Administrative Data Research Centre Scotland

An ESRC Data Investment

Criminal Careers and the Crime Drop in Scotland

Changing conviction patterns in the Scottish Offenders Index, 1989-2011

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Our argument

- We can use **change over time** in criminal career **parameters** to **understand the crime drop** better
- This probably requires the use of **administrative data**
- **Complex** convictions trends in Scotland, varying by age, sex and period

Background

- We want to understand **individual-level change** in crime over crime drop (Farrell et al 2015)
- Criminal careers research shows that **age** and **sex** differences in conviction are crucial (Hirschi and Gottfredson 1983)
- Therefore examine **change in criminal career parameters over time** (Kim et al. 2016)

Background

- Conceptualize change in age-crime curve as an **n = 1** study (Matthews and Minton 2018, Fernández-Molina and Gutiérrez 2018)
- Criminal career parameter becomes the **lens** not the focus (Matthews and Minton 2018)
- *Contra* assumption that **change** in the age-crime curve is **meaningless** (Hirschi and Gottfredson 1983:572)

Background

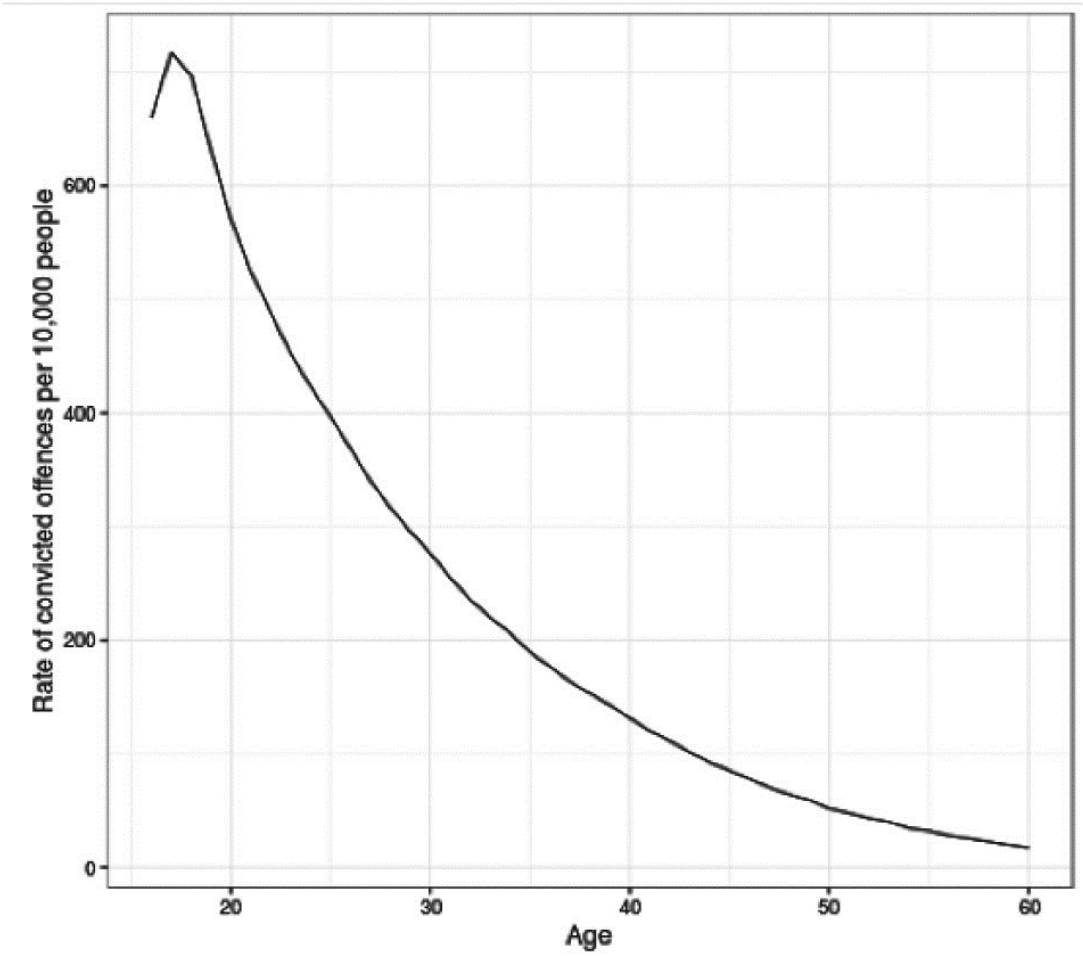


Figure 1. Age-crime curve in the Scottish Offenders Index (1989-2011).
Source: Matthews and Minton (2018)

