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What is the external validity of sentencing research?

A multi-level meta-analysis of race and gender disparities

Jose Pina-Sánchez & Ian Brunton-Smith

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- Most of the sentencing evidence-base stems from the US
 - US Federal Courts
 - State Courts: Pennsylvania, Arizona, Minnesota, Florida

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 - US Federal Courts
 - State Courts: Pennsylvania, Arizona, Minnesota, Florida
- This body of research has influenced sentencing policy and practice worldwide
 - particularly, debates of disparities and guidelines

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 - US Federal Courts
 - State Courts: Pennsylvania, Arizona, Minnesota, Florida
- This body of research has influenced sentencing policy and practice worldwide
 - particularly, debates of disparities and guidelines
- How generalisable are those findings?
 - we should expect differences across jurisdictions
 - but also across offence types, ethnic groups, model choices, etc.

Current Study

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- We employ multi-level meta-analysis to estimate some of that variability
- We consider both gender and race disparities
 - there are three meta-analyses of race disparities, all of them focus exclusively on the US
 - no real meta-analysis on gender disparities yet

Selection & Recording

- Pre-registered protocol: <https://osf.io/2pnua>
- We created a pool of 1,024 potentially eligible studies
 - searched Scopus for academic articles, in English, published since 2000
 - “sentencing” AND (“data” OR “quantitative” OR “regress*” OR “model*” OR “multilevel” OR “multi-level”) AND (“decisions” OR “outcome*” OR “length” OR “*prison*” OR “custod*”).

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- Selection criteria
 - studies based on real sentences imposed on adult offenders
 - reporting the association of gender/race on sentence length conditioning on legal factors

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- Selection criteria
 - studies based on real sentences imposed on adult offenders
 - reporting the association of gender/race on sentence length conditioning on legal factors
- Recording rules
 - estimates are transformed into multiplicative differences, i.e. the % change
 - estimates from different samples and ethnic groups are recorded separately
 - we also record: i) sample details, ii) model information, iii) the study’s title, and iv) the number of citations

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- We have selected 120 studies for gender, 110 for race
 - providing 151 estimates of gender disparities and 286 for race

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- We have selected 120 studies for gender, 110 for race
 - providing 151 estimates of gender disparities and 286 for race
- We still need to ...
 - work out recording inconsistencies
 - drop studies based on repeated samples

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- We have selected 120 studies for gender, 110 for race
 - providing 151 estimates of gender disparities and 286 for race
- We still need to ...
 - work out recording inconsistencies
 - drop studies based on repeated samples
- Most studies are based on jurisdictions from the US
 - 102 out of 120 for gender, 102 out of 110 for race
 - 48 of those from the US Federal courts

Preliminary Findings

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- Pooled effects
 - 3% longer sentences for minority offenders
 - 13% shorter sentences for female offenders

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Discussion

- Pooled effects
 - 3% longer sentences for minority offenders
 - 13% shorter sentences for female offenders
- Random effects for race disparities
 - practically all the variability is at the estimate level
 - between-jurisdiction variability: (1.02, 1.04)
 - between-estimate variability: (0.93, 1.12)

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- Pooled effects
 - 3% longer sentences for minority offenders
 - 13% shorter sentences for female offenders
- Random effects for race disparities
 - practically all the variability is at the estimate level
 - between-jurisdiction variability: (1.02, 1.04)
 - between-estimate variability: (0.93, 1.12)
- Random effects for gender disparities
 - similar variability at the jurisdiction and estimate level
 - between-jurisdiction variability: (0.69, 1.05)
 - between-estimate variability: (0.72, 1.03)



