THE CULTURE OF INTELLIGENCE

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Over the past two centuries, the concept of human mental ability has undergone three important transformations: from a concept referring to a general faculty to one primarily referring to an individual attribute; from a focus on talents in the plural to one on intelligence in the singular; and from a position of relatively limited cultural significance to one of considerable weight within the United States and, to a lesser extent, within various European countries. These shifts in meaning and emphasis have rendered intelligence a tool available to government, business, and the “helping professions” for the purpose of sorting, classifying, diagnosing, and justifying. Starting in the early part of the twentieth century, determinations of degree of intelligence have been used as aids in the placement of army recruits, in determining the kind of schooling a child will receive, in the hiring of job applicants, and in the decision to allow a person legal immigration. This chapter explores how intelligence has come to play these various social roles. It focuses especially on how experts in the human sciences have both created new meanings for the concept of intelligence and developed technologies that could make those meanings available and useful to a wider public.

FROM TALENTS TO INTELLIGENCE

During much of the nineteenth century, two distinct languages flourished in scientific and intellectual circles to describe the operations of the human

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mind. Mental philosophers and others interested primarily in what would later be called the “normal” employed a language of character and talents, emphasizing the diversity of the mental faculties and the operation of the individual mind. Whether one subscribed to Scottish common sense realism, to phrenological theories, or to the eclecticism of Victor Cousin (1792–1867), mind was represented as full of active powers, the faculties. Each, when triggered by external sensations, could act relatively independently on the ideas derived from those sensations and could add elements to them not present originally. Two characteristics stand out as particularly salient: first, the sheer number and variety of the faculties; and second, their malleability in response to external influences and the amount of effort exerted to develop them. Thus what talents one possessed and what one became—successful or failed, knowledgeable or ignorant, moral or evil—could be seen to depend largely on early education and moral choices.

This emphasis on the variety of the mental powers and on individual responsibility for nurturing them gave the language of talents much of its political import. Whether employed by those who responded to the postrevolutionary era by emphasizing order and character, or by those who insisted on equality of rights and opportunities, the language of talents provided one means to justify conceptions of the political and social order through recourse to widely accepted beliefs about the nature of human beings. Thus the French refashioned their educational system around the concours (competitive examinations), lycées (secondary schools), and grandes écoles (elite institutions at the apex of the French educational pyramid) in order, among other tasks, to identify and develop talent within the French citizenry and to enlist it in service to the state. Americans did not produce such a thoroughgoing structural connection between talent and merit. Instead, individuals were thought to prosper or fail in the marketplace, as enshrined by American liberal ideology, according to their own hard work and their wise cultivation of particular capabilities. The power of the language of talents was that it conjoined and justified notions of both equal opportunity and unequal success.

In contrast to the plasticity of notions of talent, scientific writers on notions of race and gender deployed the concept of intelligence in order to fix and explore human differences. Created by transforming reason from an absolute attribute into a characteristic that could be manifested in degrees, intelligence and its cognates imposed simple linear order on the animal and human worlds and suggested that this order, because naturalized, could scarcely be altered by human effort. Intelligence provided one way of accounting for what seemed the obvious inferiority of certain peoples. Often invoking the concept of the great chain of being—a linear scale stretching from the least intelligent organisms through humans and up to God—naturalists suggested that the human races could themselves be arrayed along this chain, with the “inferior” Africans placed closer to the rest of the animal world and the “superior” Europeans closer to the angelic. When applied specifically to human beings, intelligence as a general mental power varying by degrees and related to the physical nature of the brain allowed measurable external characteristics, such as cranial capacity, to signify power of mind, the measure of a people’s place in the hierarchy of races.