Background

- Different explanations for the crime drop imply different patterns of **cohort or period effects** (Kim et al. 2016)
- e.g. better **security** measures as **period** effects, young people's **social activities** as **cohort** effects
- But **survey research** offers only **limited age ranges**, and often only men (e.g. Berg et al. 2016)

Research design

- The **coverage** of administrative data offers complement to survey data
- Scottish Offenders Index (SOI)
- (Almost) **All** sets of **convictions proceedings** in Scottish courts 1989-present (age 16+)
- Allows **multiple comparisons** between and within ages and periods

Research design

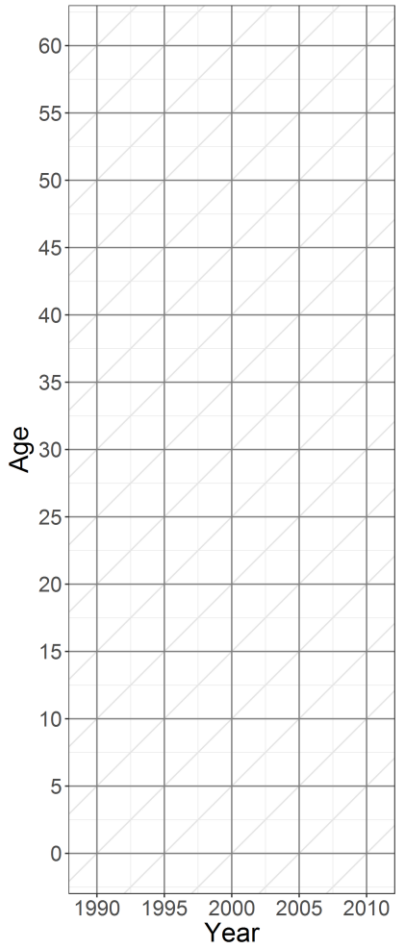
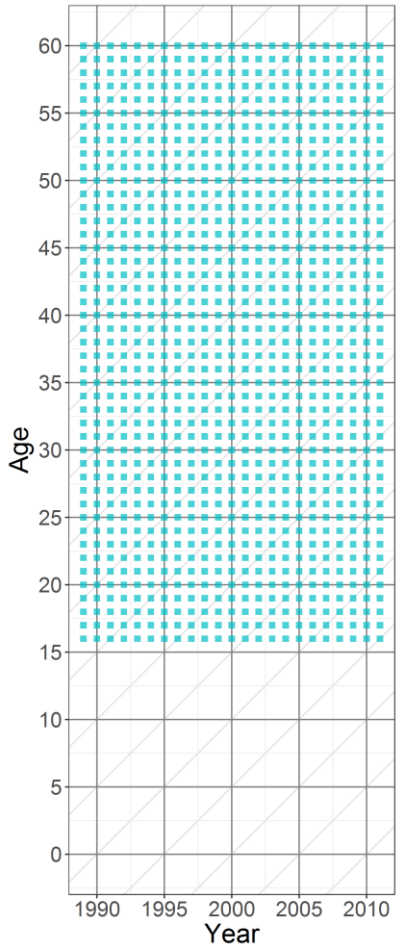


Figure 2. Comparing data coverage of SOI and cohorts used in Berg et al. (2016)

