



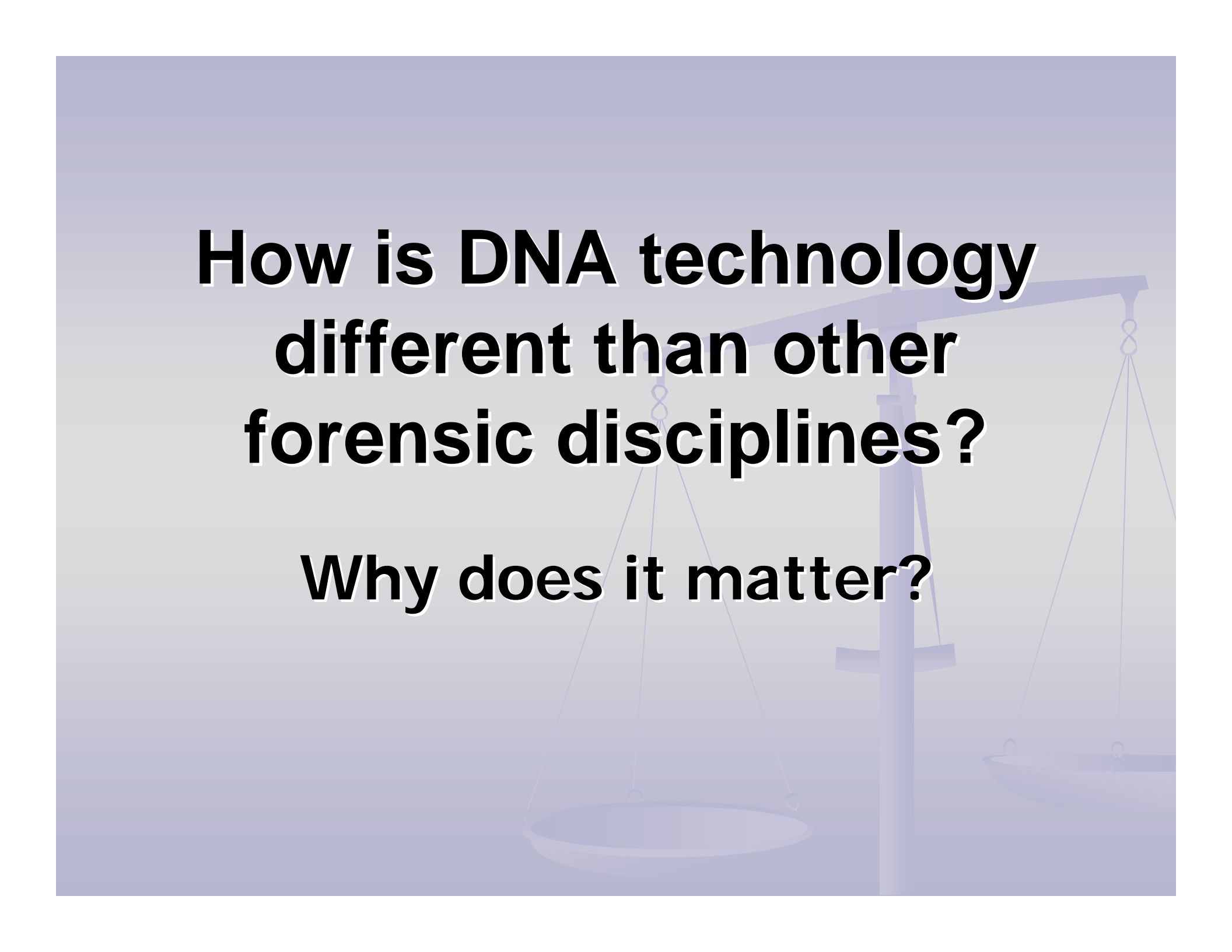
THE NATIONAL CENTER FOR
Victims of Crime

**The “CSI Effect”: Maximizing the
Potential of Forensic DNA**

June 25, Washington, DC

**Maximizing the Potential of DNA
Technology**

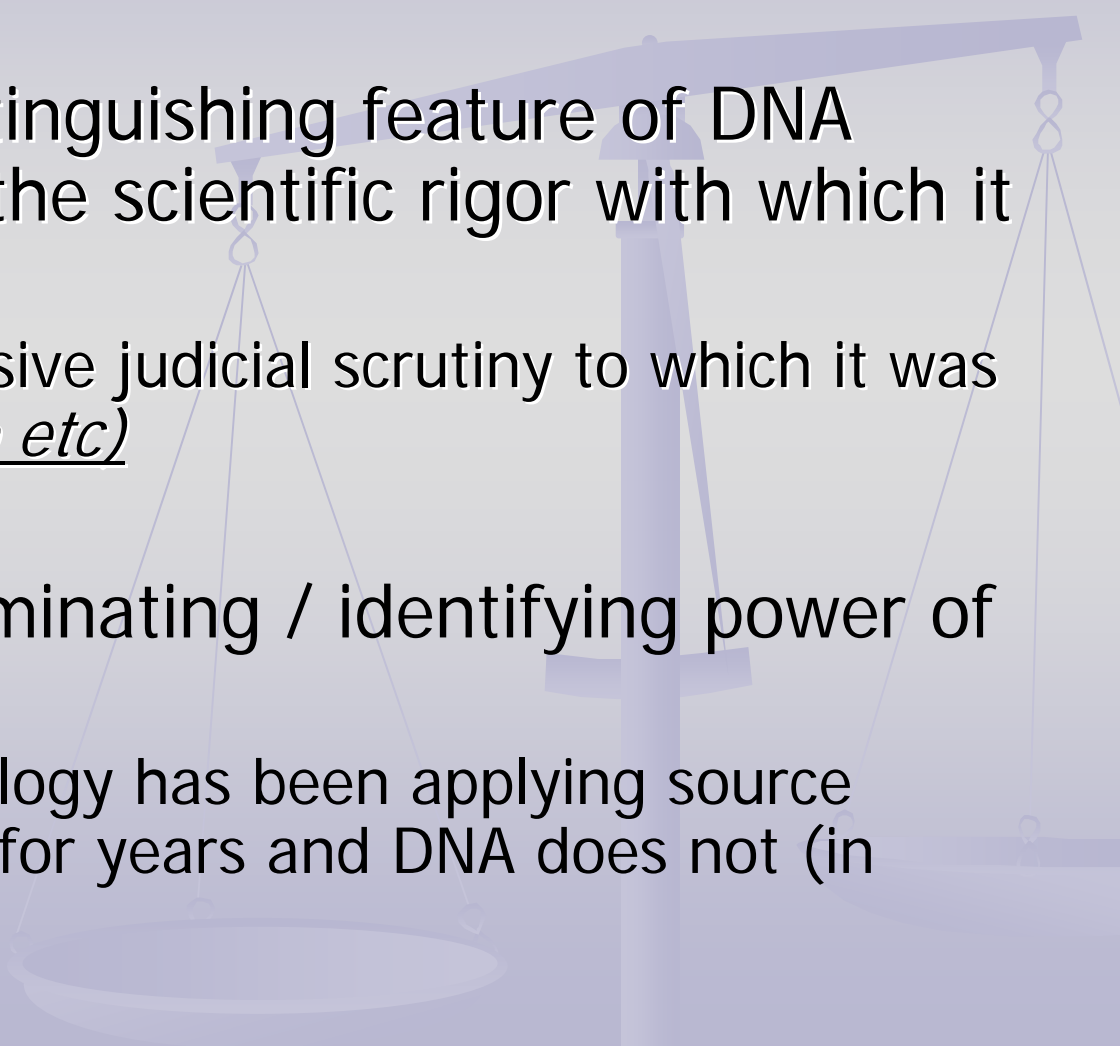
Chris Asplen, Esq.
Gordon Thomas Honeywell
Governmental Affairs



**How is DNA technology
different than other
forensic disciplines?**

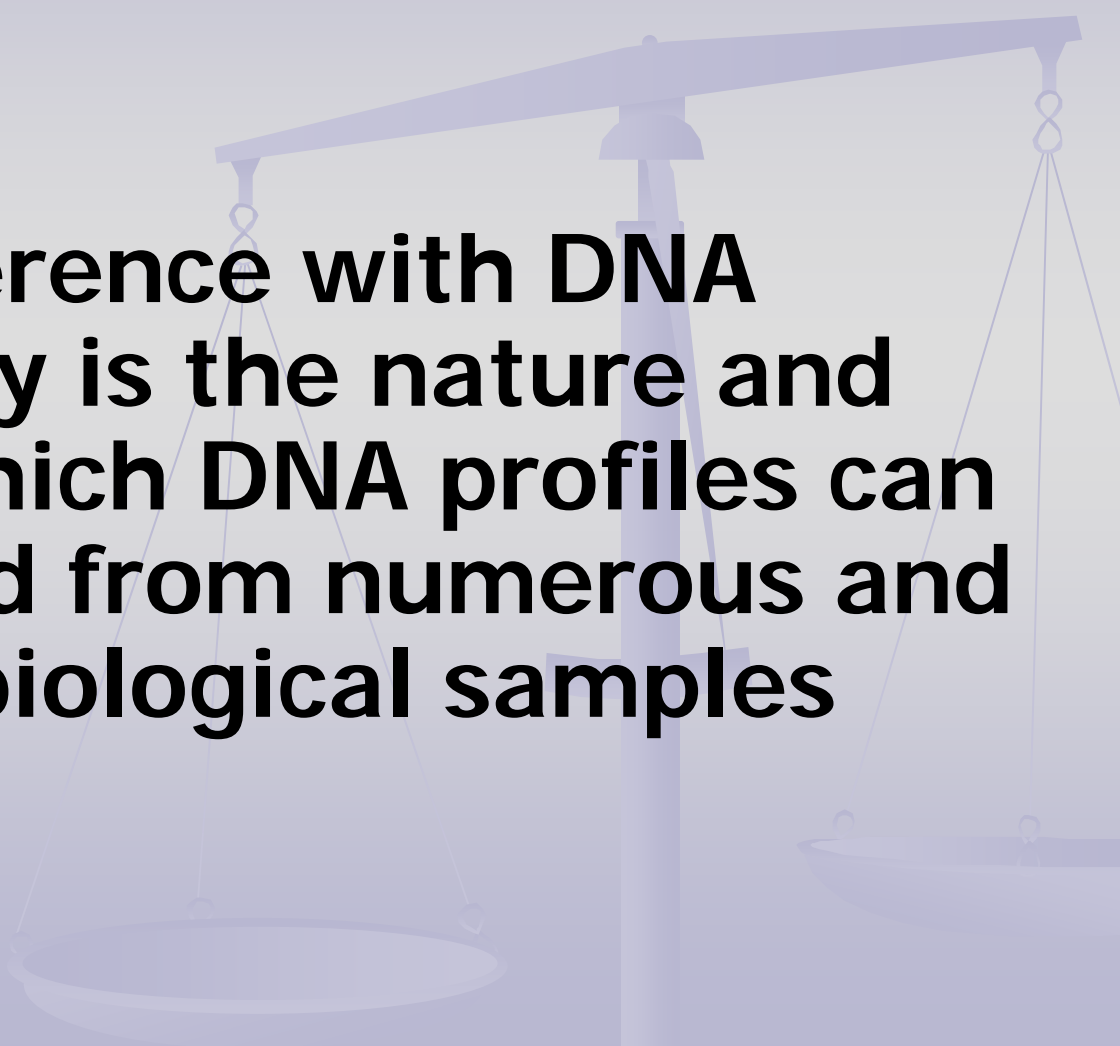
Why does it matter?

