

# Decades of Research on Personnel Selection in Organizations: Key Evidence & Principles

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# A Century of Selection Research

2014



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## A Century of Selection

Ann Marie Ryan<sup>1</sup> and Robert E. Ployhart<sup>2</sup>

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<sup>2</sup>Darla Moore School of Business, University of South Carolina, Columbia, South Carolina 29208; email: ployhart@moore.sc.edu

2008

## Personnel Selection

Paul R. Sackett<sup>1</sup> and Filip Lievens<sup>2</sup>

<sup>1</sup>Department of Psychology, University of Minnesota, Minneapolis, Minnesota 55455; email: psackett@umn.edu <sup>2</sup>Department of Personnel Management and Work and Organizational Psychology, Ghent University, Henri Dunantlaan 2, 9000, Ghent, Belgium; email: filip.lievens@ugent.be

# Selection Research

## Diversity of **settings**

- Private sector
- Public sector
- Military
- Educational
- Health professions

## Diversity of **studies**

- Experimental studies
- Longitudinal studies
- Case studies
- Meta-analyses

## Diversity of **countries**

## Diversity of **samples**

## Diversity of **jobs**

- Clerical jobs
- Service jobs
- Manufacturing jobs
- Top management, ...

# Objectives & Outline

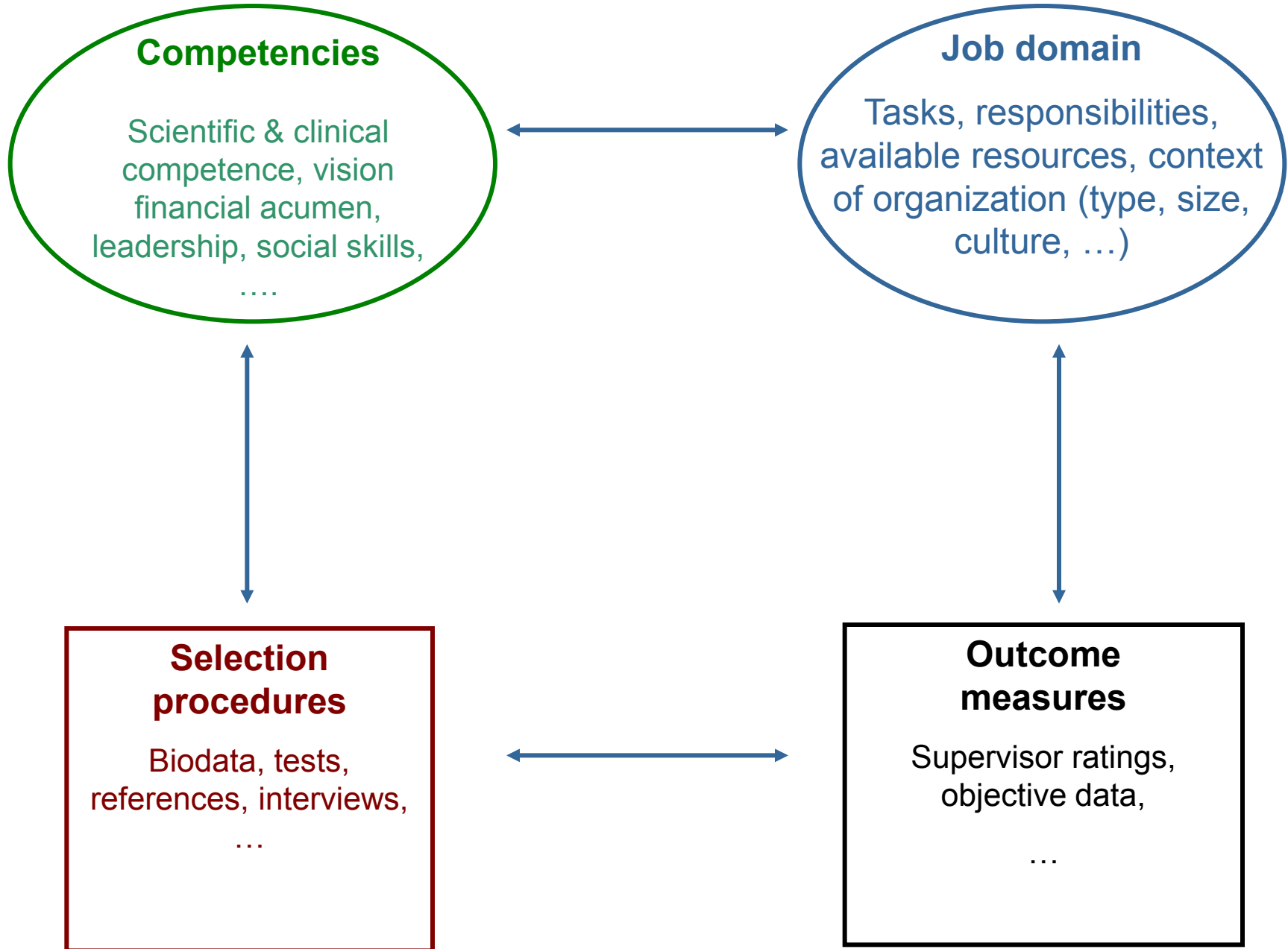
Basic selection model

Seven evidence-based principles

Validity of most common selection procedures

# Basic Selection Model

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# Seven Evidence-based Selection Principles

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# 1. Adopt Standardization

## Rationale

- ▶ Avoid rater effects & idiosyncrasies
  - First impression effect, “similar-to-me” effect, ...
- ▶ Increase reliability

## Two main approaches

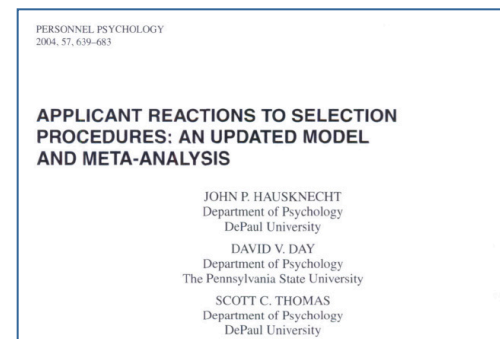
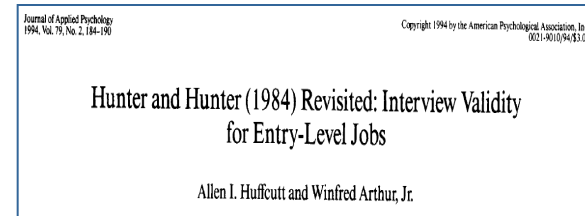
- ▶ Standardizing stimuli
- ▶ Standardizing scoring

# Example: Standardizing Interview Questions

Description	Validity ( <i>r</i> )
Level 1: Unstructured interview (no constraints)	.20
Level 2: List of topics to be discussed	.35
Level 3: List of main & follow-up questions	.56
Level 4: Exact same questions with no follow-up	.57

