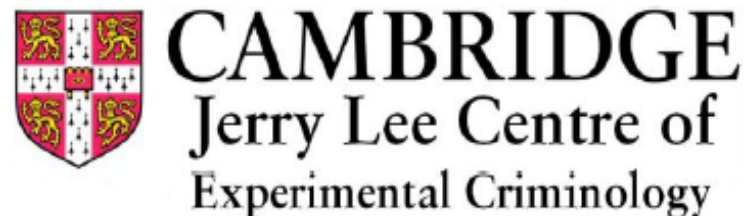# Counting Crime the Cambridge Way: A Global Progress Report

Lawrence W. Sherman & Peter W. Neyroud

Summary

1. Why does the world need a crime harm index?
2. Crime measurement vs. analysis
3. How does a CHI work
4. What makes Cambridge better than ONS
5. Why UK agencies should use ONS
6. What difference any CHI makes for crime theory or policy
7. What's new around the globe—and review: Peter Neyroud
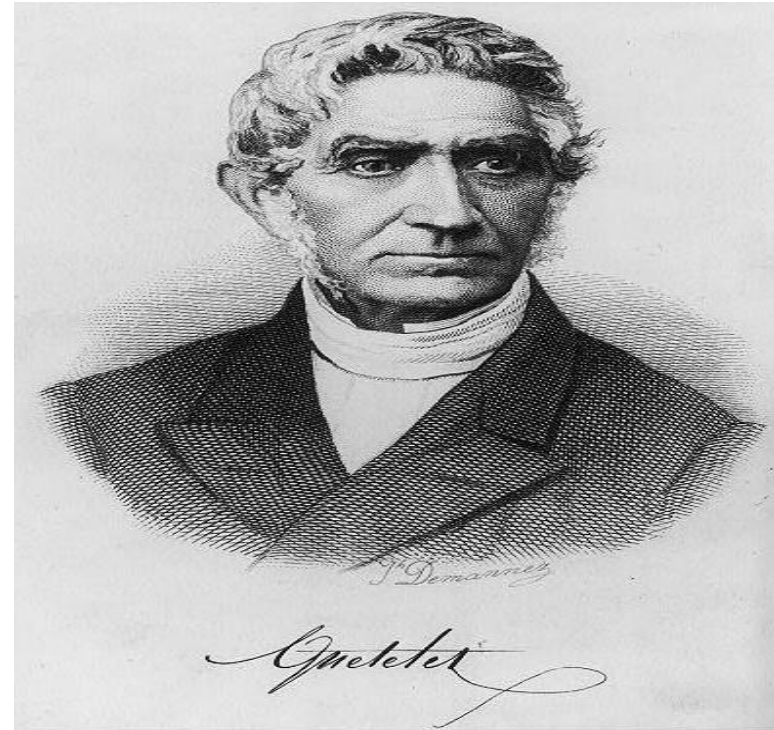
1. Counting Crime is Fundamental

Science Begins With Observation
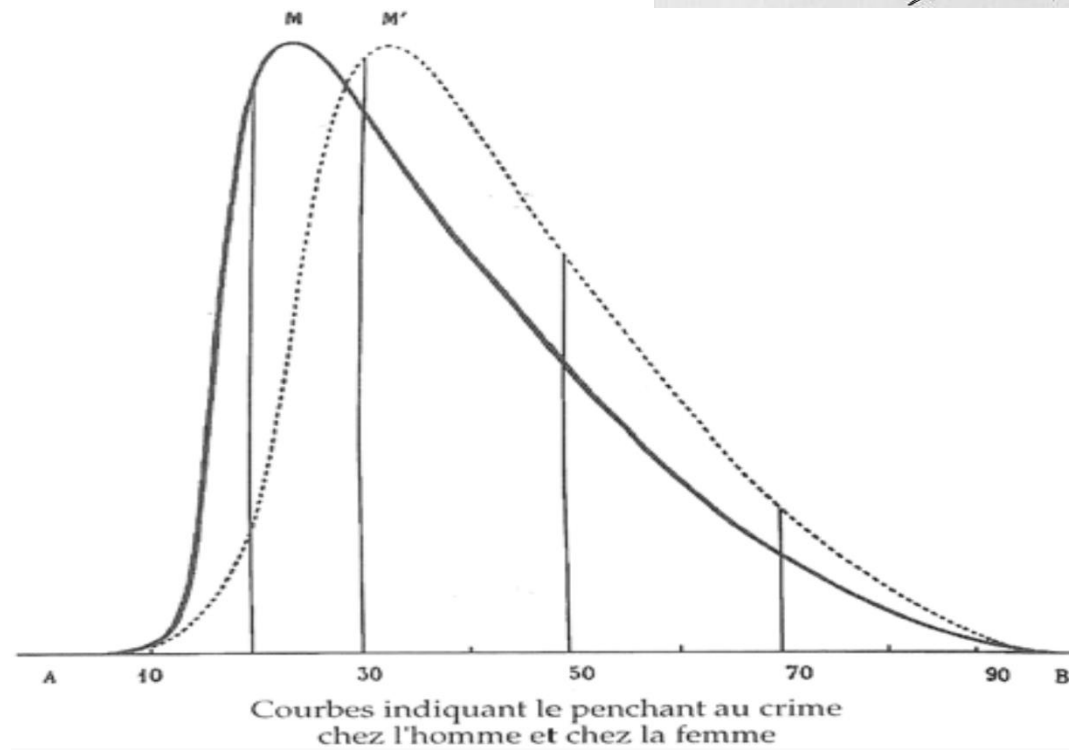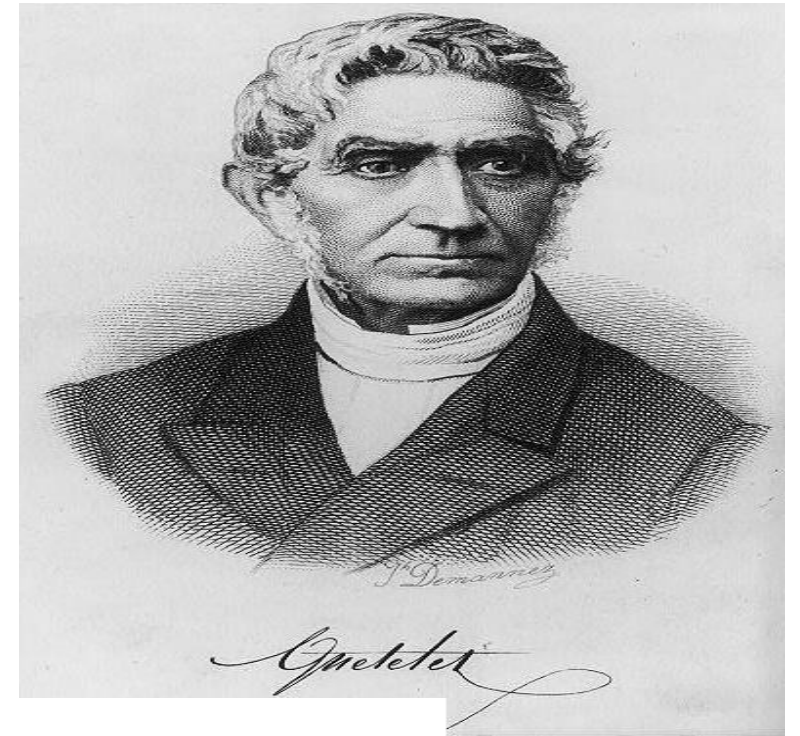
- Differences
- Patterns
- Trends

