

JonBenet Ramsey mystery





<https://www.youtube.com/watch?v=QDbPrqEeQ34>

<https://www.youtube.com/watch?v=DJnTEbCdQTQ&index=1&list=PL7CF589A1EED10C10>

Evidence Collection



CRIME SCENE EVIDENCE

Credits:
Anthony (Bud)
Bertino

Goal: to recognize, document and collect evidence at a crime scene



Dr. **Edmond Locard** (1877–1966)

- “Sherlock Holmes” of France
- Studied medicine and law at Lyon
- Wrote a seven-volume work that helped develop 12 matching points for fingerprint identification
- In early 20th century, he formulated the basic principle that “every contact leaves a trace.”

Locard's Principle

Principle of Exchange

- Part 1: when a person comes into contact with an object or another person, a cross transfer of physical evidence can occur



Locard's Principle



Part 2: the intensity, duration and nature of materials in contact determine the extent of transfer

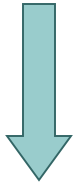
- leading to trace evidence on the individuals and objects
- cross exchange bears as a silent witness
- identified an attacker based on trace evidence underneath victim's fingernail



Types of Evidence

Circumstantial: indirect evidence

Direct



firsthand observations:

- eyewitness accounts
- dashboard video cameras
- confessions
- Evidence that proves an alleged fact



- used to imply but prove a fact
- may link a suspect and a crime scene
- ex. Suspect's gun found at crime scene



Physical:

Impressions, Fibers, weapons, bullets, shell casings

reduces number of suspects to group



Biological:

may make group of suspects very small or even one individual

Body fluids, hair, plant parts, natural fibers

Types of Evidence

Testimonial evidence includes oral or written statements given to police as well as court testimony by people who witnessed an event.

Physical evidence refers to any material items that would be present at the crime scene, on the victims, or found in a suspect's possession.

Trace evidence refers to physical evidence that is found in small but measurable amounts, such as strands of hair, fibers, or skin cells.

What will evidence collected at a scene do for the investigation?

- May **prove** that a crime has been committed
- Establish **key elements** of a crime
- Link a **suspect** with a crime scene or a victim
- Establish the **identity** of a victim or suspect
- Corroborate verbal **witness** testimony
- Exonerate the **innocent**.
- Give **detectives** leads to work with in the case