Early-nineteenth-century racial anthropologists, then, replaced talents with intelligence, suggesting that human difference might be fundamentally biological in origin, and no more alterable by human effort than the difference in mental power between a monkey and a mouse. At midcentury, these ideas, at odds with both orthodox Christianity and the theories of mental philosophy, remained the province of only a few enthusiasts for racial science. But later in the century, notions of difference built on intelligence were disseminated widely. They were aided by the reduced influence of the more evangelical or conservative forms of Christianity; by the success of evolutionary theory, with its elimination of the gap between humans and other animals; by the adoption of craniometric ideas and techniques by a new generation of scientific psychologists; by the fear of democracy, sparked by working-class and feminist claims to equality; and by the spread of empire.

IQ: MAKING INTELLIGENCE A THING

In the broadest terms, the various conceptualizations of intelligence developed in Britain, France, and the United States during the late nineteenth and early twentieth centuries were produced in tandem with and in response to transformations occurring in most parts of the industrializing West. Three such developments merit particular attention. First, the immense reshaping of social life (urbanization, immigration, and colonization) and of the nature of work (industrialization, bureaucratization, and assembly-line production) undermined traditional methods of assessing, organizing, and managing human beings, and provided both the opportunity and the need for new ways of understanding and ordering the social world. Second, the unprecedented technological innovations of the nineteenth century (railroad, telegraph, telephone, steam engine), and the notion of material progress that they were
like height or any other physical trait. The association of intelligence with Galton's commitment to a biological marker of difference critical to success in life was cemented by the work of Charles Spearman (1865–1945) early in the twentieth century. Employing his new statistical tool, factor analysis, Spearman analyzed the results of some basic psychological tests and concluded that test performance could be explained on the basis of two factors: task specific ability (s) and general intelligence (g). His mathematical "demonstration" of the existence of general intelligence, although based on methods of assessing ability that would soon be discarded, helped give reality to intelligence as a global, quantifiable, biological object that different individuals possessed to different degrees and that could be used to link notions of biological fitness with success in the world.

In 1904, the same year that Spearman proposed his theory of g, the French psychologist Alfred Binet (1857–1911) was asked to serve on a ministerial commission studying abnormal children. Binet had already spent a number of years investigating the higher mental processes from a variety of perspectives. Well versed in the pathological approach to psychological questions that was the hallmark of French scientific psychology, Binet and his colleague Théodore Simon (1873–1961) sought to develop an instrument that could identify subjects of impaired intellectual ability. What resulted was the Binet–Simon Intelligence Scale (1905), a series of thirty tests, mostly verbal, arranged from simplest to most difficult and designed to differentiate the four major classifications of intelligence within mental pathology: idiocy, imbecility, weak-mindedness (débilité), and normality.

Three features differentiated the Binet–Simon scale from most other psychological instruments. First, it was oriented toward the higher mental abilities and a holistic assessment of their power. Second, the intelligence scale was relational and statistical. Rather than measuring mental ability directly, it used a series of seemingly arbitrary tasks, such as identifying the difference between a fly and a butterfly, that would allow a relative ranking of individual performances calibrated against a standard of what normal children of a given age could accomplish. And third, the primary product of the Binet–Simon scale was a diagnosis allowing classification into a medical/administrative category, not insight into the workings of mind in general or even of an individual mind in particular. Intelligence as defined by the Binet–Simon intelligence scale, especially as the scale was further modified

in 1908 and 1911, was something discrete, quantifiable, relative, statistical, developmental, practical, and defined most clearly by its pathological manifestations. It was also an object of little interest to other French psychologists, who were less oriented toward the needs of school and asylum and felt little pressure to identify either the least or the most biologically desirable types of citizens. Indeed, it was only when the test was exported, especially to the United States, that it and “intelligence” itself found true homes.

The Binet–Simon Intelligence Scale came to America in 1908, having been “discovered” by Henry H. Goddard (1866–1957), a psychologist at the Vineland Training School for Feebleminded Girls and Boys. Goddard was interested in methods for the ready and accurate diagnosis of the mental states of residents and potential residents of the school. By the early 1910s, alternative versions of the Binet–Simon scale were being produced around the country, each adapted to the specific needs and conceptions of the investigator. A standard emerged in 1916, when Lewis M. Terman (1877–1956) published his Stanford Revision and Extension of the Binet–Simon Intelligence Scale (the Stanford–Binet scale), a version technically superior in almost every respect and one that quickly became the benchmark for work within the developing field of psychometrics.

