

# Areas of Research Interest (ARI) Academic Seminars

## Ethnic Disparities in Sentencing: Warranted or Unwarranted?

Jose Pina-Sánchez

Sara Geneletti

Ana Morales

Eoin Guilfoyle



# Background

## Background

Research Aims

Defining  
Discrimination

## Case Studies

## Unobserved Case Characteristics

Simulations

## Measurement Error

Racially constructed  
characteristics

Misclassification in  
Whites

## Selection Bias

Upstream  
Disparities

Missing Data

## Conclusion

Next Steps

- Sentencing is the most consequential criminal justice process
  - Certainly the most visible and symbolic
- Expected to reflect the principle of equality under the law
  - I.e. no discrimination

# Background

## Background

Research Aims

Defining  
Discrimination

Case Studies

Unobserved Case  
Characteristics

Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

Selection Bias

Upstream  
Disparities

Missing Data

Conclusion

Next Steps

- Sentencing is the most consequential criminal justice process
  - Certainly the most visible and symbolic
- Expected to reflect the principle of equality under the law
  - I.e. no discrimination
- When put in question, important implications follow
  - Directly affecting individuals subject to discrimination
  - but also members of the same demographic group
  - Undermining trust in the criminal justice system (e.g. compliance with court orders)
  - Loss of public trust in political and social institutions too

# Background

- Hundreds of studies exploring ethnic disparities in sentencing
  - Most document harsher sentences on ethnic minority offenders
  - However, the evidence appears inconclusive

## Background

Research Aims

Defining  
Discrimination

## Case Studies

Unobserved Case  
Characteristics

Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

## Selection Bias

Upstream  
Disparities

Missing Data

## Conclusion

Next Steps

# Background

## Background

Research Aims

Defining  
Discrimination

## Case Studies

Unobserved Case  
Characteristics  
Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

## Selection Bias

Upstream  
Disparities

Missing Data

## Conclusion

Next Steps

- Hundreds of studies exploring ethnic disparities in sentencing
  - Most document harsher sentences on ethnic minority offenders
  - However, the evidence appears inconclusive
- A key methodological limitation
  - Impossible to control for all relevant case characteristics
  - Preventing perfect ‘like with like’ comparisons
- Are those disparities ‘warranted’ or unwarranted?
  - Some see this as an unanswerable question

# Research Aims (Project)

- To describe the types of biases affecting estimates of ethnic disparities in sentencing
  - To estimate the extent of those biases
  - So we can test the presence (or absence) of discrimination in sentencing more robustly

Background

Research Aims

Defining  
Discrimination

Case Studies

Unobserved Case  
Characteristics

Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

Selection Bias

Upstream  
Disparities

Missing Data

Conclusion

Next Steps

# Research Aims (Project)

## Background

### Research Aims

#### Defining Discrimination

## Case Studies

### Unobserved Case Characteristics

#### Simulations

### Measurement Error

#### Racially constructed characteristics

#### Misclassification in Whites

## Selection Bias

#### Upstream Disparities

#### Missing Data

## Conclusion

#### Next Steps

- To describe the types of biases affecting estimates of ethnic disparities in sentencing
  - To estimate the extent of those biases
  - So we can test the presence (or absence) of discrimination in sentencing more robustly
- We focus on three main problems:
  - Unobserved case characteristics
  - Measurement error in the form of ‘racially constructed’ case characteristics, and misclassified ethnicity
  - Selection bias in the form of missing data on ethnicity not at random, and upstream disparities

# Research Aims (Project)

## Background

### Research Aims

#### Defining Discrimination

## Case Studies

### Unobserved Case Characteristics

#### Simulations

### Measurement Error

#### Racially constructed characteristics

#### Misclassification in Whites

## Selection Bias

#### Upstream Disparities

#### Missing Data

## Conclusion

### Next Steps

- To describe the types of biases affecting estimates of ethnic disparities in sentencing
  - To estimate the extent of those biases
  - So we can test the presence (or absence) of discrimination in sentencing more robustly
- We focus on three main problems:
  - Unobserved case characteristics
  - Measurement error in the form of ‘racially constructed’ case characteristics, and misclassified ethnicity
  - Selection bias in the form of missing data on ethnicity not at random, and upstream disparities
- Using your new Data First sentencing datasets



