UNIVERSITY OF CAMBRIDGE

60th · 1959 - 2019 · Anniversary of the founding of the Institute of Criminology

Counting Crime the Cambridge Way: A Global Progress Report

Lawrence W. Sherman & Peter W. Neyroud

CAMBRIDGE Jerry Lee Centre of Experimental Criminology

Institute of Criminology

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

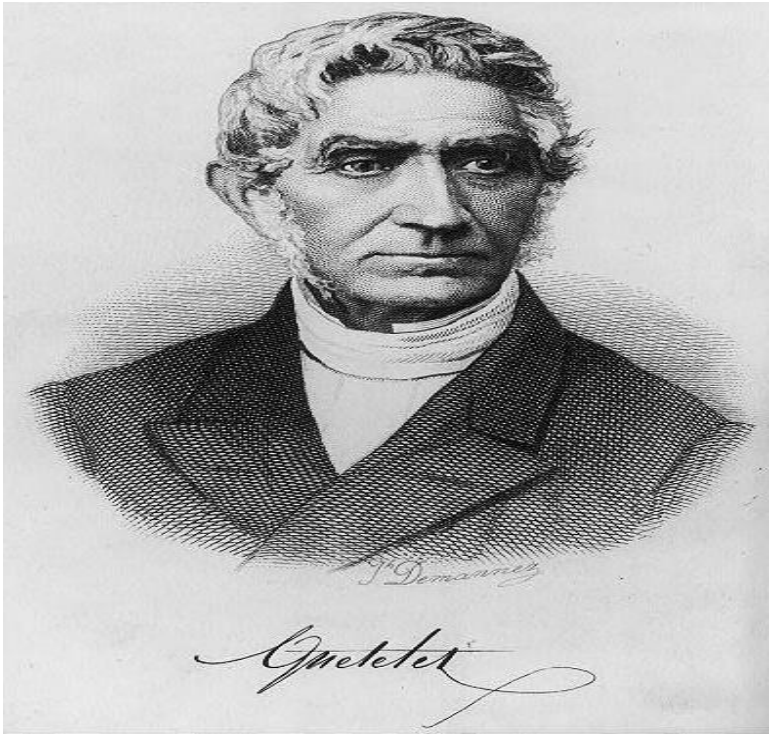
1. Counting Crime is Fundamental

Science Begins With Observation

- Differences
- Patterns
- Trends

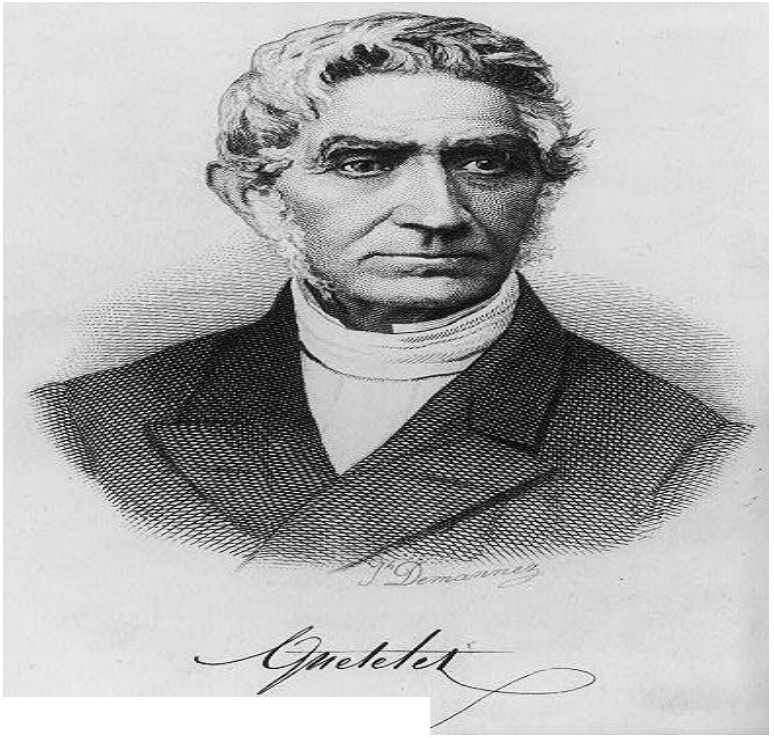
- Prediction
- Explanation
- Prevention

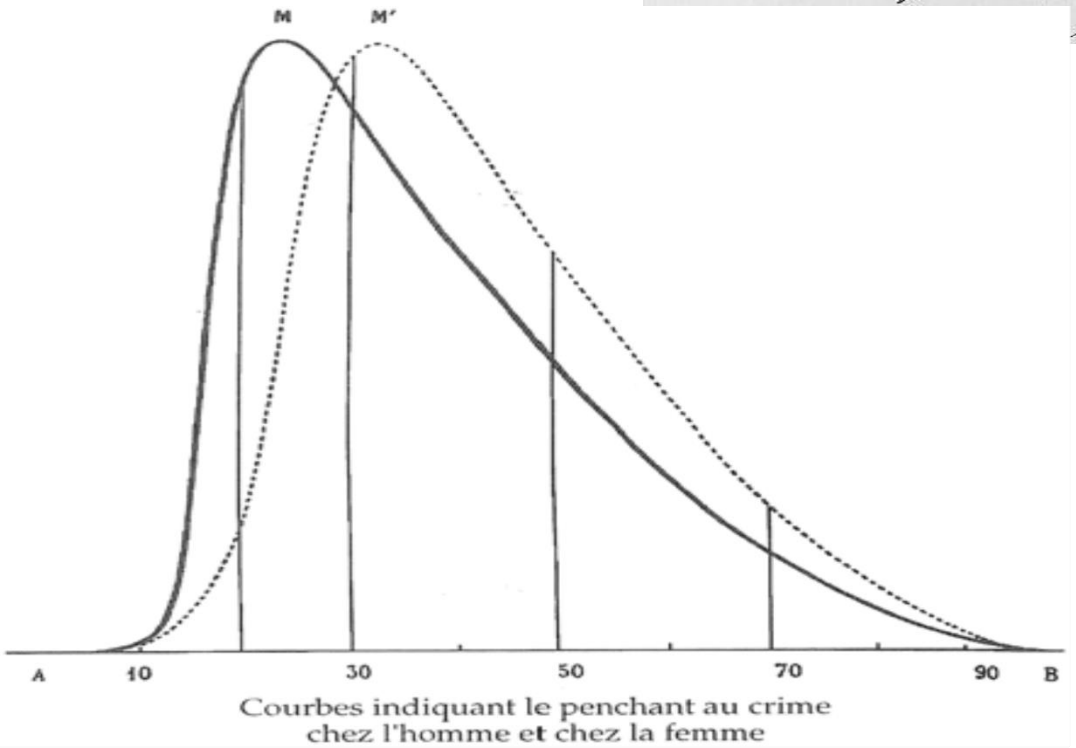
Adolphe Jacques Quetelet
1796-1874



Quetelet's work

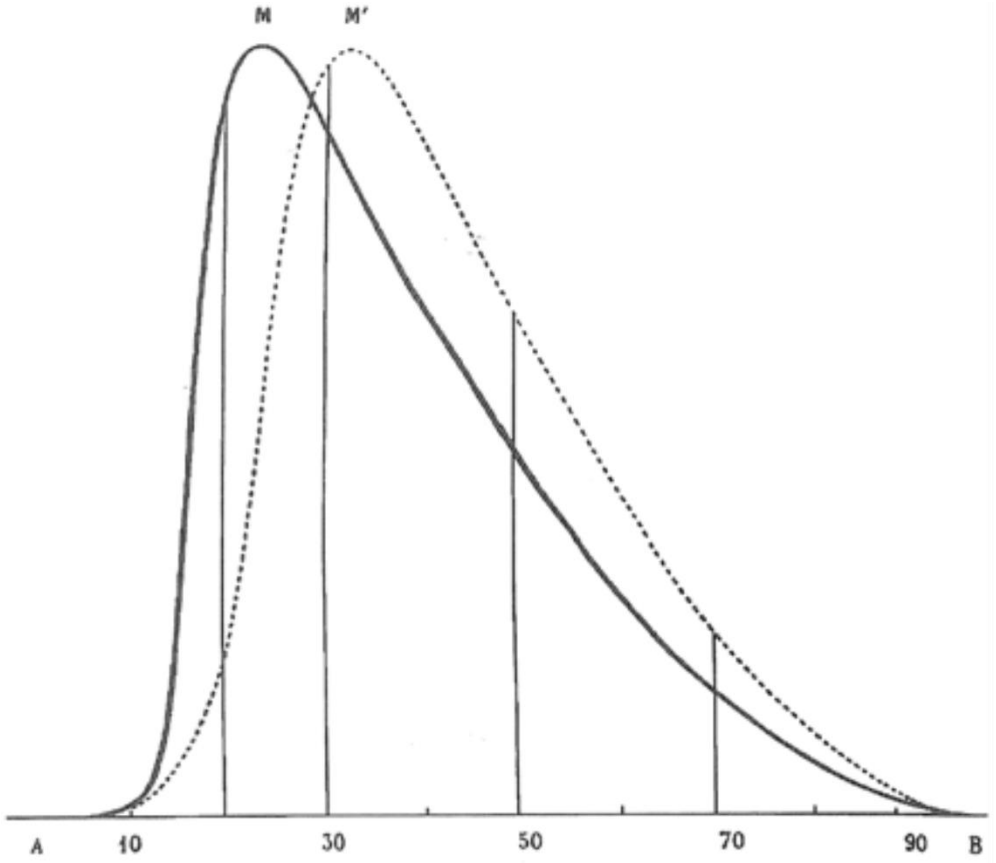
- Astronomer—observatory
- Criminology (social physics)
- 1831 *On the Development of Propensity to Crime*
- Age-crime curve
- Gender
- Mapping
- BUT……





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

