NOTE: The attached record is a presentation created by an outside third-party and provided to the National Security Commission on Artificial Intelligence (NSCAI) to complement an outside engagement. The record and its contents were not created, drafted, or developed by NSCAI and does not reflect the views or recommendations of NSCAI.
How can psychology and AI together help prepare an AI-enabled workforce?

• Goal 1: Develop and hire AI talent.
  • Identify relevant skills through work analysis
  • Measure those skills with valid and reliable assessments
  • Develop effective performance management systems

• Goal 2: Combine psychology and AI to accomplish goals. For example:
  • Video interviews
  • Behavior tracking/monitoring
  • Human/AI teams
Example 1: Video interviews

• Video interviews can be AI-based such that facial expressions, tone of voice, responses, and other signals are analyzed to build dynamic predictive models

• Current vendors include HireVue, SparkHire, others
Challenges

• Uniform Guidelines on Employee Selection (EEOC)
• APA Standards for Educational and Psychological Testing (2014) requires that all assessments should have
  • Reliability
  • Validity
  • Fairness

• Practically, reducing time-to-hire is as important as making good decisions
Challenges include fear about bias
Research Insights: AI in Hiring and Selection

• Algorithmic combination of predictor variables is superior to clinical (“human”) combination (Meehl, 1954)

• People are happy to rely on AI advice in many cases, but not when they think they are experts (Logg et al 2019)

• Introducing variation in assessment medium between candidates is not a good idea (Blacksmith, Willford, Behrend, 2016)

• “Algorithmic bias” is a misnomer. Frequently the criterion (job performance measure) is where bias is located.

• Bottom line: AI will outperform human judges. Candidates will probably accept it. Hiring managers probably won’t. Any tool should only be used when its validity can be demonstrated—must measure things that are job-related.
Example 2: Electronic performance management (EPM)

The company will use the data to decide arguments between riders and drivers, it says.
Consequences of data collection/AI on behavior

• People will optimize their behavior toward any goal that they become aware of.
  • Example: News coverage that people who “liked” curly fries on their facebook profile were smarter. Everyone who heard the story immediately went and “liked” curly fries. The correlation then disappeared.

• Choosing to measure something sends a message that it is important. The rules are changed.
  • Example: Fitbits drive behavior but also redefine “fitness.”

• Goal-setting research is psychology is clear that goals are motivating but also narrow one’s focus, at a cost
Descriptive vs Prescriptive Data Collection

- Devices like sociometers can be used to train AI about effective communication, but what works in one setting may be harmful in another.
Effects of Electronic Monitoring on Work Performance
Effects of Electronic Monitoring on Job Attitudes

![Correlation diagram showing the effect of electronic monitoring on job attitudes with correlation values and confidence intervals for various studies.](image-url)
Consequences of data collection/AI on behavior

• Fears about ubiquitous surveillance/privacy/psychological targeting

• Reactance: when people’s autonomy is restricted they will seek to reassert it by finding ways to act out that aren’t constrained
  • E.G., Uber drivers at National Airport

• Mistrust of algorithmic decision making: people want to believe that human judgment is fairer and more accurate, but it is not

• **Bottom line:** Measuring behaviors will always change those same behaviors. Must consider rationale, consequences, and effects on models.
Other issues requiring psychology expertise

• Training, Development, and Education to support human/AI teams
  • Developing both "taskwork" and "teamwork" skills
  • Avoiding automation surprise (e.g., Boeing)

• Building trust
  • Communication, procedural justice, reactance, psychological contracts/expectations
Suggested Readings


