

HAYEK'S BASTARDS MEET RASCH POSSESSION: DESTROYING THE MYTH OF BUNDLED IQ SCORES

Paul C Langley, Ph.D. Adjunct Professor, Graduate Faculty, College of Pharmacy, University of Minnesota and Sessional Lecturer, School of Pharmacy, University of Wyoming, Laramie WY

ABSTRACT

This paper demonstrates the imperative of Rasch measurement theory as the only scientifically defensible framework for evaluating latent traits and, in doing so, exposes the complete collapse of the concept of general intelligence and its illegitimate expression through bundled IQ scores. Despite their continued use in academic, clinical, and policy domains, often to justify racial hierarchy, social engineering, and the withdrawal of welfare support, IQ scores are mathematically and epistemologically incoherent. They are not, and have never been, measures. Rasch theory proves this, not through ideology or rhetorical critique, but through the discovery of universal mathematical structures that distinguish between valid and invalid claims to quantification.

At the core of Rasch measurement is the separation of two distinct ratio scales: linear ratio scales, appropriate for manifest physical quantities such as time and hospital days, and Rasch logit ratio scales, applicable only to latent traits manifested through structured response behavior. These scales are not interchangeable, and their mathematical properties are not compatible. In Rasch theory, the extent to which an individual possesses a latent trait, such as verbal abstraction or working memory, is measurable only if strict criteria are met: unidimensionality, invariance, and additivity. No IQ instrument has ever met these standards.

The logic of Rasch measurement makes the aggregation of cognitive domains into a single "intelligence" score impossible. Each cognitive capacity, verbal reasoning, spatial manipulation, working memory, must be assessed independently as a latent construct, and only then, if Rasch conditions are met, may we infer the extent to which a respondent possesses that specific trait. Profiles of trait-specific logit measures may be constructed, but no mathematical operation, no summation, averaging, or weighting, permits the combination of distinct logit scales into a single index. This is not a technical limitation; it is a structural prohibition rooted in the fundamental difference between latent and manifest measures, and between linear and logit ratio scales. The continued reliance on IQ scoring systems is not a neutral error; it is a deliberate perpetuation of racial myths under the guise of empirical science. The aggregation of ill-defined constructs into a unified score enables the classification of populations by an invented metric, facilitating a rhetoric of innate group difference and social stratification.

It is in this context that the title's invocation of Hayek's Bastards must be understood, not as a slight on Hayek's critique of scientism, but as a condemnation of those who invoke economic or statistical authority to justify biological determinism, inherited inferiority, and the dismantling of public obligation. These are the intellectual descendants of the eugenics movement, cloaking racial

hierarchy in mathematical language while defending policies of neglect as if they were acts of scientific necessity.

Rasch measurement offers a decisive refutation. It does not merely criticize the IQ edifice; it destroys it—mathematically, conceptually, and epistemologically—replacing a pseudoscientific myth with the possibility of valid, justifiable measurement, grounded in the discovery of the structure of possession. Where measurement is possible, it must be earned. Where it is not, it must be rejected.

Rasch measurement offers a decisive refutation. It does not merely criticize the IQ edifice; it destroys it, mathematically, conceptually, and epistemologically, replacing a pseudoscientific myth with the possibility of valid, justifiable measurement, grounded in the discovery of the structure of possession. Where measurement is possible, it must be earned. Where it is not, it must be rejected. This is the focus of this paper

INTRODUCTION

The concept of “intelligence” has long enjoyed an undeserved status as a quantifiable trait, embedded in psychometric practice and public policy alike. From school placements to employment screening, intelligence is treated as a latent psychological attribute that can be measured, compared, and modeled statistically. Nowhere is this presumption more entrenched than in the development and use of IQ tests, instrument batteries that purport to rank individuals according to cognitive capacity and distill this capacity into a single number. This number is then treated as a ratio measure, presumed to support statistical inference, regression modeling, and predictive claims about life outcomes. Yet this assumption rests on a profound misunderstanding of what measurement requires. This paper challenges the legitimacy of IQ as a measurable construct and demonstrates that so-called IQ “measures” fail to meet even the most basic axioms of fundamental measurement. The conclusion is clear and unavoidable: IQ tests do not measure intelligence because “intelligence,” as presently defined, is not a latent construct with a demonstrable measurement structure.