How is DNA technology different than other forensic disciplines?

- The important distinguishing feature of DNA technology is not the scientific rigor with which it was developed
 - Nor is it the extensive judicial scrutiny to which it was subjected. (*Castro etc*)
 - Nor is it the discriminating / identifying power of the technology
 - Fingerprint technology has been applying source attribution results for years and DNA does not (in most jurisdictions)
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How is DNA technology different than other forensic disciplines?

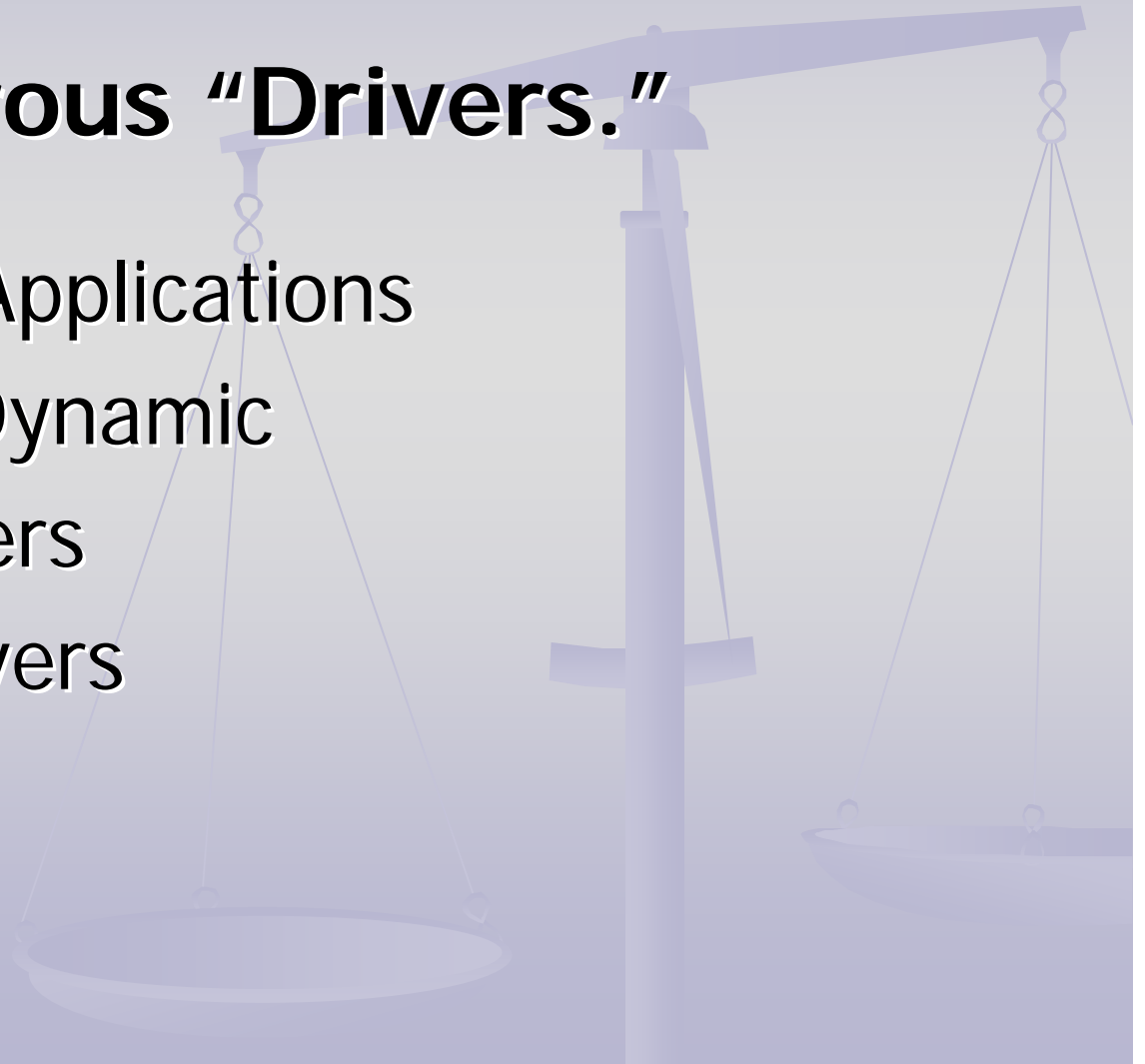
The difference with DNA technology is the nature and extent to which DNA profiles can be developed from numerous and diverse biological samples



How Did DNA become the Phenomenon That It Is?

Numerous "Drivers."

- Postconviction Applications
- Accountability Dynamic
- Legislative Drivers
- Technology Drivers
- Media Drivers



Jurisprudential History

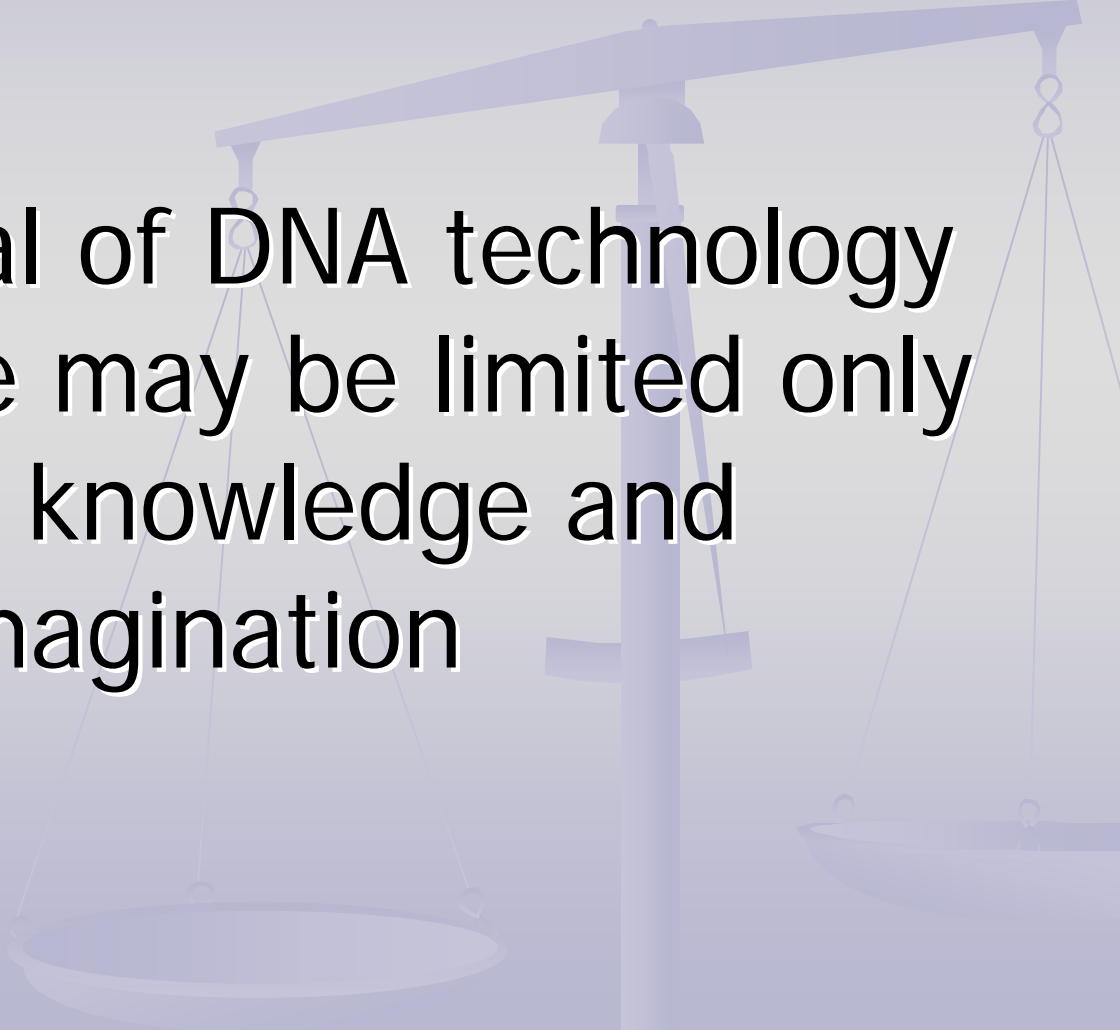


Admissibility

- Prosecutors “let it in”
 - Defense Attorneys “keep it out”
- Postconviction Applications
 - Defense Attorneys “Let it in – justice demands it!”
 - Prosecutors “keep it out – The value of finality!”
- Statute of limitations extensions
 - Prosecutors “It was good enough for Postconviction laws!”
 - Defense Attorneys “It’s a violation of rights!”