From: Adolphe Quetelet (1796–1874)—the average man and indices of obesity

Nephrol Dial Transplant. 2007;23(1):47-51. doi:10.1093/ndt/gfm517

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

Advance Access publication: 3 April 2016
Policing, Volume 10, Number 3, pp. 171–183
doi:10.1093/police/paw003

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

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

Research Impact

- VC Research Impact Award 2017

Origin:
Lateral Thinking

<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

<u>As a research tool—some official</u>

- 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

<u>ONS Problems</u>

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

<u>Cambridge CHI Solutions</u>

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

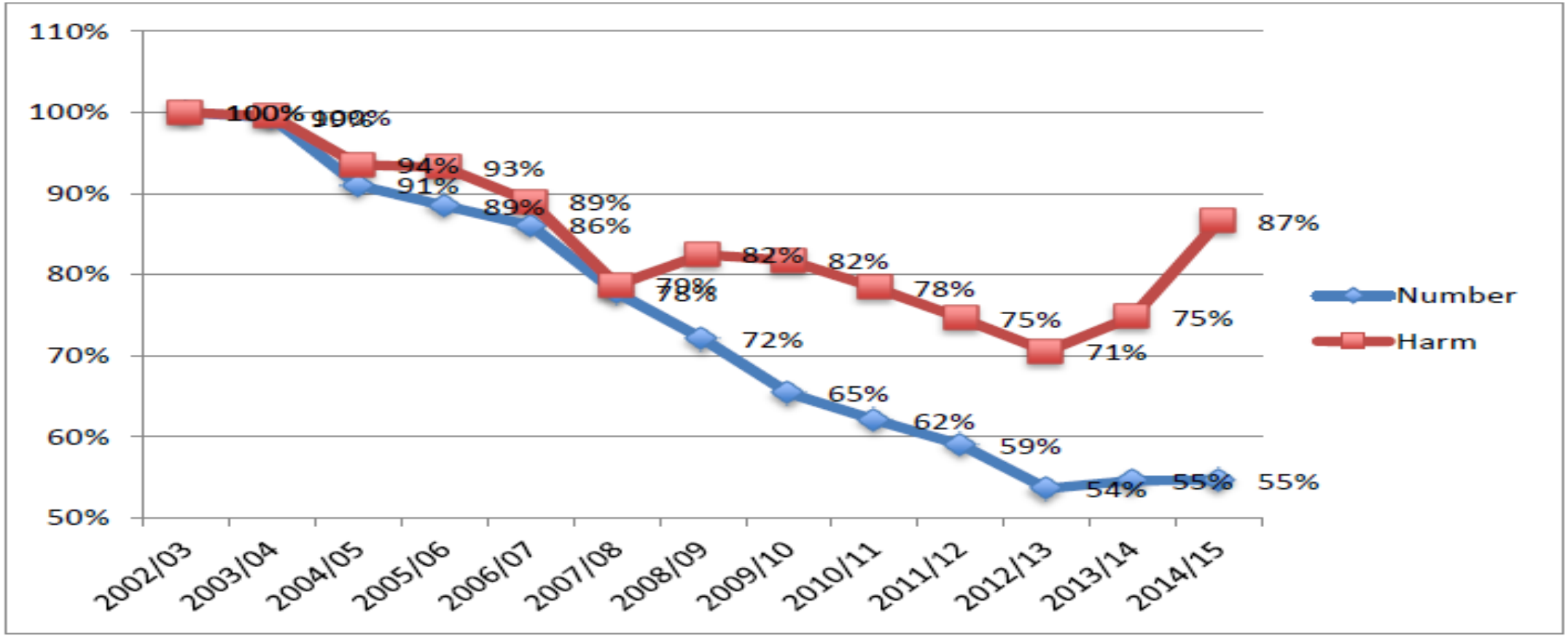
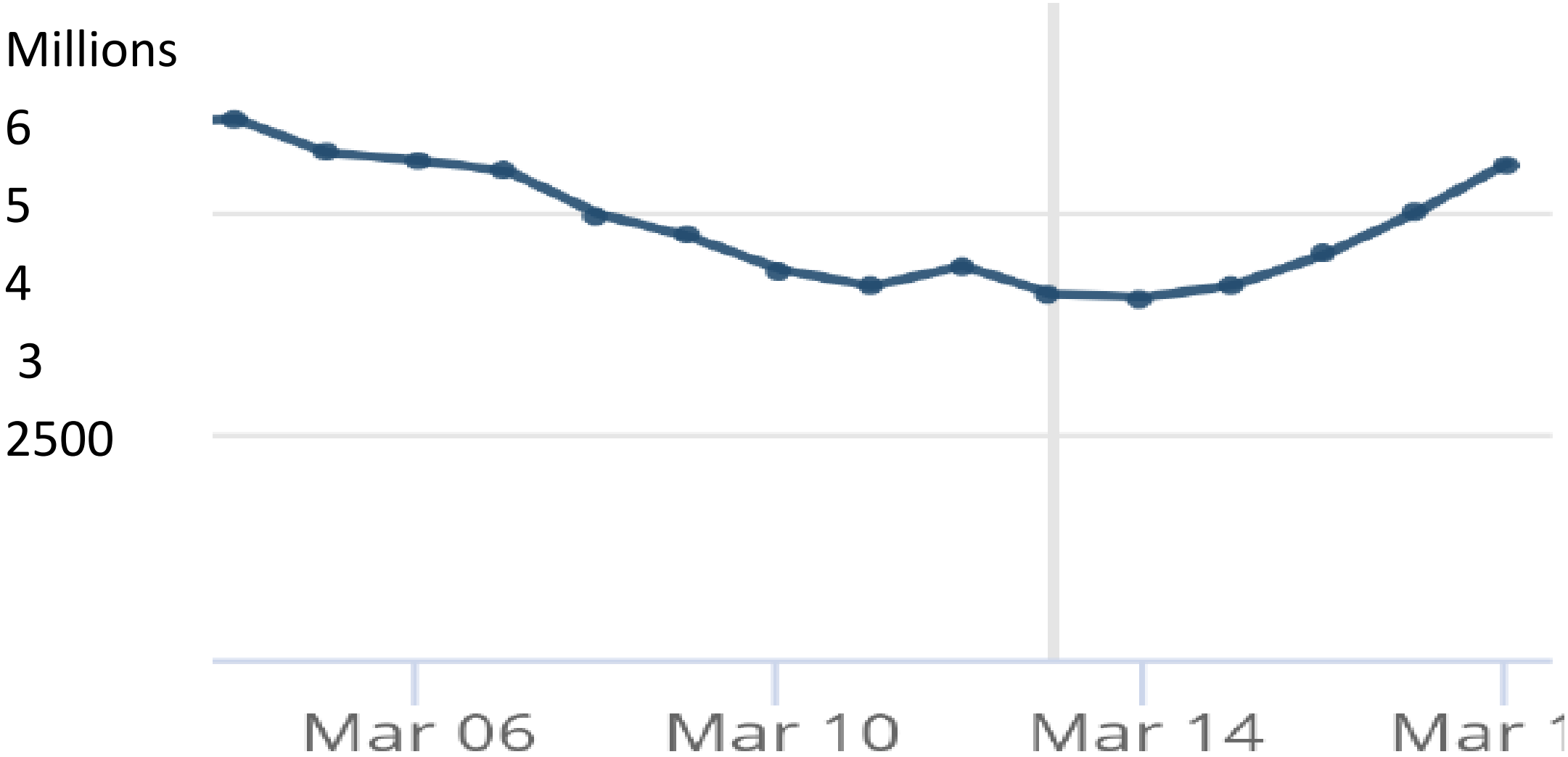