The central failure of IQ theory is ontological: it treats “intelligence” as a unified latent trait, yet provides no theoretical or empirical evidence for such unity. What is labeled intelligence is, in practice, a statistical artifact, an amalgamation of performance across heterogeneous item domains including verbal comprehension, arithmetic manipulation, analogical reasoning, and spatial visualization. These domains are bundled without demonstrating that they reflect a single, unidimensional trait. Without unidimensionality, there can be no claim to measurement. To sum or average scores across such domains and assign cardinal meaning to the result is not to measure a trait, but to manufacture an abstraction. IQ, far from being a valid indicator of latent ability, is a

non-measure: an ordinal index masquerading as a ratio-scale quantity.

This paper deconstructs the methodological and epistemological status of IQ by evaluating it through the lens of Rasch measurement theory; the only known framework capable of transforming

ordinal observations into scientifically valid measures of latent traits. Rasch provides the necessary and sufficient conditions for measurement, conditions that IQ tests consistently fail to meet. Rather than refine or reform IQ instruments, we argue that the construct itself must be abandoned. What is needed is not a better IQ test, but a rejection of the idea that intelligence is a single, measurable trait. In its place, we propose the recognition of more narrowly defined, substantively grounded latent constructs, each subject to rigorous testing for structure, unidimensionality, and invariance. Only then can claims of cognitive measurement enter the domain of science, but in terms of defensible manifestation of a latent construct.

At the same time, as the term *Hayek's Bastards* in the title of this paper might indicate, albeit to a relatively small but intellectually significant audience, the measurement of IQ and the interpretation placed on IQ scores has a darker side: the persistence of negative eugenic judgments¹. In the United States, this takes a particularly insidious form through the ideological framework known as *new fusionism*, a synthesis of neoliberal economics, cultural reaction, and biological essentialism. In this construction, the language of market rationality and individual freedom is fused with a belief in innate, inherited group differences, especially in cognitive capacity; the essence of Project 2025². At its core, new fusionism defends inequality not as a failure of institutions but as a reflection of natural order. And it relies critically on the symbolic authority of IQ scores to justify its worldview.

These scores, invalid as measures and meaningless as arithmetic quantities, become the empirical scaffolding for a politics of justified neglect. The premise is simple: if group differences in IQ are natural, immutable, and predictive of economic productivity, then the role of the state is not to intervene or equalize, but to retreat. Welfare, education, and health policy are reinterpreted not as instruments of justice but as irrational subsidies to the biologically unfit. It is a system of moral triage masked as realism. The poor are not victims of structural injustice; they are rendered cognitively inferior. The racialized and marginalized are not excluded by design; they are categorized by measurement. IQ, in this schema, becomes the keystone in a new architecture of exclusion.

This is not Hayek's vision of spontaneous order resisting central planning; it is the appropriation of his critique of scientism to defend an altogether unscientific caste logic. These are *Hayek's bastards*; those who invoke the rhetoric of freedom and empiricism while advancing the old eugenic dream under a new libertarian banner. And at the center of their narrative stands a false number: the IQ score, empty of measurement but full of consequence.

UNDERSTANDING LATENT CONSTRUCTS

The question of whether a latent construct is discovered or invented is not trivial. It cuts to the heart of what it means to do science in the human domain. In the physical sciences, many measurement constructs, such as mass, time, or electric charge, reflect intrinsic properties of the world, properties whose invariance and measurability suggest discovery. But when we turn to psychology, economics, and related fields, the situation becomes less clear. Are constructs like depression, utility, or intelligence intrinsic features of human beings that exist independently of theory, waiting to be uncovered? Or are they conceptual inventions, pragmatic tools for organizing behavior and making predictions, but lacking any objective ontological status?

In the case of latent constructs, the answer lies somewhere between these extremes. Latent constructs are not metaphysical entities with causal powers. They are hypotheses: proposed underlying traits inferred from consistent patterns in observed responses. A construct becomes scientifically meaningful only when it is defined precisely, structured unidimensionally, and supported by response data that can be transformed into an interval or ratio scale under strict invariant model conditions. That is, latent constructs are not simply invented; they are provisionally discovered when the conditions for measurement are met. Measurement, then, is the means by which we determine whether a latent construct has empirical content. A construct that cannot support measurement remains a metaphor or classification, not a scientific object.