- Prediction
- Explanation
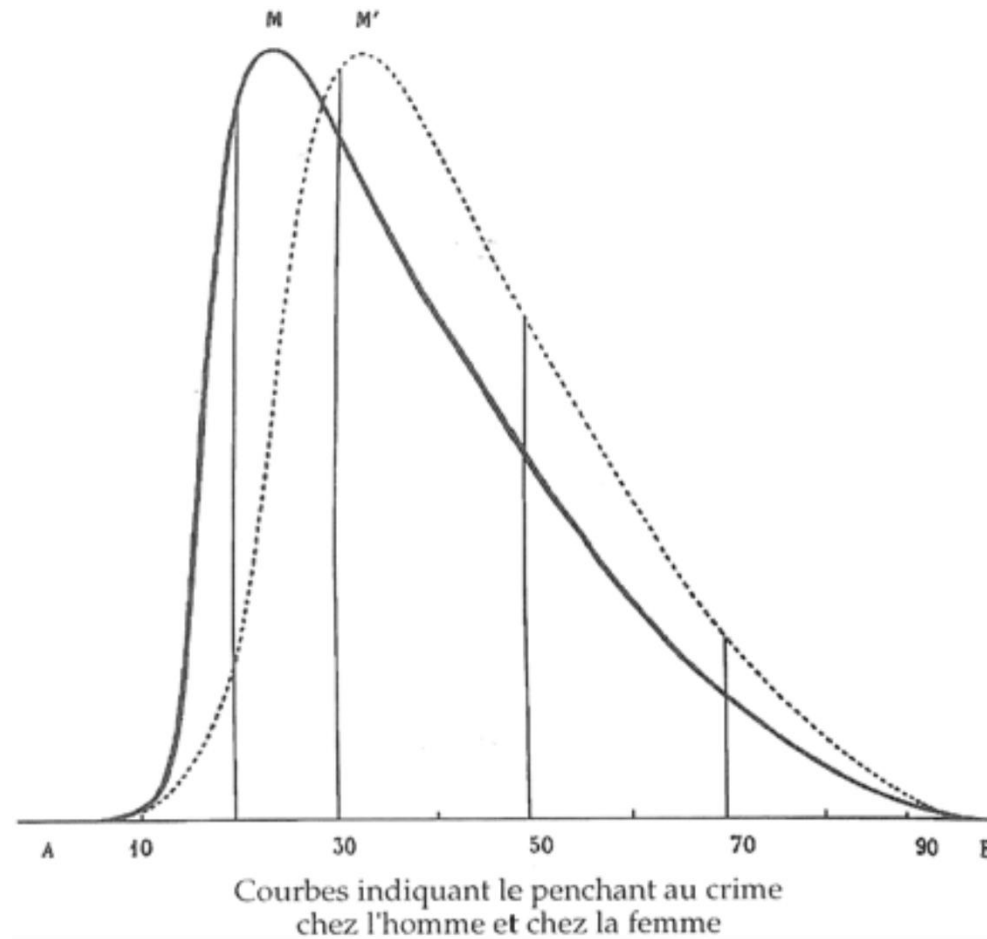- Prevention

Adolphe Jacques Quetelet 1796-1874

Quetelet's work

- Astronomer—observatory
- Criminology (social physics)
- 1831 *On the Development of Propensity to Crime*
- Age-crime curve
- Gender
- Mapping
- BUT………

Courbes indiquant le penchant au crime chez l'homme et chez la femme

Are all crimes created equal?

Courbes indiquant le penchant au crime
chez l'homme et chez la femme

2. Analysis Ahead of Measurement

- Unreported Crime
- Social bias in reporting
- Differences in counting rules
- Proactive = reactive detection
- When crime occurred/reported
- Biggest problem:

Differences in Seriousness

Most Research in Criminology Uses…

- Prevalence (Percent of population with any offence)
- Frequency (How many offences per offender per time period)
- Rates (number of crimes per head of population)
- Time to failure (how long until the next offence)
- But not

  SEVERITY OF CRIME HARM

- Why not?

Are all crimes created equal?

- If not, then

- Why do governments around the world report them that way?

- Good news: the Cambridge Crime Harm Index is changing that---fast.

POLICING (Oxford Press) 2016

The Cambridge Crime Harm Index: Measuring Total Harm from Crime Based on Sentencing Guidelines

Lawrence Sherman*, Peter William Neyroud** and Eleanor Neyroud***

Research Impact

Origin:
Lateral Thinking

- VC Research Impact Award 2017

<u>Common Currency:</u>

From Francs, Marks, Kroner, Pounds, Drachmas

to

The Beloved EURO

Since 2007—mostly since 2016—Impact has spread

- UK
- Office of National Statistics
- Experimental version 2016
- First Results 2018
- Now tracking 43 police forces
- Police have new incentive rules
- Good to distinguish URGENT
  from   IMPORTANT

As a research tool—some official
- Canada (O)
- Sweden
- Denmark
- California
- Western Australia (O)
- New Zealand (O)
- Japan
- USA

3. How Does a Crime Harm Index Work? (Sherman, 2007)

- Each crime category gets a different weight
- The weight is in a common currency
- Multiply N of crimes in a category by that currency
- Product is the total currency weight (value) for that category
- Sum the weights across all categories
- Result = Crime Harm Index Value for all crimes

    --by each offender

    --against each victim

    --in each area

    --in each year

    --by time of day

Where does the currency come from?

- Moral philosophy?

- Empirical data on cost of crime? Psychological damage? Hate?

- Public opinion surveys?

To be viable, a CHI needs to use a metric that is

1. Derived from a democratic rule of law

2. Reliable in its application

3. Free of charge

4. What Makes Cambridge Better Than ONS, or others based on actual sentences

- Sentencing Guidelines for England & Wales
- Starting point for sentence:

  --No aggravating factors

  --No mitigating factors

- *Only crimes reported to police by victims or third parties*
- *Not crimes proactively discovered by police or quasi-police*

  Police are blamed when "crime" goes up, even when they discover it—but why give them disincentives to detect hidden crime?

- *Only crimes that occurred in time frame, not when reported*

Office of National Statistics, Canada, New Zealand

- Get actual sentencing data
- Disregard aggravating & mitigating factors
- Disregard when crimes occurred—just when reported
- Include proactive, police-detected crime
- WRONG! (or at least poor measurement)
- But legitimate—"official governmental statistics"
- So I recommend using the "wrong" way as more legitimate