# Research Aims (Paper)

- We review two studies of the Crown Court

Background

Research Aims

Defining  
Discrimination

Case Studies

Unobserved Case  
Characteristics

Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

Selection Bias

Upstream  
Disparities

Missing Data

Conclusion

Next Steps

# Research Aims (Paper)

Background

Research Aims

Defining  
Discrimination

Case Studies

Unobserved Case  
Characteristics

Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

Selection Bias

Upstream  
Disparities

Missing Data

Conclusion

Next Steps

- We review two studies of the Crown Court
- We consider their robustness to unobserved case characteristics
  - Use simulations to recreate the potential effect of case characteristics left uncontrolled

## Research Aims (Paper)

Background

Research Aims

Defining  
Discrimination

Case Studies

Unobserved Case  
Characteristics

Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

Selection Bias

Upstream  
Disparities

Missing Data

Conclusion

Next Steps

- We review two studies of the Crown Court
- We consider their robustness to unobserved case characteristics
  - Use simulations to recreate the potential effect of case characteristics left uncontrolled
- We theorise the impact of violations of additional assumptions that are often neglected
  - Racially determined case characteristics, and a heterogeneous White reference group, as measurement error problems
  - Missing ethnicity data potentially not at random, as a form of selection bias

# Defining Discrimination in Sentencing

- Our analysis focuses on direct discrimination in sentencing
  - We assess whether decisions made by judges show *differential treatment*
  - Rather than just differences in outcomes
  - I.e. disparities that cannot be explained by relevant case characteristics

Background

Research Aims

Defining  
Discrimination

Case Studies

Unobserved Case  
Characteristics

Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

Selection Bias

Upstream  
Disparities

Missing Data

Conclusion

Next Steps

# Defining Discrimination in Sentencing

- Our analysis focuses on direct discrimination in sentencing
  - We assess whether decisions made by judges show *differential treatment*
  - Rather than just differences in outcomes
  - I.e. disparities that cannot be explained by relevant case characteristics
- We ignore paths of indirect discrimination outside the remit of judicial deliberations
  - Such as the promulgation of specific sentencing regimes for offences predominantly attributed to ethnic minorities
  - The structural socio-economic inequalities leading to differential rates of criminality and incarceration
  - Disparities in upstream criminal justice decisions that do not bias estimates of discrimination in sentencing

Background

Research Aims

Defining  
Discrimination

Case Studies

Unobserved Case  
Characteristics

Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

Selection Bias

Upstream  
Disparities

Missing Data

Conclusion

Next Steps

## Two Case Studies

- Hopkins et al. (2016), from the Ministry of Justice
  - 21,639 cases, covering all offence types processed in the Crown Court
  - Controls for offender demographics, offence type, previous convictions and guilty plea
  - Estimates 53% higher odds of incarceration for Blacks

Background

Research Aims

Defining  
Discrimination

Case Studies

Unobserved Case  
Characteristics

Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

Selection Bias

Upstream  
Disparities

Missing Data

Conclusion

Next Steps

## Two Case Studies

### Background

Research Aims

Defining  
Discrimination

### Case Studies

Unobserved Case  
Characteristics

Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

Selection Bias

Upstream  
Disparities

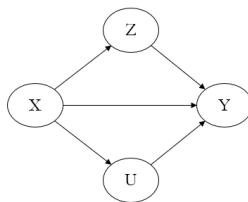
Missing Data

Conclusion

Next Steps

- Hopkins et al. (2016), from the Ministry of Justice
  - 21,639 cases, covering all offence types processed in the Crown Court
  - Controls for offender demographics, offence type, previous convictions and guilty plea
  - Estimates 53% higher odds of incarceration for Blacks
- Isaac (2020), from the Sentencing Council
  - 14,000 cases of three drug offences sentenced in the Crown Court
  - Controls for offender demographics, and practically all factors listed in the sentencing guidelines
  - Estimates 40% higher odds of incarceration for Blacks