This is precisely why “intelligence,” as conventionally conceived, cannot be accepted as a latent construct. It fails every test required for scientific status. There is no clear definition of the trait. It is variously described as reasoning capacity, learning potential, adaptability, or general problemsolving ability, descriptions that are vague, shifting, and often circular. More critically, the instruments used to operationalize intelligence do not support the claim of unidimensionality. IQ tests aggregate across disparate subdomains with no evidence that the responses form a coherent latent continuum. Without a demonstrable structure of increasing item difficulty mapped onto a single trait, no scale can be constructed, and no quantitative comparisons can be justified. The Rasch model, which provides the only known framework for testing whether a latent construct can support ratio-level measurement, exposes this failure^{3 4}. IQ scores do not arise from data that fit a unidimensional, invariant, additive structure. Therefore, they cannot be treated as manifestations of a measurable trait.

Some defenders of IQ argue that intelligence may still be understood as a broad capacity with multiple expressions, verbal, spatial, logical, numerical, and that IQ is simply a summary or estimate of that broader capacity. But this argument mistakes aggregation for measurement. There may well be complementary latent constructs that reflect different domains of cognitive function, each potentially measurable under Rasch conditions if properly structured. Verbal analogy solving may be one; numerical reasoning another. But these are not manifestations of a unitary underlying “intelligence” unless and until their responses can be shown to lie on a shared unidimensional continuum. To simply assume that these separate domains add up to a general factor is to conflate correlation with measurement and to substitute statistical artifact for scientific evidence.

This insistence on rigor is not a methodological fetish. It is a requirement of scientific reasoning. If latent constructs are to contribute to the evolution of objective knowledge, they must submit to the same standards as any other scientific claim. They must be testable, measurable, and invariant across samples and conditions. “Intelligence” fails this test not because humans lack cognitive capacity, but because the abstraction of a single, quantifiable intelligence collapses under scrutiny. If we are serious about measuring human capacities, we must move beyond folk constructs and develop instruments that define, constrain, and test for measurement. The problem is not that we cannot measure cognitive traits. It is that we cannot measure what does not exist in measurable form. Intelligence, as currently conceived, is such a fiction.

DECONSTRUCTING AN IQ INSTRUMENT

The most widely used so-called “intelligence” test in clinical and research settings is the Wechsler Adult Intelligence Scale (WAIS), now in its fourth edition ⁵. It exemplifies, in its structure and interpretation, the entire category error at the heart of IQ measurement. It assembles a collection of subtests drawn from disparate cognitive domains, verbal comprehension, perceptual reasoning, working memory, and processing speed, and purports, through aggregation and norm-referenced scoring, to distill a singular, quantifiable trait: full-scale IQ. This practice is not just methodologically flawed; it is epistemically incoherent. It reflects the uncritical assumption that distinct performance domains are manifestations of a single latent continuum. No such continuum has ever been demonstrated.

Each index within the WAIS is made up of subtests, Vocabulary, Similarities, Arithmetic, Digit Span, Block Design, Matrix Reasoning, and others, that vary dramatically in their cognitive demands, cultural loading, and response formats. There is no theoretical or empirical justification for treating the raw or scaled scores from these subtests as commensurate, let alone additive. The notion that Vocabulary and Matrix Reasoning, for example, represent varying degrees of a common ability is never tested. Instead, they are summed, weighted, and converted into a composite index under the assumption, never validated, that they share a unidimensional latent structure. This is not measurement. It is numerology.

A Rasch analysis of any one of these subtests would demand that the items within it satisfy strict conditions: unidimensionality, local independence, and a monotonic relationship between person ability and item difficulty. Only if these conditions are met could we say that the subtest measures a latent trait, and only then could a person’s response pattern be transformed into a meaningful, invariant measure of trait possession. None of this is attempted in the WAIS. Instead, the subtests are assumed to be valid and are aggregated into index scores, which are then further aggregated into a full-scale IQ. This is numerical storytelling on an industrial scale.

The aggregation of scores across fundamentally different tasks and domains violates every principle of fundamental measurement. It presumes, without evidence, that distinct cognitive tasks are merely surface manifestations of a deeper, unified trait. But in the absence of a demonstrable measurement structure, this is a fiction. What is required is not aggregation but deconstruction, the independent assessment of each subtest as a possible, but not presumed, expression of a distinct latent construct. Vocabulary might reflect lexical access and verbal abstraction. Digit Span may represent short-term memory span or attentional capacity. Block Design may reflect spatial visualization and constructional ability. Each of these, if meaningfully structured, could in principle be measured on its own terms.