Figure 1. Percentage change in numbers of crimes and CHI for total crime, by year. Data (2016) obtained from Eleanor Neyroud by personal email, July 3, 2018.

England & Wales: Count of Crime not up until 2014

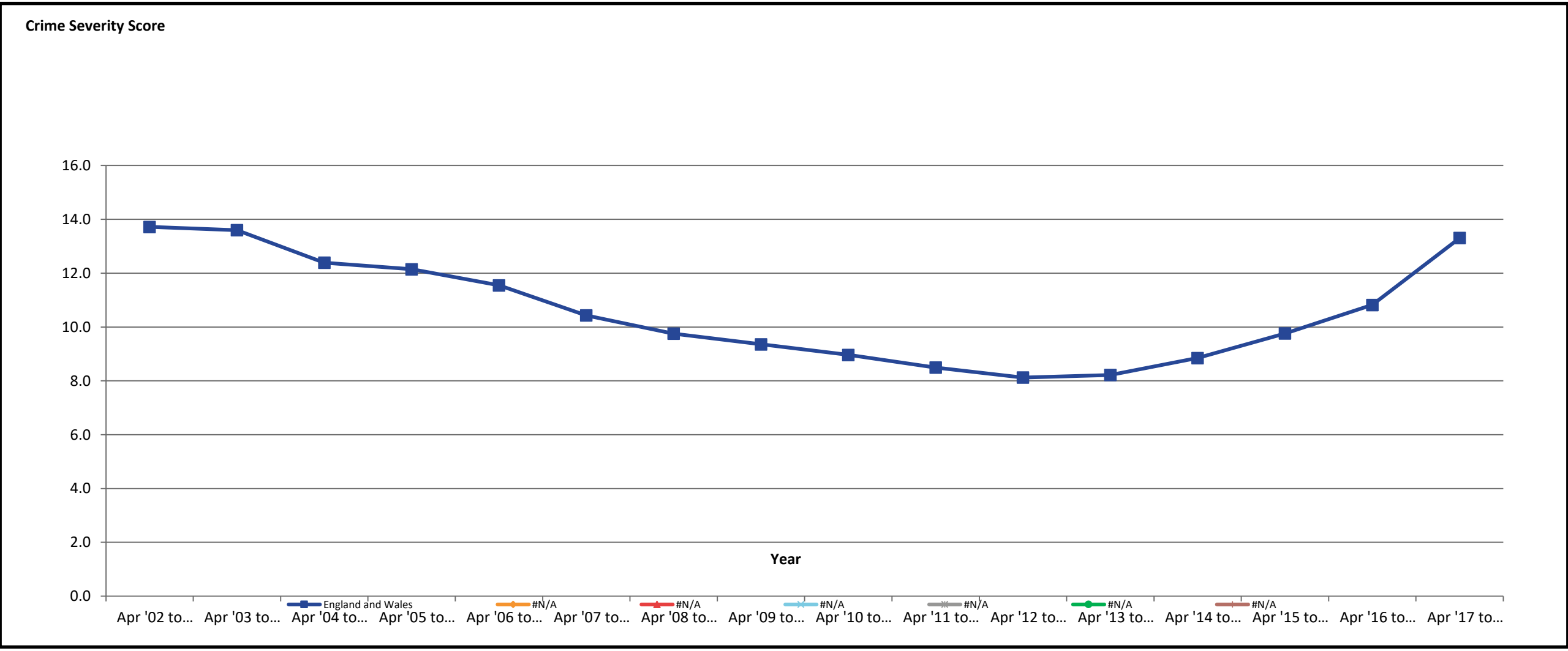


ONS Crime Severity Index: 2 years EARLY WARNING from

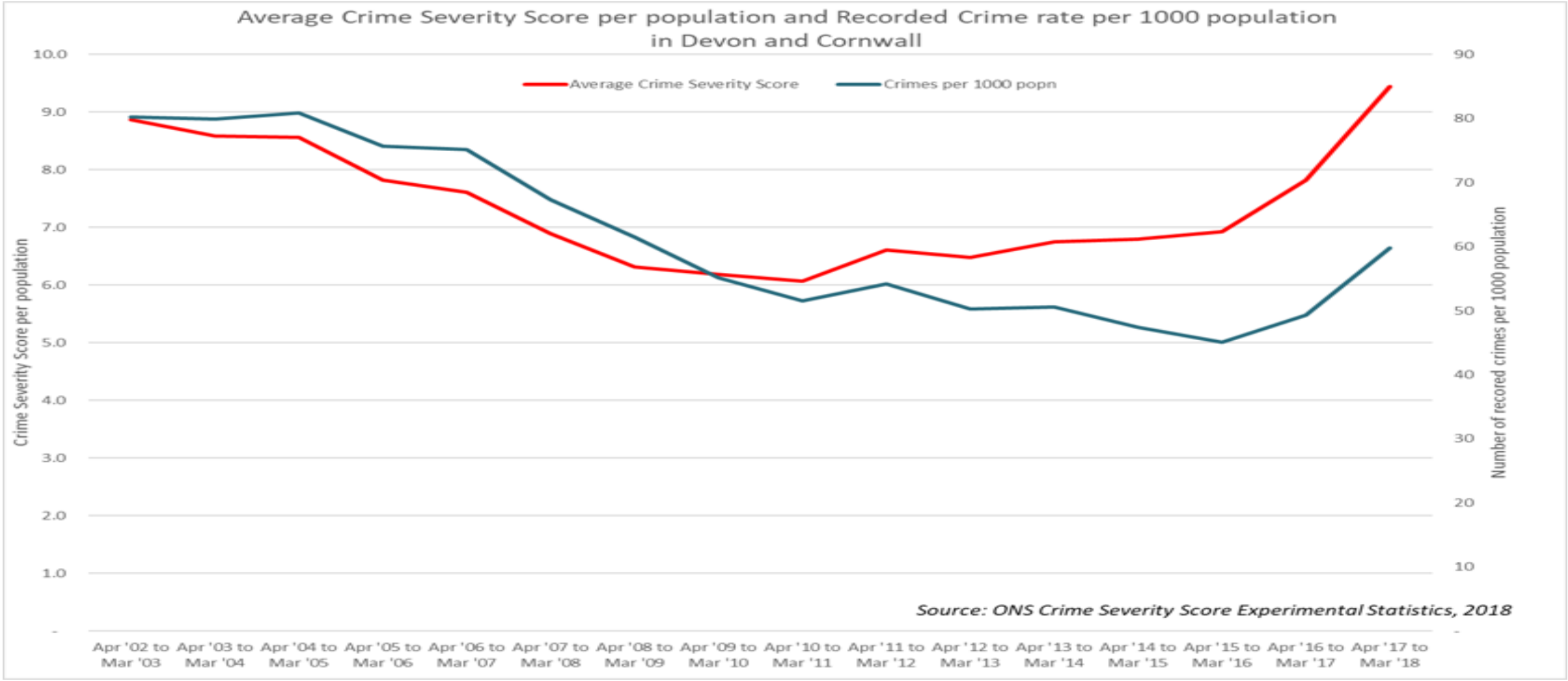