ONS Crime Severity Score vs. Cambridge CHI

ONS Problems

Actual sentences

75% are repeat offenders

Sentence weighted by prior crime

Yet harm is the same for 1st crime

Victim just as dead if killed by a first offender or prolific one

Also: Proactive policing

Cambridge CHI Solutions

Guidelines

Assume all are first offenders

Prefer year of crime

Exclude proactive offence types

      drug possession

      shoplifting

      weapon carrying

5. Why UK Research Should Use ONS

- Legitimacy—its official

- Simplicity—built into police systems

- Politically more convincing
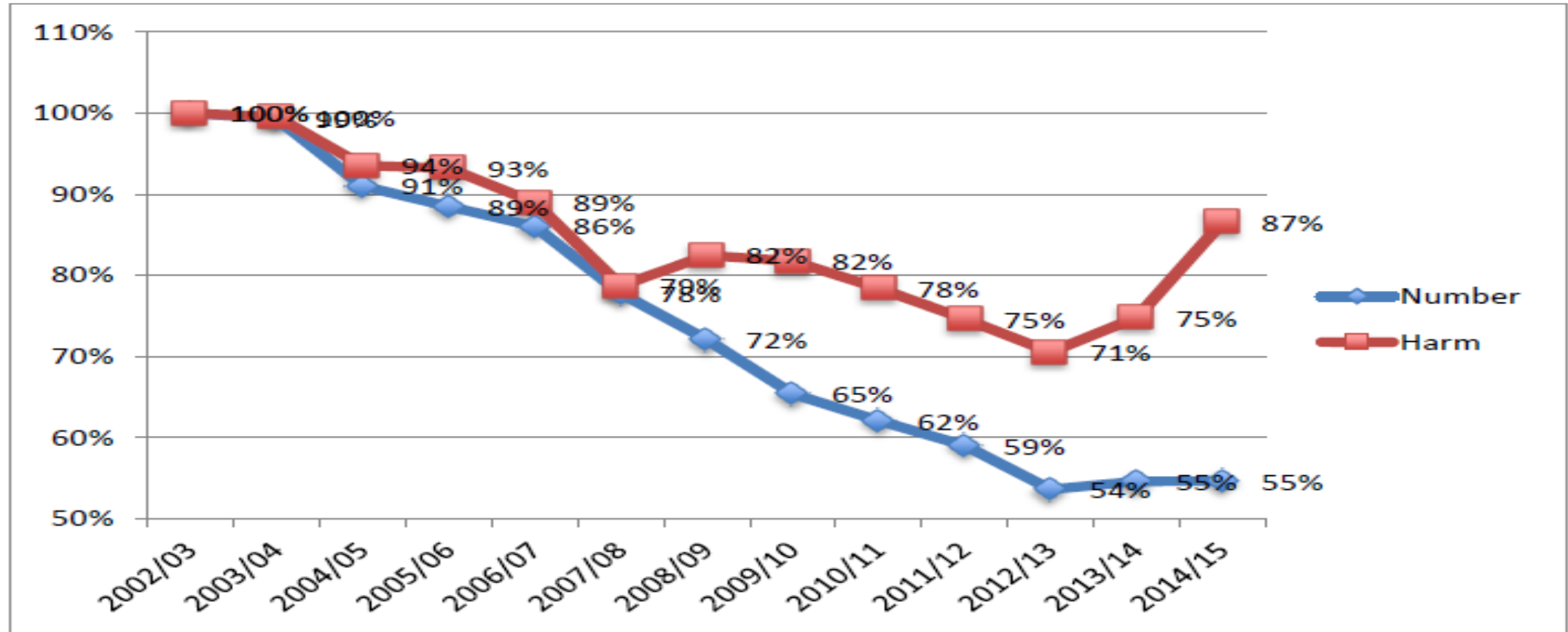
6. COUNTING CRIME the CAMBRIDGE WAY: *SO WHAT?*

A. May show different trends from counts

B. May show trends EARLIER—as a harbinger of a coming change

C. Best reason: to make better decisions

            Just like for NHS in funding medicines

A. Differing Trends

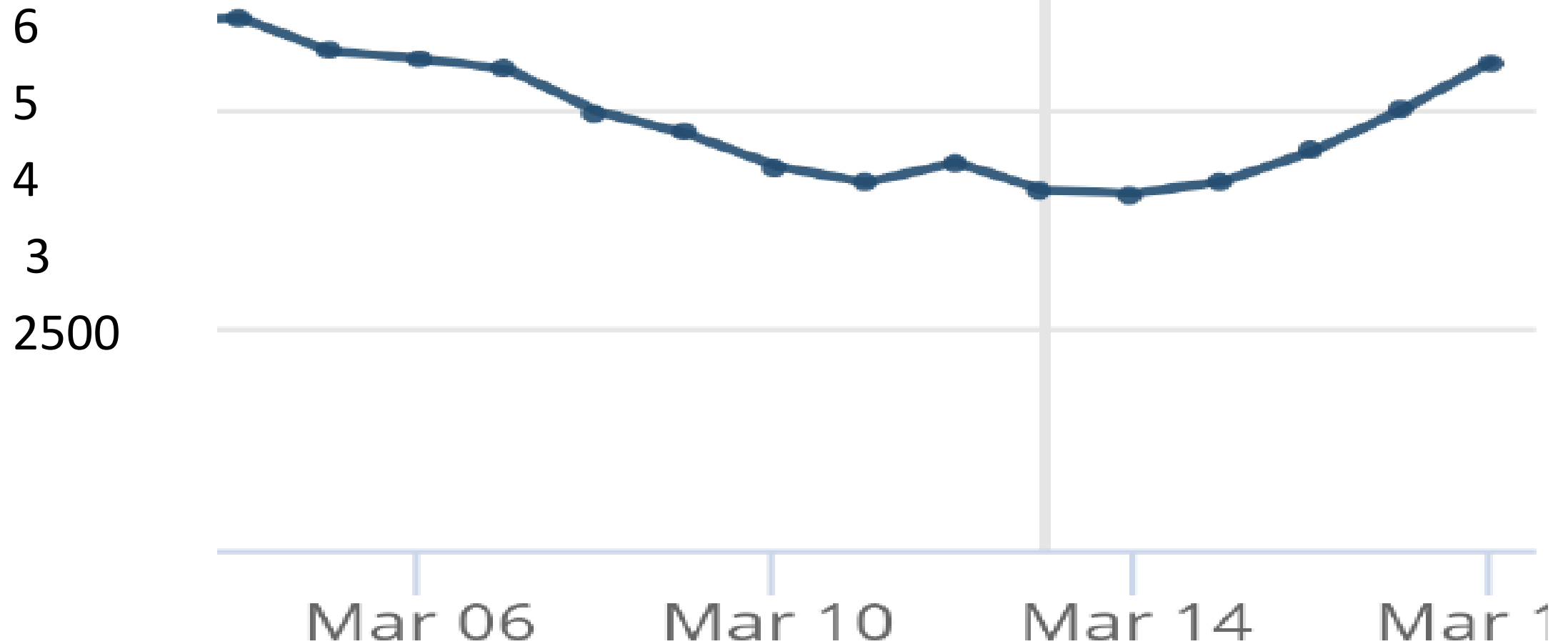Counts vs. Harm

England & Wales, 2002-2015: base of 2002 Approximate Cambridge CHI

Figure 1. Percentage change in numbers of crimes and CHI for total crime, by year. Data (2016) obtained from Eleanor Neyroud by personal email, July 3, 2018.

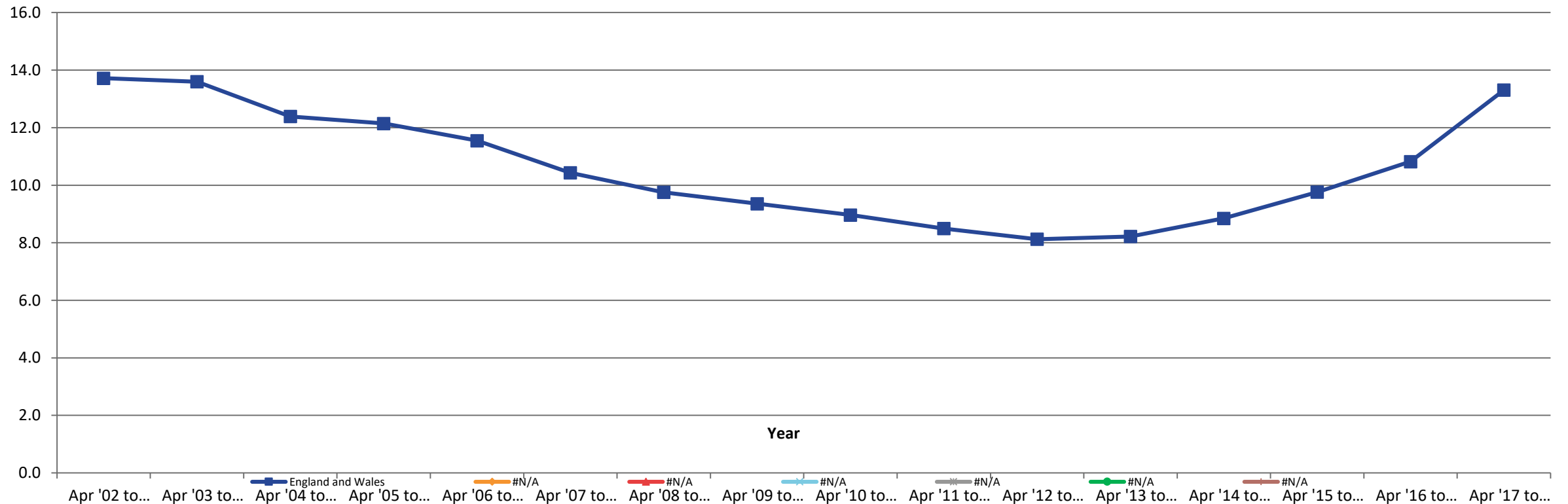# England & Wales: Count of Crime not up until 2014