Research design



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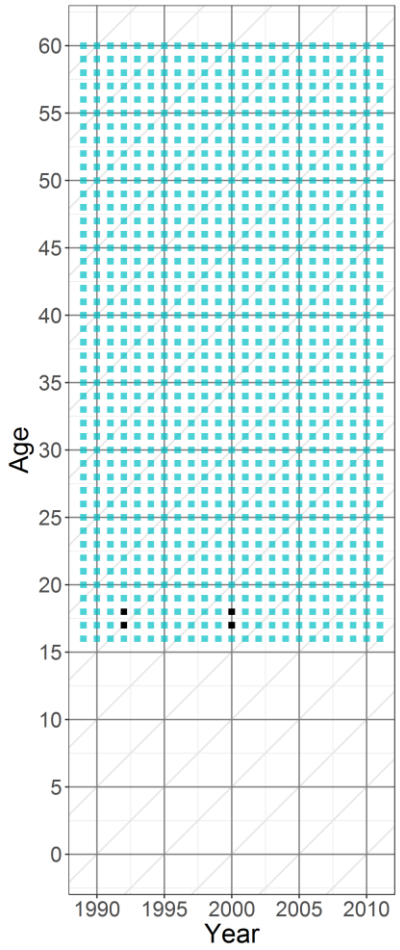

Figure 2. Comparing data coverage of SOI and cohorts used in Berg et al. (2016)

Methods

- Level plot allows specific **visualization** of **rates** on **lexis** surface (Minton 2014)
- But same principle of multiple age-period comparisons can be used for **any parameter** (including from models)

Methods

- **Visually inspect** for period or cohort trends in conviction rates (Matthews and Minton 2018)
- If change for **all ages at the same time**, assume a **period** effect (not cohort effect or age-limited period effect)