Crime severity started rising in 2012

Counts vs. Harm

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



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



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

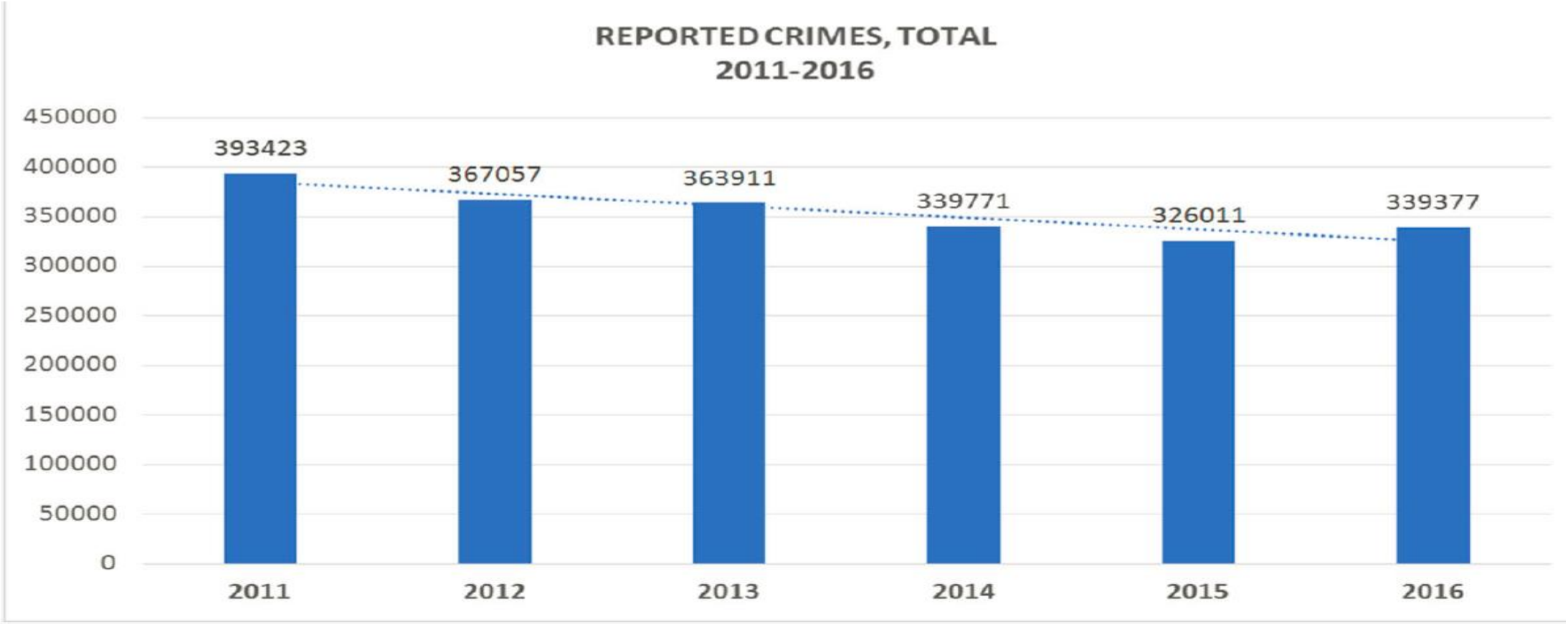
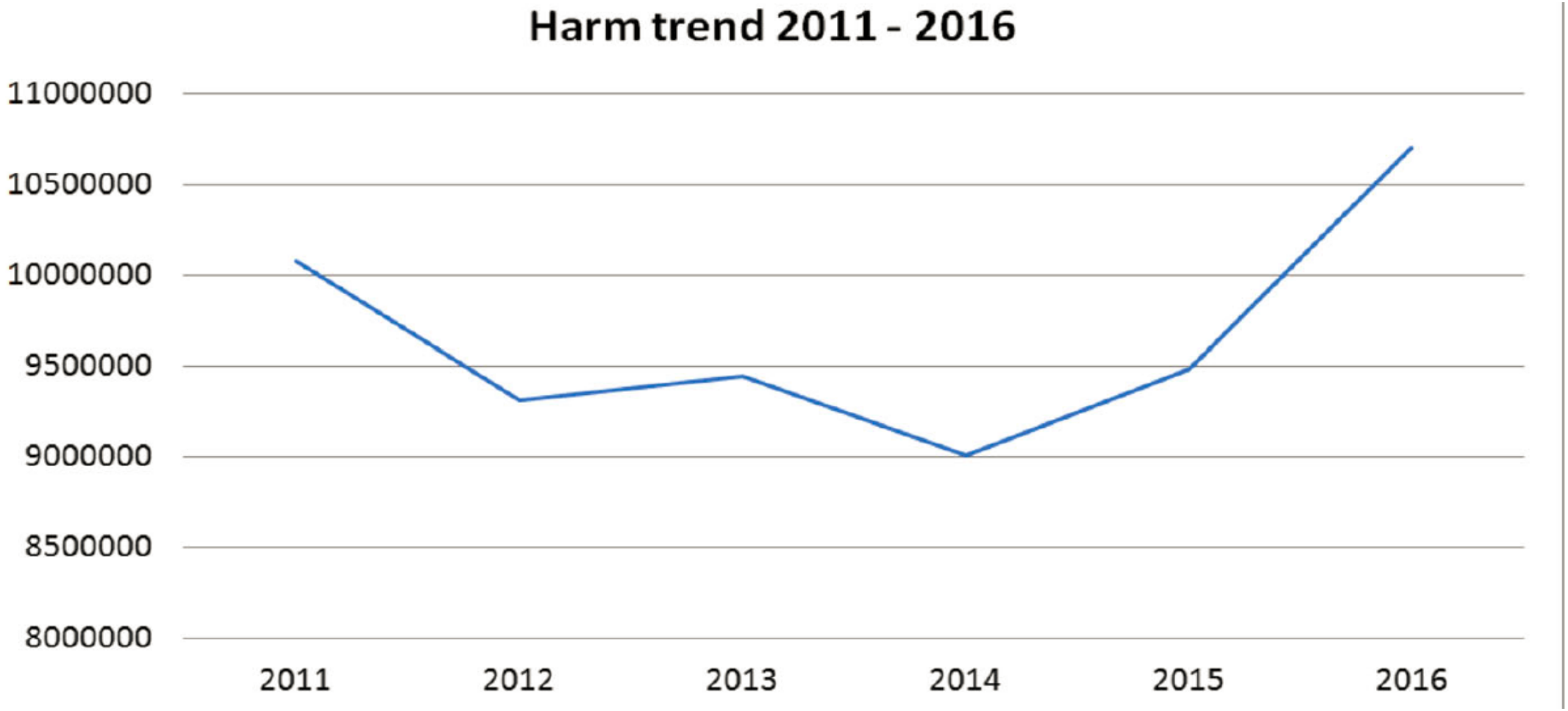