Millions

ONS Crime Severity Index:
2 years EARLY WARNING from
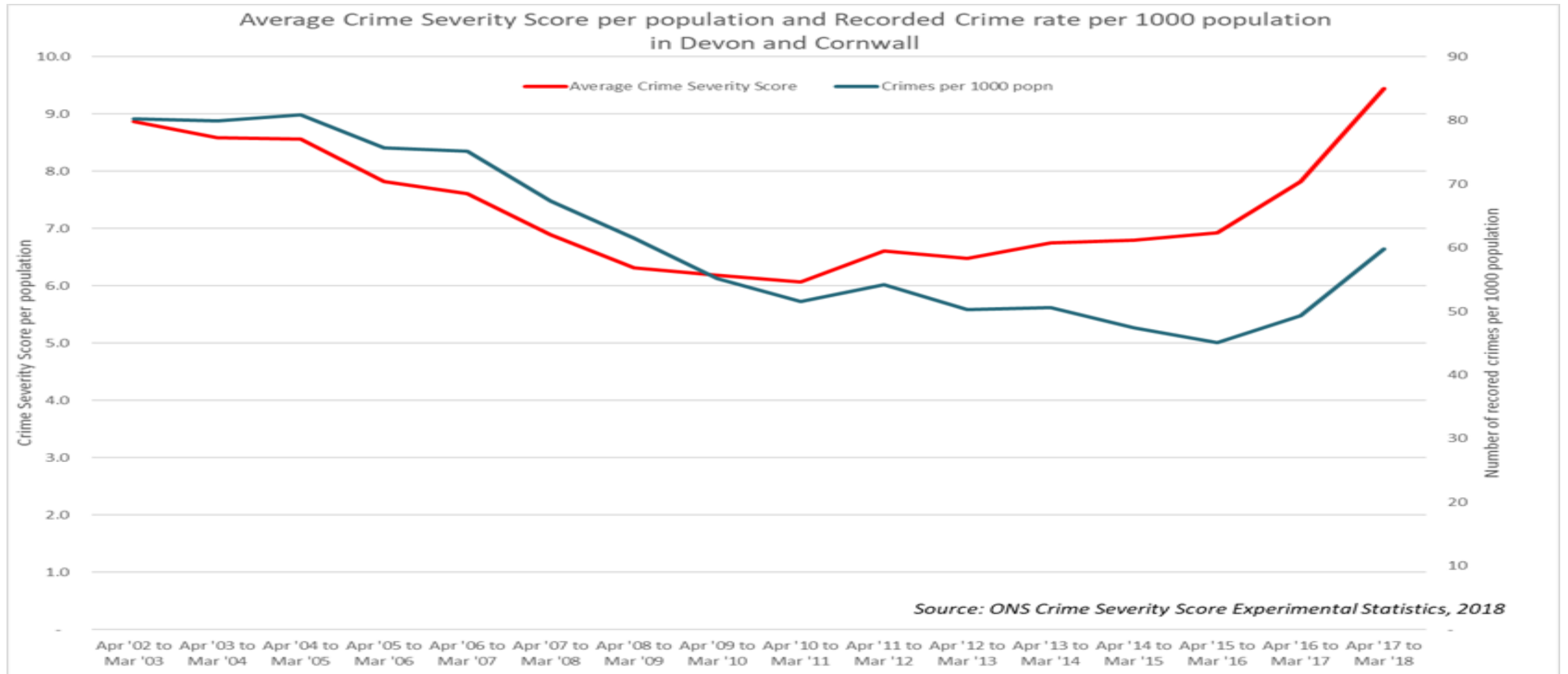
Crime severity started rising in 2012

Counts vs. Harm

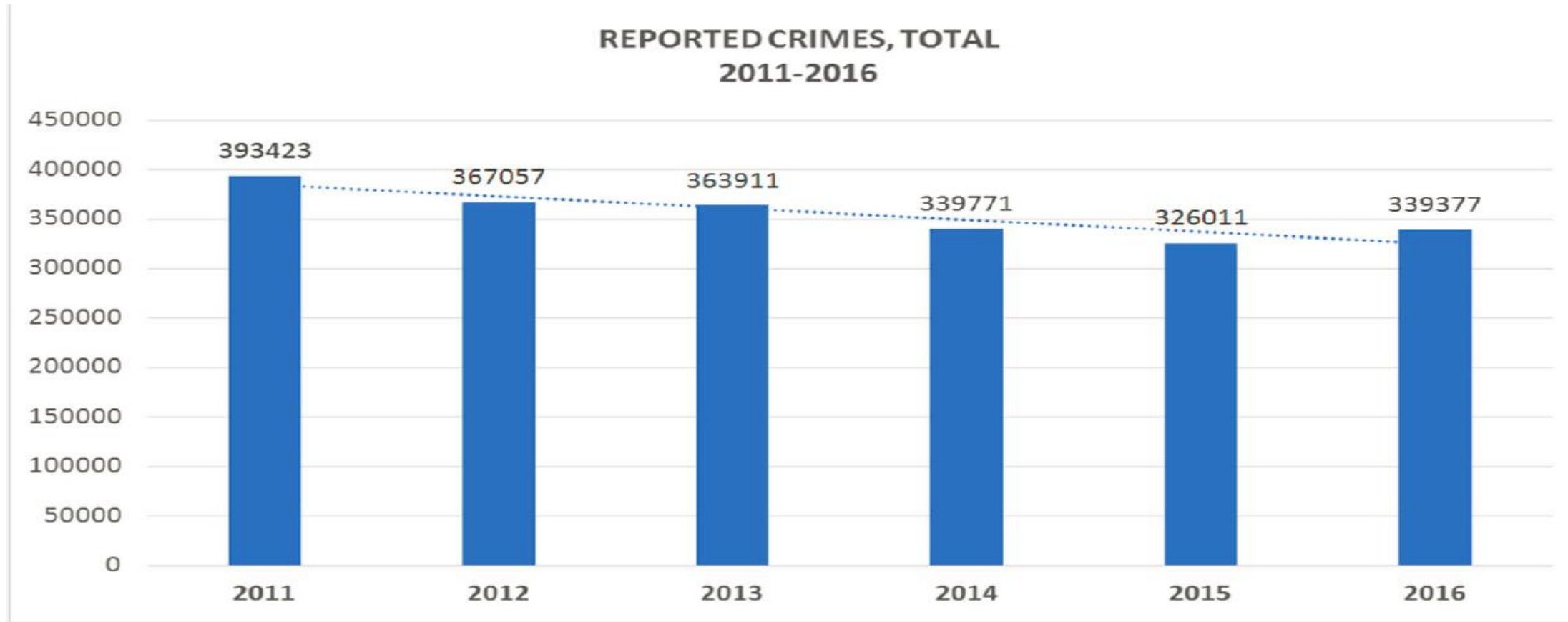# Crime Severity Score Total /Pop. England & Wales 2002-2017

Devon & Cornwall: Count vs. Severity (2010-2011 split)

Average Crime Severity Score per population and Recorded Crime rate per 1000 population in Devon and Cornwall

Source: ONS Crime Severity Score Experimental Statistics, 2018

Danish Crime Counts—Like US: All Crimes Are Created Equal?