## Implications

- ▶ Higher levels of standardization pay off.
- ▶ “Multimodal” interviews

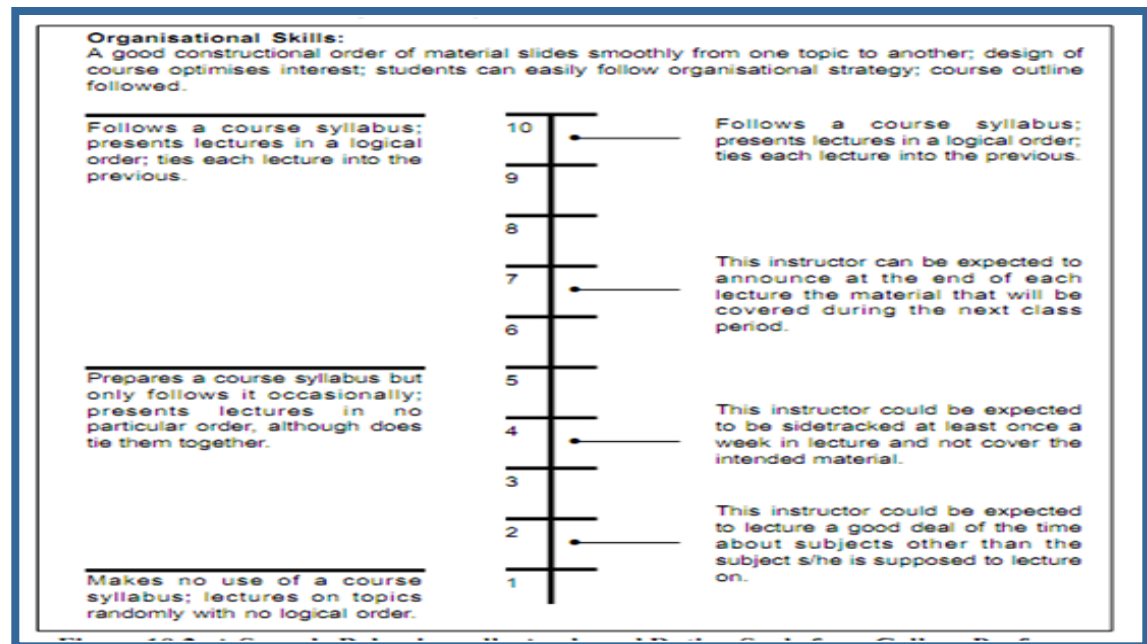


# Example: Standardizing Interview Scoring

Level 1: Global assessment

Level 2: Score on competencies

Level 3: Score on each question



Example of behaviorally-anchored rating scale (BARS)

## 2. Gather Samples of Past & Future Behavior

“The best prophet of the future is the **past**.”

- ▶ Biodata, experience
- ▶ Past accomplishments



“Simulate future situations in selection.”

- ▶ Assessment of **potential**
- ▶ Scenario-based instruments

*Journal of Applied Psychology*  
1968, Vol. 52, No. 5, 372-376

### SIGNS, SAMPLES, AND CRITERIA

PAUL F. WERNIMONT  
*3M Company, St. Paul, Minnesota*

AND

JOHN P. CAMPBELL  
*University of Minnesota*

Proposes a new emphasis in the prediction of future job behavior. The essence of the suggested procedure is the establishment of consistencies between relevant dimensions of job-behavior and preemployment-behavior samples obtained from real or simulated situations. If samples instead of signs are employed, a number of prediction and measurement problems seem to be alleviated or at least confronted more directly. An emerging technology of behavior sampling and measurement would appear to put these goals within reach.

# Example: Structured Interviews

## Past-behavior interviews

- ▶ “Tell me about a past situation where you had to show resilience. What was your role? What was the result?”



## Situational interviews

- ▶ “What would you do if X does not agree with your plan?”

Journal of Occupational and Organizational Psychology (2002), 75, 277–294  
© 2002 The British Psychological Society



[www.bps.org.uk](http://www.bps.org.uk)

### **Asking applicants what they *would do* versus what they *did do*: A meta-analytic comparison of situational and past behaviour employment interview questions**

Paul J. Taylor<sup>1\*</sup> and Bruce Small<sup>2</sup>

<sup>1</sup>Chinese University of Hong Kong and University of Waikato, Hamilton, New Zealand

<sup>2</sup>AgResearch, Hamilton, New Zealand

# 3. Use Selection Stages

“Select out”



“Select in”

- ▶ Screening
- ▶ Factual info: ability, knowledge, expertise

- ▶ Identifying the best
- ▶ Motivation, personal & interpersonal skills

Journal of Applied Psychology  
2007, Vol. 92, No. 4, 978–992

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0021-9010/07/\$12.00 DOI: 10.1037/0021-9010.92.4.978

Working Hard and Working Smart: Motivation and Ability During Typical and Maximum Performance

Ute-Christine Klehe and Neil Anderson  
University of Amsterdam

© 2011 American Psychological Association  
0021-9010/11/\$12.00 DOI: 10.1037/a0023298

Designing Pareto-Optimal Selection Systems: Formalizing the Decisions Required for Selection System Development

