

Canaries in the coalmine: A narrative review of contributions to cognitive assessment by marginalised psychologists

Tiahn Hannaford

tiahn@juicygyri.org

Masters of Clinical Neuropsychology (Macquarie University)

Research Assistant (Western Sydney University)

Content Warning

1. This presentation contains discussion of discrimination, prejudice and touches on the harms of the eugenics movement.
2. This is a short presentation – I will be making some generalisations and reductive points, where nuance exists.

It is more than okay to step out if this isn't your speed, and I welcome conversation after if you want to share your thoughts!

Coalmine: The systems we operate in, at times a source of harm.



Coalminers: People with a stake in the field of neuropsychology.



Canaries: People who use their positionality to form insights regarding 'blind spots' of the field, and alert others to the risk of harm, whilst being vulnerable to systemic harms themselves.

Methodology – ‘Big Q’ qualitative, reflexive narrative review

This research interest is part of my professional reflexivity work on how I relate to, and fit into, the field of clinical neuropsychology.

I come at this topic from a position of curiosity more than judgement. I believe:

- No-one is, or was, an idealised perfectly moral person.
- Science is all about learning from the mistakes, missteps, and successes of others.

My perspective is informed by my positionality, including:

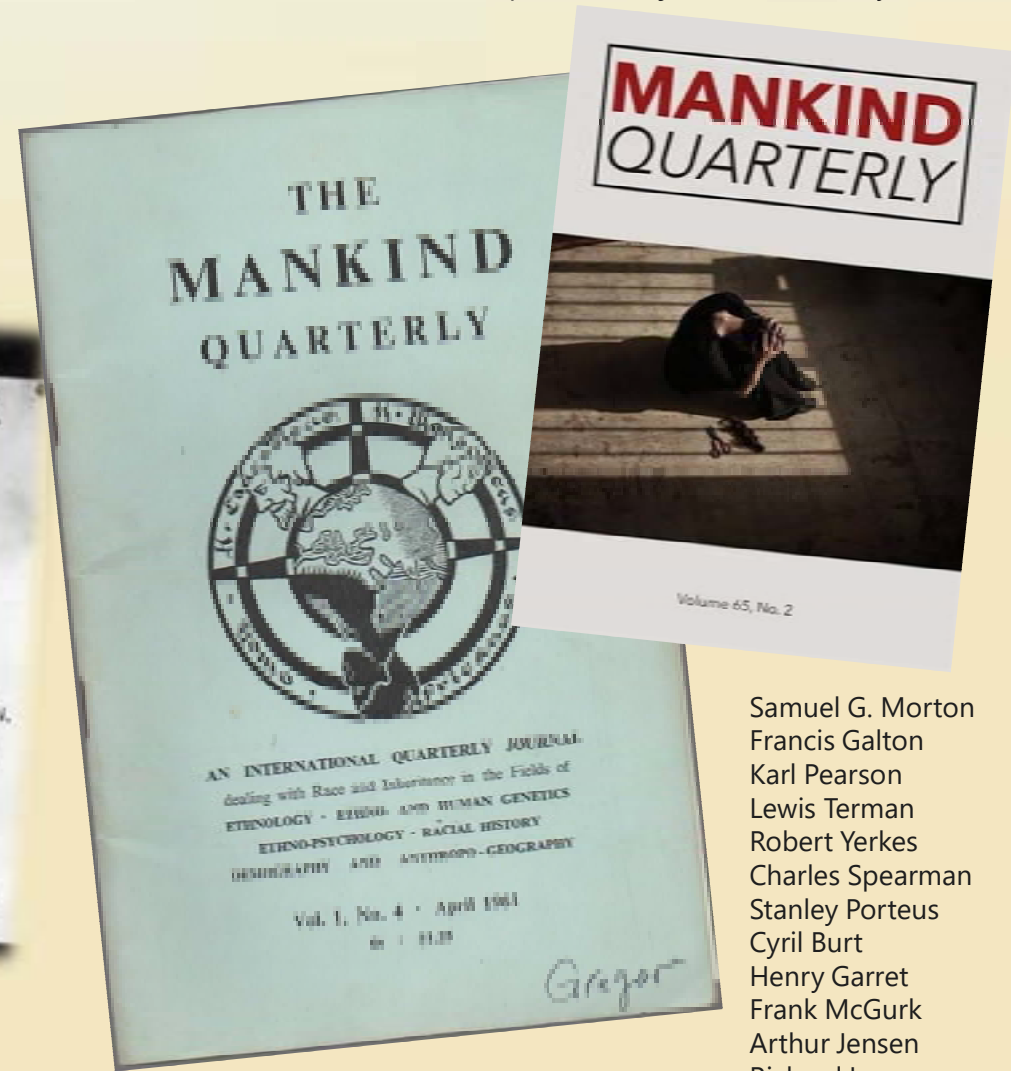
- My career before neuropsych as a research assistant, support worker, counsellor, and mental health policy advocate.
- My personal identity and life experiences including both privileges and disadvantages.
- My masters research leading me to explore models of cognitive abilities and their quantitative or empirical evidence.
- My current work at WSU supporting cross-cultural neuropsychology research & database development.

