had some suspicion that it might have some value since it's been translated into about 20-odd countries. . . . At any rate, in revising the test there are also the travails of parturition which only a mother—in this case a father—can testify to. It's pretty hard to eliminate certain items, and I think I was broadminded—but somebody said I was weakminded!

He was a memorable mentor to me:

Dr. Wechsler possessed a rare blend of humility and grandeur. From the first day I met him, he treated me with kindness and with a respect I had not yet earned. He was soft-spoken, yet every word was carefully measured and carried authority. He was a man of unusual compassion and unflagging integrity. He lacked patience for the pomp and circumstance and protocol that permeated the first few corporate meetings that addressed the issue of a WISC revision. The meetings were tedious affairs, spiced with old recollections by Project Directors Past, . . . At the end of the third meeting, when once more nothing was accomplished, Dr. Wechsler ended the meeting by stating simply that this was the last group meeting; from now on, he said, 'Alan will come alone to my apartment, and we'll hammer out the revised WISC.' And that's exactly what happened (Kaufman, 2016, pp. 715-716, originally in Kaufman, 1992).

I especially enjoyed Dr. Wechsler's warm, human side, which emerged in casual moments when he didn't have to be 'on.' The serious and sometimes gruff side came out in business meetings, and the occasional animal rage was reserved for anyone who challenged the perfection of nearly any of his hand-picked, time-tested items, especially one that had its roots in his original Wechsler-Bellevue scales. But he displayed unabashed boy-like enthusiasm when he showed off materials for the new subtests he was constantly working on (at age 75!). . . .And his eyes twinkled when he talked about his grandchildren; or reminisced about visiting Freud in Vienna; or spoke warmly about spending a week at the home of former Israeli Defense Minister Moshe Dayan and his wife; or boasted sheepishly about being greeted at the Bucharest Airport by the King of Romania (his birthplace in 1896); or played for over an hour with our son James, then 7 months old and called Jamie, when he and Ruth visited my family in Athens, Georgia, in April 1975. (Author's note—James, an international leader in creativity, has his own biography in this volume (Kaufman, 2016, p. 717; originally in Kaufman, 1992).

And he was quick to acknowledge his own mentors, as pointed out by Hargus and Wasserman (1993) and expanded upon by me (Kaufman, 2016).

In a 1975 interview, Wechsler credited Woodworth and E. L. Thorndike as contributing most to his intellectual development, and he also praised Augusta Bronner and William Healy for refining his clinical skills: 'they were both wonderful clinicians and they were

the first, as I recall, who had discussions of every individual case at which first the social worker would present her history, then the psychiatrist, then the psychologist, and they either praised the individual and so forth on the basis of these conferences' (Wechsler, Doppelt, & Lennon, 1975, p. 42). He also spoke often to me about how much he owed to Bernard Glueck of the New York Bureau of Child Guidance (where Wechsler worked in the early 1920s) for training him in a discipline that would later be known as school psychology (p. 723).

There are so many things to thank Dr. Wechsler for because more than any professor or older colleague, Dr. Wechsler inspired me as a person and professional. I have clear images of spending hours with him at his home, trying to convince him to delete or modify WISC items that were outdated or potentially offensive, arguments that were not easily, or always, won. Thinking back:

I'd take a taxi to his East Side Manhattan apartment, and for two or three hours, week after week, we'd engage in friendly battle. . . . Little did I realize then that those battles with the Master would shape my own development as a test author and trainer of school psychologists, and would remain forever etched—fresh and vibrant and poignant—in my memory (Kaufman, 2016, pp. 715-720, originally in Kaufman, 1992).

His humanitarian principles, expressed nearly a century ago (Wechsler, 1930), reverberate today:

The tendency in recent years has been rather to exaggerate and over-emphasize human differences, whether in the field of psychology, government or industry . . . . Now every democracy and particularly our own is based on the very contrary assumption; . . . for the differences between men, when the totality of the capacities is considered, is surprisingly small (p. 39).

So, too, does his perspective on when to downplay test scores (Wechsler, 1939):

The kind of life one lives is itself a pretty good test of a person's intelligence. When a life history (assuming it to be accurate) is in disagreement with the "psychometric," it is well to pause before attempting a classification on the basis of tests alone. Generally it will be found that the former is a more reliable criterion of the individual's intelligence (p. 48).

### Author Note

I am extremely grateful for the important input to this biography made cheerfully and insightfully by Drs. Melissa A. Bray, Brittany A. Dale, Jacqueline Caemmerer, and John Wasserman, and by school psychology PhD candidate Emily L. Winter, M.A., S.Y.C., NCSP. To contact the au-

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