Results

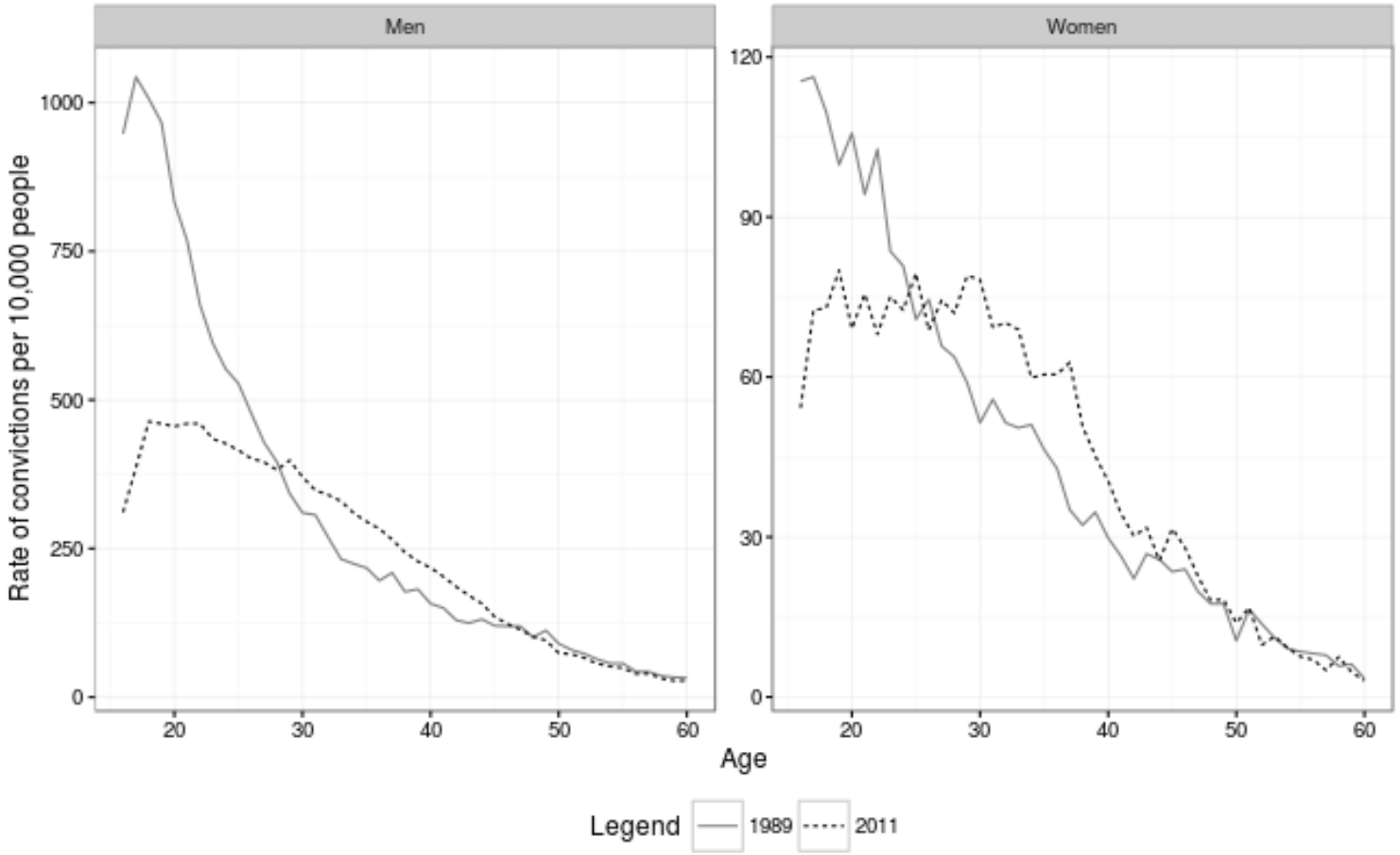

Figure 3. Age-crime curves in SOI 1989-2011
Source: Matthews and Minton (2018)