Wilfried De Corte  
Ghent University

Paul R. Sackett  
University of Minnesota, Twin Cities Campus

Filip Lievens  
Ghent University

# 4. Use Multiple Information Sources

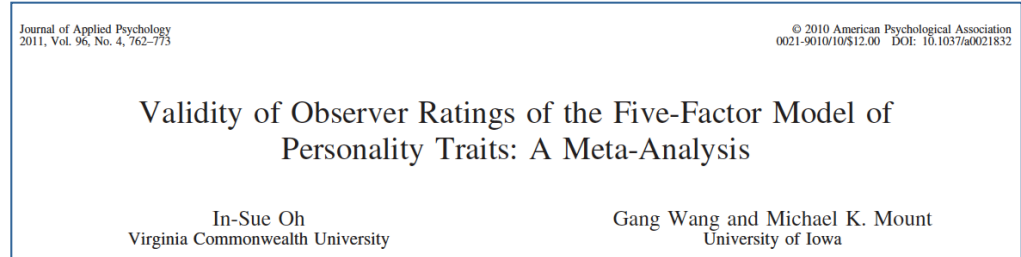
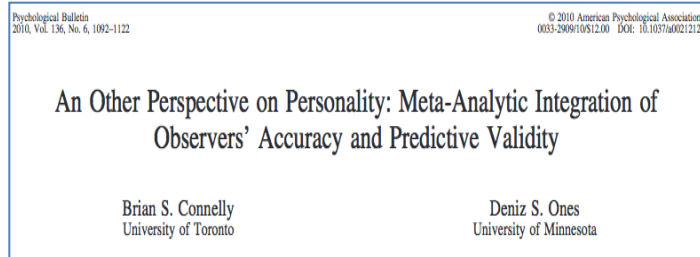
## Self-reports

- ▶ Applicant
- ▶ “Identity”
- ▶ But: Leniency, faking good



## Other-reports

- ▶ Supervisor, colleagues, 360° “Reputation”
- ▶ But: Friendship bias, ...



Provide information over & above each other  
 (“incremental validity”)

# 5. Rely On Principle of Aggregation

Aggregate information about same competency over multiple instances

- Selection procedures
- Assessors
- Information sources
- Observations
- Situations

Cross validate

The Stability of Behavior:  
I. On Predicting Most of the People Much of the Time

Seymour Epstein  
University of Massachusetts—Amherst

## 6. Use Mechanical Integration

How to combine all information?

▸ Biodata, tests, interviews, ...

Rely on

▸ **Mechanical (statistical, actuarial)**

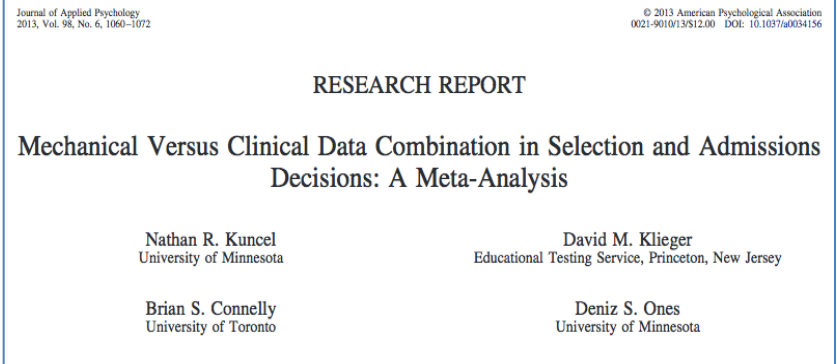
instead of on

▸ Holistic (human judgment) integration



# Kuncel et al. (2013)

*“There was consistent and substantial loss of validity when data were combined holistically- even by experts who are knowledgeable about the jobs and organizations in question- across multiple criteria in work and academic settings. In predicting job performance, the difference between the validity of **mechanical** and holistic data combination methods translated into an **improvement in prediction of more than 50%**”.*



## 6. Use Mechanical Integration

Other decision:

- ▶ **Compensatory** rule: Strengths on some criteria can compensate weaknesses on other ones.

vs.

- ▶ **Non compensatory** rule: A weakness can't be compensated.

Depends on objectives of decision makers.

Decide **prior to selection process**.

# 7. Ensure Procedural Fairness

## Procedural fairness aspects

- ▶ Consistency
- ▶ Transparency
- ▶ Information
- ▶ Confidentiality
- ▶ ...

## Rationale

- ▶ Important for applicant perceptions, image of organization, potential appeals/ legal actions

© Academy of Management Review  
1993, Vol. 18, No. 4, 694-734.

### **THE PERCEIVED FAIRNESS OF SELECTION SYSTEMS: AN ORGANIZATIONAL JUSTICE PERSPECTIVE**

**STEPHEN W. GILLILAND**  
Louisiana State University

Journal of Applied Psychology  
2001, Vol. 86, No. 3, 425-445

Copyright 2001 by the American Psychological Association, Inc.  
0021-9010/01/\$5.00 DOI: 10.1037/0021-9010.86.3.425