REPORTED CRIMES, TOTAL 2011-2016

| Year	Reported Crimes
2011	393423
2012	367057
2013	363911
2014	339771
2015	326011
2016	339377

Fig. 1 Annual total of reported crimes, Criminal Code

Danish Crime Harm Index: Crime Weighted by Benchmark Prosecutor Penalty Request

Harm trend 2011 – 2016
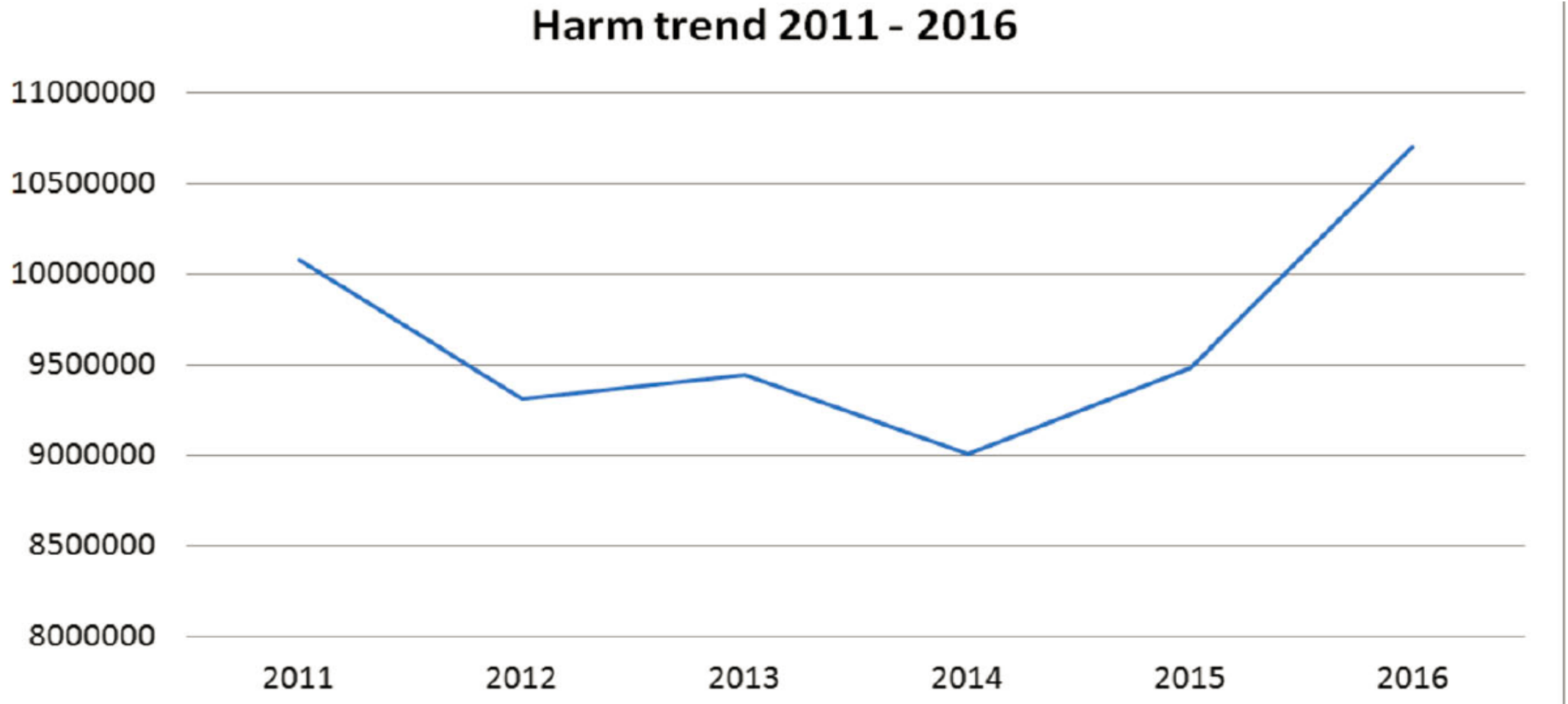
Not Always Different—e.g., US (M.Phil. Thesis, LeFurge-McLeod 2018)

Figure 7. U.S. UCR Part I Crimes – Percent change since 1982
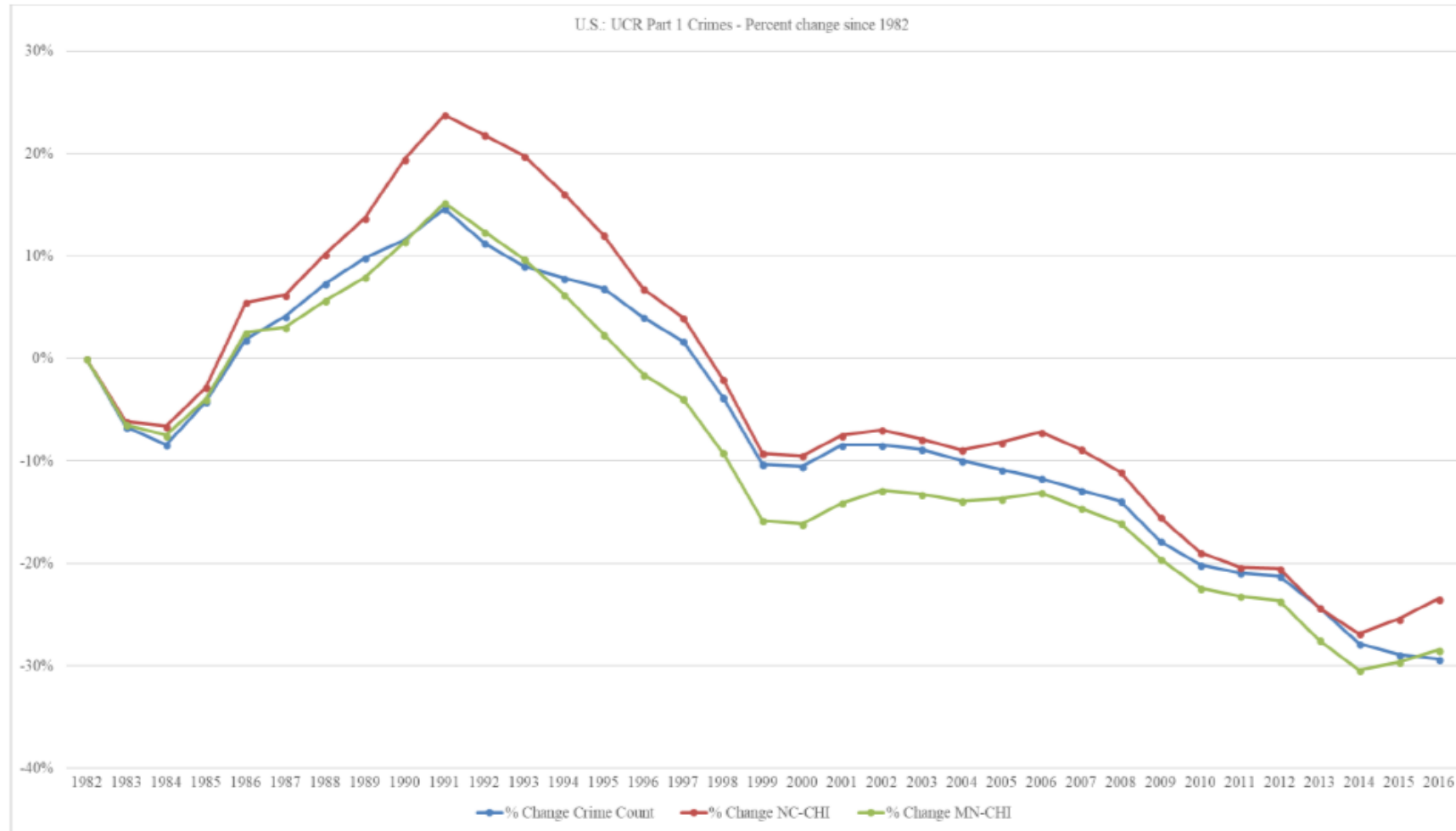
What else is different about US?