Important point !

The potential of DNA technology for your case may be limited only by your knowledge and imagination



DNA SOURCES

Blood/Bloodstains

**Semen (Sperm)/Semen
Stains**

Saliva

Hair roots/hair

Bones

Organs/Tissue



TISSUE (SKIN)



CLOTHING



TISSUE (SKIN)



GLOVE

PLANT DNA

Botanical Witness for the Prosecution



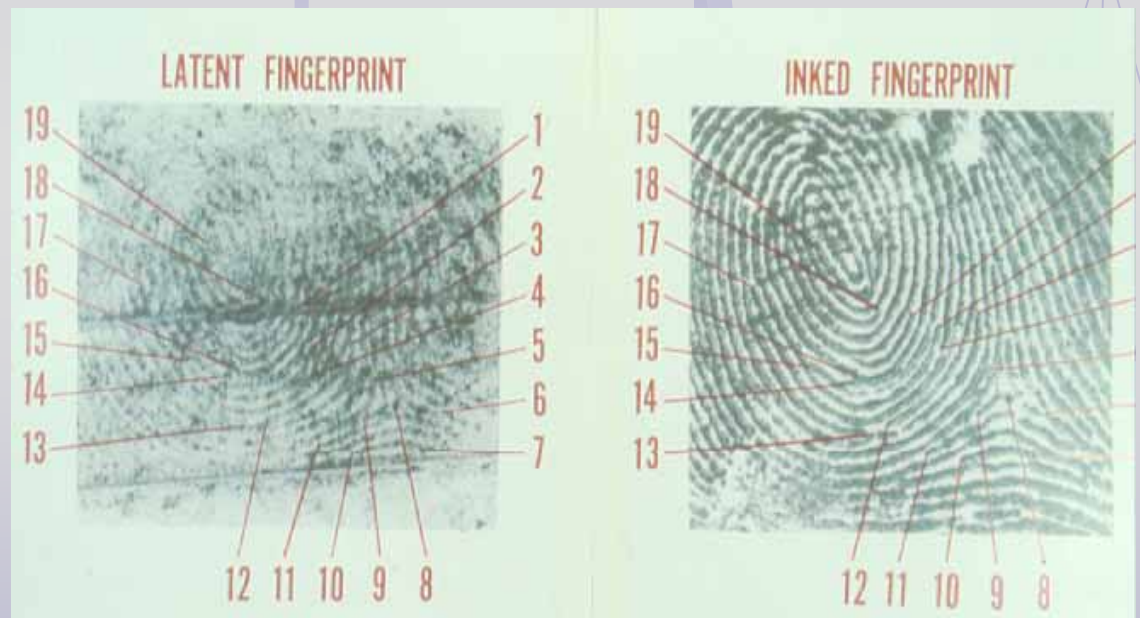
Rugged individual. Palo Verde trees show a lot of genetic variation.



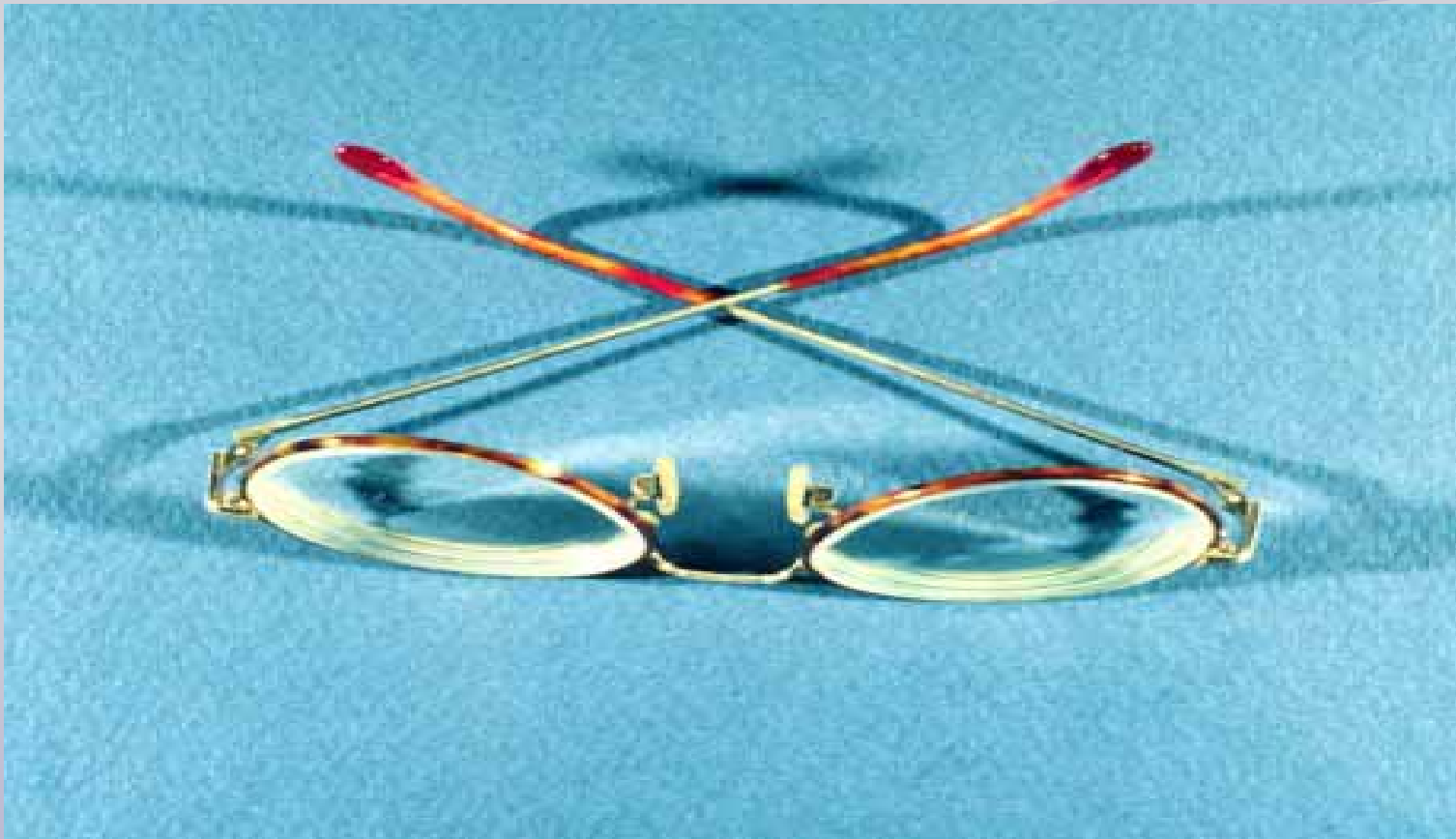
TISSUE (SKIN)

**“CONTACT
DNA”**

Fingerprints



TISSUE (SKIN)



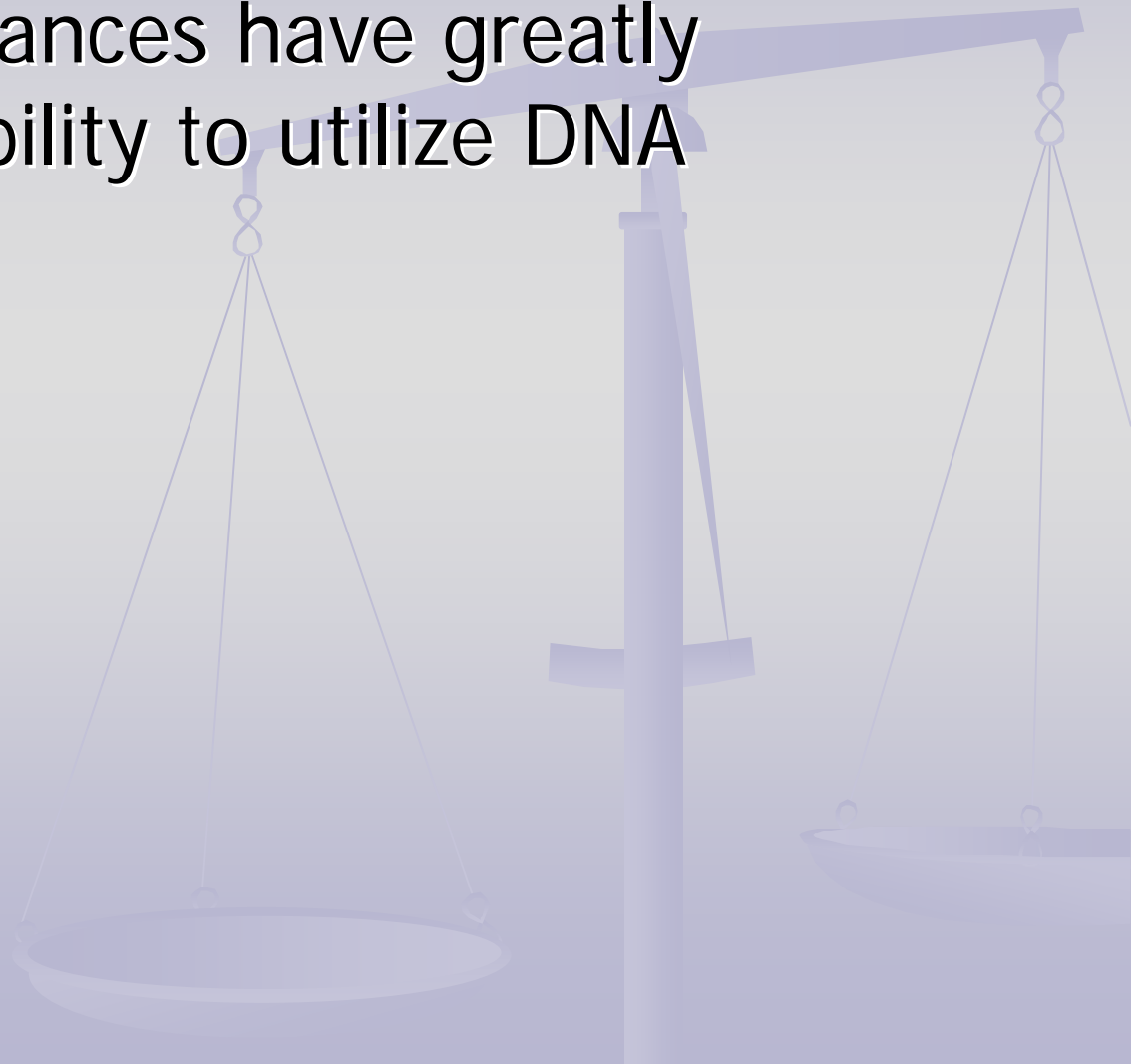
BIRD DNA

“Bird”



