A Vision of the Future
of Justice Technology

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Evolution of Technology
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[W]ith the advent of the radio equipped car a new era has come....Districts of many square miles...are now covered by the roving patrol car, fast, efficient, stealthy, having no regular beat to patrol, just as liable to be within 60 feet as 3 miles of the crook plying his trade—the very enigma of this specialized fellow who is coming to realize now that a few moments may bring them down about him like a swarm of bees—this lightning swift “angel of death.”

and speaking of Bees...
Evolution of Technology

An early take on today's Taser?
1998

• Don’t get into strangers’ cars
Evolution of Technology

1998

• Don’t get into strangers’ cars
• Don’t meet people from the Internet
2018

- Literally summon strangers from the Internet to get into their cars
Genetic test traps girls’ killer

By Paul Hoyland

A man who killed two 15-year-old girls and was caught as the result of the first mass screening for genetic fingerprints, was sent to prison for life yesterday. He had tried to avoid the test by talking a workmate into taking it instead.

Mr Justice Otton, sentencing Colin Pitchfork, aged 27, at Leicester Crown Court, said he was a danger to young women. Had it not been for the development of the genetic fingerprint test, which identifies unique chromosome patterns from a sample of blood or saliva, he might still be at large.

Pitchfork, of Littlethorpe, near Leicester, who is married with two children, admitted strangling teenagers Lynda Mann and Dawn Ashworth in 1983 and 1986. He was sentenced to life imprisonment on two counts of murder, and was also gaol for ten years on two counts of raping the girls.

He admitted two charges of indecently assaulting two other girls and was gaol for three years on each count. He also received three years for conspiring to pervert the course of justice by getting Ian Kelly to take his place on the genetic test. All sentences are to run concurrently.

Kelly, aged 23, of Leicester, admitted conspiracy and was jailed for two years, suspended for 18 months. The prosecution accepted that he did not know he was shielding the killer. The deception was revealed by another workmate.

The court heard that Pitchfork had killed Lynda Mann after driving his wife to an evening class. He left his four-month-old son in a carrycot in the car while he stalked the girl on a footpath near Narborough. He was alleged to have told police: “I ripped her clothes off and jumped on her and beat her up”.

Mr Brian Escott Cox, QC, prosecuting, said: “He exhibited great self control and what must have been a total lack of remorse — neither his wife, whom he picked up later, nor anyone else, suspected he had been involved in this terrible crime.”

Three years later he carried out the identical rape and murder of Dawn Ashworth, who suffered “appalling injuries”. A man working nearby heard her screams but thought someone was playing about.

Pitchfork told police he killed the girls because he feared they would identify him. The court heard he enjoyed exposing himself to young women and was a sexual psychotic.

Evasive double killer, page 4
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Rapid DNA: Now in as little as 90 minutes
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2001
$100,000,000 DNA Sequencing 1 Person

2015
$1,000 DNA Sequencing 1 Person

2019*
$99

*Genotyping, not full sequencing
Evolution of Technology

2001
$100,000,000 DNA Sequencing

2015
$1,000 DNA Sequencing

2019*
*Genotyping, not full sequencing
Automated License Plate Recognition
Unmanned Aircraft Systems (Drones)

1. Mapping highly frequented locations
2. Documenting crime scenes
3. Surveying disaster sites
4. Search & Rescue
5. Accident & Traffic Management
6. Dealing with bombs and hazardous materials

Public Safety Agencies with Drones

<table>
<thead>
<tr>
<th>Agency Type</th>
<th>Qty</th>
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<tbody>
<tr>
<td>County Police and Sheriff</td>
<td>302</td>
</tr>
<tr>
<td>Municipal Police</td>
<td>278</td>
</tr>
<tr>
<td>Fire and EMS</td>
<td>186</td>
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<td>City/County Emergency Management</td>
<td>107</td>
</tr>
<tr>
<td>Statewide Agency</td>
<td>37</td>
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</tbody>
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Public Safety Agencies with Drones by Year

*Data is available for 360 of the 910 agencies.
Autonomous Vehicles
Where is technology going?

Amazon

Apple

Facebook

Google
The fundamental concern about faceprinting is the possibility that it would be used to covertly identify a live person by name—and then serve as the link that would connect them, without their awareness or permission, to intimate details available online, like their home addresses, dating preferences, employment histories and religious beliefs. [Natasha Singer, “Never Forgetting a Face,” The New York Times, 5/18/14]
Universal Principles

- Specification of Use
- Policies and Procedures
- Privacy and Data Quality
- Data Minimumization and Limitation
- Performance Evaluation
- Transparency and Notice
- Security
- Data Retention, Access and Use
- Auditing and Accountability
“Measurement is the first step that leads to control and eventually to improvement. If you can’t measure something, you can’t understand it. If you can’t understand it, you can’t control it. If you can’t control it, you can’t improve it.”

—H. James Harrington
Criminal History Record

Name: Goodwife
Date when Form 1 was taken: 21.4.1915

Convictions:
- Date: 9.2.1915
  - Place: Blackburn
  - Offence: False坚硬
  - Sentence: Sent to Parramatta Industrial School

Date: 21.9.1915
- Place: Blackburn
- Offence: False坚硬
- Sentence: 14 days hard labour

Date: 29.9.1915
- Place: Blackburn
- Offence: Perjury
- Sentence: 6 Years P.S.
Name: Fred Bonepart, O.K. Smith
Alias: None
Residence: Nowhere
Nativity: German
Occupation: None
Criminal Occupation: Burglar and thief
Age: 29
Height: 5'7 1/2
Weight: 148
Build: Stout
Complexion: Dark
Eyes: Dark
Hair: Black
Beard: None
Mustache: None
Date of Arrest: Apr 23, 1908
Arrested by: Sidway and Thompson
Where Arrested: City
Crime Charged: Robbery in Portland
Marks, Scars, Etc.: 2 scars on left arm, 1 scar on left hand, 1 scar on left knee, 3 scars on left thumb, and scar on left arm.
Past Record: Arrested by sueman 1907 for breaking safe. Sentenced to 3 years in Wisc Pen.
Disposition of Case: Taken back to Portland.
Sentence: 2 years at Salem. 12 years to 5 1/2 in Idaho Pen. One term at Reformatory.
No. of Subjects in State CCH Files

Number of Subjects in State Criminal History Files (In Millions)

- Total
- Automated
- Manual
Noncriminal Justice Queries Expand
CCH Analytics

• Exploiting the research value of CCH Records
• *Process Measures*, related to operational reporting volumes, workflow, data quality, timeliness, etc.
• *Research Measures*, related to assessing changes in the active offending population, first-time arrestees, risk assessment, recidivism, redemption, criminal careers.
• Working with the SEARCH Membership Group to identify and define universal process metrics and build CCH Data Quality Dashboard
  – Trend analysis
    • Changes in volume of arrests and dispositions
    • Changes in time elapsed between arrest and dispositions
  – Anomaly detection
    • Early problem identification
    • Potential data quality issues
CCH Analytics

- Profile active offending populations
- Profile discharge cohorts
- Criminal career development
- Recidivism, Risk Assessment, and Redemption
- Assess variations across states and interstate criminality.
  - FBI reported in the 1980s that about 30% of persons in their CCH files had arrests in more than one state
So What?
So What?

Chapters:
- Planning for Change
- Funding Integration Efforts
- Technology Challenges
- Managing Integration Long-Term
- Justice Information Policy
- Securing the System
So What?

- **Recurring Themes**
  - Planning
  - Governance
  - Metrics
  - Funding
  - Policy
  - Security
Thank you