# Unobserved Case Characteristics



Background

Research Aims

Defining  
Discrimination

Case Studies

**Unobserved Case  
Characteristics**

Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

Selection Bias

Upstream  
Disparities

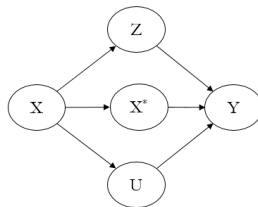
Missing Data

Conclusion

Next Steps



# Unobserved Case Characteristics



Background

Research Aims

Defining  
Discrimination

Case Studies

**Unobserved Case  
Characteristics**

Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

Selection Bias

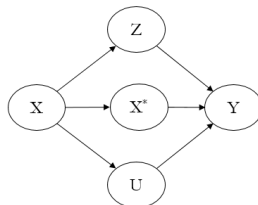
Upstream  
Disparities

Missing Data

Conclusion

Next Steps

# Unobserved Case Characteristics



- If we do not control for  $U$  then the  $X^* \rightarrow Y$  effect is biased
- We rule out this being a problem in Isaac (2020), but it is likely present in Hopkins (2016)
- Since we do not have access to their data we simulate (back engineer) it

# Simulations

- We adopt the following fixed parameters derived from Hopkins (2016)
  - the proportion of non-Whites is 0.22
  - the probability of being incarcerated if White is 0.53

Background

Research Aims

Defining  
Discrimination

Case Studies

Unobserved Case  
Characteristics

**Simulations**

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

Selection Bias

Upstream  
Disparities

Missing Data

Conclusion

Next Steps

# Simulations

- We adopt the following fixed parameters derived from Hopkins (2016)
  - the proportion of non-Whites is 0.22
  - the probability of being incarcerated if White is 0.53
- Explore combinations of three values
  - The prevalence of the unobserved case characteristics in White offenders is: 0.3, 0.5 and 0.7
  - The relative prevalence of the unobserved in ethnic minority compared to White offenders is: 1, 1.25, 1.5, 1.75 and 2
  - The direct ethnicity effect is: 1 and 1.25 odds ratios

Background

Research Aims

Defining  
Discrimination

Case Studies

Unobserved Case  
Characteristics

**Simulations**

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

Selection Bias

Upstream  
Disparities

Missing Data

Conclusion

Next Steps

# Simulations

- We adopt the following fixed parameters derived from Hopkins (2016)
  - the proportion of non-Whites is 0.22
  - the probability of being incarcerated if White is 0.53
- Explore combinations of three values
  - The prevalence of the unobserved case characteristics in White offenders is: 0.3, 0.5 and 0.7
  - The relative prevalence of the unobserved in ethnic minority compared to White offenders is: 1, 1.25, 1.5, 1.75 and 2
  - The direct ethnicity effect is: 1 and 1.25 odds ratios
- For each scenario we assess if two ‘hard’ constraints are met
  - The overall unadjusted probability of being incarcerated is 0.55
  - The total effect of ethnicity on incarceration is 1.53 (odds ratio)
- We run 100 repetitions of 5,000 samples each
  - Consider congruous scenarios where the two constraints are met 25% of times

Background

Research Aims

Defining  
Discrimination

Case Studies

Unobserved Case  
Characteristics

Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

Selection Bias

Upstream  
Disparities

Missing Data

Conclusion

Next Steps

# Simulations: Results

Background

Research Aims

Defining  
Discrimination

Case Studies

Unobserved Case  
Characteristics

Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

Selection Bias

Upstream  
Disparities

Missing Data

Conclusion

Next Steps

Congruous scenarios where the ethnic disparities reported in Hopkins (2016) could be overestimated as a result of unobserved case characteristics

prevalence of the un- observed in Whites	relative prevalence of the unobserved in minorities com- pared to Whites	effect of the un- observed on incar- ceration, $OR_{U \rightarrow Y}$ ( $RR_{U \rightarrow Y}$ )	direct effect, $OR_{X \rightarrow Y}$ ( $RR_{X \rightarrow Y}$ )
0.3	1.5	2.12 (1.46)	1.25 (1.10)
0.3	1.75	2.12 (1.46)	1.25 (1.10)
0.3	2	2.12 (1.46)	1.25 (1.10)
0.5	1.25	1.91 (1.36)	1.25 (1.10)
0.5	1.5	1.91 (1.36)	1.25 (1.10)
0.7	1.25	1.5 (1.2)	1.25 (1.10)