"Scientific racism" movement still publishes a 'journal' to this day!

A bit of background...



Eugenics posters and presentations featured at public fairs across the US in the 1920's & 1930's. This one is a widely shared example (credit: American Philosophical Society).



Samuel G. Morton
Francis Galton
Karl Pearson
Lewis Terman
Robert Yerkes
Charles Spearman
Stanley Porteus
Cyril Burt
Henry Garret
Frank McGurk
Arthur Jensen
Richard Lynn

Cognitive Ability Levels of 9th-Grade Students across Germany's Federal States: IQB Education Trends 2009–2024 and the Role of Migration Background

Ronald Henss

Published: 2026/03/01

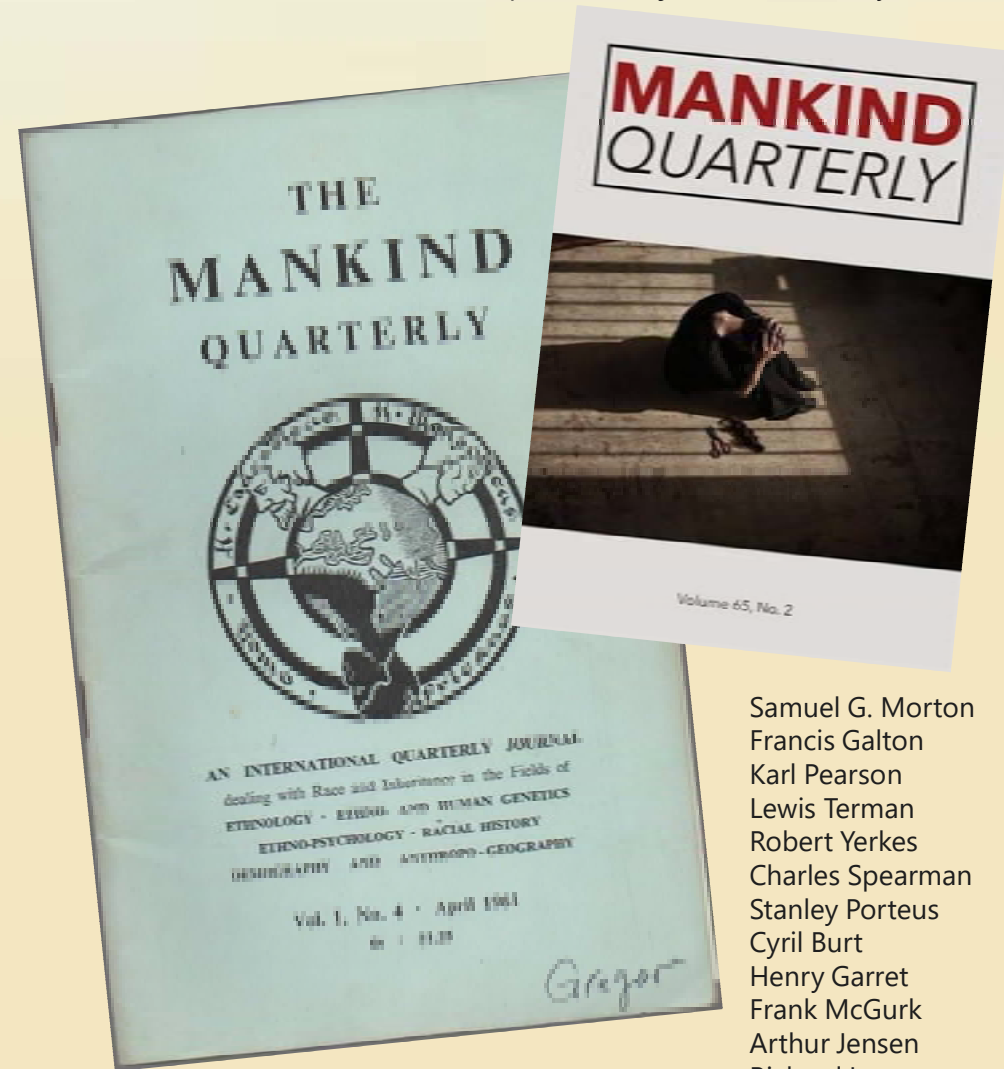
Abstract

The IQB Education Trends constitute Germany's national counterpart to the PISA studies. In large-scale representative assessments conducted in 2012, 2018, and 2024, the performance of 9th-grade students in mathematics, biology, chemistry, and physics was measured, while German and English were assessed in 2009, 2015, and 2022. The present study analyses these data at the level of Germany's 16 federal states. At this highly aggregated level, performance across subjects (with the exception of English) and across all assessment cycles is extremely highly intercorrelated and can be reduced to a single global factor termed IQ-B, which may be interpreted as an almost perfect measure of general intelligence. This factor reveals a massive performance advantage of the eastern over the western federal states. After controlling for the proportion of students with a migration background, this advantage disappears entirely while a clear south-north gradient becomes evident. The region of origin of