- Federated, voluntary crime reporting
- Completely unaudited
- FBI does not include most misdemeanors—highest portion of crimes
- Part I "Index" Crimes only count

> --Murder
>
> --Rape
>
> --Robbery
>
> --Aggravated Assault
>
> --Burglary
>
> --Car theft
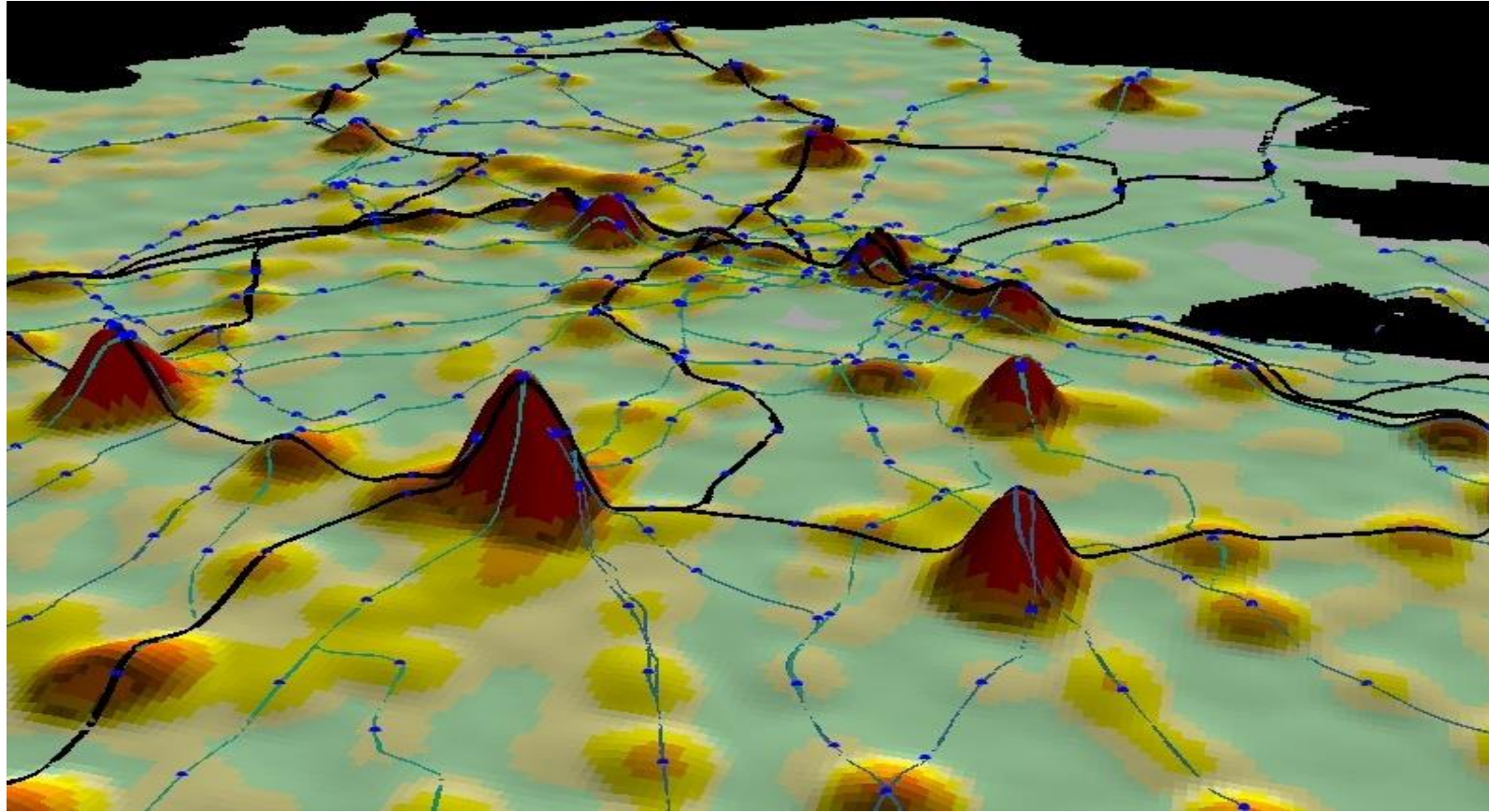>
> --Larceny
>
> --Arson

Hypothesis About Any CHI

- The better the crime counting

- The bigger the difference between count trends and CHI trends

Decisions with PRECISE TARGETING:
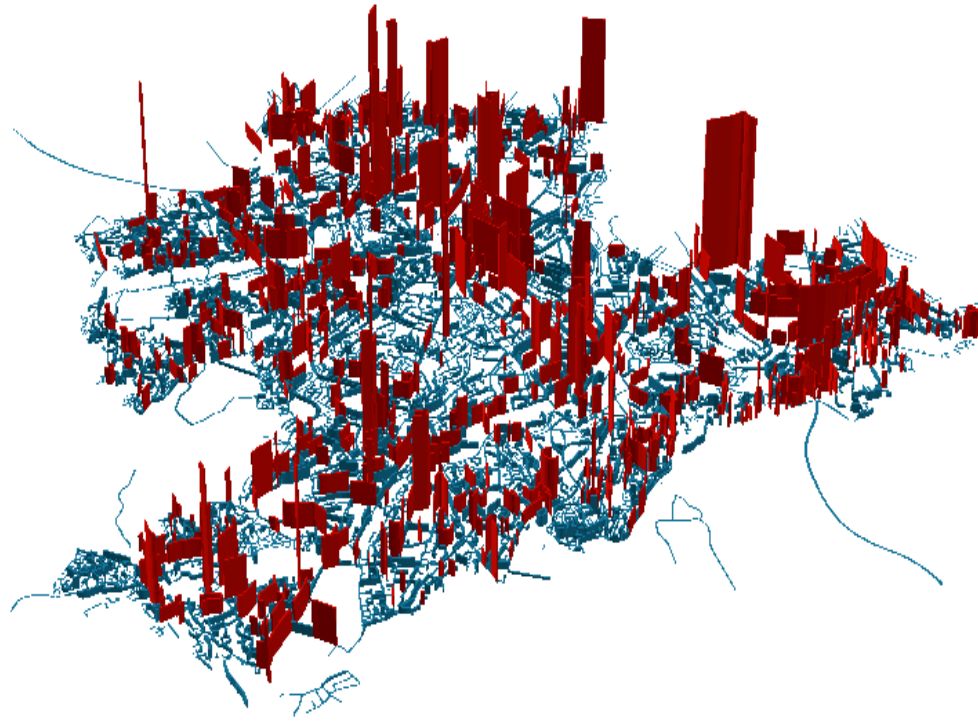# A 21ˢᵗ Century Revolution