### **Justice at the Millennium: A Meta-Analytic Review of 25 Years of Organizational Justice Research**

Jason A. Colquitt  
University of Florida

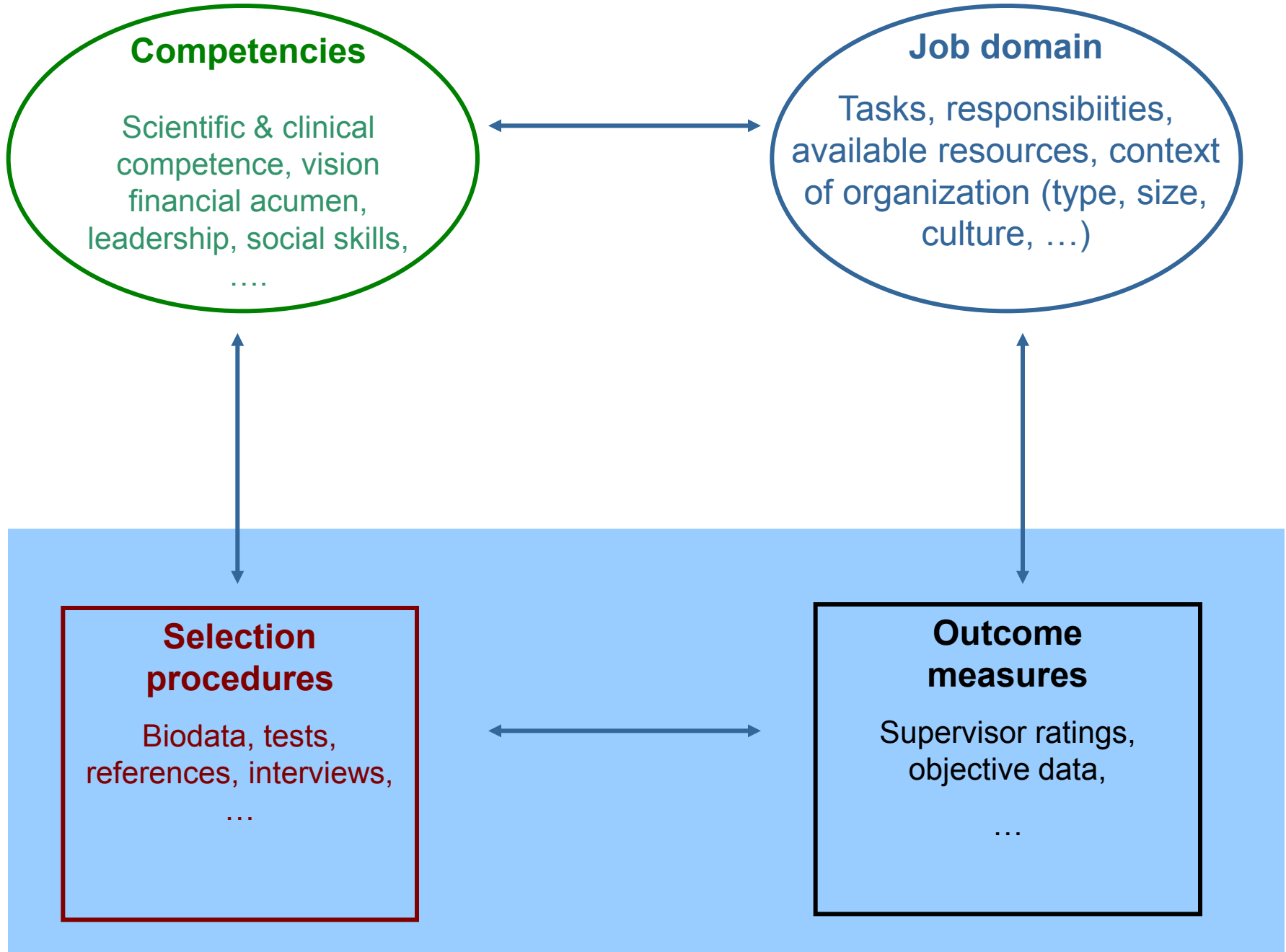
Donald E. Conlon  
Michigan State University

Michael J. Wesson and Christopher O. L. H. Porter  
Texas A&M University

K. Yee Ng  
Michigan State University

# Predictive Evidence Of Selection Procedures

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Psychological Bulletin  
1998, Vol. 124, No. 2, 262–274

1043 citations

Copyright 1998 by the American Psychological Association, Inc.  
0033-2909/98/\$3.00

## The Validity and Utility of Selection Methods in Personnel Psychology: Practical and Theoretical Implications of 85 Years of Research Findings