Threatening Correspondence and Libelous Communications

- Technology advances have greatly improved the ability to utilize DNA technology
 - Saliva
 - Envelopes
 - Stamps
 - Skin cells
 - Letters
 - Stamps



“CLASS ACTION” SUIT

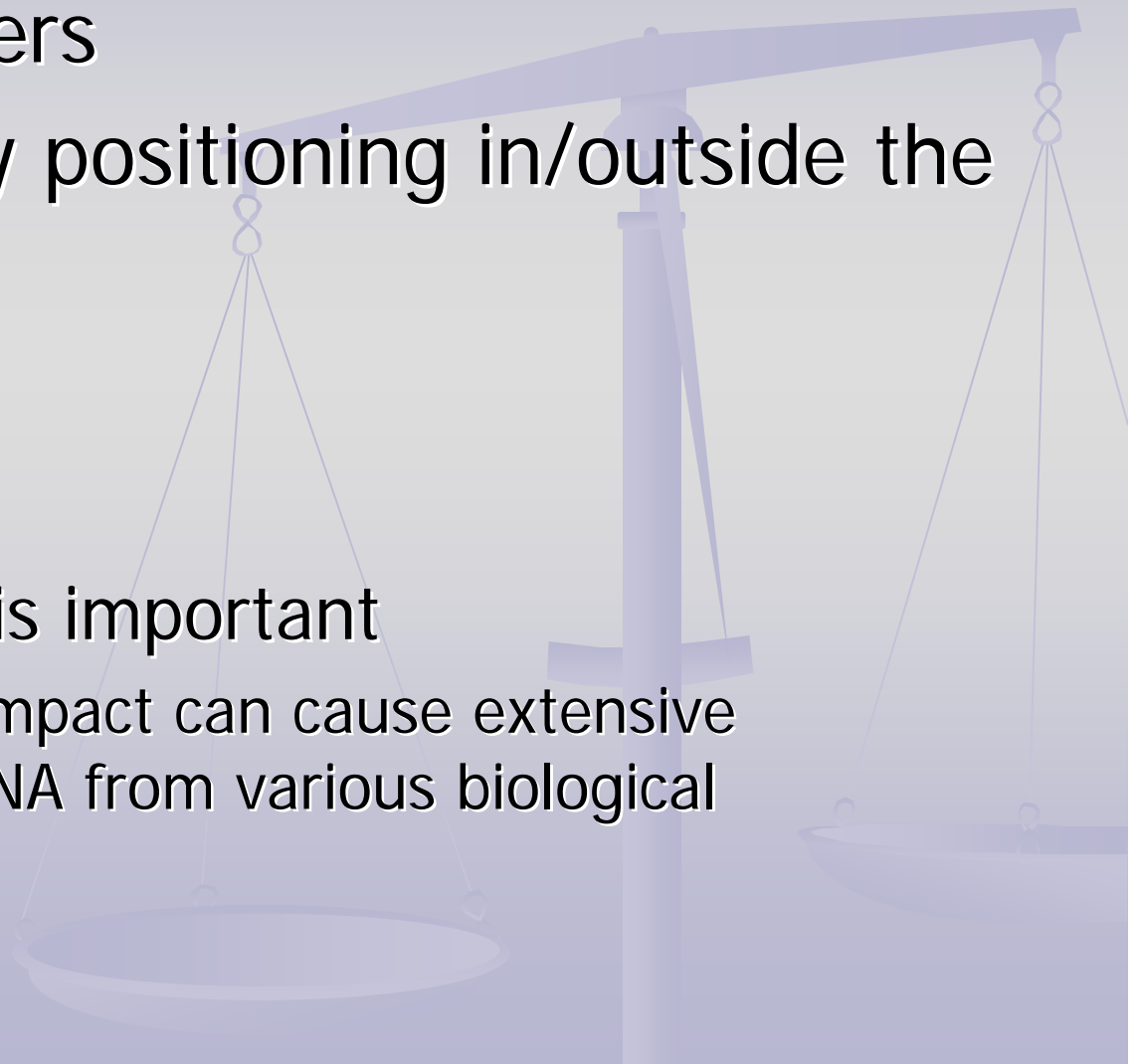
- **Washington State Patrol**
- **Murder Suspect**
- **Class Action Parking Case**
- **Mail Form for Return**
- **Saliva from Envelope**



“SELF-ADHESIVES?”

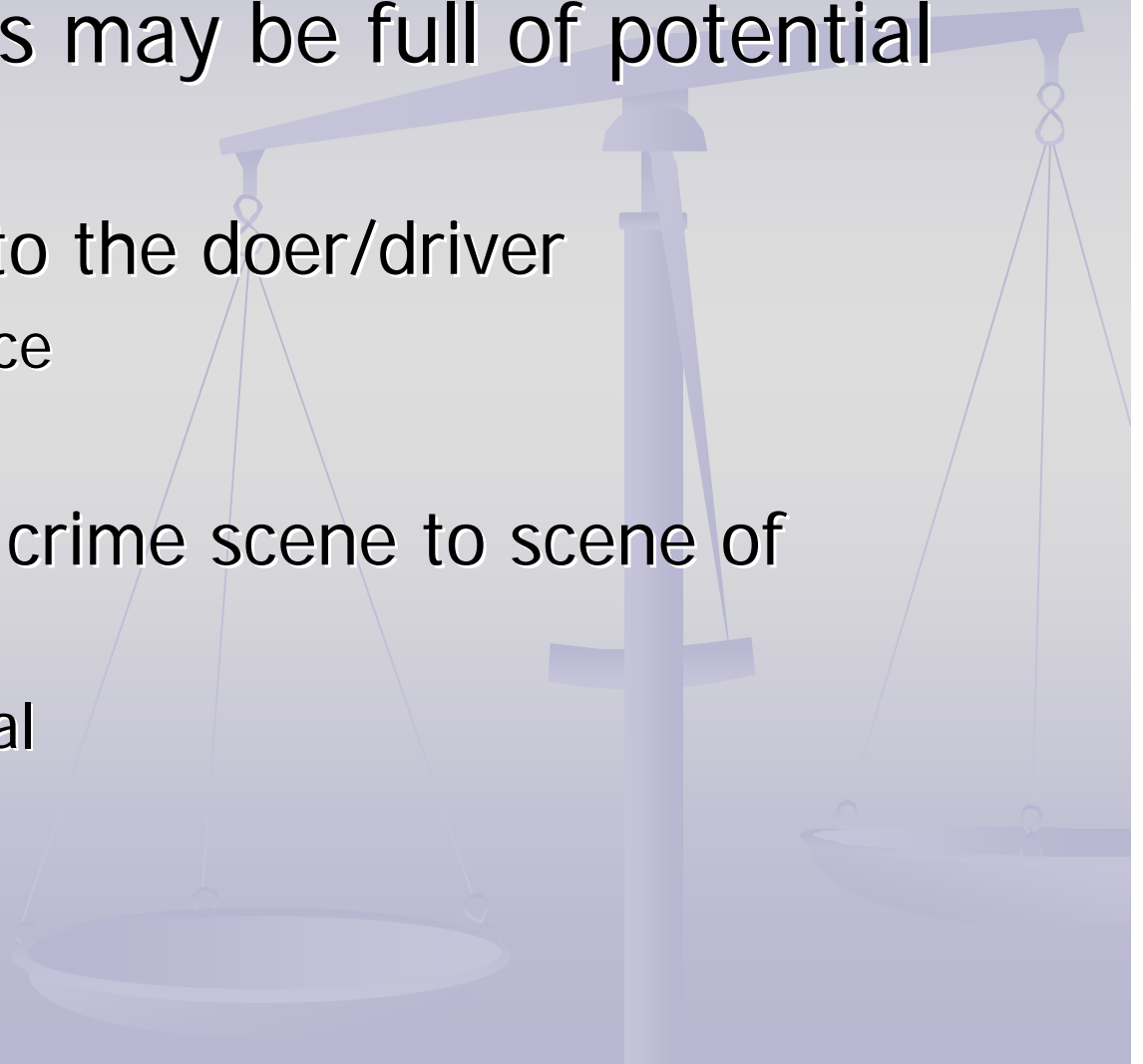
Motor Vehicle Accident Reconstruction

- Identifying Drivers
- Identifying body positioning in/outside the vehicle
- Caution
 - Source of DNA is important
 - Motor vehicle impact can cause extensive spreading of DNA from various biological fluids/tissues