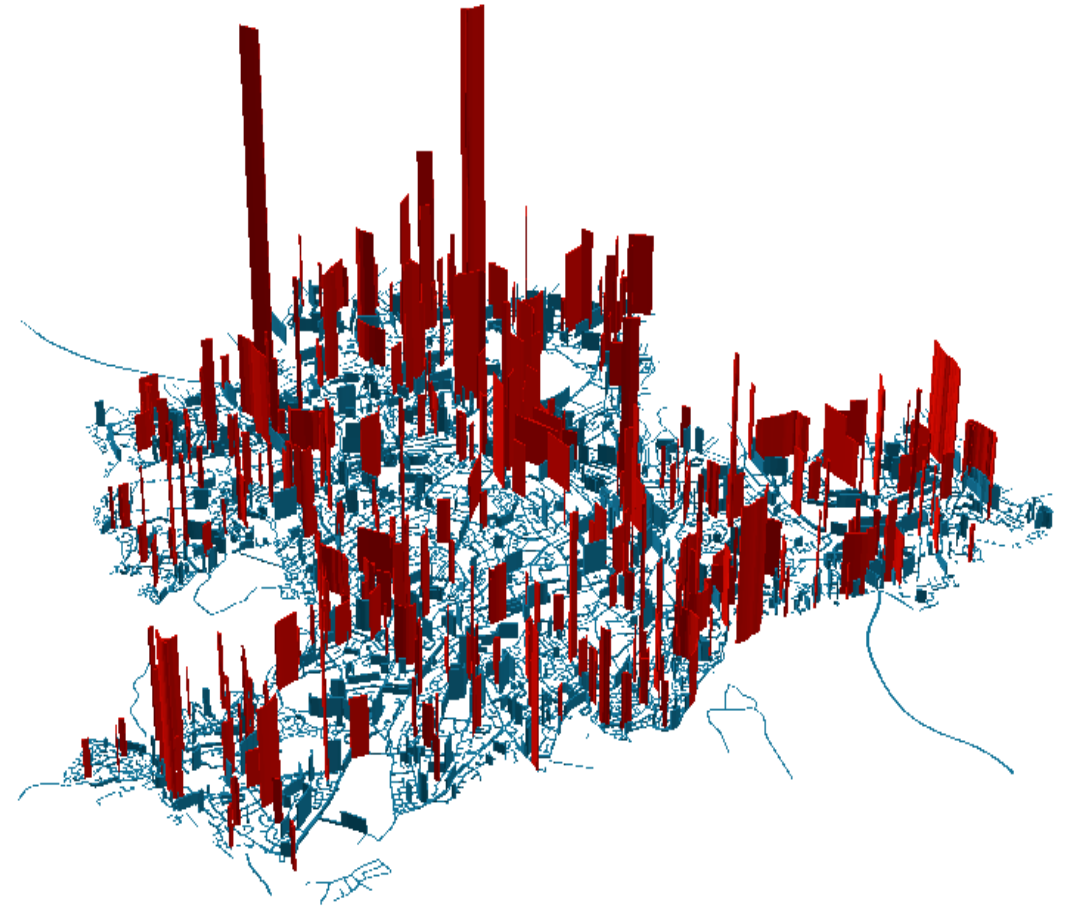# PLACES: Violent Crime Counts
 in Tokyo 2005

Hot Spots by counts vs. Harm Spots
In Birmingham UK

Uniformed Police Patrol: Foot, Car, Bicycle, CSO
Putting Police Where the Crime Is: "Hot Spots"

- Sherman's discovery (1989), Weisburd's Law (2015)
- Most crime occurs in a tiny proportion of all places in a city
- 3% of street addresses
- 50% or more of all crime
- Yet no police agency directs 50% of patrol to 3% of those addresses
- Deterrent theory of patrol says more *Targeted* Patrol, Less Crime
- Experimental evidence shows it works (unlike "predictive policing")
- Displacement hypothesis disproven

ANNOUNCING ADVANCE PREVIEW:
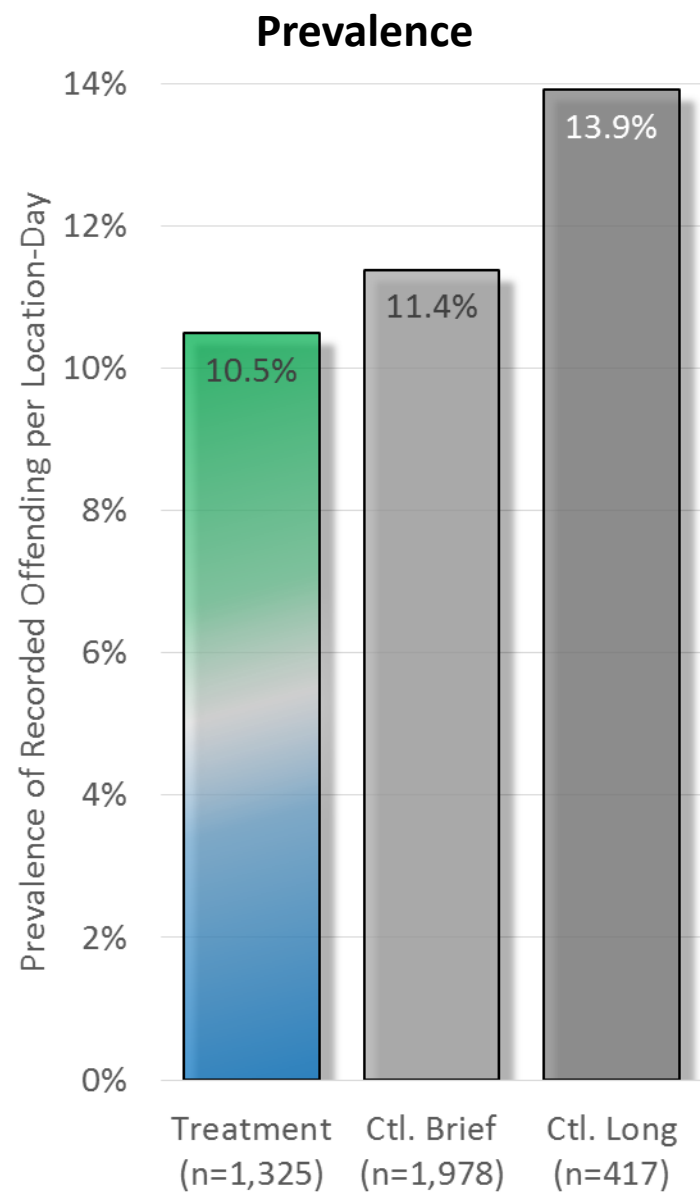## *The Barnes-Williams Decay Spike*

- Evidence from a rigorous experiment (Randomized Trial)

- Followup for 1-10 days

- Measured with Western Australia Crime Harm Index (WACHI)

- Shows Frequency of Patrol Matters in DAYS—not minutes
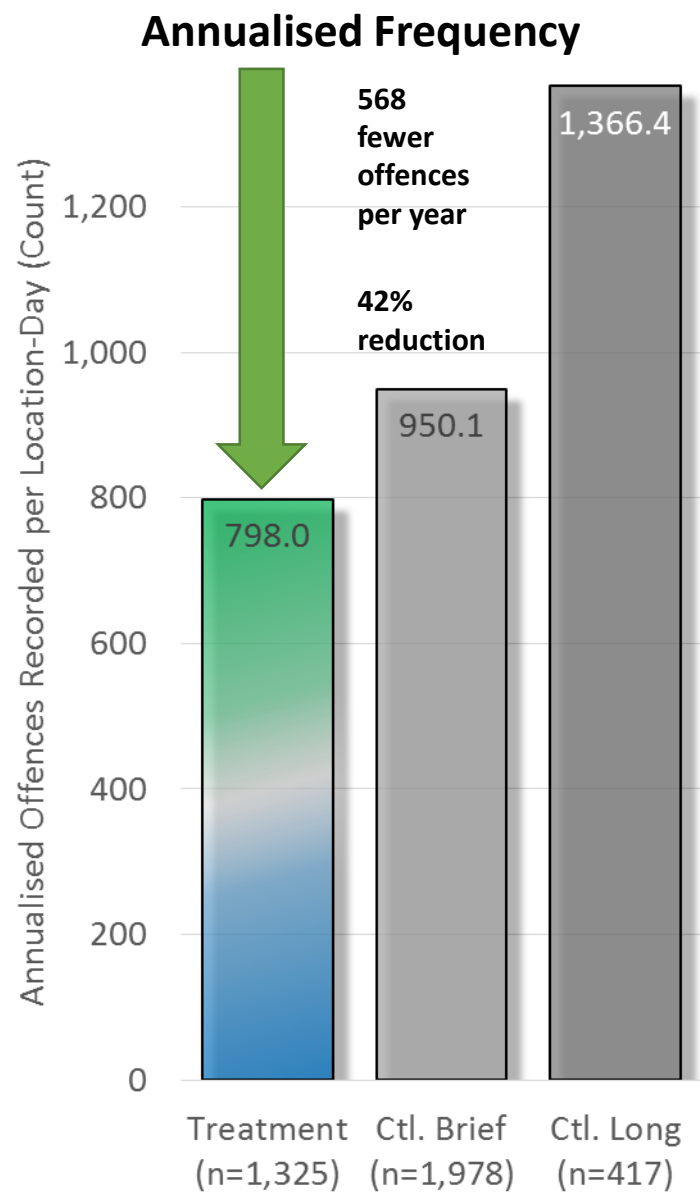
The Barnes-Williams Decay Spike