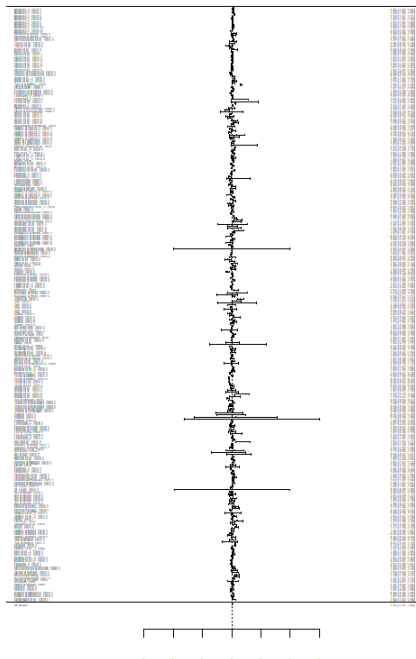
Background

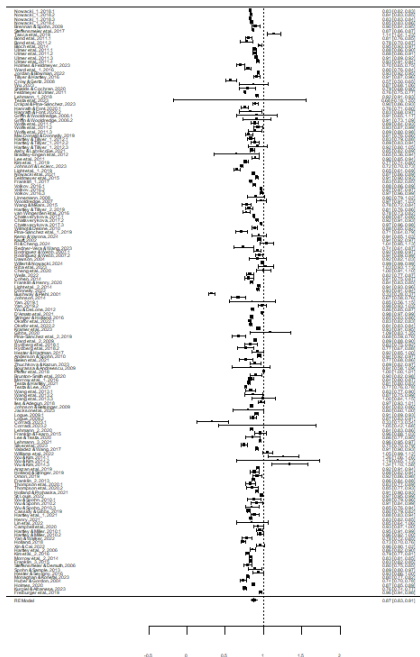
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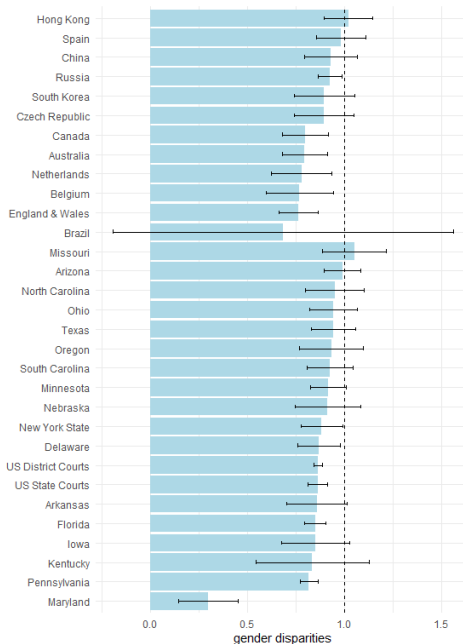
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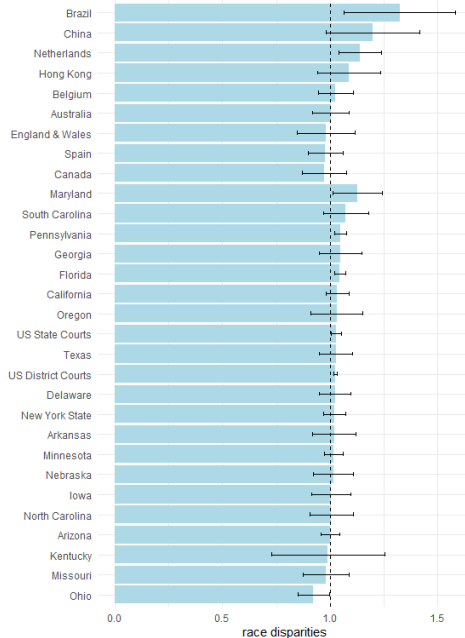
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Moderating Effects: Race

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	estimate	ci.lb	ci.ub
intrcpt	1.07	1.04	1.11
offence:drugs	0.03	0.00	0.05
offence:firearm	-0.08	-0.18	0.03
offence:fraud	0.00	-0.10	0.11
offence:homicide	-0.01	-0.12	0.11
offence:immigration	-0.02	-0.07	0.02
offence:motor	0.01	-0.19	0.20
offence:property	-0.04	-0.10	0.03
offence:sex	0.01	-0.04	0.05
offence:terrorism	0.09	-0.18	0.36
offence:violence	0.03	-0.02	0.08
probation	0.01	-0.01	0.02
multiple_counts	-0.01	-0.03	0.01
criminal_history	-0.02	-0.04	0.01
recommended_sentence	-0.01	-0.04	0.01
departure	-0.01	-0.03	0.01
seriousness_level	0.01	-0.01	0.02
specific_offence	-0.02	-0.04	0.01
guilty_agreement	-0.02	-0.04	0.00
remand	-0.01	-0.03	0.01
legal_factors	-0.00	-0.01	0.00
education	0.00	-0.02	0.03
unemployed	-0.02	-0.05	0.02
noncitizen	-0.01	-0.02	0.01
dependents	-0.02	-0.04	-0.00
extralegal_factors	0.003	0.00	0.01

Moderating Effects: Gender

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	estimate	ci.lb	ci.ub
intrcpt	0.84	0.77	0.92
probation	0.00	-0.03	0.04
multiple_counts	0.01	-0.02	0.04
criminal_history	-0.03	-0.08	0.02
recommended_sentence	0.01	-0.03	0.06
departure	0.06	0.01	0.11
seriousness_level	0.01	-0.03	0.04
specific_offence	0.02	-0.01	0.05
guilty_agreement	-0.01	-0.05	0.03
remand	0.02	-0.02	0.06
additional_legal_factors	0.01	0.00	0.01
education	0.02	-0.02	0.07
unemployed	0.00	-0.07	0.07
noncitizen	-0.01	-0.06	0.03
dependents	-0.03	-0.08	0.01
additional_extralegal_factors	-0.00	-0.01	0.01

Selective Reporting

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- Evidence of selective reporting in the race disparities literature
 - when race is mentioned in the title, effect sizes are larger (1.02 vs 1.04)
 - entirely driven by studies reporting Native American disparities (0.91 vs 1.18)
 - there is no evidence of selective reporting for gender disparities

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- Evidence of selective reporting in the race disparities literature
 - when race is mentioned in the title, effect sizes are larger (1.02 vs 1.04)
 - entirely driven by studies reporting Native American disparities (0.91 vs 1.18)
 - there is no evidence of selective reporting for gender disparities
- Evidence of selective citation in the gender disparities literature
 - for every 10 citations* gender disparities widen by 2%
 - no evidence of selective citation for race disparities

Conclusion

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- Sentencing research implications
 - minority and male offenders are treated more harshly
 - the former appears to be universal, the latter is not
 - the American literature is not different from the *rest of the world*

Conclusion

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- Sentencing research implications
 - minority and male offenders are treated more harshly
 - the former appears to be universal, the latter is not
 - the American literature is not different from the *rest of the world*
- Meta-science implications
 - there is a lot of model uncertainty
 - a single study does not tell us much
 - systematic misinterpretation of the literature (publication bias?) due to selective reporting and citation



Going Forward

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- 1 Sentencing research needs to be cross-jurisdictional (even when focusing on a single country)

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- ① Sentencing research needs to be cross-jurisdictional (even when focusing on a single country)
- ② We need to publish via pre-registered reports

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Discussion

- ① Sentencing research needs to be cross-jurisdictional (even when focusing on a single country)
- ② We need to publish via pre-registered reports
- ③ We should embrace model uncertainty