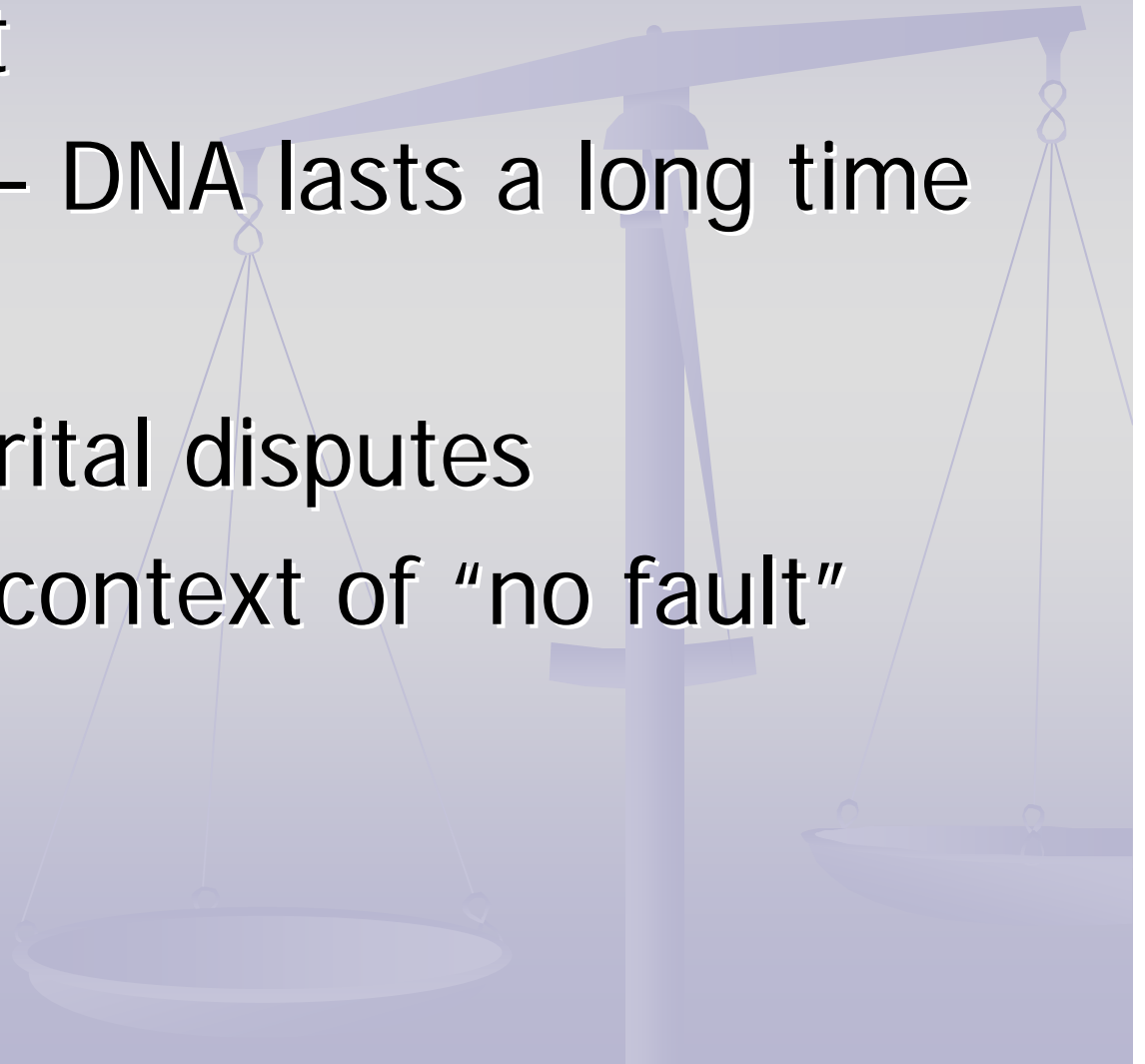
Intentional Torts of Vandalism / Illegal Dumping / Trespass

- Scenes of crimes may be full of potential evidence
 - Articles linking to the doer/driver
 - Contact evidence
 - saliva
 - Material linking crime scene to scene of origination
 - Organic material



Sexual / Physical Contact

- Sexual Assault
 - Remember – DNA lasts a long time
- Infidelity / Marital disputes
 - Even in the context of “no fault” divorces





International Trends Regarding Scope of Inclusion

1. No Country has ever reduced the amount of DNA databasing it performs.

Every country has only ever increased it

Indicative of:

- The effectiveness of expansion
- The safety of the databasing system

2. Countries which previously had limited scope of inclusion are expanding

Germany –

Now has a scope of inclusion similar to the UK

Sweden –

Recently expanded to a broader scope (2 years)

Finland -

Has expanded its law to include anyone suspected of a crime punishable by more than 6 months

Netherlands -

Has expanded to include offenders convicted of certain crimes

International Trends Regarding Scope of Inclusion

3. **Countries considering DNA Databasing legislation are starting with significantly larger databases.**

India – Is close to passing legislation including offenders of most crimes in the DNA database

4. **Private Sector / University Laboratory Utilization**

- | | | |
|----|-----------------------------------|---|
| 1. | United Kingdom | Forensic Science Service moving from government entity to private company |
| 2. | South Africa | Movement to establish private laboratories to reduce backlog |
| 3. | United States | Relies heavily on outsourcing to address massive backlog |
| 4. | The Philippines University | Reliance on University of The Philippines |
| 5. | Austria | Institute of Legal Medicine, University of Innsbruck is an International leader in forensic DNA analysis |

International Trends Regarding Scope of Inclusion

5. **International Connectivity**

1. **Prum Treaty**
2. **Interpol DNA Gateway database**
3. **Interpol G8 project**
4. **Australia connectivity between states**
5. **Recent EU Legislation**

Pilot Project

Germany and Austria Sharing data across borders:

German Crime Scene Profiles check against Austrian Database

Resulted in 1500 + matches

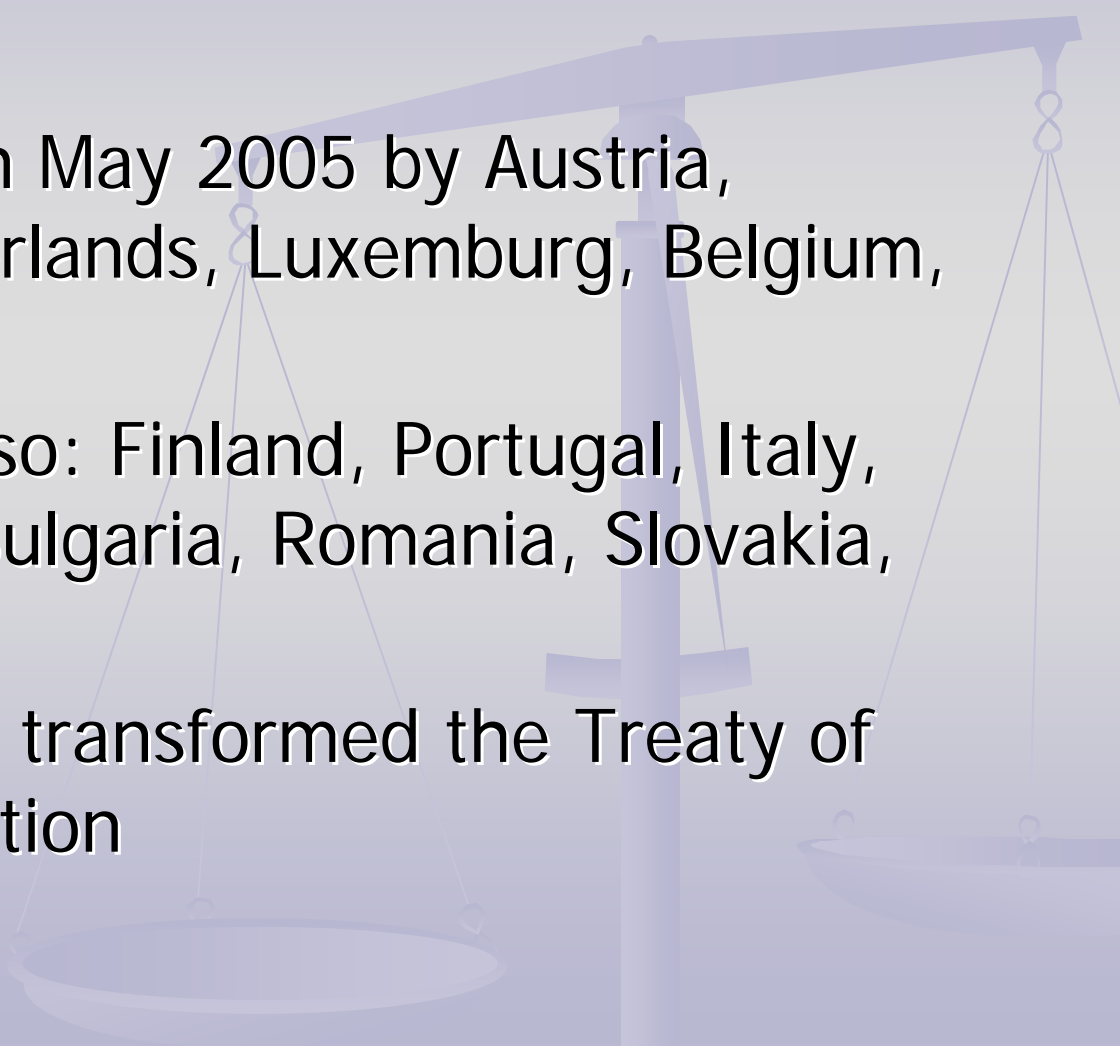
Austrian Crime Scene profiles checked against the German Database

Resulted in 1400 + matches

Scope of the Treaty of Prüm

- Cross border cooperation by means of exchanging judicial and police information and mutual assistance
- Each memberstate makes its fingerprint- DNA-, and vehicle registration database available to other member states for automated searches on a hit/no hit basis
- After a hit: exchange of personal data and case information by existing mutual legal assistance procedures