Results

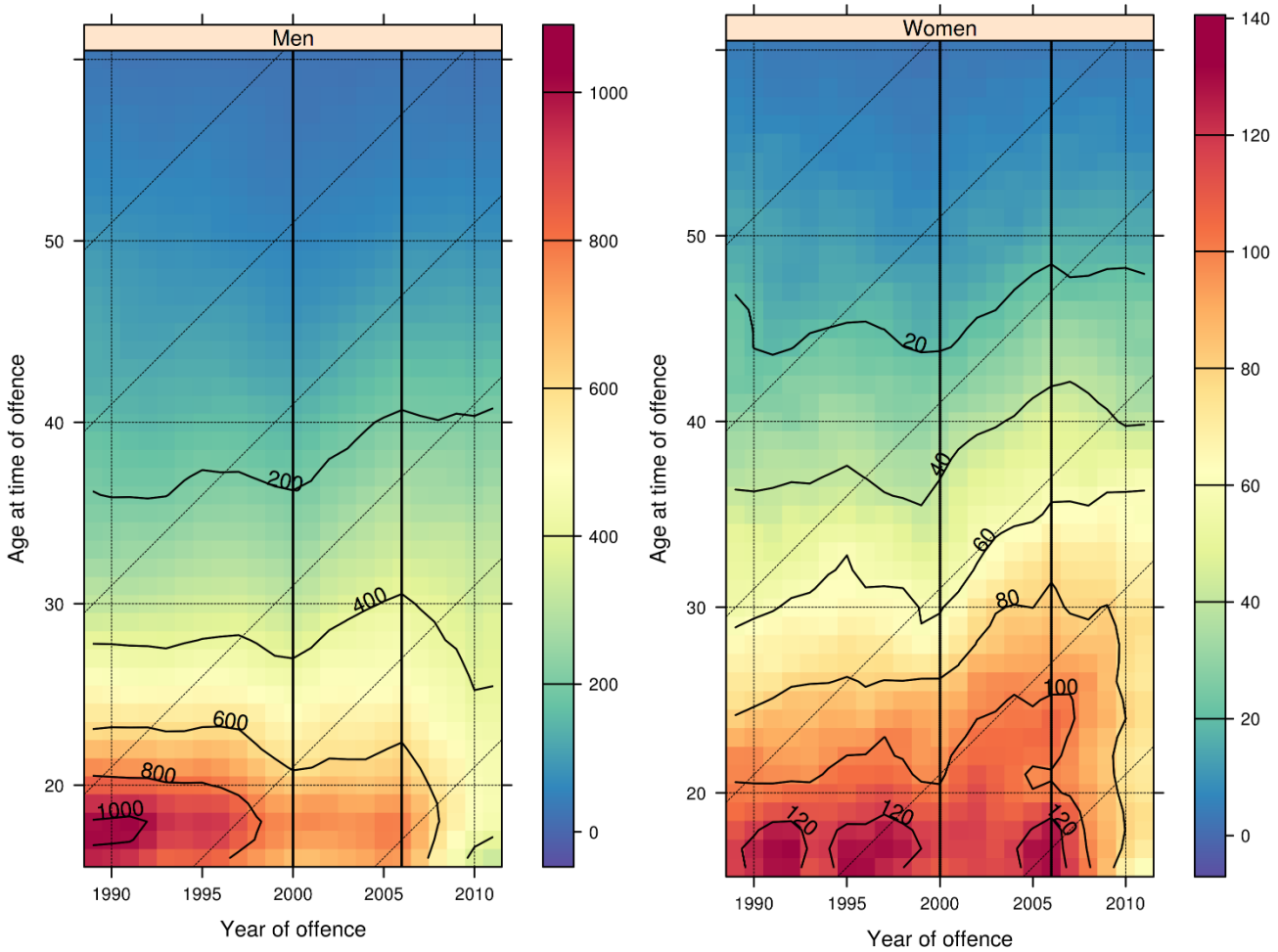

Figure 4. Shaded contour plot of convicted offending for different ages in SOI, 1989-2011.
Source: Matthews and Minton (2018)