But they must be treated as profiles, not parts of a whole. The fantasy of collapsing distinct human capabilities into a single scalar score must be abandoned. There is no reason, scientific or clinical, to believe that a person’s performance across all subtests should be reducible to one number. Doing so hides relevant variation, collapses distinct abilities, and substitutes simplicity for understanding. If there is anything worth preserving from the WAIS and its predecessors, it is not the full-scale IQ but the possibility that individual domains may, if appropriately structured and tested, yield valid measures. That means treating each as a separate latent construct, subject to Rasch testing and

confirmation. If the model fits, the measure exists. If it does not, the subtest must be rejected or revised.

The field must shift from the illusion of a general intelligence score to a profile of rigorously validated, independent measures. Only then can we claim to be measuring cognitive traits. Until that is done, IQ testing remains what it has always been: an unexamined ritual of aggregation, with the prestige of science and none of its discipline.

SOCIAL OPIUM EATING AND RASCH MEASUREMENT

The pseudoscientific framework built on unvalidated claims of human cognitive hierarchy is not just a methodological error, it is an ideological tool. The practice of assigning individuals to racial categories and declaring average cognitive differences between them, often by way of misapplied statistical models and false measurement, serves a social function ⁶. It is not merely mistaken science but instrumental narrative: a rationale for withdrawing moral obligation, erasing individual potential, and legitimizing social stratification under the pretense of objectivity. It is a mythology of inequality dressed in the costume of quantification.

At the core of this mythology lies the reassertion of fixed, heritable racial types; fabricated constructs assigned arbitrary boundaries but treated as biologically intrinsic. These fabricated categories are then ordered into a hierarchy: some groups deemed inherently competent; others pathologically deficient. Once this hierarchy is assumed, all variation within groups is ignored, and the policy focus shifts from equal opportunity to population management. Intervention becomes futile; merit is redefined as inheritance. This is not a theory of difference; it is the protofascist revival of the master race fantasy, supported by spurious metrics and enforced through institutional design. It is eugenics by another name, not through sterilization or gas, but through starvation, exclusion, and the quiet violence of neglect.

The political effect is to dissolve the social contract. Welfare, health care, housing, and education become viewed not as public goods but as opiates; unearned subsidies extended to those whose cognitive inferiority, defined through bad measurement, allegedly disqualifies them from full citizenship. The very idea of equality of opportunity is displaced. One's future is no longer shaped by access or effort, but by the pseudoscientific identity conferred at birth. This is not only unscientific; it is dangerous nonsense, a caste system built from numerical lies.

This is where Rasch measurement stands as a radical counterpoint. Not because it rescues the idea of intelligence, but because it *refuses to measure what cannot be measured*. Rasch imposes discipline where ideology demands freedom to invent. It refuses aggregation without unidimensionality, refuses scores without structure, and denies measurement where invariance fails. It does not support claims of superiority or inferiority across fabricated groups. It requires demonstration, not belief. Where a trait cannot be shown to exist on a measurable continuum, across all individuals, under invariant conditions, it rejects the claim.

Rasch measurement cannot be co-opted into race science because it does not tolerate untested constructs. It cannot validate hierarchy because it does not permit bundling without structure. It cannot rank populations without first demonstrating that the trait being compared even exists. That

is why Rasch is not merely a statistical tool; it is an epistemological safeguard. It protects against the misuse of numbers to advance ideological fictions. It rejects the social opium of false measurement, and with it the new fusionist fantasy of biologically ordained inequality. It restores to measurement what has been stripped from politics; that no human being can be dismissed by the weight of a number that signifies nothing.

THE TWO RASCH MEASURES AND THE DEATH OF AGGREGATION

To understand why the IQ construct disintegrates under scrutiny, we must return to the foundations of measurement itself. Rasch measurement theory identifies two distinct, irreconcilable types of measurement, each rooted in a fundamentally different mathematical structure. The first is the manifest linear measure, used for directly observable quantities such as time, distance, mass, and resource use. This measure relies on *constant absolute differences*, enabling operations on ratio scales that possess a true zero and uniform, interpretable units. These are the familiar instruments of the physical sciences, governed by cardinal numbers. If one patient spends twice as many days in hospital as another, that difference is meaningful, replicable, and arithmetic.