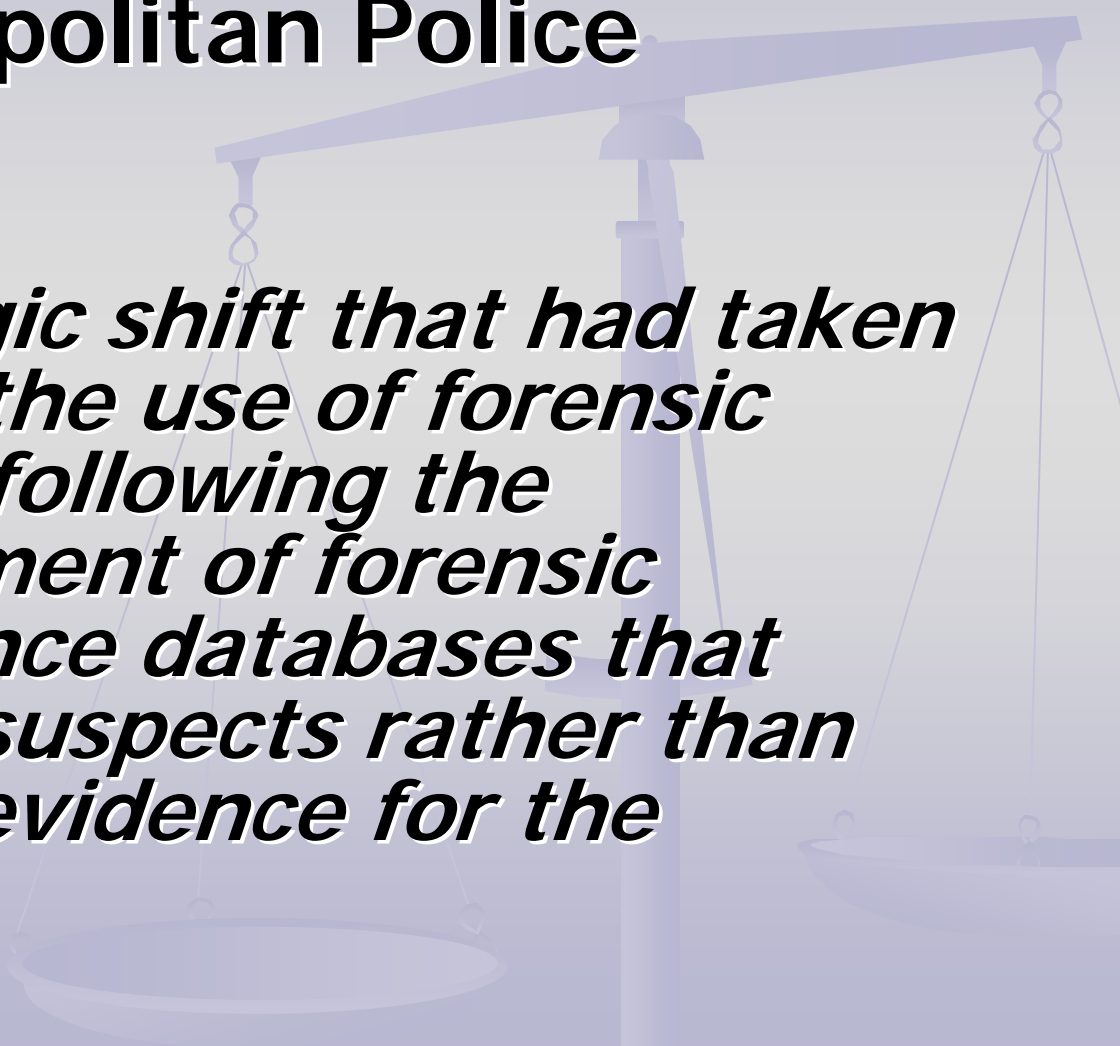
Participating Countries

- Treaty was signed in May 2005 by Austria, Germany, the Netherlands, Luxemburg, Belgium, France and Spain
 - In the mean time also: Finland, Portugal, Italy, Slovenia, Sweden, Bulgaria, Romania, Slovakia, Hungary, Greece
 - European Union has transformed the Treaty of Prüm into EU-legislation
- 

United Kingdom

The Metropolitan Police Service

“A Strategic shift that had taken place in the use of forensic science following the development of forensic intelligence databases that identify suspects rather than provide evidence for the courts”

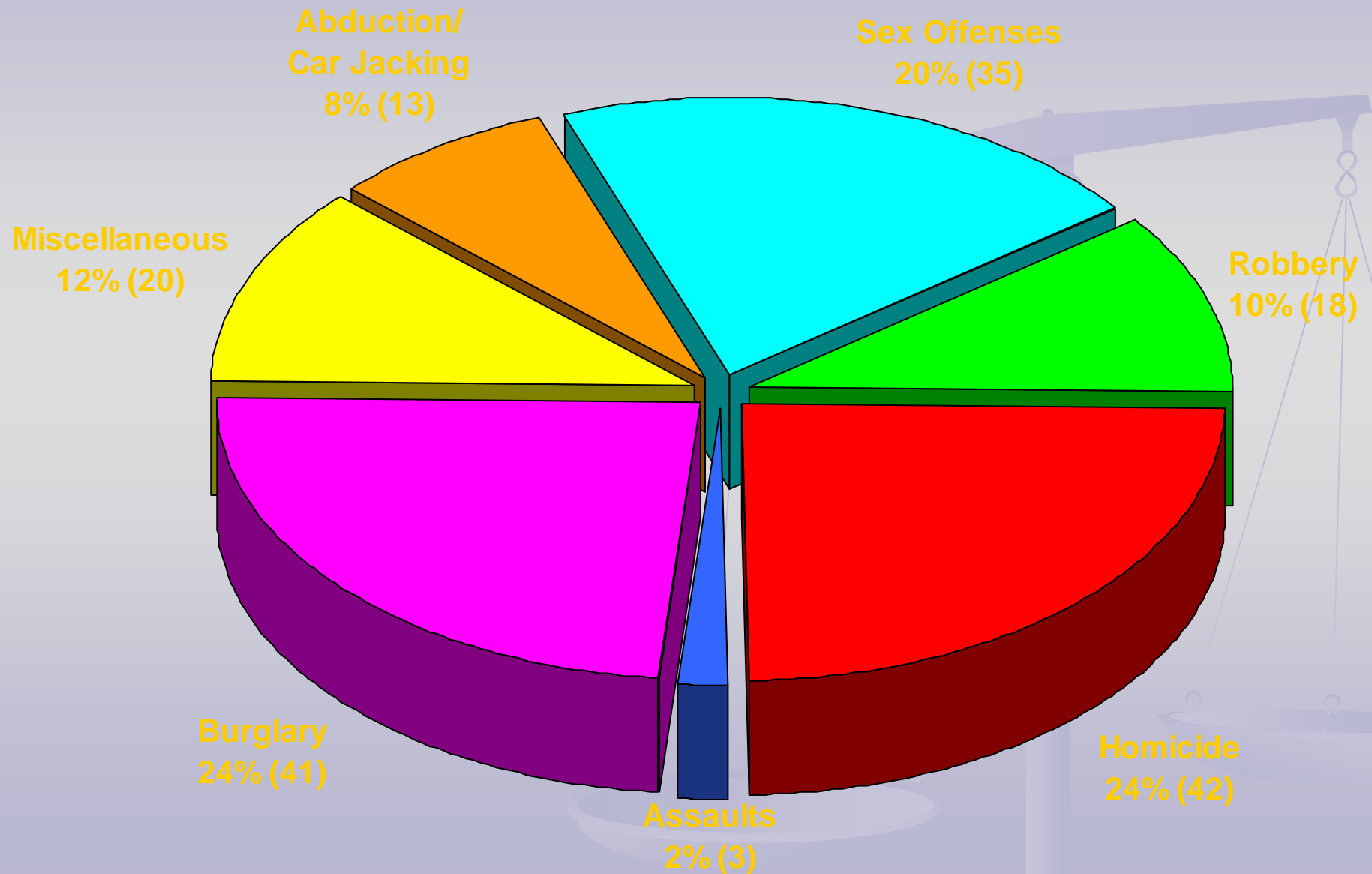


United Kingdom

- Contains 4 million profiles
- Approximately 900 scene of crime to subject matches are reported per week
- Around 55,000 subject sample profiles are loaded to the Database per month
- Around 4,500 crime scene profiles are loaded to the Database per month
- During 2006/2007, 1,175 violent/sex crimes were linked to one or more subjects, 852 drugs cases were linked to one or more subjects and 7,892 domestic burglaries were linked to one or more subjects
- Average turnaround time is 14 days