Results

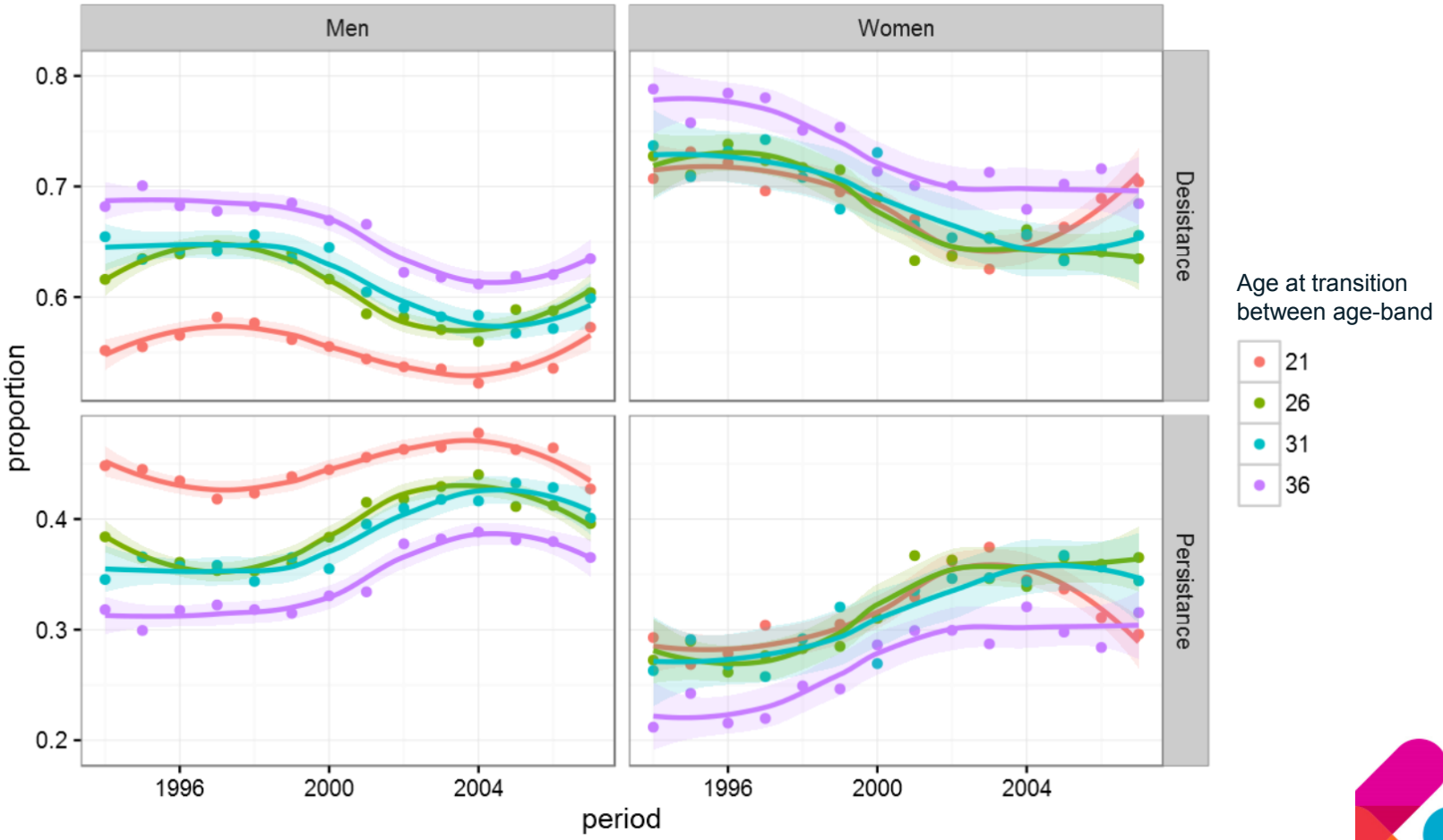

Figure 5. Proportion of people with convictions in consecutive age-bands, 1993-2007.
Source: Matthews (2016), SOI

Discussion

- The crime drop is a **youth crime drop**…
- … but shows **different trends** for **men and women** of different ages in different **periods**
- **Questions uniform explanations** for crime drop which imply same mechanism for all people at the same time

Discussion

- **Administrative data** can give breath, complementing depth of surveys
- Visualization methods can be expanded to multiple countries (Minton et al. 2017)

Caveats

- Inference is visual and logical not statistical
- Requires a suitable data source (SOI, Scandinavian registers, …?)

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Thank you!

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Data were provided by Scottish Government – many thanks to them for their help throughout this project.

References

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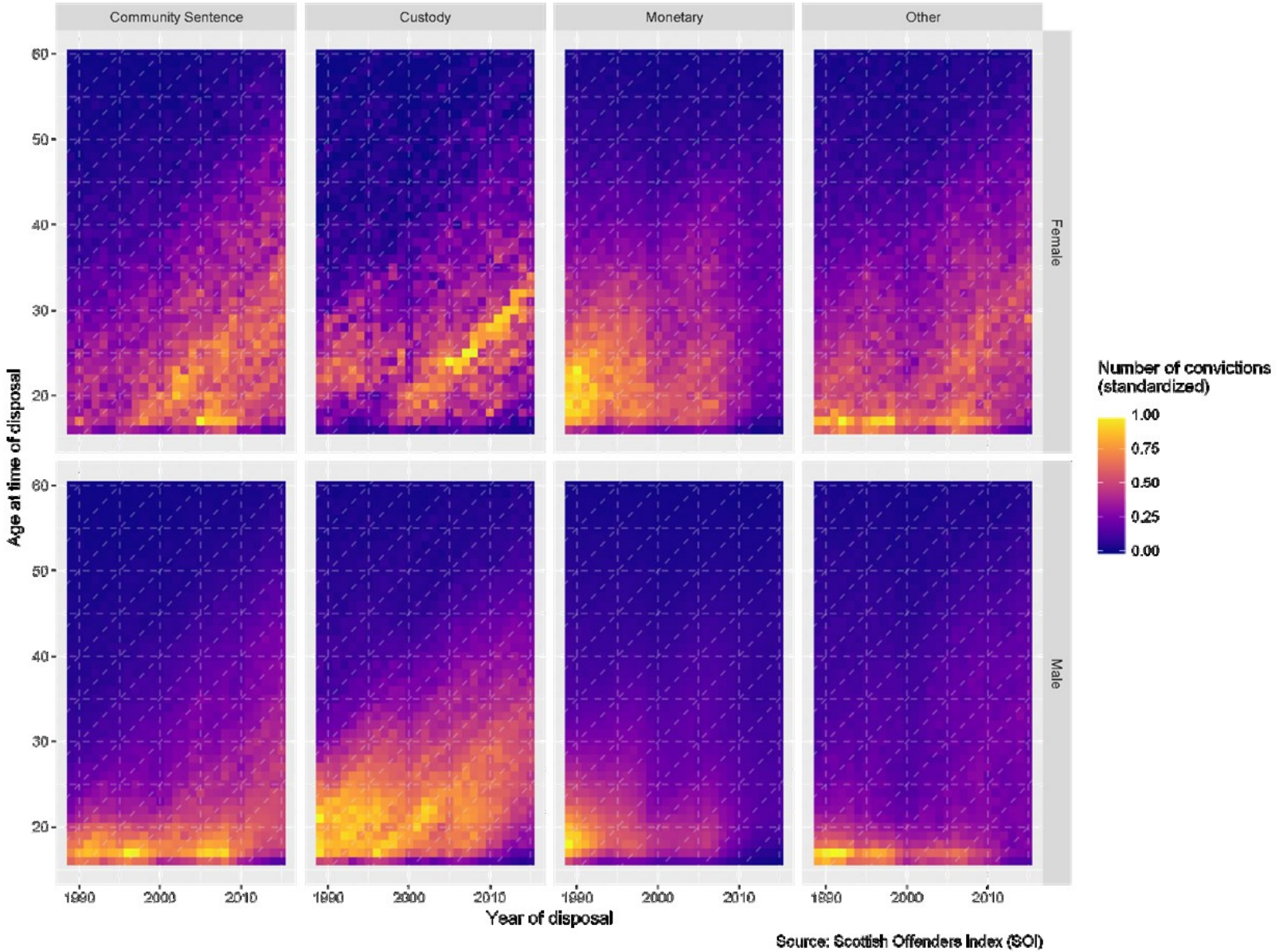
Results