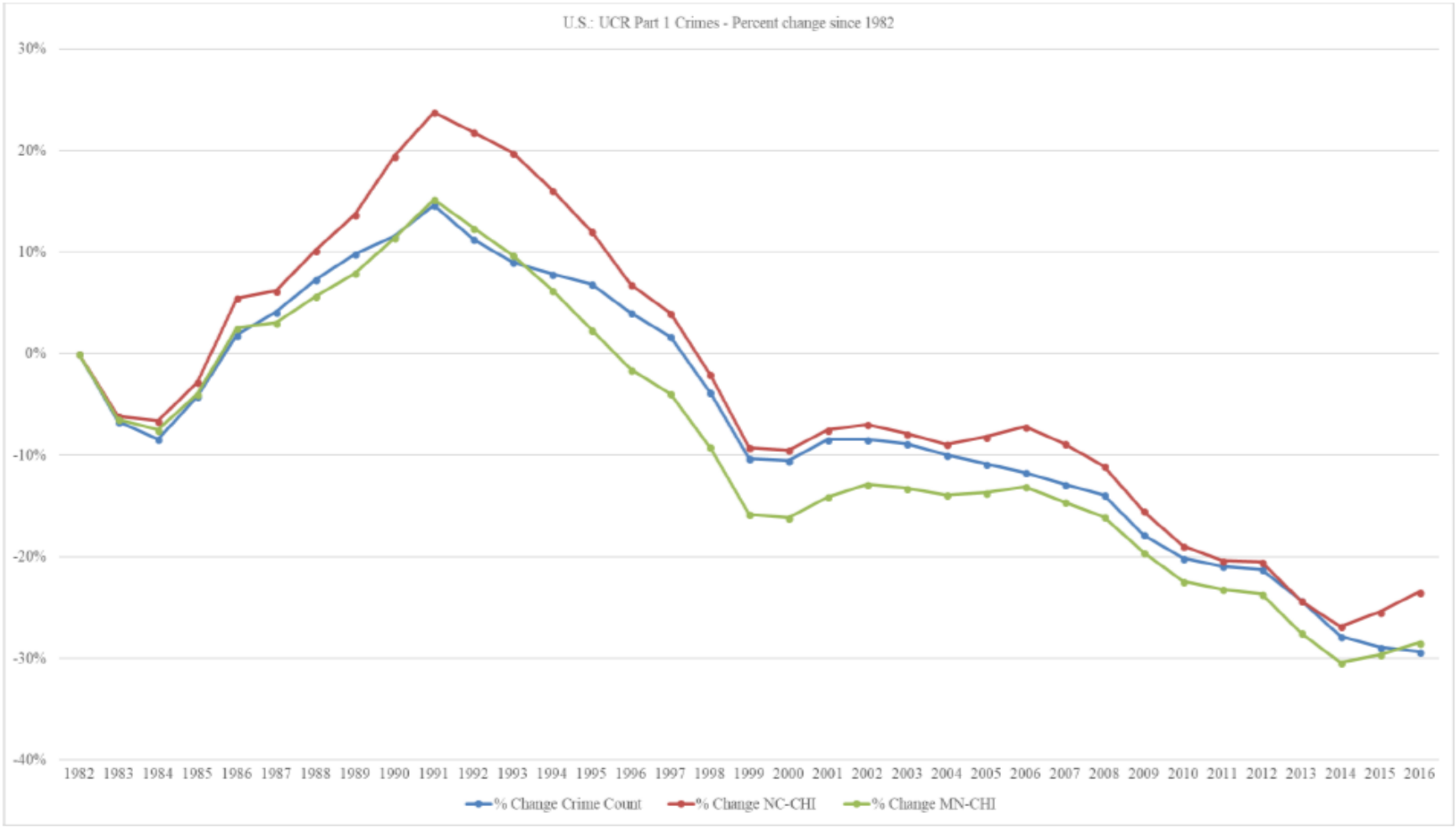
Fig. 1 Annual total of reported crimes, Criminal Code

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



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?