Frank L. Schmidt  
University of Iowa

John E. Hunter  
Michigan State University

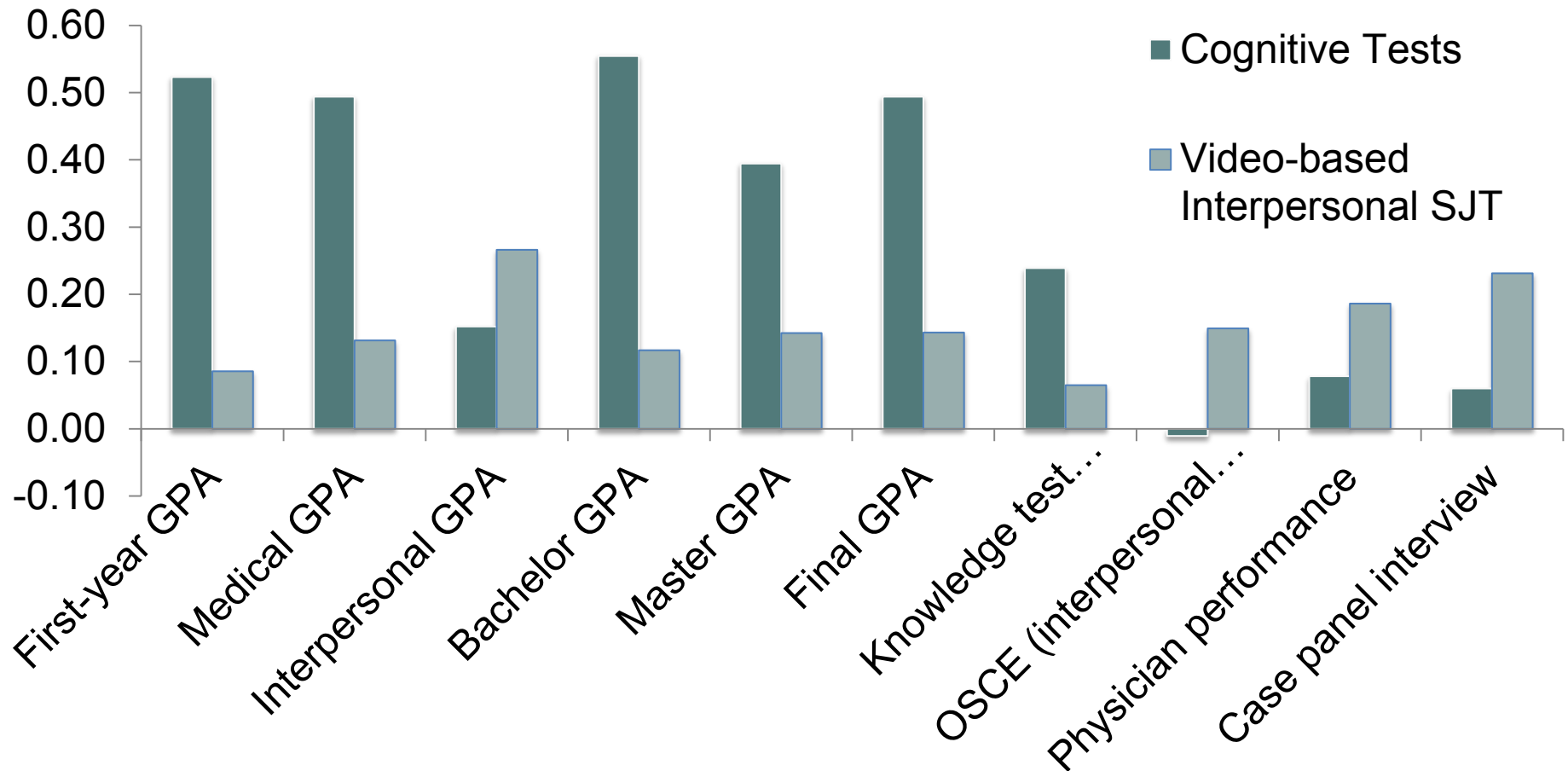
# Summary of Meta-Analyses

Selection procedure	Validity (correlation with job performance)
Cognitive ability test	.51
Knowledge test	.48
Educational level	.10
Interest inventory	.10
Age	-.01
Personality: Conscientiousness	.22
Simulation exercise	.54
Structured situational interview	.47
Situational judgment test	.26

## Summary of Meta-Analyses (2)

Selection procedure	Validity (correlation with job performance)
Structured past-behavior interview	.47
Biographical data	.35
References	.26
Working experience	.18
Unstructured interview	.20
...	