Like the Binet–Simon, the Stanford–Binet scale was an individually administered examination in which an examinee was asked questions by a trained psychologist, marked right or wrong on the answers, and then evaluated against a standard determined by his or her age peers. The result was summarized in the calculation of the individual’s Intelligence Quotient (IQ) — mental age divided by chronological age times one hundred — a quantity proposed by the German psychologist William Stern. Designed to be constant over time, IQ was described as a measure of the examinee’s biologically determined intellectual potential. Opaque to differences in intellectual performance that did not translate into raw score differences, Stanford–Binet homogenized intellect into a linear scale of relative brightness that could encompass not only those already categorized by their degree of intelligence — idiots and geniuses — but everyone in between as well, whatever their age or background or degree of education. And in part through the characterization Terman provided along with the scale, intelligence came to be seen as something biological, quantifiable, and heritable, and as a decisive influence on behavior and status in life.

Before World War I, dissemination of this psychometric version of intelligence remained limited. The successful introduction of intelligence testing into the American military, as part of the mobilization for the war, changed the situation decisively. Confronted with the immediate need to sort and classify hundreds of thousands of new soldiers, military leaders were open to arguments that intelligence tests might prove of practical wartime value. Although the military itself remained ambivalent about the usefulness of large-scale testing, for American psychologists it proved an extraordinary boon. Forced to construct a new type of intelligence test that could be administered in groups, they succeeded in developing methods that allowed them to assess almost 1.75 million recruits. And in the process, intelligence itself became something familiar to everyone, a quantitative characteristic shown to be as applicable to the average person as to someone manifesting intellectual difficulties, and one that produced clear differentiations across the intellectual spectrum.

INTELLIGENCE AS A TOOL

In the aftermath of World War I, the place of intelligence and its tests in the topography of American culture seemed fairly secure. Many psychologists were involved in the study of intelligence and the development of new means of assessing it; companies specializing in the production of mental tests flourished; and testing was beginning to be used on a large scale at all levels of education and in industry. Finding employment primarily in academe, public education, and industry, American psychological testers constituted a growing interest group whose livelihoods were linked to the promotion of notions of intelligence and its importance. Their successes were particularly noteworthy in two areas: industry and education. Within industry, intelligence testing proved especially popular during the early 1920s, as managers looked to assessments of intellectual ability as one component of their evaluation of applicants for various white-collar positions. The enthusiasm for intelligence testing faded, however, later in the decade, to be replaced by a growing interest in personality as the key to business success.
In education, by contrast, intelligence remained of central concern throughout the interwar period. During the 1920s, the number of positions for educational psychologists grew rapidly, as modernizing school districts sought guidance in organizing and administering the increasingly diverse student bodies characteristic of urban systems. One role for psychologists was diagnostic: to examine individual children who were manifesting educational problems. Their other major role, however, was more structural: to supervise large-scale intelligence testing as part of the process of placing students on the appropriate academic track. For certain individuals and groups, such testing proved to be of enormous benefit. Potential that may have been ignored because of various forms of prejudice, such as anti-Semitism, often stood out sharply thanks to the mechanical objectivity of the tests. Doors opened for some, however, also proved to be doors closed for others, as individuals and groups who performed poorly, such as African Americans and eastern Europeans, were often shunted away from opportunities that other modes of assessment might have made available.

