Unwrapping Your Crystal Ball: The Ethical Concerns of Predicting the Future

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● Professional Ethics Guidelines
● Rise of the Algorithm
● Current Example - Multiple Measures Assessment Project
● Ethical Considerations
Professional Ethics Guidelines

- **Code of Ethics** adopted by AIR membership in 1992 and updated in 2001

  - PREAMBLE: The Code of Ethics of the Association for Institutional Research was developed to provide members of the Association with some broad ethical statements with which to guide their professional lives and to identify relevant considerations when ethical uncertainties arise. It also provides a means for individuals new to the profession to learn about the ethical principles and standards that should guide the work of institutional researchers.

  - Sections include:
    - Competence
    - Practice
    - Confidentiality
    - Relationships to the community
    - Relationships to the craft
Personal Moral Guidelines/Obligations

But what about personal moral obligations?
Rise of the Algorithms

al·go·rithm

NOUN

a process or set of rules to be followed in calculations or other problem-solving operations, especially by a computer.
“a basic algorithm for division”
Algorithms

Algorithms are rules or formulas used to make decisions

Even simple algorithms may outperform professional judgment

See the collected work of Paul Meehl

Algorithms are less expensive than professionals

Large data sets increase statistical power

Fewer Type II Errors and greater ability to detect small effects
Predictive Analytics

Using data and algorithms to predict future outcomes based on historical data.

Data mining, machine learning, and artificial intelligence

If it’s better, where does the bias come in?
Sources of Bias

Algorithms have bias because…
History of Data Mining and Predictive Analytics

- Data mining and predictive analytics outside of higher education
  - Weather forecasting, customized advertisements

- Data mining and predictive analytics inside of higher education
  - Light touch, rise of technology initiatives to use predictive analytics
Multiple Measures Assessment Project (MMAP)

“High school transcript data are explored in depth and predictive models, derived from logistic regressions and recursive partitioning and regression tree procedures (aka, decision trees), presented and reviewed”
Discussion - Ethical Guideline Considerations

Other fields - Healthcare as an example

Education Field

- What are the implications for the IRPE?
- How do we ensure PA is being done ethically for the field?
- Do we need ethical guidelines for data monitoring and PA? If yes, what should they be?
Questions?