# Validity of Medical Admission Tests (Lievens, 2013)



Note. Correlations corrected for range restriction and unreliability in criterion.

# Medical Field

Meyer, Finn, Eyde, Kay, Moreland, Dies, Eisman, Kubiszyn, & Read (2001)

Common medical procedure	<i>r</i>	<i>N</i>
Bypass surgery & 5 year survival	.08	2649
Smoking & lung cancer within 25 years	.08	3956
Antihistamines & reduced snot & sneezing	.11	1023
Effects of Iboprufen on pain reduction	.14	8488
Viagra & improved sexual functioning	.38	779

*“Some authors are **critical** of the personnel selection field, given the magnitude of the validities reported.*

*However, if one considers the complexity of job performance and the organizational constraints on performance ..., the size of the coefficients actually represents one of the **most remarkable achievements of psychology.**”*



Schmitt (2013)

# Caveats

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# Practice-Science Gap

Most popular selection procedures are not always the most valid & reliable ones.

## Reasons

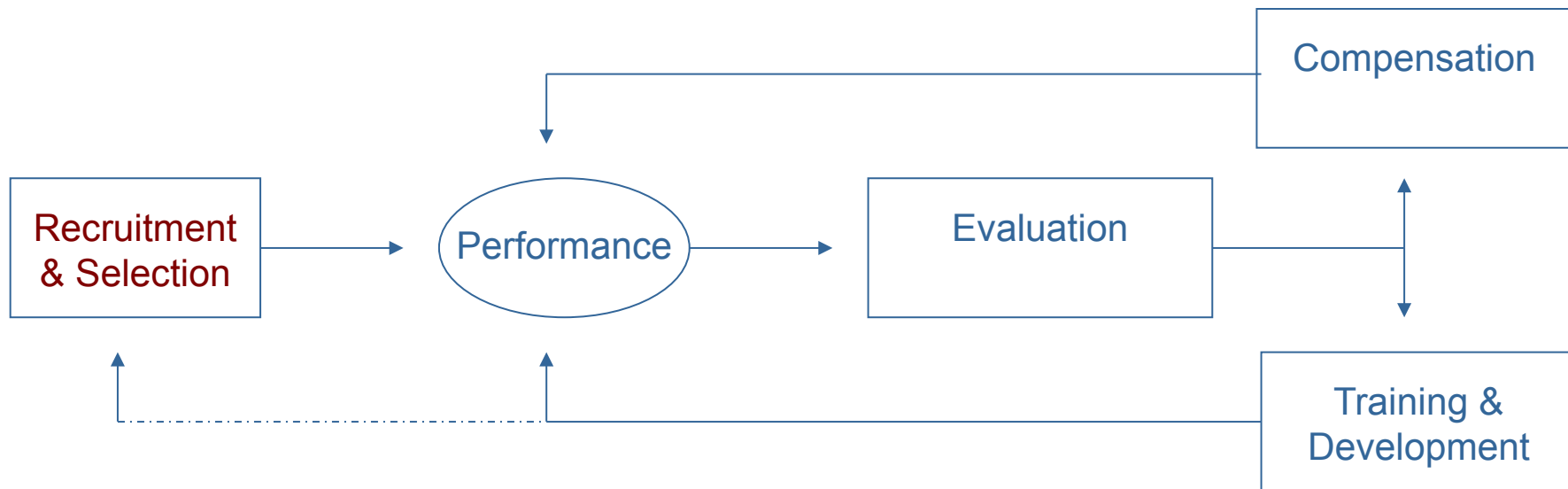
- Habits, history, trust in intuition/ “gut feeling”
- Lack of information
- Culture
- Politics

## Implication

- Cautiously use surveys about practical use of selection procedures.

# A Wider Perspective

Human Resource Management (HRM) cycle.



Implication: Invest also in

- Recruitment (branding)
- Socialization (onboarding)
- Development (mentorship)

# Summary

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# Summary

- Follow steps in basic selection model.
- Adopt standardization.
- Gather samples of past & future behavior.
- Use selection stages.
- Use multiple information sources.
- Rely on principle of aggregation.
- Use mechanical integration.
- Ensure procedural fairness.

# Thanks for your attention!

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