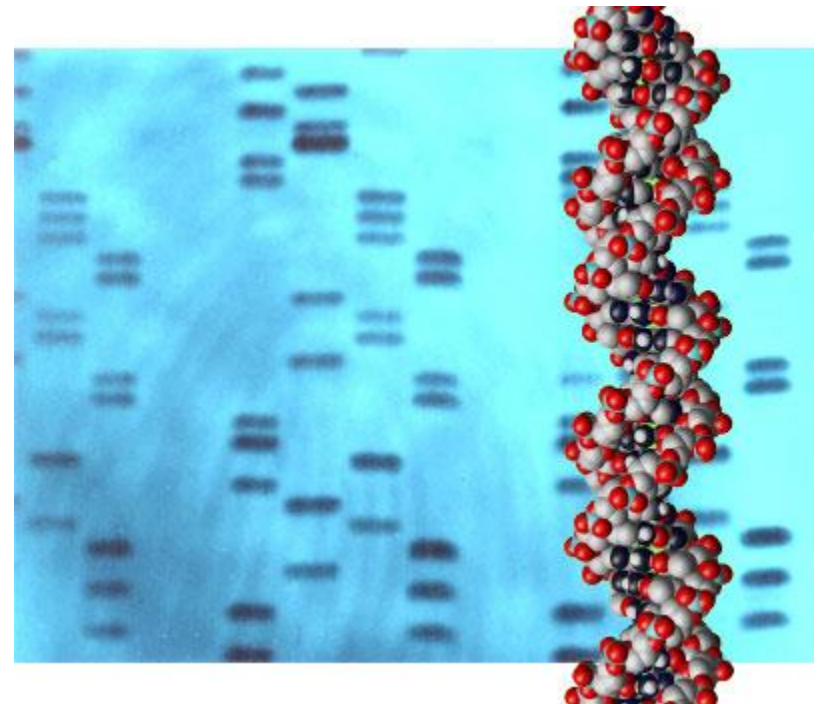
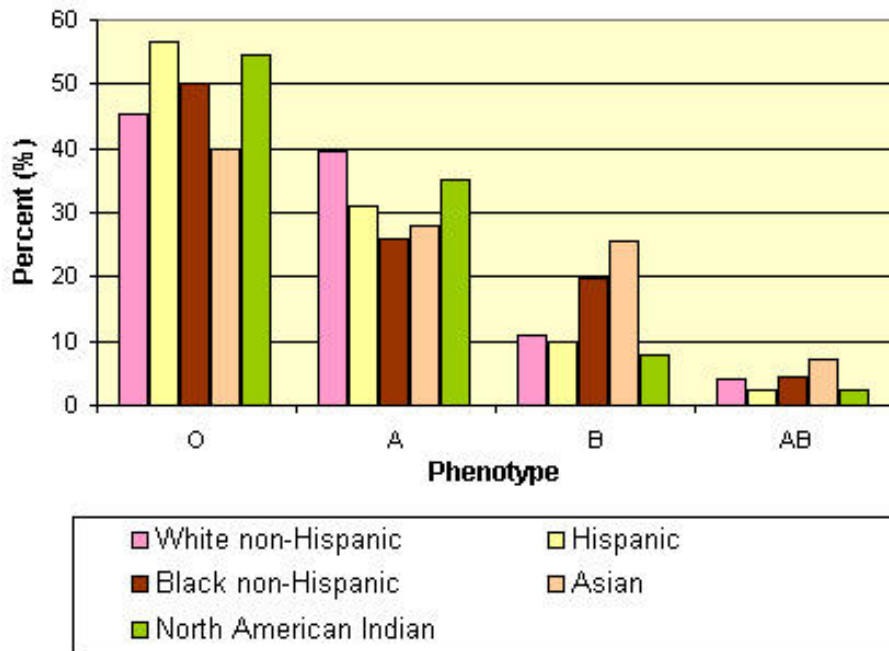


Class evidence: narrows the identity to a group

ex. Blood type ABO

Individual evidence:
single person, DNA,
fingerprint, combination
of unique traits

Distribution of ABO phenotypes by Race or Ethnicity



Trace evidence:

- Pet hair on clothes or rugs
- Hair on brush
- Fingerprints on glass
- Soil tracked inside on shoes
- Drop of blood on t shirt
- A used facial tissue
- Paint chips
- Broken glass
- Fiber from clothing





Latent Prints

Latent Prints - Identification and comparison of fingerprints or other hidden impressions from sources like feet, shoes, ears, lips or the tread on vehicle tires

Example

Important aspects about a person that can be revealed from a shoe print ...the person's height, gait, and the direction they entered and exited the crime scene



Substrate Control

Unstained area of the evidence specimen adjacent to, or representative of the area upon which the biological stain is deposited. This enables a background reading for the stained sample.



Class Discussion

- Casey Anthony – new use of Air Sample

Coverage of Casey Anthony Murder Trial

<http://www.abcactionnews.com/news/state/for-ensics-expert-testifies-in-casey-anthony-trial>

- OJ Simpson – “If the glove doesn’t fit, then you must acquit”

OJ Simpson Trial Criminal Evidence

Suggested STOP of Day 1



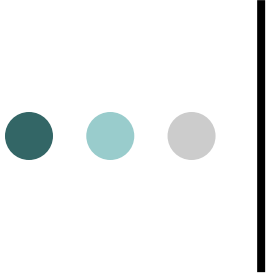
Casey Anthony Timeline

- 6/16/2008 Caylee last seen alive
- 6/20/2008 Casey at a party drinking
- 7/2/2008 Casey get tattoo “Bella Vita” (Beautiful Life)
- 7/15/2009 911 call Caylee is missing. Mother reports gave child to babysitter 31 days prior and both are missing.
- 7/16/2009 Casey Anthony arrested for child neglect.
- 8/29/2008 Car trunk -Caylee hair found
- 10/14/2008 Casey indicted for murder
- 12/11/2008 Caylee body found
- 1/23/2009 Grandfather suicide attempt
- 1/25/2010 Casey guilty of check fraud
- 7/5/2011 Casey not guilty of murdering Caylee