Based On

- 3,730 Location Days Randomly Assigned to More or Less Patrol
- 21,722 Visits by Individual Officers to
- 15 Selected Hotspots
- In which 86.7% lasted less than 5 minutes
- And 74.4% lasted less than 1 minute,

1. **Spike 1 = Daily Crime Harm _Doubles_ Without Extra Patrols for 4 days**
2. **Spike 2 = Daily Crime Harm _Rises 5 times after 5 Days_ without patrol**
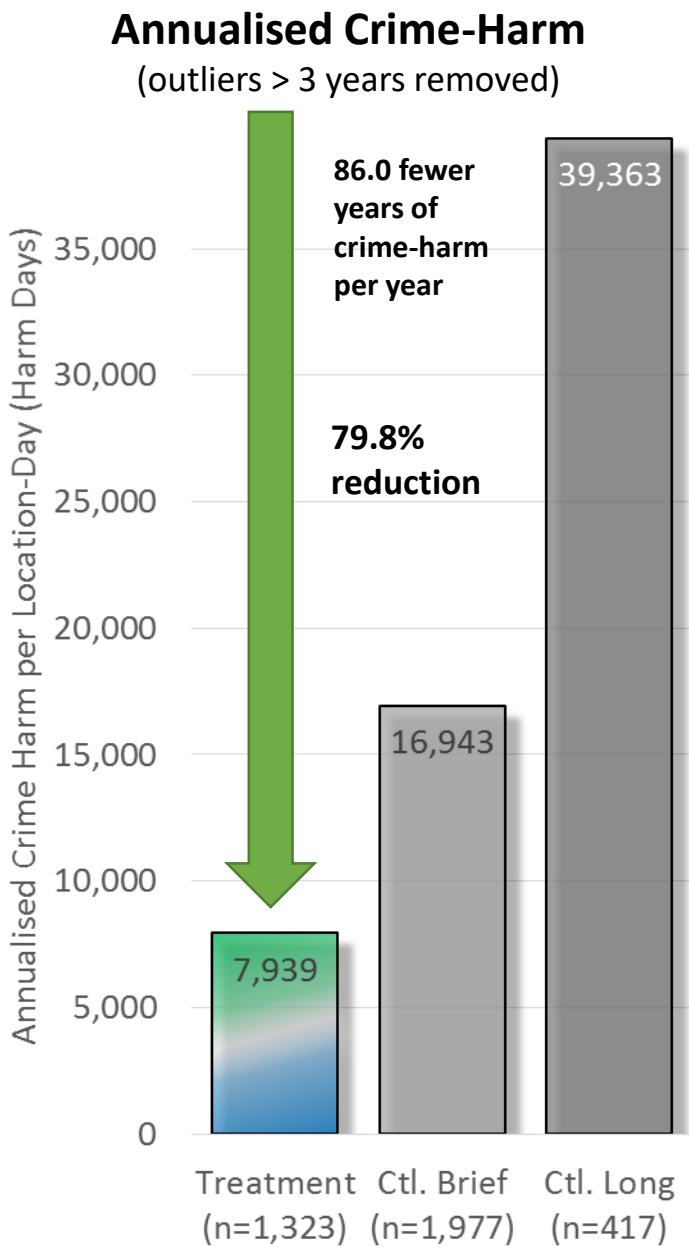
Recorded Offending and Crime Harm – Treatment, 1-4 Days of Control, 5+ Days of Control

Prevalence

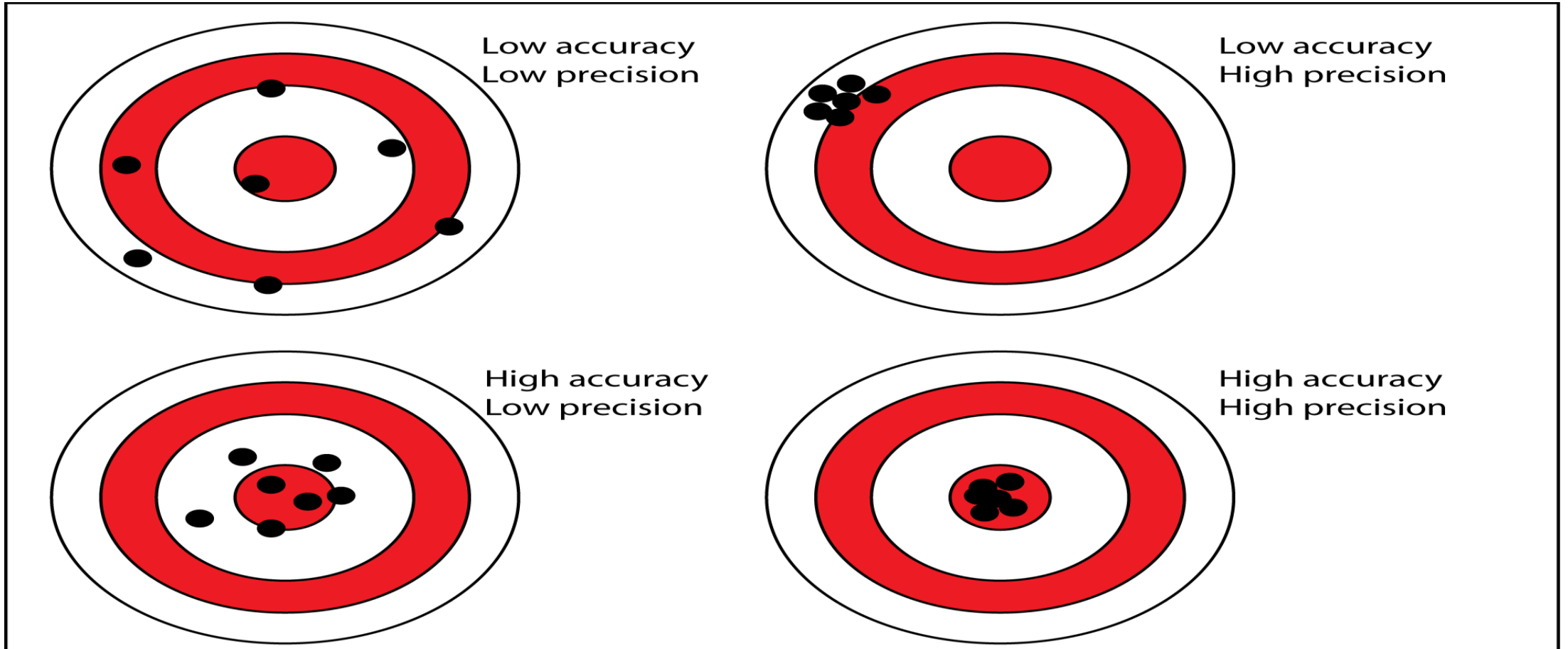Treatment (n=1,325): 10.5%
Ctl. Brief (n=1,978): 11.4%
Ctl. Long (n=417): 13.9%

$F = 1.84$, df = 2, $p = .1582$

Annualised Frequency

568 fewer offences per year

42% reduction

Treatment (n=1,325): 798.0
Ctl. Brief (n=1,978): 950.1
Ctl. Long (n=417): 1,366.4

$F = 3.94$, df = 2, $p = .0195*$

Annualised Crime-Harm
(outliers > 3 years removed)

86.0 fewer years of crime-harm per year

79.8% reduction

Treatment (n=1,323): 7,939
Ctl. Brief (n=1,977): 16,943
Ctl. Long (n=417): 39,363

$F = 3.44$, df = 2, $p = .0320*$

Accuracy vs. Precision: Why Not Both?

Summary So Far

- Measurement matters

- It can change an entire science

- Criminology was hopelessly imprecise, if fairly accurate

- May be far more helpful