In large measure, the dissemination of the psychological approach to intelligence in America during the 1920s was based on the belief, fostered by the testers themselves, that intelligence played a critical role in determining an individual's place in society and success in life, and that mental tests were its authoritative gauge. Studies of intelligence carried out using the army data—widely trumpeted by Carl C. Brigham (1890–1943) in A Study of American Intelligence (1923)—and analyses of the results of post-war testing served to legitimate both the optimism and the anxieties of the American middle class. Buoyed by the "discovery" that individuals of northern European descent were superior in intelligence to all other groups and that the American occupational hierarchy correlated highly with IQ, middle-class Americans—at least fearful about "reds," immigrants, workers, and other seeming threats from within—were at the same time unsettled by the determination that a large percentage of adult American males were feebleminded or worse. Notions of a nation in biological and cultural peril abounded, reflected not only in the vogue for eugenics but also in Supreme Court Justice Oliver Wendell Holmes's famous opinion in Buck v. Bell (1927) upholding enforced sterilization of the feebleminded, and in the Immigration Act of 1924, which sought virtually to eliminate the immigration of southern and eastern Europeans, in part on the grounds of their biological unfitness.

In all of these debates, not to mention in schools and prisons and other institutions for the administration of the dependent or marginal, the language of intelligence played an important role, serving to link a perceived social problem with a biological identity. Some, however, challenged this way of evaluating individuals. William C. Bagley (1874–1946), a psychologist at Teacher's College, Columbia University, worried about the antidemocratic implications of an intelligence whose level was presumed to be set from birth and determinative of an individual's future possibilities; and Walter Lippmann (1889–1974) carried on an extensive debate with Terman about the results of the army testing program and what they meant about the intelligence of the American population. More prosaically, those who were subjects of the tests adopted a range of attitudes, from compliance to indifference to hostility, and public culture as often ridiculed the notion of testing in order to determine one's inborn potential as it supported such an idea. Nonetheless, what emerged and persisted throughout American culture was the belief that intelligence was something real, measurable, and able to influence, if not necessarily to decide, an individual's fate.

In Britain, intelligence and its tests provoked a much more ambiguous response. Following in the footsteps of Galton and Spearman, psychologists such as Cyril Burt (1883–1971) and Godfrey Thomson (1881–1955) worked energetically to establish the science of psychometrics and the practice of intelligence measurement, especially as part of the emerging field of educational psychology. Public interest in intelligence grew substantially after the war, and Thomson was particularly successful in promoting the adoption of intelligence testing by Scottish educational authorities. In England and Wales, however, the results were decidedly mixed. Little interest was evinced in large-scale mental testing, and in the main intelligence assessment, when it occurred, was conducted either for diagnostic reasons or by local educational authorities in the course of the 11+ examination, a test designed to determine which students would enter the university-preparatory curriculum. Many advocates saw standardized intelligence testing as representing a commitment to merit over privilege, a way of opening the class system to infusions of talent from below, and thus as central to ensuring the nation's progress by nurturing the biologically most able, regardless of origin. Ranged against these claims for merit, however, were not only those members of the elite who saw their privileges threatened, but also various groups who argued for a more complex calculus for determining what individual merit might mean. These debates continued well after World War II, resulting in both broad cultural familiarity with the notion of quantified intelligence and piecemeal application of the technology designed to make it visible.

INTELLIGENCE IN AN ENVIRONMENTALIST CONTEXT

During the period from 1930 to 1970, two issues dominated discussions of intelligence in both the professional and, increasingly, the popular literature: the number of primary intellectual abilities, and the degree to which intelligence was inheritable. The question of whether intelligence is one thing or many arose early in the construction of the modern understanding of the term and has persisted up to the present. Spearman’s demonstration of the unitary nature of intelligence, his g, was adopted by Burt and Terman and by most champions of IQ, and it became the dominant view in which intelligence was understood, both within the profession and popularly. Nonetheless, it did not go unchallenged. Diametrically opposed stood the American educational psychologist Edward L. Thorndike (1874–1949), who argued that the mind was composed of a vast array of specific and intrinsically independent abilities, with no underlying unity. Between them could be found, among others, L. L. Thurstone (1887–1955) and Thomson, who concluded on the basis of factor analysis that the primary mental abilities, though more than one, were few in number. During the postwar period, attempts were made to mediate this disagreement by, among others, Philip E. Vernon (1905–1987), who posited a pyramidal version of intelligence, with specific skills at the base and general intelligence at the apex. He was soon challenged, however, by Joy P. Guilford (1897–1987), whose model of mind eventually embraced 150 independent factors.

