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The Autonomy-Validity Dilemma in Mechanical Judgment Procedures: The Search for a Compromise

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Google meet link: meet.google.com/ybn-wmgy-djd

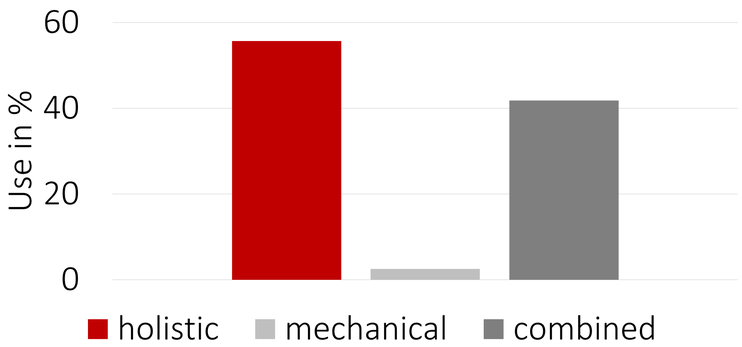
Introduction

Background

- In personnel- and educational selection, information from multiple assessments (e.g., test scores and interview ratings) is often used, which can be combined in two ways[1,2]:
  - Holistic judgment: information is subjectively combined in the mind
  - Mechanical judgment: information is combined with an explicit decision rule
    - Prediction = predictor 1 * w1 + predictor 2 * w2 …
- Mechanical judgment is on average more valid than holistic judgment[1,2]

The problem

Holistic judgment dominates in practice[3,1]



Contribution

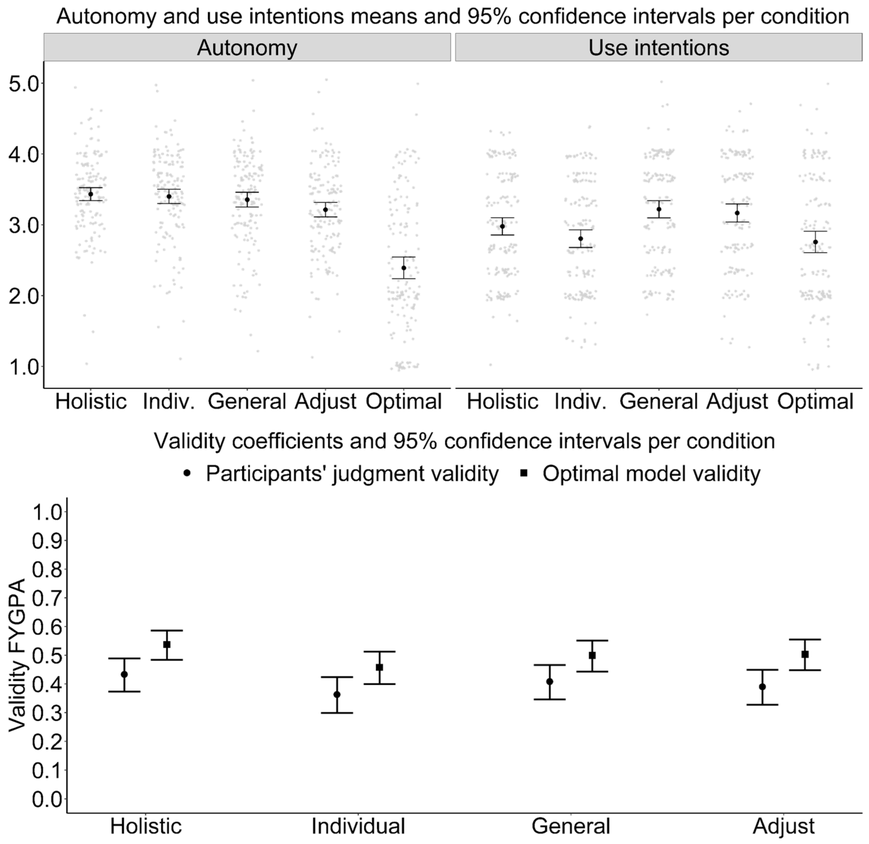
- Decision makers may use mechanical judgment more often when they retain autonomy
  - Decision makers could choose predictor weights (w1, w2)[4]
  - Decision makers could holistically adjust predictions[5]
- Research questions:
  1. Do decision makers prefer autonomy-enhancing judgment procedures, compared to strictly using an optimal decision rule?
  2. How does increased autonomy affect predictive validity?