## Simulations: Results

- Out of 30 scenarios considered, only six were congruous with an overestimated ethnicity effect on incarceration
- None of them explained it away entirely

Background

Research Aims

Defining  
Discrimination

Case Studies

Unobserved Case  
Characteristics

Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

Selection Bias

Upstream  
Disparities

Missing Data

Conclusion

Next Steps

## Simulations: Results

Background

Research Aims

Defining  
Discrimination

Case Studies

Unobserved Case  
Characteristics

Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

Selection Bias

Upstream  
Disparities

Missing Data

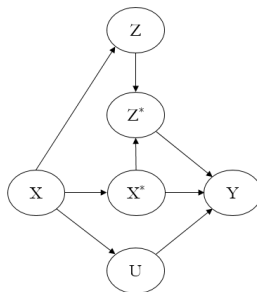
Conclusion

Next Steps

- Out of 30 scenarios considered, only six were congruous with an overestimated ethnicity effect on incarceration
- None of them explained it away entirely
- This is an oversimplification
  - We have considered a factor (or an index of factors) increasing sentence severity
  - There will be unobserved mitigation factors too
  - Which likely interact in complex ways that we are missing here

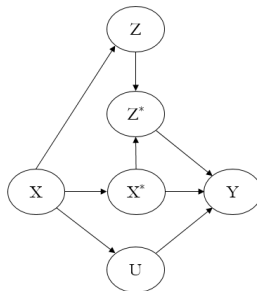


# Measurement Error



- Racially-determined case characteristics
  - Discretionally defined characteristics by the judge
  - E.g. remorse, ‘good character’, but also previous convictions

# Measurement Error



- Racially-determined case characteristics
  - Discretionally defined characteristics by the judge
  - E.g. remorse, ‘good character’, but also previous convictions
- Controlling for these will exert a downward bias
  - Particularly problematic in Isaac (2020) as it is likely overfitted

# Measurement Error

- We are classifying sentencing factors from the guidelines in three categories
  - Race neutral, racially constructed, and potentially racially constructed
  - To assess whether we should control for them or not, and how

Background

Research Aims

Defining  
Discrimination

Case Studies

Unobserved Case  
Characteristics

Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

Selection Bias

Upstream  
Disparities

Missing Data

Conclusion

Next Steps

# Measurement Error

- We are classifying sentencing factors from the guidelines in three categories
  - Race neutral, racially constructed, and potentially racially constructed
  - To assess whether we should control for them or not, and how
- Misclassification in the White group
  - Irish travellers, Romany gypsies, and White Europeans, could also experience discrimination
  - Their share within the White group is unknown, but ‘Other Whites’ represent over 7% of the UK population
  - 5% of the male and 7% of the female prison population identify themselves as Gipsy or Traveller, but that is only 0.01% of the UK population in England

Background

Research Aims

Defining  
Discrimination

Case Studies

Unobserved Case  
Characteristics  
Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

Selection Bias

Upstream  
Disparities

Missing Data

Conclusion

Next Steps

## Measurement Error

- We are classifying sentencing factors from the guidelines in three categories
  - Race neutral, racially constructed, and potentially racially constructed
  - To assess whether we should control for them or not, and how
- Misclassification in the White group
  - Irish travellers, Romany gypsies, and White Europeans, could also experience discrimination
  - Their share within the White group is unknown, but ‘Other Whites’ represent over 7% of the UK population
  - 5% of the male and 7% of the female prison population identify themselves as Gipsy or Traveller, but that is only 0.01% of the UK population in England
- Placing ‘Other Whites’ together with White British exerts an additional attenuation bias
  - Affecting both Hopkins (2016), Isaac (2020)
  - As far as we know all other criminal justice studies published in England and Wales