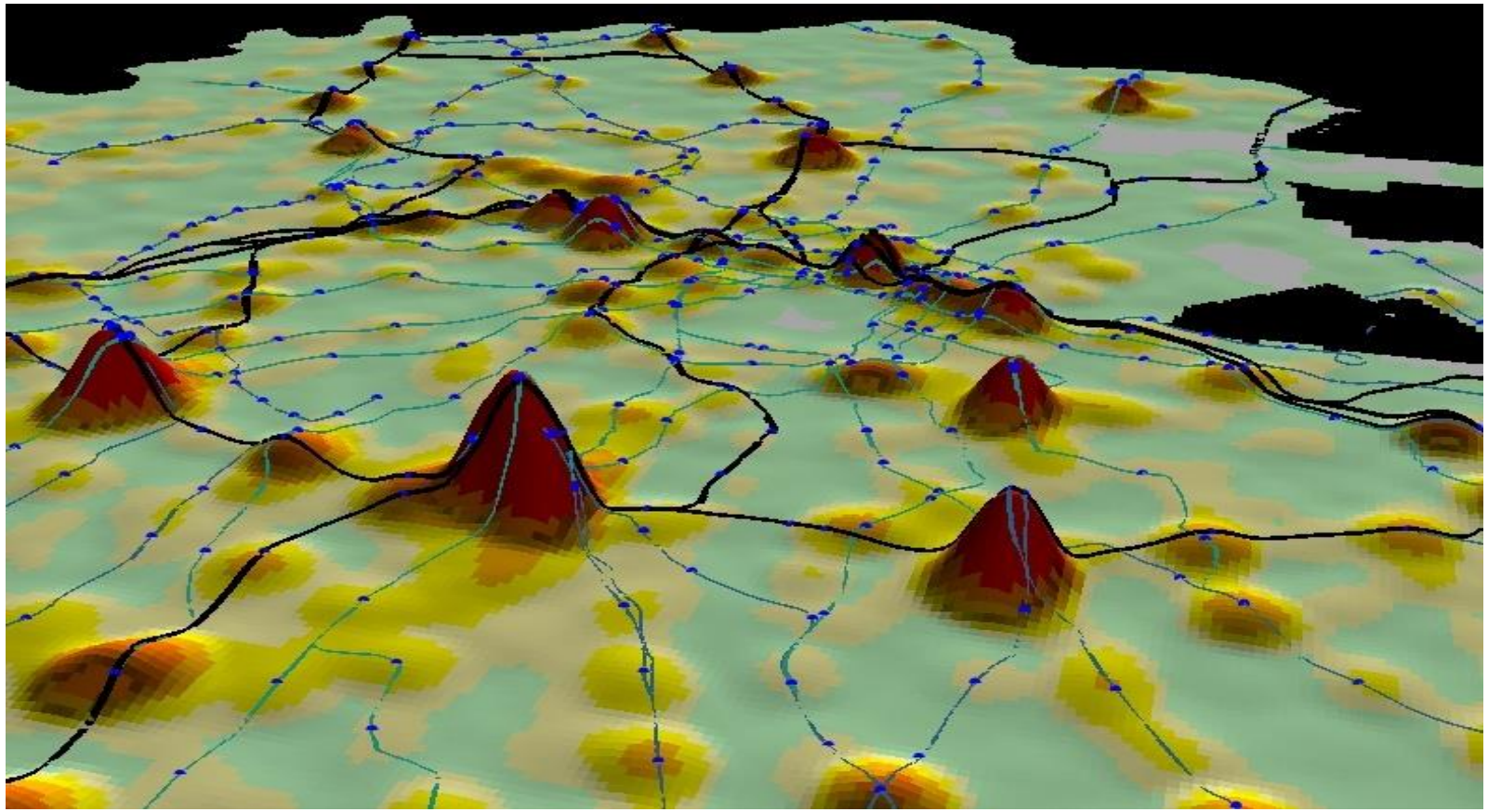
- Federated, voluntary crime reporting
- Completely unaudited
- FBI does not include most misdemeanors—highest portion of crimes
- Part I “Index” Crimes only count
    - --Murder
    - --Rape
    - --Robbery
    - --Aggravated Assault
    - --Burglary
    - --Car theft
    - --Larceny
    - --Arson

Hypothesis About Any CHI

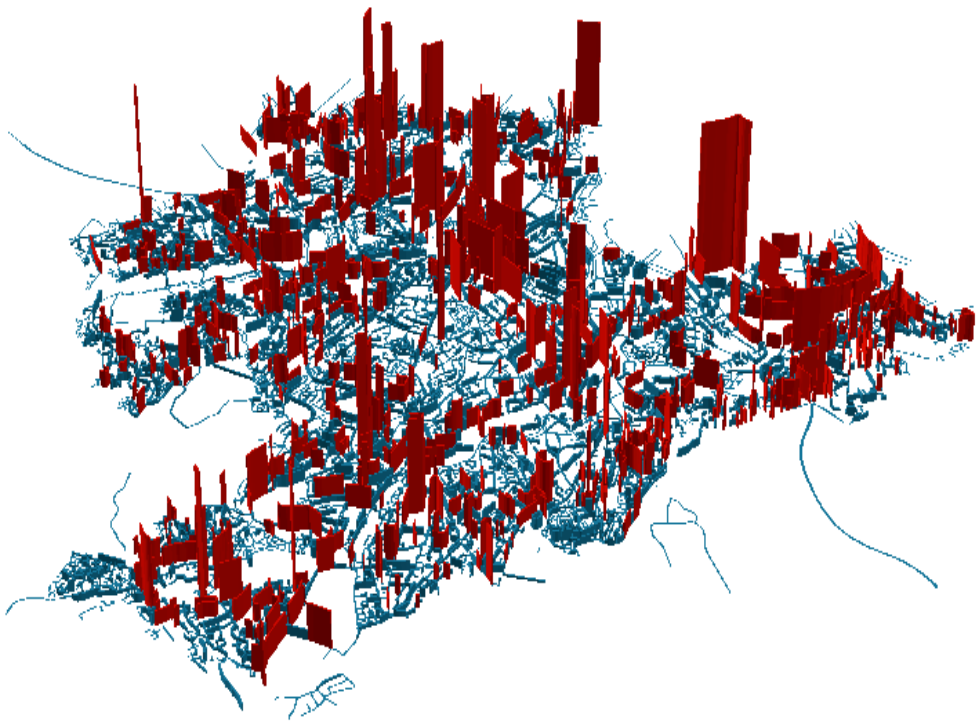
- The better the crime counting
- The bigger the difference between count trends and CHI trends