Method

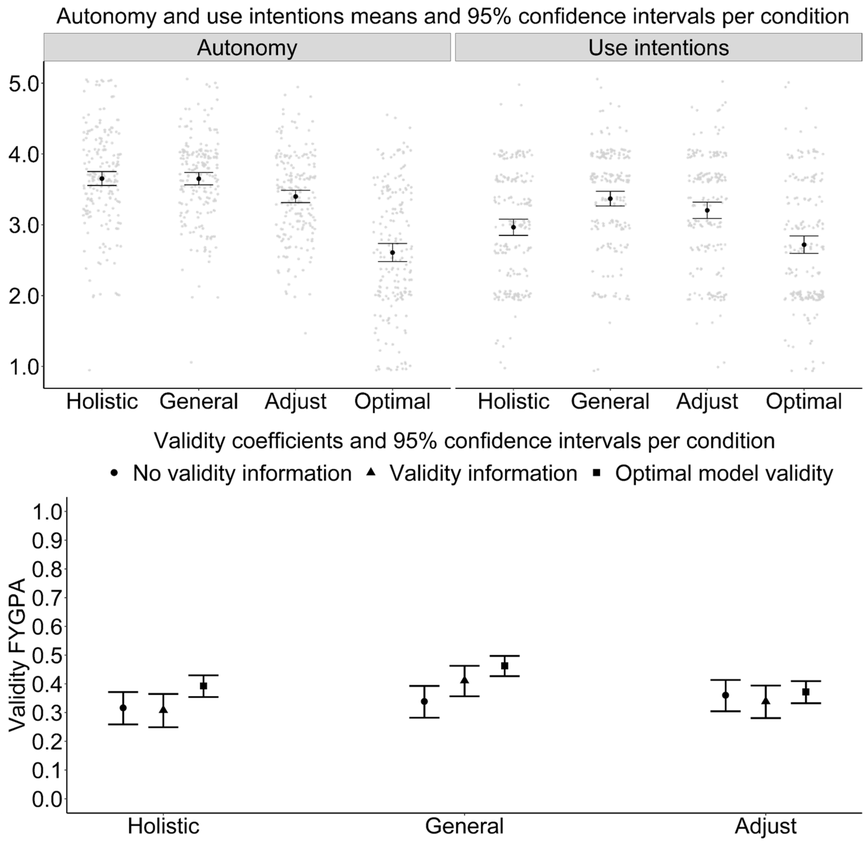
- Prediction task: Predict first-year GPA (FYGPA) of 5 applicants using high school GPA, admission test scores, and personal statements. Participants (students) were informed of predictor validities
- Study 1 (*N* = 150): within-subjects design, in which the autonomy in making predictions was varied in five conditions
  1. Holistic: Predictions based on participants' subjective impression of the predictors
  2. Individual: Assignment of percentage predictor weights for each of the five applicants judged
  3. General: Assignment of percentage predictor weights that applied to all of the five applicants judged
  4. Adjust: Participants could adjust the predictions of a statistical model as much as they wanted
  5. Optimal: Participants imagined a statistical model would make predictions that they could not adjust
- Study 2 (*N* = 192): mixed design
  - Same within-subjects factor as in Study 1. The "individual" condition was dropped because Study 1 results were not promising. Furthermore, participants could only restrictedly adjust model predictions in the "adjust" condition
  - Between-subjects factor: A random half of participants was not informed of predictor validities

Results and Discussion

Study 1



Study 2



- Perceived autonomy: was similar across conditions, but much lower in the "optimal" condition (e.g., general vs. optimal, d = 1.17 and d = 1.35 in Study 1 and 2, respectively)
- Use intentions: was higher in all autonomy-enhancing conditions than in the "optimal" condition (e.g., general vs. optimal, d = 0.54 and d = 0.81 in Study 1 and 2, respectively)
- Predictive validity: was similar across conditions, but optimal model predictions were always better than participants' predictions. Knowing predictor validities only slightly increased predictive validity in the "general" condition

Conclusion

- The most promising procedure in terms of decision-makers' acceptance and validity is the use of a decision rule with self-chosen predictor weights when predictor validity information is available. Similarly, letting decision makers holistically adjust optimal model predictions seemed promising
- Yet, our results prevent a clear conclusive statement regarding a compromise between autonomy and validity

Key references

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