Let's remember who is part of the CSI Team:

- **Police Officers:** usually first (possibly a DA for a search warrant)
- **Crime Scene Investigators:** document crime and collect physical evidence
- **Recorder**
- **Sketch artist**
- **Photographers**
- **Evidence collectors**
- **Medical Examiners:** coroners may be necessary to determine cause of death in a homicide case
- **Detectives:** look for leads, interview witnesses and talking to the CSI about evidence
- **Specialists:** entomologists, psychologists



Remember.....Consent to Search prior to Evidence collection without a warrant

- Always get consent in writing. Verbal consent is allowed however difficult to uphold in court.
- If possible have a witness sign the consent to search.
- Can also search when ...
- the need to prevent the eventual loss of evidence over time
- The existence of emergency circumstances
- Cannot be made incident to a lawful arrest

● ● ● | Securing and Collecting the Evidence

Must be properly packaged, sealed and labeled

- Specific procedures must be followed for collection and storage



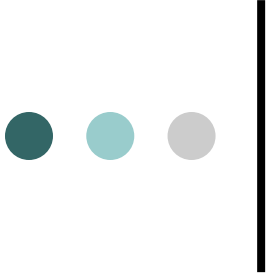
- Liquids and arson remains: airtight, unbreakable container

- Biological evidence: breathable containers to reduce mold and to dry.



Securing and Collecting the Evidence

- After evidence is allowed to dry, it is then packaged into a paper bindle
- Paper bindle (druggist fold) then placed in paper or plastic container
- Outer container then sealed with tape and signed by the collector on the label



Evidence log and Chain of Custody document is attached to the evidence container.

Contains:

- Case number
- Item inventory number
- Description of the evidence
- Date and Time of recovery
- Signature of person recovering evidence
- Signature of any witnesses present during collection

Optional for reference evidence (evidence collected from a known person):

1. Name of suspect
2. Name of victim

Chain of Custody Form Example

PROPERTY/EVIDENCE CUSTODY REPORT				CASE NUMBER:	
Time/Date Obtained:				Department Name: <input type="text"/>	
Name of Person from whom Received:				Address and Telephone number (include zip code)	
<hr/>				Please fill in the address here. <input type="text"/> <input type="text"/>	
OR Location Collected:				Phone: <input type="text"/>	
Reason Obtained:				Laboratory Exam Requested:	
<input type="checkbox"/> Evidence	<input type="checkbox"/> Found	<input type="checkbox"/> Safekeeping	<input type="checkbox"/> Recovered	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Item No:	Quantity	Description of Articles (include model, serial number, etc.)			
CHAIN OF CUSTODY					
+					
Item No:	Date	Released By	Received By	Purpose of Custody change	
		Signature	Signature		
		Printed Name	Printed Name		
		Signature	Signature		
		Printed Name	Printed Name		
		Signature	Signature		
		Printed Name	Printed Name		



CHAIN OF CUSTODY:

Must be maintained to secure evidence

1. Collector finds evidence and bags it in appropriate container
2. The final container is the collection bag labeled with pertinent information
3. Collection bag is sealed and collector's signature written across sealed edge of the container
4. Then the evidence is taken to evidence storage and logged
5. Not all evidence collected gets tested. Once the necessary tests are determined, then the evidence is checked out and sent to a lab

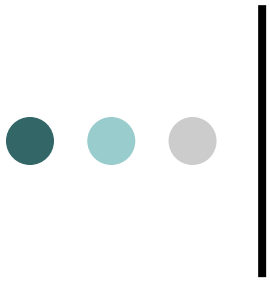


CHAIN OF CUSTODY:

Must be maintained to secure evidence

After evidence has been received by the Laboratory:

1. Tech opens bag (tears) somewhere that isn't over someone else's evidence seal
2. Technician handles evidence then repackages evidence in original packaging and then seals in new packaging
3. Sign chain of custody log
4. Ensures responsible handling from crime scene to courtroom and vice versa



CHAIN OF CUSTODY

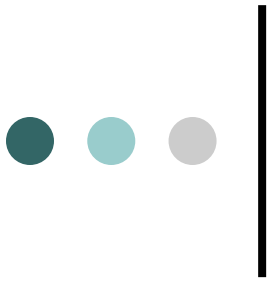
If Chain of Custody is not maintained
evidence is inadmissible in court.