Background

Research Aims

Defining  
Discrimination

Case Studies

Unobserved Case  
Characteristics

Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

Selection Bias

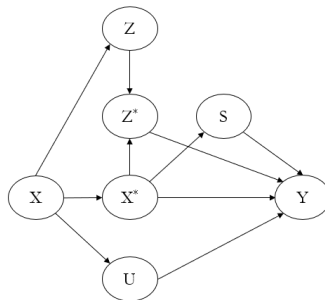
Upstream  
Disparities

Missing Data

Conclusion

Next Steps

# Selection Bias



- Upstream disparities

- Ethnic minority individuals are more likely to being stopped, arrested, charged and found guilty
- Sentencing cases are therefore not representative of the criminal justice system
- An attenuation bias if the object of the study is the criminal justice system

# Selection Bias

- If we are clear we seek to focus on the sentencing process only
  - No bias as long as the judicial perception of the defendant's ethnicity is independent from the perception formed by other criminal justice practitioners
  - Which is the case in England and Wales as the indictment (charge sheet) provided to judges before the trial/guilty plea only covers the defendant's name, address, and offence type

Background

Research Aims

Defining  
Discrimination

Case Studies

Unobserved Case  
Characteristics

Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

Selection Bias

Upstream  
Disparities

**Missing Data**

Conclusion

Next Steps

# Selection Bias

## Background

Research Aims

Defining  
Discrimination

## Case Studies

Unobserved Case  
Characteristics

Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

## Selection Bias

Upstream  
Disparities

Missing Data

## Conclusion

Next Steps

- If we are clear we seek to focus on the sentencing process only
  - No bias as long as the judicial perception of the defendant's ethnicity is independent from the perception formed by other criminal justice practitioners
  - Which is the case in England and Wales as the indictment (charge sheet) provided to judges before the trial/guilty plea only covers the defendant's name, address, and offence type
- Problems of missing data could be exerting a similar attenuation bias
  - When offender's ethnicity is self-reported (12% item-missingness in Hopkins 2016)
  - Or the judge is in charge of filling the questionnaire (40% non-response in Isaac 2020)



## Conclusion

- Estimates of ethnic disparities in sentencing are subject to multiple biases
  - Unobserved case characteristics is only one of them
  - By carefully mapping their impact we can potentially test the presence of discrimination in sentencing

Background

Research Aims

Defining  
Discrimination

Case Studies

Unobserved Case  
Characteristics

Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

Selection Bias

Upstream  
Disparities

Missing Data

**Conclusion**

Next Steps

## Conclusion

- Estimates of ethnic disparities in sentencing are subject to multiple biases
  - Unobserved case characteristics is only one of them
  - By carefully mapping their impact we can potentially test the presence of discrimination in sentencing
- The England and Wales evidence seems to point at real sentencing discrimination
  - Without a doubt for the case of drug offences
  - This problem needs to be redressed through effective policy
  - Ideally informed by further research exploring the specific mechanisms behind these disparities (class discrimination, legal representation, demeanour in court, perceptions of rehabilitative potential, etc.)
  - And where are those disparities more present

Background

Research Aims

Defining  
Discrimination

Case Studies

Unobserved Case  
Characteristics  
Simulations

Measurement  
Error

Racially constructed  
characteristics

Misclassification in  
Whites

Selection Bias

Upstream  
Disparities

Missing Data

Conclusion

Next Steps

## Next Steps

Background

Research Aims

Defining  
Discrimination

Case Studies

Unobserved Case  
Characteristics  
Simulations

Measurement  
Error

Racially constructed  
characteristics  
Misclassification in  
Whites

Selection Bias

Upstream  
Disparities  
Missing Data

Conclusion

Next Steps

- Through this project we will:
  - Further exploratory analysis; map out ethnic disparities by offence type, court, gender, area deprivation, etc.
  - Expand our simulations to consider unobserved aggravation and mitigation factors, and their interactions with ethnicity
  - Make the above available as an R package
  - Combine sensitivity analyses for unobserved case characteristics with others for measurement error and selection bias
  - We are open to exploring other areas that partners might find useful