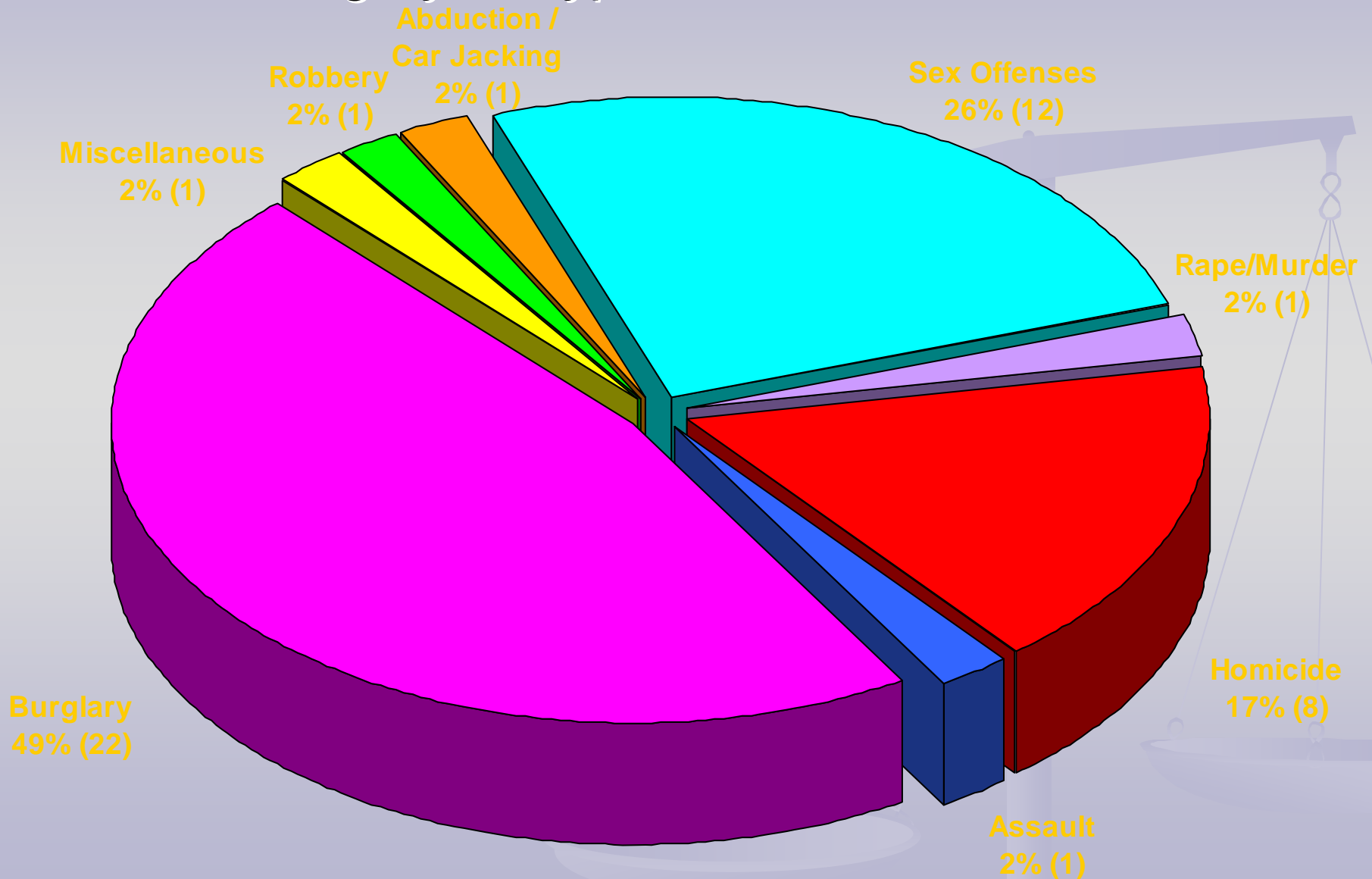
Virginia "Cold Hits" on the DNA Database

All Drug Offenders to Type of Crime Solved



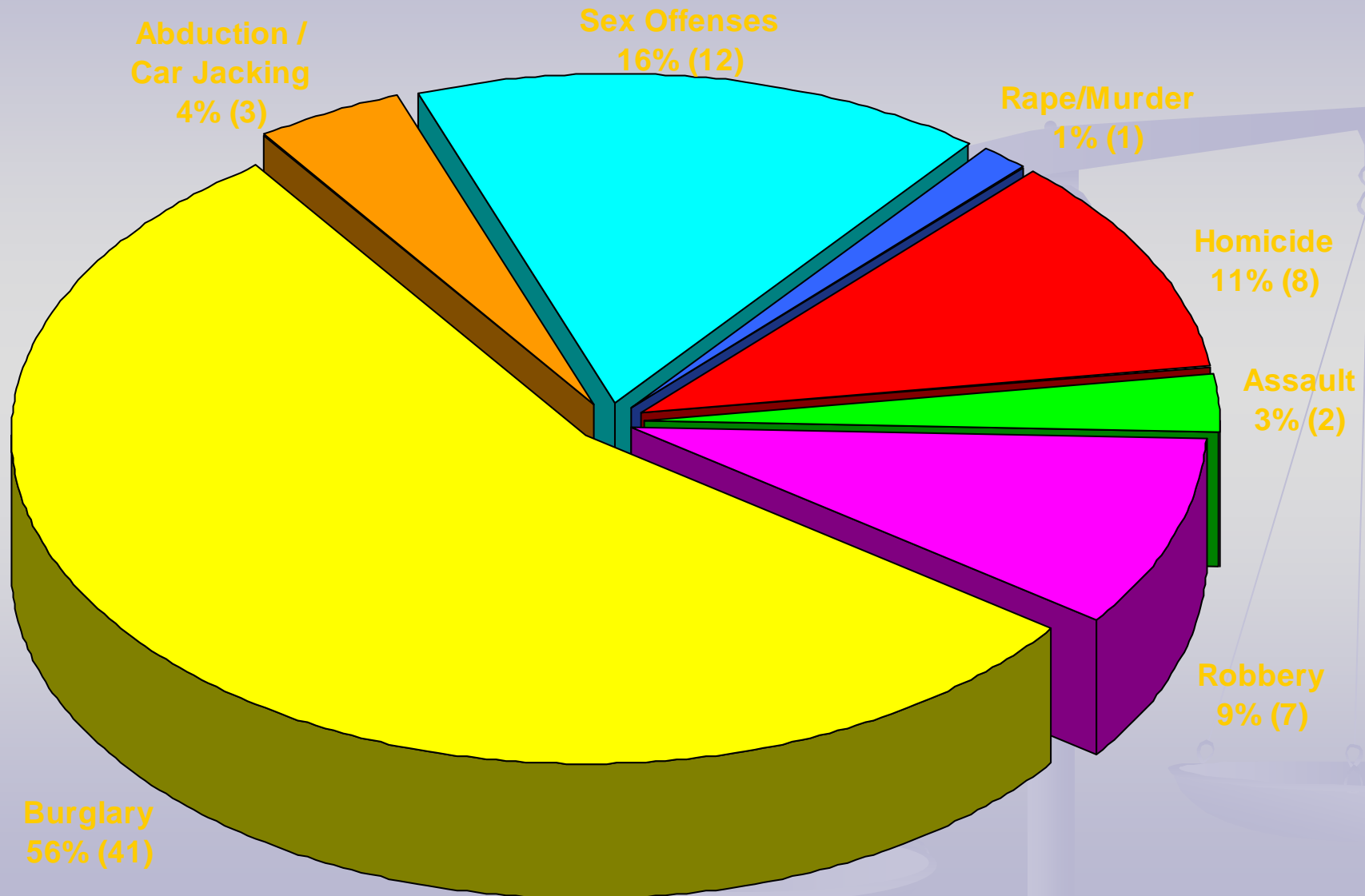
Virginia "Cold Hits" on the DNA Database

Forgery to Type of Crime Solved



Virginia "Cold Hits" on the DNA Database

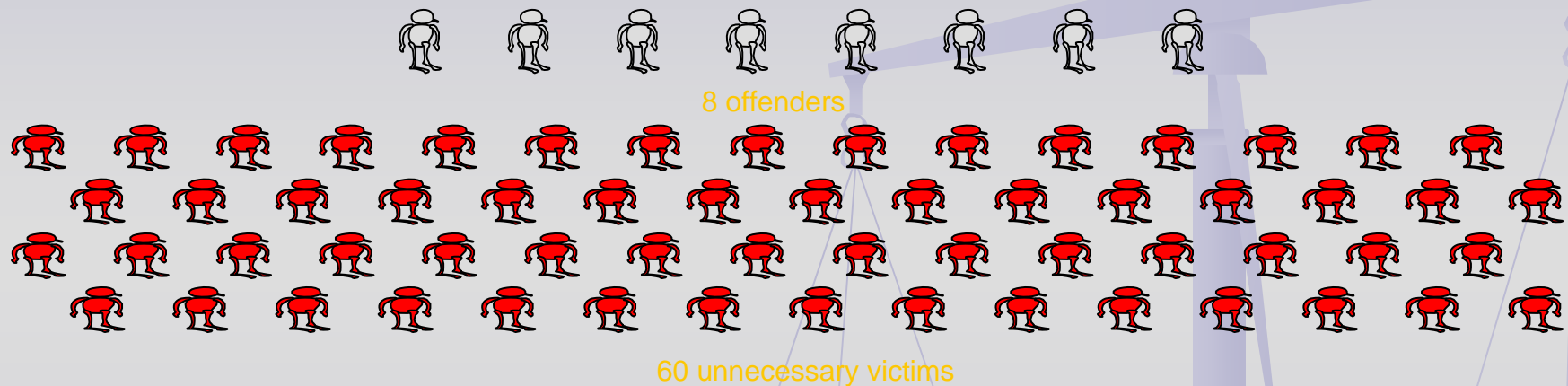
Juveniles to Type of Crime Solved



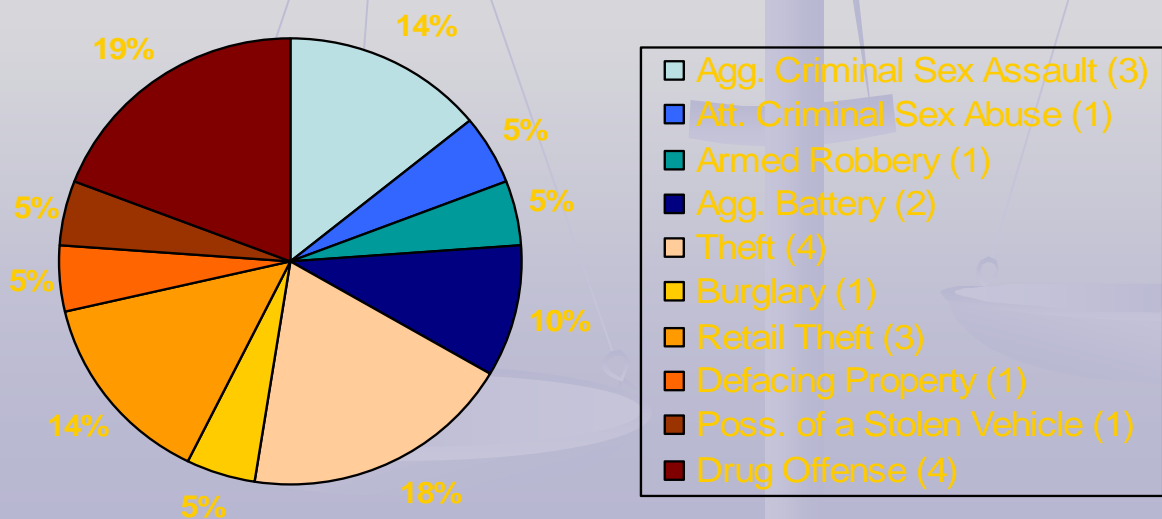
The Power to Prevent Crime: A New Focus in the United States

