Behavioral Assessment in the Military Selection Process

Dragos Iliescu
What is assessment and what does it do?

- Tests = Assessment instruments
  - procedures or methods
  - that examine or determine the presence of a factor or phenomenon
  - that comprise a set of standardized items (e.g. questions, stimuli, or tasks)
  - that are scored in a standardized manner and
  - are used to examine and possibly evaluate individual differences (e.g. in abilities, skills, competencies, dispositions, attitudes, emotions) (Anastasi & Urbina, 1997; American Psychological Association, 2006; Cronbach, 1990).

- This definition includes psychological and educational tests in all forms of deployment (e.g. paper-and-pencil booklets, computerized online testing, work samples, serious games).
Psychological measurement

- Assessment of psychological constructs by means of tests / assessment instruments
- Intangible constructs
  - assessed based on inferences
  - from primary data collected through
    - self-report / introspection
    - other-report / perception
    - observation / behavior
- Generally:
  - Observation
  - Interview
  - Personality inventory
  - Test
Why bother? Predictive validity

- Psychological assessment provides to decision-maker data about a person, that is not accessible through other means
- Allows for description + explanation + prediction
- Especially at the selection stage, of huge importance
So: does this prediction work?

- GMA
- Personality traits
- Motivation
- Values
- ...

**Individual Differences**

$R^2(\text{max}) \sim .40$

**CRITERION**
(e.g., Job Performance)

**Job Attitudes**
Are there (better) alternatives?


- 2 major motivations (not real today, but …):
  - classical psychological indicators (and tests) do not predict career/life success;
  - classical psychological indicators (and tests) are biased against minorities (gender, ethnicity etc.)
What are competencies?

“A competency is the repertoire of capabilities, activities, processes and responses available that enable a range of work demands to be met more effectively by some people than by others.”

*Bartram and Kurz (2002)*
And why are they important?

- Because
  - they shift the assessment process from psychological traits to **behavioral constructs**
  - they de-emphasize internal states and emphasize **observable behaviors**
  - they are less universal and more **job-specific**
  - are **more valid** predictors (or, some would argue, criteria ...)

## Psychological vs. behavioral measurement

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation</td>
<td>&gt; Psych. observation</td>
<td>&gt; Job Simulation / Assessment Centre (AC)</td>
</tr>
<tr>
<td>Interview</td>
<td>&gt; Psych. Interview</td>
<td>&gt; Competency-Based Beh. Intw. (CBI)</td>
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<tr>
<td>Inventory</td>
<td>&gt; Personality inventory</td>
<td>&gt; Multi-Rater Feedback (360)</td>
</tr>
<tr>
<td>Test</td>
<td>&gt; Ability test</td>
<td>&gt; Situational Judgment Test (SJT)</td>
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</tbody>
</table>
The Assessment Center/Centre

- A unique combination of assessment methods
- Favors a Multitrait-Multisource-Multirater-Multimethod-Multitime approach
- May include tests (cognitive ability, personality)
- May include interviews (especially CBI)
- Will include behavioral observation based on realistic job simulations
  - In-tray exercises
  - Group activities
  - Role plays
  - Analyses & presentations
  - ...
The Assessment Center/Centre

- Hugely popular, especially for high-stake decisions for higher ranked personnel

- Extremely valid, **if conducted correctly**
  - International Task Force on Assessment Center Guidelines (2000, *Guidelines and Ethical Considerations for Assessment Center Operations*

- Essential elements:
  - job analysis
  - behavioral classification
  - assessment techniques / assessment matrix
  - job-related simulations
  - assessors (multiple & trained)
  - data recording & integration
However, there are problems …

- Namely, 2 problems:
  - Difficult to develop
  - Very expensive

- Because of difficulty in development:
  - usually developed by consultancy companies, sold to businesses
  - e.g., SHL, A&DC
  - these exercises do not have the face validity (and realistic sense) needed for the military organization

- Because of costs
  - avoided even though needed
  - military organizations do not afford the prices, so do not use them
ACs are best deployed during the final stages of multiple-hurdle selection processes.

Sifting Out
Eliminating unsuitable applicants

Selecting In
Identifying the best
ACs should be seen as an investment, not as a cost

- An introduction to the Taylor-Russell Model (HR econometrics)

- **Base Rate (Success Rate)**
  - The proportion of actual job incumbents who have been recruited without the usage of the current method (or based on "a-priori strategies") and who perform well (have job success)

- **Selection Ratio**
  - The proportion of candidates who are selected

- **Test Validity**
  - The relationship between test scores and job performance
An example ...

- 100 applicants for 20 customer service positions
  (Selection ratio is 0.20)

- 60 out of these 100 applicants (60%) are likely to perform well
  (Base rate of 0.60)

- If applicants were selected at random we would expect:
  - 12 are likely to be successful in the job (60% of 20 selected)
  - 8 are likely to be unsuccessful (40% of 20 selected)

- These numbers are improved by using a valid selection process/test!
# The Taylor-Russell Table

<table>
<thead>
<tr>
<th>Validity</th>
<th>Selection Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.05</td>
</tr>
<tr>
<td>.0</td>
<td>.60</td>
</tr>
<tr>
<td>.1</td>
<td>.68</td>
</tr>
<tr>
<td>.2</td>
<td>.75</td>
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<tr>
<td>.3</td>
<td>.82</td>
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<td>.4</td>
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<td>.5</td>
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<td>.7</td>
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</tr>
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<td>.8</td>
<td>1.00</td>
</tr>
<tr>
<td>.9</td>
<td>1.00</td>
</tr>
<tr>
<td>1.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>
Practical implications