The second, and more conceptually radical, is the Rasch logit measure, used for latent traits, constructs that cannot be observed directly but can be inferred from consistent, structured response patterns. These are not physical quantities; they are manifestations. The Rasch model transforms ordinal responses into interval-level logit measures based on *constant relative differences* in the odds of a successful response. A one-logit difference means the odds of endorsing or succeeding on an item are multiplied by a constant factor. The unit is not additive in the linear sense but multiplicative in the probabilistic sense. The logit is not a cardinal number. It is a measure grounded in the natural and discovered logarithmic structure of response probability.

This distinction is mathematically inviolable. Logit measures and linear measures operate in entirely different metric spaces. You cannot combine them, average them, or reduce them to a single score. More importantly, even among logit measures, aggregation is impossible unless the items all form a single unidimensional continuum. If two latent constructs each support their own Rasch-calibrated logit scale, say, verbal reasoning and spatial manipulation; they cannot be collapsed into a single trait without destroying the measurement structure. Each logit scale represents the invariant hierarchy of a distinct latent attribute. No mathematical operation permits their fusion.

This is the point at which the entire apparatus of IQ collapses. IQ theory assumes that multiple cognitive domains can be assessed, scored, and then averaged or summed to yield a single index. This is arithmetically illegitimate. Rasch does not merely refuse such aggregation on theoretical grounds; it proves its impossibility. The mathematics of measurement forbids it. You cannot sum logits across constructs. You cannot reduce a multidimensional response structure to a scalar score. You cannot assign a number to “intelligence” unless it arises from a single latent construct that meets the model’s conditions. If no such construct exists, and none has ever been demonstrated, then there is nothing to measure and no number to assign.

The discovery of the logit was not just a technical innovation; it was a paradigm shift. It revealed that the measurement of latent traits required a fundamentally different framework than that of

manifest physical variables. It placed limits on what can be claimed, demanded proof of structure, and exposed the fraud of aggregation. It marked the end of the illusion that measurement is simply assigning numbers. It imposed discipline on the human sciences, a discipline that IQ theory has never acknowledged, let alone satisfied.

Thus, Rasch does not merely critique the IQ score; it renders it impossible. Not through opinion or ideology, but through mathematics. Any framework that aggregates scores across subtests, collapses domains into composites, or pretends to rank human beings along a dimension that has never been measured, is not just methodologically flawed; it is mathematically incoherent. Rasch does not offer a better IQ test. It proves that the IQ test, in principle, cannot exist. Not because human cognition cannot be measured, but because measurement cannot occur where the conditions for measurement are absent. This is not a matter of preference or interpretation. It is the universal optics of mathematics asserting its authority over the illusions of social science.

POSSESSION IS EVERYTHING

In Rasch measurement, the objective is not to rank individuals by a single, synthetic score, nor to claim a totalizing index of human worth. It is to establish, under strictly defined conditions, whether a specific latent trait is present in an individual, and to what extent that trait is *possessed*. The Rasch model is not concerned with assigning people to hierarchies; it is concerned with transforming ordinal responses into meaningful, invariant measures of individual difference: *but only within the confines of a single, unidimensional trait*. That trait must be defined precisely, structured through items of increasing challenge, and confirmed by model fit. If these conditions are met, we are justified in interpreting the resulting logit score as an estimate of possession on a mathematically coherent scale.

Critically, Rasch measurement never yields a global score. It produces a *profile of trait-specific measures*, each one distinct, each independently validated. Every trait must earn its own metric. There is no aggregation across constructs. To do so would violate the fundamental axioms of measurement. A person's performance across tasks measuring, say, working memory and verbal analogical reasoning may each be measurable, if each task satisfies Rasch conditions, but no mathematical operation can legitimately combine these into a single score. Each measure reflects possession of a different attribute, and *the units of each scale are not interchangeable*. The logit scale is not additive across traits; it is defined within a trait.

These individual logit measures are not speculative. They are invariant: they do not change with the sample of respondents or with the particular test items, provided the model holds. This invariance allows us to make claims not only about individuals, but about populations, patient groups, demographic cohorts, or educational subpopulations. But again, only within traits. The average logit score for a group on a given latent construct is meaningful only if the measure itself is valid. It supports statements like: "This population possesses, on average, more of this welldefined trait than another population," and with associated measures of dispersion, such claims are empirically accountable. They do not reduce individuals to a fixed hierarchy; they represent distributions of trait possession, each grounded in measurement, not in myth.

