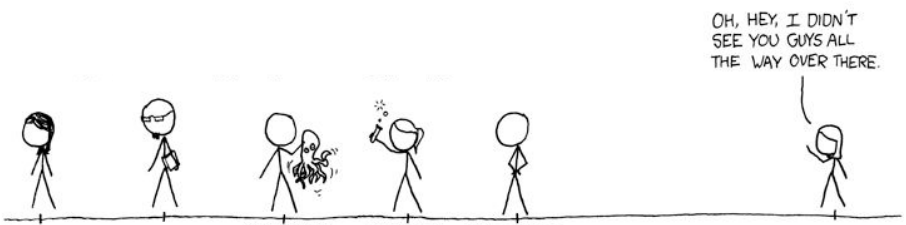
Cognitive psychometrics: ethical considerations

Joachim Vandekerckhove

Spring 2025



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- Requires serious ethical scrutiny
- Easily abused by scientific racists, eugenicists, and other pseudoscientists

The shadow of the past

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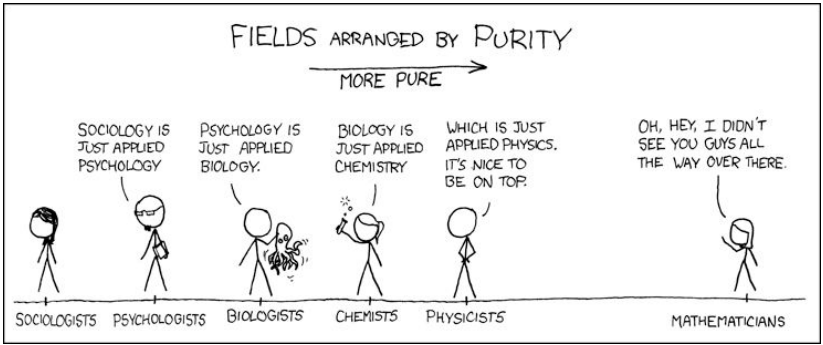

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Definition (Scientific racism)

Use of pseudoscientific practices and claims to justify racial hierarchies or discrimination. Measurement of skull sizes (phrenology) within and between populations was used to conclude that some races are inherently less intelligent.

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Definition (Eugenics)

The belief or practice of improving the genetic quality of the human population through selective breeding or sterilization. Some governments have enacted policies to sterilize individuals deemed "unfit" to reproduce (e.g., based on mental health diagnoses), and make health care more easily accessible for certain subpopulations than others, etc.

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- **Consequences:** discriminatory immigration policies (e.g., US Immigration Act of 1924), forced sterilization programs.
- **Ethical breaches:** gross cultural bias, lack of validity, confirmation bias, justification for harmful social engineering.
- **Today:** This still just happens, it's not even particularly more subtle (e.g., Richard Lynn's "The Intelligence of Nations" was published in 2019; Lynn also argued for sex differences in intelligence).

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- **Ethical breaches:** lack of fairness and equity, failure to consider construct-irrelevant variance.

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(E.g., Lynn's work compared children in remedial education programs to children in regular high schools.)

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- **Transparency issues:** limited access to test content or understanding of scoring for test-takers.

Contemporary ethical challenges

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- Any number of computer image processing studies are basically phrenology (physiognomy).

> J Pers Soc Psychol. 2018 Feb;114(2):246-257. doi: 10.1037/pspa0000098.

Deep neural networks are more accurate than humans at detecting sexual orientation from facial images

Yilun Wang [1], Michal Kosinski [1]

Affiliations – collapse

Affiliation

1 Graduate School of Business, Stanford University.

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- Tools like differential item functioning (DIF) analysis help detect bias.

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- Challenges in test translation and cross-cultural adaptation.

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- Critical for vulnerable populations (minors, patient groups, the incarcerated).
- **Common ethical principles:** autonomy, beneficence, non-maleficence.

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- **Ethical principle:** justice, scrutiny of consequences.

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- Need for transparency in algorithmic decision-making

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- The "black box" problem: lack of transparency in AI-driven assessment decisions.

Ethical measurement practice

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- Cognitive modelers need to keep track.

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- Promoting transparency in test development and scoring processes.

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- Understand the limitations inherent in any measurement instrument.
- Advocate for ethical practices and consider societal impact of your contributions and omissions.

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