- A-priory strategy:
  - 12 performant
  - 8 not performant

- Test-based strategy:
  - 16 performant
  - 4 not performant

- Behavioral assessment strategy:
  - 19 performant
  - 1 not performant

- Multiply by?
  - number of selections: 20? 200? 2000 every year?
  - cost of mis-decision: EUR 1500 (low-level commercial) - EUR 7000 (mid-level comm.)
ACs in the Military

- ACs were actually invented in the military
  - military officer recruitment in Germany and UK, between the I and II WW
  - first industrial application: Douglas W. Bray at American Telephone and Telegraph (AT&T) during the 1950’s

- A number of countries consistently use ACs for officer recruitment and officer development

- Few report on their procedures with empirical data
  - One of those who consistently do so are the Canadian Armed Forces
  - Best practice example: Canadian Forces Military Police Assessment Centre (MPAC)
The Canadian Forces Military Police Assessment Centre (MPAC)

- Three-day process during which candidates were assessed on 12 competencies:
  - (1) Integrity; (2) Analytical Thinking; (3) Decision Making; (4) Personal Impact; (5) Interpersonal Skills; (6) Tolerance; (7) Conscientiousness; (8) Performance Under Stress; (9) Teamwork; (10) Practical Intelligence; (11) Oral Communication Skills; (12) Written Communication Skills

- The 12 competencies were assessed using six different methods:
  - (1) Group Dynamics exercise; (2) Structured Interview; (3) Role Play Exercise; (4) Background Integrity Interview; (5) Skills Test; (6) Fact Find Exercise
The 12 competencies of the MPAC

<table>
<thead>
<tr>
<th>Competency</th>
<th>n</th>
<th>Cronbach’s alpha</th>
<th>lowest item-total correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Integrity</td>
<td>233</td>
<td>.48</td>
<td>.26</td>
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<tr>
<td>2. Analytical Skills</td>
<td>181</td>
<td>.55</td>
<td>.34</td>
</tr>
<tr>
<td>3. Decision Making</td>
<td>153</td>
<td>.50</td>
<td>.26</td>
</tr>
<tr>
<td>4. Personal Impact</td>
<td>154</td>
<td>.64</td>
<td>.28</td>
</tr>
<tr>
<td>5. Interpersonal Skills</td>
<td>144</td>
<td>.54</td>
<td>.23</td>
</tr>
<tr>
<td>6. Tolerance</td>
<td>96</td>
<td>.55</td>
<td>.30</td>
</tr>
<tr>
<td>7. Conscientiousness</td>
<td>83</td>
<td>.61</td>
<td>.32</td>
</tr>
<tr>
<td>8. Stress Tolerance</td>
<td>73</td>
<td>.56</td>
<td>.22</td>
</tr>
<tr>
<td>9. Teamwork</td>
<td>279</td>
<td>.48</td>
<td>.33</td>
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<tr>
<td>10. Practical Intelligence</td>
<td>145</td>
<td>.26</td>
<td>-.06</td>
</tr>
<tr>
<td>11. Oral Communications</td>
<td>153</td>
<td>.69</td>
<td>.41</td>
</tr>
<tr>
<td>12. Written Communications</td>
<td>242</td>
<td>.40</td>
<td>.25</td>
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</table>
The 5 methods of the MPAC

<table>
<thead>
<tr>
<th>Method</th>
<th>n</th>
<th>Cronbach’s alpha</th>
<th>lowest item-total correlation</th>
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<tbody>
<tr>
<td>1. Group Dynamics</td>
<td>118</td>
<td>.94</td>
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<tr>
<td>2. Structured Interview</td>
<td>224</td>
<td>.87</td>
<td>.55</td>
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<tr>
<td>3. Fact Find Exercise</td>
<td>107</td>
<td>.90</td>
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<tr>
<td>4. Background/Integrity Interview</td>
<td>290</td>
<td>.82</td>
<td>.52</td>
</tr>
<tr>
<td>5. Role Play</td>
<td>156</td>
<td>.94</td>
<td>.54</td>
</tr>
<tr>
<td>COMPETENCY</td>
<td>GROUP DYNAMICS (I)</td>
<td>STRUCTURED INTERVIEW</td>
<td>SKILLS TEST</td>
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<tr>
<td>----------------------</td>
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<td>-------------</td>
</tr>
<tr>
<td>INTEGRITY</td>
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<td>ANALYTICAL SKILLS</td>
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<td></td>
</tr>
<tr>
<td>DECISION MAKING</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PERSONAL IMPACT</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>INTERPERSONAL SKILLS</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>TOLERANCE</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>CONSCIENTIOUSNESS</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>PERFORMANCE UNDER STRESS</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>TEAMWORK</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRACTICAL INTELLIGENCE</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ORAL COMM SKILLS</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>WRITTEN COMM SKILLS</td>
<td>N/O</td>
<td>N/O</td>
<td>X</td>
</tr>
</tbody>
</table>
Practical implications

- Cost for setup: approx. $350,000
  - based on both internal expertise and external (commercial/business) expertise
  - timing: 2 years, including validity and assessor training

- Cost for running the process: approx. $400 / candidate

- Estimated gain: $4.5 M / year
Conclusions

- Behavioral assessment is the most powerful assessment approach in the repertoire of selection methods.
- But it requires psychologists to rethink their approach:
  - Psychological testing is only subsumed and does not drive behavioral assessment.
- Especially in the armed forces, the implementation of ACs may encounter a number of hurdles:
  - Requires a change in the status quo.
  - Low quality of badly designed ACs hamper the utility of this method on face of decision-makers.
  - High costs of development may be a deterrent.
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