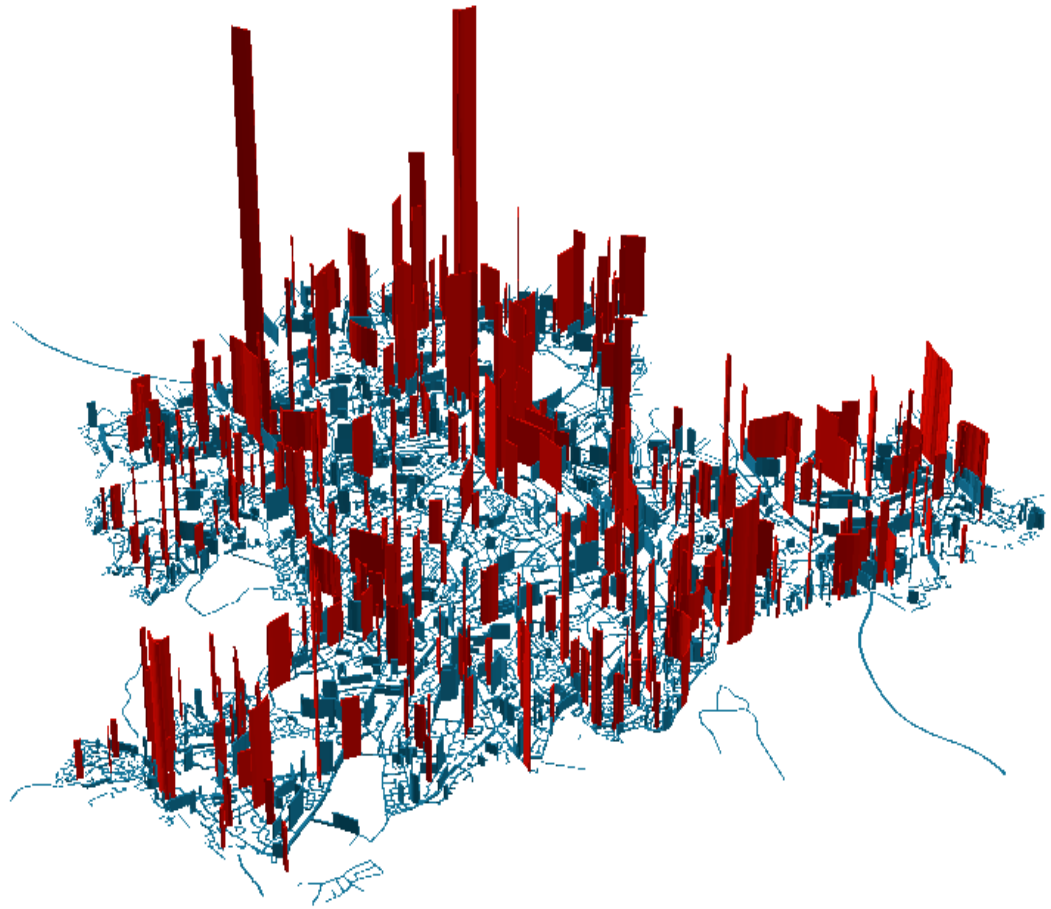
Decisions with PRECISE TARGETING: A 21st Century Revolution

PLACES: Violent Crime Counts in Tokyo 2005



Hot Spots by counts In Birmingham UK vs. Harm Spots





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

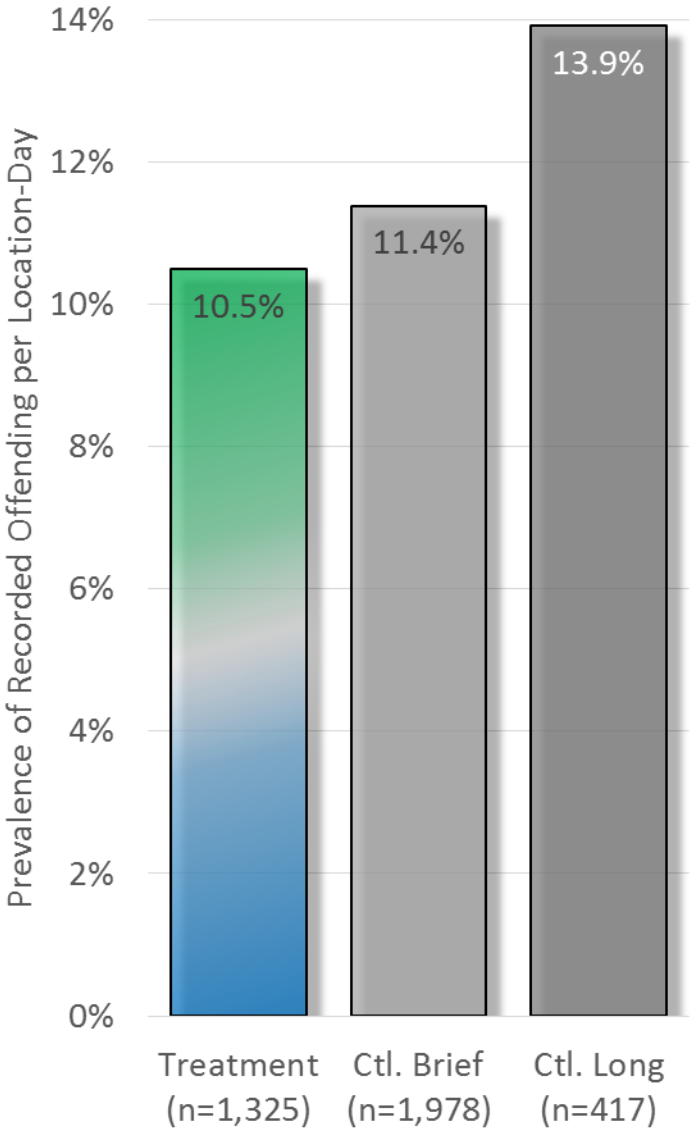
Based On

- 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**

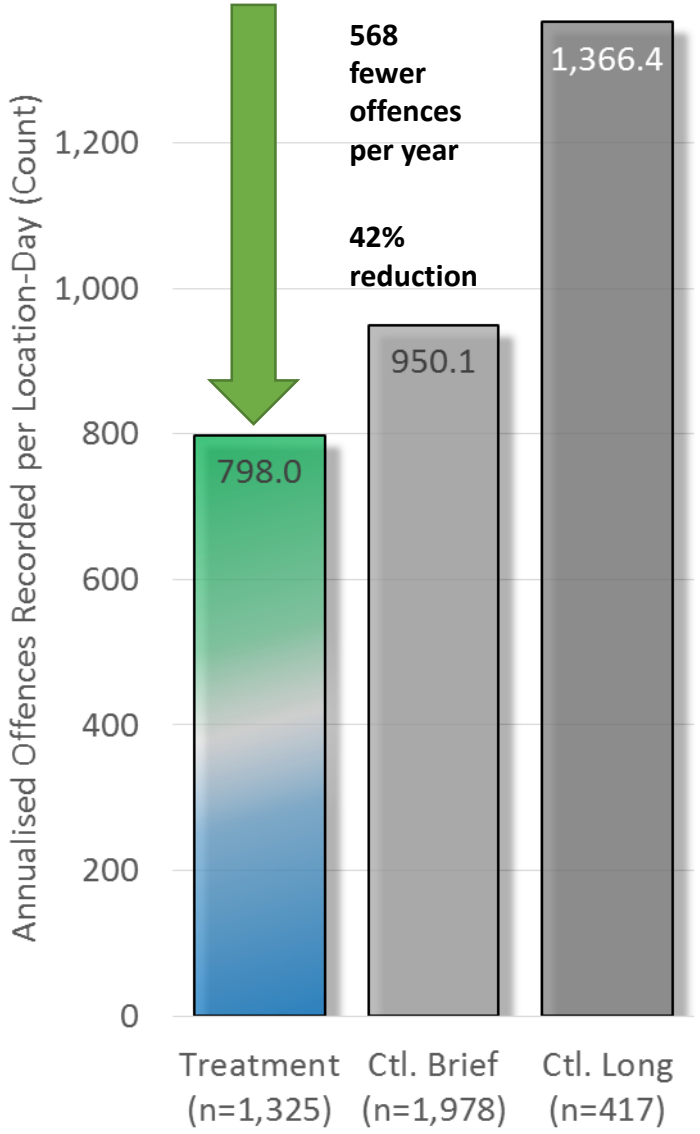
Recorded Offending and Crime Harm – Treatment, 1-4 Days of Control, 5+ Days of Control

