

# Reassessing Risk Assessment

## Taking Risk Suppression Seriously

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# Overview of Presentation

- 1 Background
- 2 What is risk suppression?
- 3 Why is it a problem?
- 4 What can be done about it?
- 5 An example
- 6 Concluding thoughts

## Background of Problem

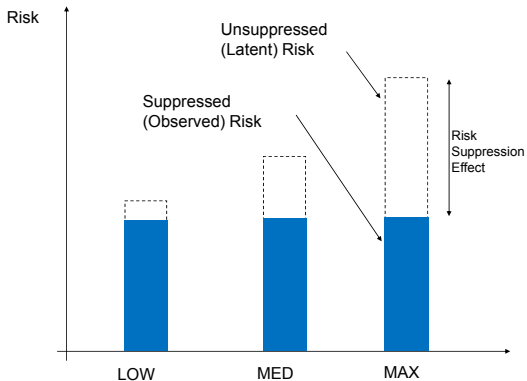
- 1 Risk assessment should be evidence-based
- 2 How to operationalize this concept? One needs
  - Data on static or dynamic attributes (e.g., Criminal history)
  - Linked data on undesirable outcomes (e.g., Rearrest)
- 3 Seems readily available in most jurisdictions! Where's the problem?
  - Attributes also used by Criminal Justice System to mitigate risk
  - Results in varying levels of intervention/treatment
- 4 Example: Supervision Intensity and Recidivism Risk
  - Latent Risk → Screening Items → Supervision Intensity
  - Intensity → Observed Recidivism
    - Observed Recidivism  $\neq$  Latent Risk
    - Observed Recidivism = Suppressed Risk

# Risk Suppression in the Criminal Justice System

- 1 Pretrial
  - High-risk defendants are detained (complete suppression)
  - Varying conditions of release for the rest (partial suppression)
- 2 Sentencing
  - Longer prison terms for riskier offenders
- 3 In-prison
  - Formal or informal classification/sorting of inmates
- 4 Post release
  - Varying conditions of release
  - Varying intensity of supervision
- 5 Result: Observed misconduct captures *suppressed risk*

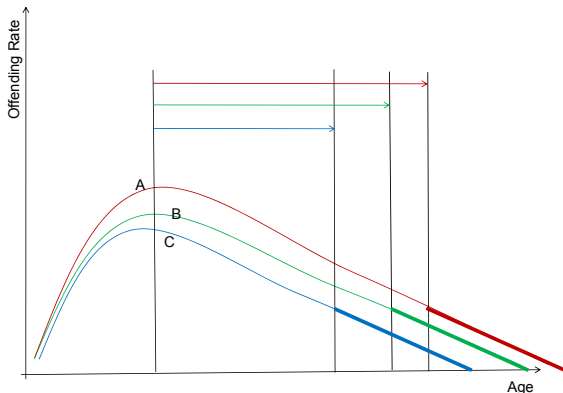
# Risk Suppression in the Criminal Justice System

## Differential Supervision Intensity



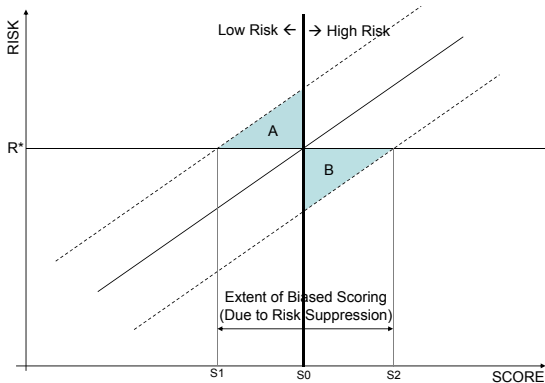
# Risk Suppression in the Criminal Justice System

## Differential Incapacitation



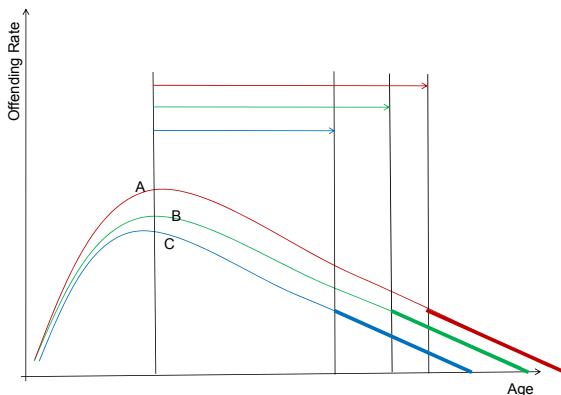
# Why is Risk Suppression a Problem?

Potential for Misclassification based on Risk



# Why is Risk Suppression a Problem?

## Distorts Links between Risk and Theoretical Attributes



# Taking Risk Suppression Seriously

- 1 First assess the extent of risk suppression
- 2 It may be irrelevant
  - Nonexistent intervention
  - Random intervention
- 3 Typically not the case: CJS cannot be turned off
- 4 Estimate suppression effects
  - Random assignment
  - Regression Discontinuity Design
  - Subjective Assessment
- 5 Ignoring it is not a solution

## Computing Latent Risk Scores

- 1 Let
  - $y_i$  = suppressed risk for each individual
  - $z_i$  = suppression effect for each individual
  - $d_{ic}$  = category  $c$  of attribute  $k$
- 2 Computation of risk scores
  - Suppressed score:  $s_c = \frac{\sum_i d_{ic} y_i}{\sum_i d_{ic}}$
  - Unsuppressed score:  $s_c^* = \frac{\sum_i d_{ic} y_i}{\sum_i d_{ic} (1 - z_i)}$
- 3 Aggregate unsuppressed scores (weighted or unweighted)
- 4 Critical to get good estimates of  $z_i$

## Adjusted Scoring Scheme

Example: Age at first arrest

Item Category	Suppressed		Risk Supp.	Latent	
	Absolute Scoring	Relative Scoring		Absolute Scoring	Relative Scoring
15 or below	35.2	15.5	0.90	39.1	19.4
16 to 18	32.2	12.5	0.93	34.7	15.0
19 to 20	30.8	11.1	0.98	31.4	11.7
21 to 25	26.2	6.5	0.94	27.9	8.2
26 to 30	23.1	3.4	0.97	23.8	4.1
31 to 40	21.2	1.5	0.97	21.9	2.2
41 or above	19.7	0.0	1.00	19.7	0.0

## Concluding Thoughts and Future Research

- 1 Scholarship risks seriously misinterpreting the evidence
  - Attributes may be unrelated to risk because of suppression
  - Information in attributes may be well utilized by CJS
- 2 Predictive efficacy is overrated if outcomes are suppressed
  - Current instruments can predict *residual* outcome
  - If CJS utilizes information well, predictive power of attribute will be low
  - That doesn't mean attribute is unrelated to latent risk
- 3 Need new methods to ...
  - Estimate and incorporate suppression effects
  - Validate instruments using suppressed outcomes and suppression effects (augmented AUC/ROC)
- 4 Latent Risk Assessment instruments – the next generation ???

# Thank You

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