While the theoretical disagreement was profound, and the debate among these factions, especially during the 1920s and 1930s, was often sharp, the commitment of each to the existence of intelligence as a real entity with well-defined characteristics never wavered. David Wechsler (1896–1981), for example, began during the late 1930s to develop new instruments for measuring intelligence—the now-dominant Wechsler Intelligence Scale for Children (WISC) and Wechsler Adult Intelligence Scale (WAIS)—out of dissatisfaction with the Stanford–Binet scale and the concept of unitary intelligence. Unable to escape the practical demand for an overall measure of intelligence, however, he also provided an IQ score as well as assessments of verbal and nonverbal ability. Both intelligence itself as a singular, quantifiable entity and its technologies of display were by that time so well established and so thoroughly incorporated into the operating structures of schools and asylums that they had taken on lives of their own, independent of the worries of psychometricians.

If the representation of intelligence as a unitary entity largely persisted from the 1930s until well into the postwar period, the same cannot be said of its characterization as a biological potential genetically determined from birth. As early as the 1920s, questions were raised about the “nature” interpretation of intelligence, most significantly in the research of the anthropologist Franz Boas (1858–1942) on migration and changes in skull size among native peoples of northwest North America. With enthusiasm for wholly biological and especially eugenic explanations of social phenomena themselves waning (at least in the United States) by the end of the 1920s, a number of psychologists advanced more decidedly environmentalist interpretations of IQ at the level of race and ethnicity. In 1930, Brigham dramatically recanted his 1923 study, which had argued for the existence of a biological hierarchy of European groups (Nordic, Alpine, Mediterranean). At about the same time, Boas’s student Otto Klineberg (1899–1992) undertook research on the mean IQs of these European peoples and demonstrated that Brigham’s initial findings had been the result of specific environmental conditions and not of underlying biological differences. Klineberg went on to challenge assertions about the innate intellectual inferiority of African Americans, showing that African-American migration to northern cities produced IQ gains that could best be explained in terms of the different educational environments of the North and the South. This shift to “nurture” explanations of group-level differences was given official sanction after World War II, when UNESCO responded to Nazi eugenic policies by convening a conference on race, which concluded that race was a meaningless biological category and that suppositions of natural intergroup differences were unwarranted.

The nearly unanimous rejection of hereditary explanations for racial and group differences by the 1940s and 1950s was not matched, however, when researchers turned to explaining individual differences in measures such as IQ. There the commitment to biological conceptions of intelligence was much stronger, and the evidence more ambiguous. A number of studies conducted during the 1930s and 1940s, especially at the Iowa Child Welfare Research Station, buttressed the nurture side of the argument. Data on foster child placement, for example, indicated that IQ could change, often dramatically, when children were placed in different social and educational environments. At the same time, research on identical twins by Burt, among others, suggested that a high percentage of an individual’s IQ derived from his or her genetic inheritance. Although it is now clear that Burt’s results were fraudulent, other studies continued to show the

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68 Degler, *In Search of Human Nature*.


important influence of hereditary factors on an individual’s measured level of intelligence.  

What is perhaps most striking about these debates is that they did not seriously upset continued reliance either on the notion of intelligence or on its technology of measurement. The Scholastic Aptitude Test (SAT), developed by Brigham in 1926 as an alternative to content-based tests for college admission, was widely adopted by American universities during World War II as part of the process of accelerating the production of trained individuals for the war. With the end of hostilities, however, instead of being abandoned, the SAT became institutionalized; it was represented as a way to make elite education available to all who were able, regardless of social background or schooling. For those during the 1950s and especially the 1960s who were interested in applying psychology directly to social policy – as did the American Great Society program and the British welfare state – the possibility that intelligence could be increased by improving a child’s social environment could be used to justify a range of social programs, from neonatal care to school lunches to early childhood education. And in the mundane tasks of diagnosing learning difficulties and assigning students to educational tracks, intelligence continued to serve as a significant source of both legitimation and guidance in the decision-making process.