Rasch measurement thus offers no support, none, for the ideological fiction that cognitive performance or personal value can be distilled into a singular index. It dismantles that fiction entirely. Where IQ theory aggregates incompatible domains into a spurious composite, Rasch exposes that operation as invalid. Where IQ proponents treat differences as innate and immutable, Rasch shows that only well-defined constructs can be measured, and only with instruments that satisfy the strict criteria of measurement theory. Where IQ is used to justify neglect, exclusion, or triage, Rasch insists that any claim to difference must first be demonstrated, and demonstrated one construct at a time.

Rasch does not offer the possibility of a new master scale. It offers something far more disciplined and humane: the possibility of *valid, context-sensitive, construct-specific measurement*; measurement that illuminates variation, supports intervention, and resists the ideological abuse of numbers. Possession is everything, but only possession of a defined trait, measured within a defensible logit structure. That is the limit of what science can tell us. And it is enough.

CONCLUSION

The deconstruction of the false belief in single, bundled intelligence scores is not just a technical or theoretical correction; it is a political and moral necessity. We are witnessing, in the contemporary United States, the resurgence of eugenic reasoning under the guise of policy rationalism and statistical objectivity. This revival, often rebadged as “new fusionism,” repackages long-discredited ideas of biological determinism, cognitive hierarchy, and racial essentialism in modern rhetoric. But the core impulse remains unchanged: to categorize individuals by birth, to naturalize inequality, and to withdraw the responsibilities of the state on the pretext of inherent human difference.

This new ideology finds its justification in bad measurement; specifically, in the misuse of composite scores, the abuse of ordinal data, and the conflation of statistical association with scientific evidence. At its center stands the longstanding myth of a single, quantifiable “intelligence”; a hierarchy that determines social value and justifies social neglect. This mythology, promoted for decades by mathematically illiterate social right wing theorists, has now been weaponized as a rationale for the dismantling of welfare systems, educational equity, and public health. It is not merely pseudoscience; it is policy masquerading as mathematics. And it is collapsing under its own incoherence.

Rasch measurement exposes this edifice as a lie. It offers not another model of hierarchy, but a principled refusal to measure what cannot be measured. It insists that traits be defined, unidimensional, and invariant before any claim can be made about their possession. It recognizes that profiles of cognitive traits may be measurable under strict conditions, but that no legitimate arithmetic permits their aggregation. What Rasch provides, and what its critics cannot confront, is a mathematical proof of limits; a boundary between what can be known and what must be rejected as fiction.

We are not merely dealing with flawed science. We are confronting a charade of neo-fascist propaganda, cloaked in the authority of numbers. We are in a moment that echoes, with disturbing clarity, the logic of Germany in the late 1930s: the ranking of lives, the withdrawal of care, the

redefinition of humanity in mathematical terms deliberately designed to exclude. The danger is not theoretical. It is immediate. And it will not be confronted by appeals to empathy alone. It must be met with the hard edge of mathematics. The mythology must be dismantled with structure, with proof, and with an uncompromising demand for scientific integrity. Rasch measurement does not merely resist this ideology; it renders it untenable. The arithmetic of possession defeats the arithmetic of hate.

ACKNOWLEDGEMENT

This paper benefited from the use of OpenAI's ChatGPT (GPT-4, 2024–2025), which served as a valuable tool in refining arguments, structuring content, and improving the clarity of presentation. While the author retains sole responsibility for all content, interpretations, and conclusions, the interactive support provided by this AI platform contributed meaningfully to the writing and editorial process

REFERENCES

¹ Slobodian Q. *Hayek's Bastards*. New York: Zone Books, 2025

² Dans, P., Groves, S. (Eds.). *Mandate for leadership: The conservative promise*. 2023. The Heritage Foundation

³ Bond T, Yan Z, Heene M. *Applying the Rasch Model: Fundamental Measurement in the Human Sciences* (4th Ed) New York: Routledge, 2021

⁴ Andrich D, Marais I. *A Course in Rasch Measurement Theory: Measuring in the Educational, Social and Health Sciences*. Singapore: Springer, 2019
Zone Books, 2-25

⁵ Wechsler, D. *Wechsler Adult Intelligence Scale – Fourth Edition (WAIS-IV)*. 2008. San Antonio, TX: Pearson Assessment.

⁶ Herrnstein R. Murray C. *The Bell Curve: Intelligence and Class Structure in American Life*. New York: Free Press 1994.