Prevalence



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

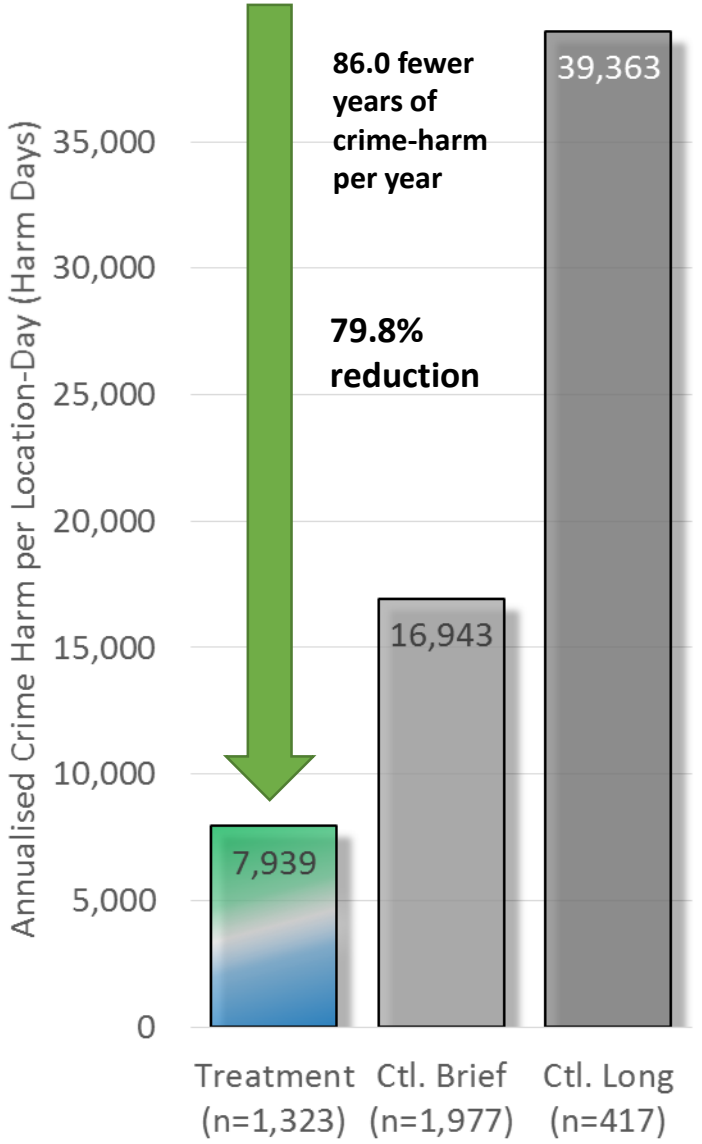
Annualised Frequency



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

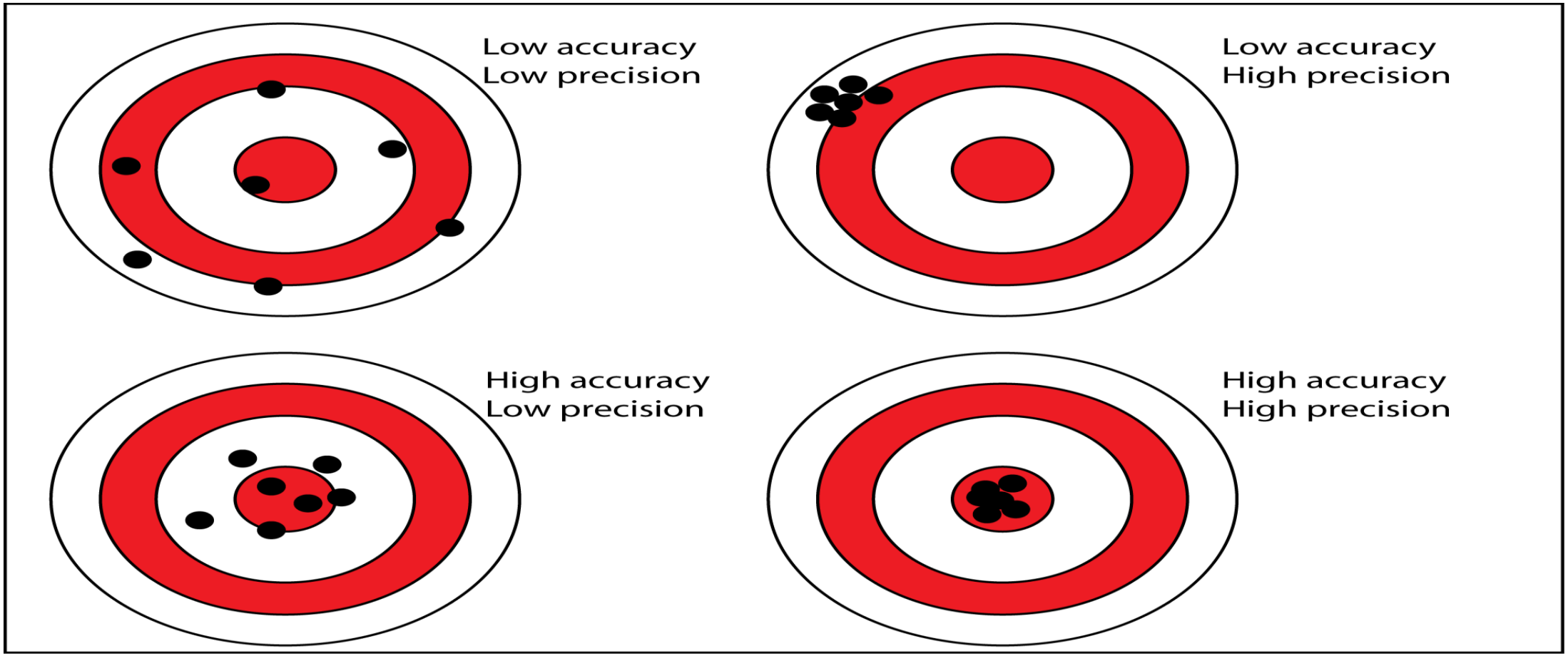
Annualised Crime-Harm

(outliers > 3 years removed)



$F = 3.44$, 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