migrants emerges as a decisive variable: immigration increasingly originates from countries with substantially lower average cognitive ability. Demographic projections indicate that the share of the ethnic German population will shrink to less than one-third by the year 2100. Continuation of current trends would inevitably lead to a substantial decline in Germany's average cognitive ability level.

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Name: Leta Stetter-Hollingworth
(1886-1939)

Context:

- A suffragette, eugenicist & schoolteacher
- By law wasn't allowed to work as a teacher after marriage
- Completed her PhD in psychology
(accessed admission via her husband's network)



Why could she so easily see the impact of sexism on cognitive ability research, but not the same impacts in classism and racism?

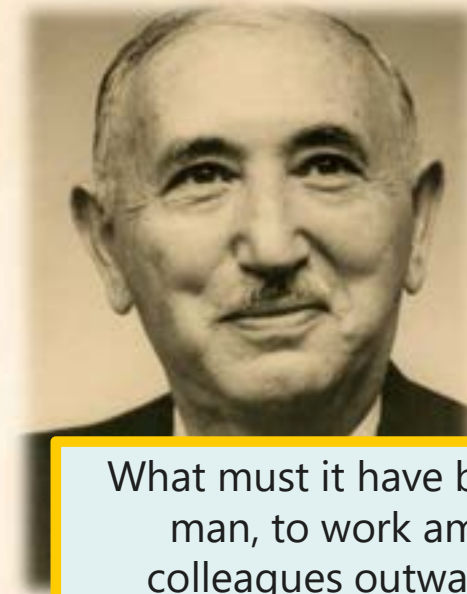
Key Contributions:

- Psychology PhD in 1916 on "Functional periodicity: An experimental study of the mental and motor abilities of women during menstruation."
- Published empirical refutations to the Greater Male Variability Hypothesis
- Studied giftedness in children and argued for the sterilisation of "mentally deficient" children.

Name: David Wechsler
(1896–1981)

Context:

- Immigrated to the US with his family at age 6 to escape antisemitic persecution in Romania.
- Worked in the world wars in psychometric testing using the Army Alpha & Beta tests.
- After WWII, supported the plight of stateless Jewish people & worked to establish academic psychology in Israel



What must it have been like as a Jewish man, to work amongst academic colleagues outwardly supportive of antisemitic eugenic projects?