Figure 6. Level plot of convicted offending for different ages in SOI, 1989-2015.



Results

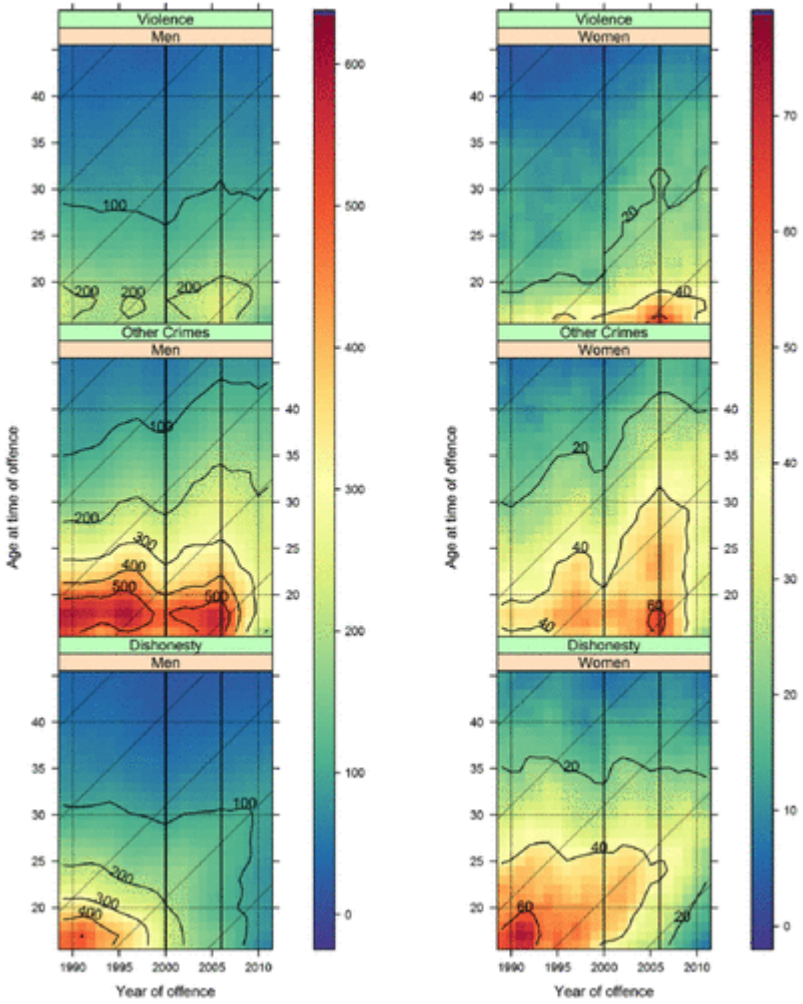


Figure 7. Shaded contour plot of convicted offending for different ages in SOI by crime type, 1989-2011.
Source: Matthews and Minton (2018)