CONCLUSION: THE IQ DEBATES, SOCIAL POLICY, AND THE RETURN OF BIOLOGY

A new round of controversies about the nature of intelligence and its measures erupted in 1969, initiated by the work of Arthur R. Jensen (b. 1923), a professor of education at the University of California, Berkeley. Questioning the basis of programs such as Head Start, Jensen contended that environmentalist claims about intelligence were overstated and that both individuals and groups differed in terms of native abilities in ways that had significant social and economic consequences. His views sparked passionate responses from friends and critics alike. Coincident with a perceptible shift away from nurture explanations in a number of the human and biological sciences – epitomized by E. O. Wilson’s articulation of sociobiology and by what would soon become the ascendency of molecular genetics – and away from social interventionism in the realm of politics, Jensen’s claims were supported on both sides of the Atlantic by such psychologists as Richard J. Herrnstein (1930–1994) and Hans J. Eysenck (1916–1997), as well as by policy makers intent on tempering, if not dismantling, affirmative action programs and the welfare state. Jensen’s article also appeared in the wake of the social upheavals of 1968, a time when disenchantment with the Vietnam War and with Western capitalistic culture in general had helped to produce a serious, even pervasive, skepticism about experts and their claims to authority. The biological meritocracy envisioned by Jensen, Herrnstein, and Eysenck, especially given its highly racialized component, provoked a firestorm of criticism. Biologists and psychologists including Richard C. Lewontin (b. 1929), Stephen Jay Gould (1941–2002), and Leon Kamin (b. 1927) joined New Left college students and social critics in organized opposition, at both the technical and policy levels, to the hereditarian conception of intelligence being elaborated. The data on IQ and race and the results of identical twin studies received particular attention, with charges of racist and antiscientific bias mingling freely with arguments over the techniques used to measure heritability and the validity of intergroup comparisons.

What resulted was not so much a victory for one side or the other as a kind of institutionalized stalemate, marked by periodic skirmishes over the ensuing twenty-five years. James Q. Wilson’s (b. 1931) work on the connections between criminality and IQ during the mid-1980s, and then the publication in 1994 by Herrnstein and Charles Murray (b. 1943) of The Bell Curve – in which they argue that America’s socioeconomic stratification is a meritocratic reflection of differences in innate levels of intelligence – generated strong responses in both the popular and the professional press. There has been little open public support for claims that innate biological inequalities in intelligence exist between races or groups. Nonetheless, a dissatisfaction with the politics of pluralism among certain segments of the middle and working classes at the end of the 1990s may have made the meritocratic individualism inherent in arguments such as those contained in The Bell Curve more attractive than was publicly articulated. What is certainly clear is that the idea of unitary intelligence remains sufficiently vital in popular as well as scientific culture to continue to provoke discussion, even when challenged by the theories of multiple intelligence put forward by Howard Gardner (b. 1943) and

33 Leslie S. Hearnshaw, Cyril Burt, Psychologist (London: Hodder and Stoughton, 1979); Wooldridge, Measuring the Mind.
36 Block and Dworkin, The IQ Controversy; Duglas, In Search of Human Nature; Kevles, In the Name of Eugenics.
Robert J. Sternberg (b. 1949). Skepticism about the validity of intelligence tests and postmodern notions of the fractured self notwithstanding, intelligence in its various guises has become an institutionalized and deeply rooted aspect of culture, and especially of Anglo-American culture, one that is integral to the ways in which resources are allocated and democracy is discussed.