Key Contributions:

- Developed the Wechsler Scales (WAIS, WISC, WMS, WPPSI) shifting towards scaled scores over 'mental age'
 - Emphasised non-genetic influences on intellectual ability.
 - Observed the English-language bias of earlier tests, added more non-verbal tasks and partitioned out 'verbal' and 'performance' quotients.
- Refused to weigh in on the 'race and intelligence' debates, leading to unfortunate outcomes.

Name: Psyche Cattell
(1896–1981)

Context:

- During her homeschooling, struggled to learn to read and had to fund her own way to university.
- Her father, eminent psychologist James McKeen Cattell, did not believe she had the intellectual aptitude to encourage her further education.
- Never married, and became one of the first unmarried women to successfully adopt children.



What did she think, but not say, about her views on the eugenicist policies and view of intelligence pushed by those around her (including her father)?

Key Contributions:

- Published: The Measurement of Intelligence of Infants and Young Children (1940), and Cattell Infant Intelligence Scale (for ages 2 to 30 months)
 - Demonstrated it was possible to measure cognitive abilities in infants, and demonstrated no meaningful differences across sex, race or socio-economic status of the infants.
- Wrote a popular parenting book in the 1970's Raising Children with Love and Limits

Name: Robert L. Williams II
(1930–2020)

Context:

- Grew up under segregation in Arkansas (Jim Crow era)
- Was given an IQ test in junior high-school and told he was suited only to manual labouring work.
- One of the first Black Americans to gain a PhD in psychology and founded the National Association of Black Psychologists (US).

Key Contributions:

- Coined 'Ebonics', now called African-American Vernacular English (AAVE) recognising it as a legitimate dialect of English, rather than "deficient poor English" as it had been regarded.
- Published: Black Intelligence Test of Cultural Homogeneity (BITCH-100, 1972)
 - Demonstrated that the WISC-R systematically underestimated Black children's intellectual abilities due to cultural bias.
 - White children performed worse on the BITCH-100 which was deliberately oriented toward Black culture.



If someone were to create a measure today to highlight the flaws in our current tools, which social groups would they be aiming to be a canary for?

Final thought

Before mining was made safer through better systems of work and improvements to sensor technology, miners found a way to support the canaries.

Reflexivity might act in the metaphor as a resuscitation cage of sorts. As in, it is not a solution to systemic harms, but it can help us to ease the burden on the canaries in our field by helping us spot our blind spots.

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RESUSCITATION CAGE FOR MINE CANARIES

CANARIES and mice are often used by the men entering a mine after an explosion or fire. These little animals, being more sensitive than man to carbon monoxid in the atmosphere, will give quick indication of the presence of this deadly and odorless gas.

Usually, in the past, the canaries or mice have the mine in ordinary cages use of a canary or mouse



Bonus Slides

(for if there's time or questions)

Name : Stanley Porteus
(1883–1972)

Context:

- Australian, though also lived in Honolulu, Hawaii
- Created the Porteus mazes (most maze-based psychometric tools followed from this, though have fallen out of favour in recent years),
- Actively racist, eugenicist who sat on the board of eugenics societies post-WWII (into the 1960's) he never softened his views.
- Subjected Indigenous Australians and indentured workers in Hawaii to colonial 'science' with an explicit agenda of reinforcing racial hierarchy.
 - Published a book on this topic.
 - Misinterpreted his own data to support his social views.



DISHONOURABLE MENTION

Name: Alexander Luria
(1902–1977)

Context: **HONOURABLE MENTIONS**

- Lived in Kazan, Russia
- Worked at the same time as Wechsler, but behind the Iron curtain so his work was not influential in the West until the 1960's
- He had a socio-cultural focus to his work, rejected the reductivism in contemporaneous quantitative approaches.



Name: Muriel Lezak
(1927–2021)

Context:

- Wrote 'the bible' of neuropsychology, Neuropsychological Assessment, synthesising Luria's approach with use of empirical tools
- Rejected the overreliance on overall IQ (IQ: RIP, 1988) and brought focus to executive functioning and quality-of-life outcomes in brain injured people, pushing for better tools to measure EFs
- Advocated for wives of brain-injured soldiers, starting support groups for them