Chicago study of 8 offenders

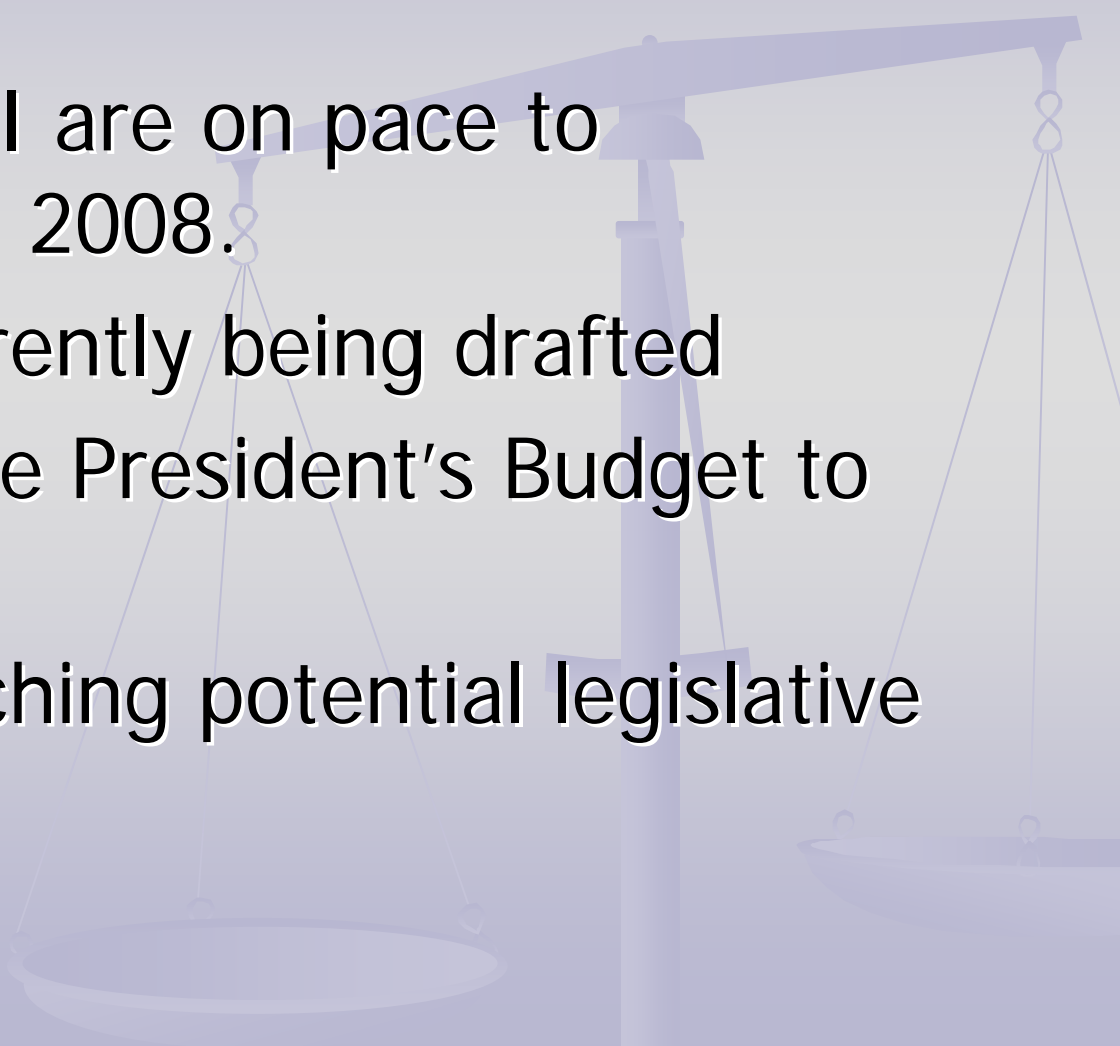
60 preventable violent crimes, including 30 rapes and 22 murders



Offenders accounted for **21 prior arrests**, only **7 of which were violent felony arrests** – two-thirds of prior arrests were for non-violent felonies.



Illegal Immigration and Federal Arrestees Database

- 4 DHS and the FBI are on pace to implementing in 2008.
 - 4 Regulations currently being drafted
 - 4 \$22 Million in the President's Budget to Implement
 - 4 Supporters watching potential legislative repeal attempts
- 

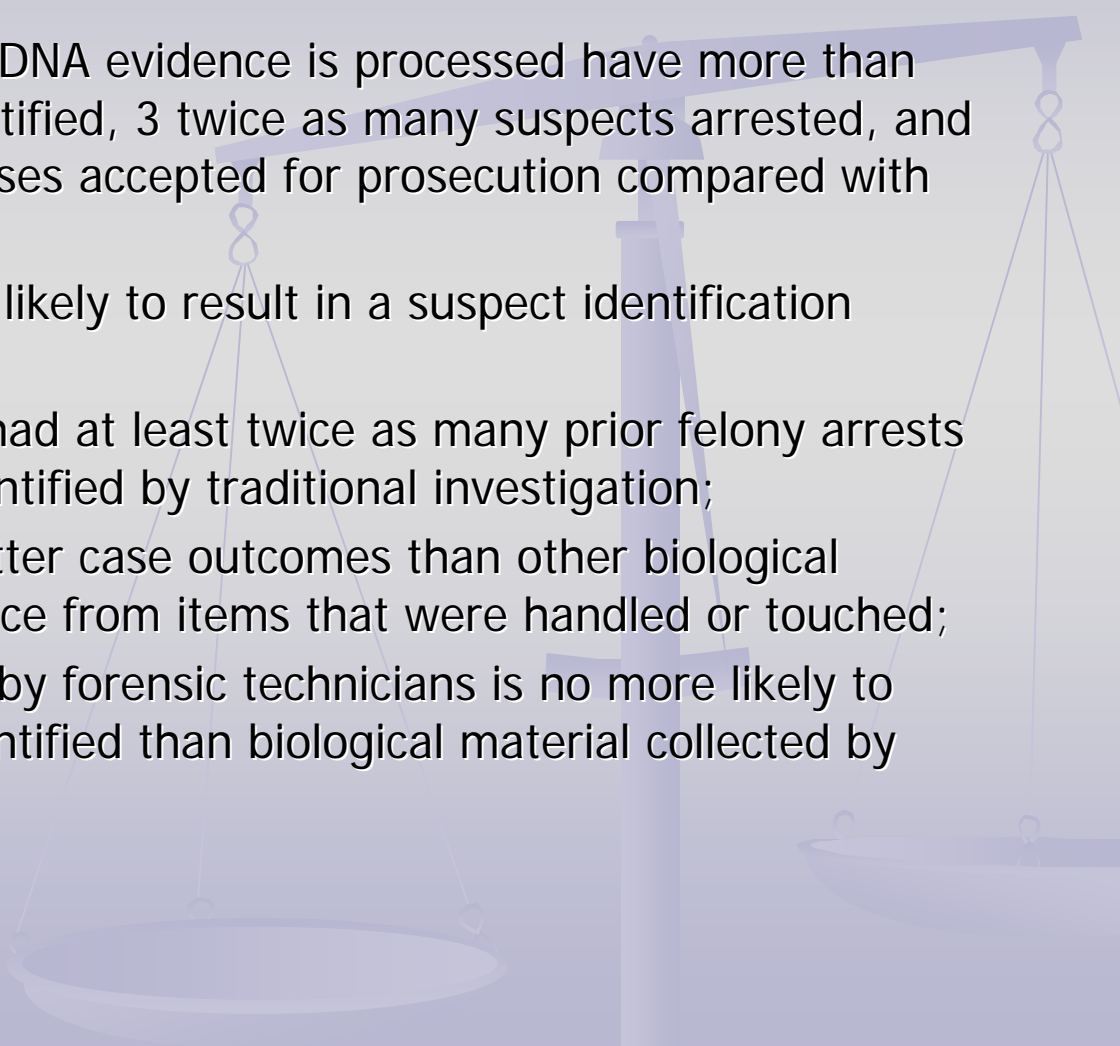
Familial searching

Utilized in many places throughout the world

In UK

- Familial searching for five years
- Solved at least eight cases
- Including the "Shoe Rapist" who took his victims' stilettos as trophies and was caught 20 years later when his sister was arrested for drink-driving

National Institute of Justice sponsored Urban Institute DNA Field Experiment.

- Property crime cases where DNA evidence is processed have more than twice as many suspects identified, 3 times as many suspects arrested, and more than twice as many cases accepted for prosecution compared with traditional investigation;
 - DNA is at least five times as likely to result in a suspect identification compared with fingerprints;
 - Suspects identified by DNA had at least twice as many prior felony arrests and convictions as those identified by traditional investigation;
 - Blood evidence results in better case outcomes than other biological evidence, particularly evidence from items that were handled or touched;
 - Biological material collected by forensic technicians is no more likely to result in a suspect being identified than biological material collected by patrol officers.
- 

Burglary

Denver Project identified over 40 prolific burglars since the project started November 1, 2005.

Also learned:

- A prolific burglar commits an average of 243 cases per year.
- Burglary cases where DNA is recovered, the prosecution rate is 5 times higher than cases without DNA.
- Average sentence for burglars linked to DNA is over 12 years in prison (compared to 6 months without DNA evidence).
- A recent case after police arrested one man - who later admitted to over 1000 burglaries – the burglary rate in the West Washington Park neighborhood dropped about 40%.

GO TO

- WWW.DNA.gov
- www.dnaresource.com
- casplen@gth-gov.com