Analyze Evidence

FBI crime is largest forensics lab in the world. They:

- Process all evidence to determine facts of the case
- Each technician has one specialty (one type of evidence). *See next slide.*
- The examination of evidence requires comparison with a substrate control to ensure the evidentiary value of the crime-scene evidence.
- Lab results sent to lead detective
- Test results lead to crime scene reconstruction
- Detective takes evidence and tries fit into scenario
- Analysis can link a suspect to scene or victim or lead to acquittal
- Direct evidence is more compelling than circumstantial



When can a crime scene become unsealed?

As soon as all the evidence has been collected and witnesses have been detained

Investigating the Evidence

Forensic Science disciplines at the
Illinois State Police Crime Labs

Drug Chemistry – Determines the presence of controlled substances and the identification of marijuana

Trace Chemistry - Identification and comparison of materials from fires, explosions, paints, and glass.

Microscopy – Microscopic identification and comparison of evidence, such as hairs, fibers, woods, soils, building materials, insulation and other materials.

Biology/DNA – Analysis of body fluids and dried stains such as blood, semen, and saliva.

Toxicology – Tests body fluids and tissues to determine the presence of drugs and poisons.

Latent Prints - Identification and comparison of fingerprints or other hidden impressions from sources like feet, shoes, ears, lips or the tread on vehicle tires.

Ballistics (Firearms) – Study of bullets and ammunition through the comparison of fired bullets, cartridges, guns, and gunpowder patterns on people and objects.

Toolmarks – Examines marks left by tools on objects at a crime scene or on a victim, such as a hammer used to break a door or a screwdriver used to pick a lock.

Questioned Documents - Examination of documents to compare handwriting, ink, paper, writing instruments, printers, and other characteristics that would help to identify its origin.



National databases available to Forensic Scientists

List of Forensic Databases from NIJ
Journal No. 258, October 2007

<http://www.nij.gov/journals/258/Pages/forensic-databases.aspx>

On your own sheet of paper, create a table listing the different databases available and a brief description of 8 databases of your choice.



Crime Scene Reconstruction

1. Hypothetical sequence of events
2. Examine evidence and compare to witness accounts to determine reliability
 - Evidence does not lie but it can be staged

Staged Crime Scenes



Unique problem: evidence does not match testimony

Common situations:

- Arson: stage fire to cover murder
- Suicide/murder: death may alcohol or overdose
- Burglary: staged to collect





Things to consider when determining if staging occurred:

Initially treat all death investigations as homicide, however:

1. Do the type(s) of wounds found on the victim match the weapon employed?
2. Could the wounds be easily self inflicted?
3. Establish a profile of the victim through interviews with friends and family
4. Evaluate the behavior (mood and actions) of the victim before the event
5. Evaluate the behavior (mood and actions) of any suspects before the event
6. Corroborate statements with evidential facts
7. Reconstruct the event
8. Conduct all forensic examinations to determine the facts of the case



SUMMARY

- Locard's principle
- Evidence may be direct: eyewitness or Circumstantial: does not directly prove a fact
- Evidence can be physical or biological (trace can be either)
- CSI team: police officers, detectives, CSI investigators, medical examiners and specialists
- CS investigation: recognizing, documenting and collecting evidence from a scene
- First responding officer: id extent of crime scene (including 1 and 2), secure the scene and segregate witnesses
- walk the scene, id evidence then document scene by photos and sketches
- Evidence must be properly handled, collected and labeled to maintain Chain of Custody
- Evidence is analyzed in a forensic lab, results provided to detectives who fit results into crime scenario

CRIME SCENE DO NOT CROSS

What evidence would you collect?



Mock Crime Scene:

<http://www.mesaaz.gov/police/ForensicServices/>

<http://www.masss.gov>