



# Chapter One: Observation Skills





# Chapter 1 *Observation Skills*

By the end of this chapter you will be able to:

**1.1** Define observation and describe what changes occur in the brain while observing.

**1.2** Describe examples of factors influencing eyewitness accounts of events.

**1.3** Compare the reliability of eyewitness testimony with what actually happened.



# Chapter 1 *Observation Skills*

By the end of this chapter you will be able to:

**1.4** Relate observation skills to their use in forensic science.

**1.5** Define forensic science.

**1.6** Practice and improve your own observation skills.



# Rookie training!

- o Rookie training csi web  
<http://forensics.rice.edu/>
- o Fill out worksheet as you go!



# Forensic files

- o FF a clutch of witnesses(22:46)  
<https://www.youtube.com/watch?v=CHeEDUKAy9A>
- o FF material witness(21:50)  
<https://www.youtube.com/watch?v=ppGWy2kCKjg>



# eyewitness

- o <https://www.pbs.org/newshour/nation/newly-released-witness-testimony-tell-us-michael-brown-shooting>
- o <https://www.brainblogger.com/2014/05/31/false-memories-a-faulty-reconstruction/>
- o False memories
- o [https://www.ted.com/talks/elizabeth\\_loftus\\_how\\_reliable\\_is\\_your\\_memory](https://www.ted.com/talks/elizabeth_loftus_how_reliable_is_your_memory)



## Chapter 1

# Vocabulary

- o analytical skills
- o deductive reasoning
- o eyewitness
- o fact
- o forensic
- o logical
- o observations
- o opinion
- o perception



## Day 1 :

### 1. test your awareness (making passes 1:08)

- <https://www.youtube.com/watch?v=Ahg6qcgoy4>

### 2. Test Your Awareness : Whodunnit? 1:54

test:

<https://www.youtube.com/watch?v=ubNF9QNEQLA>



## WAS SOMEONE STEALING THE TREES?

An officer with the Department of Natural Resources was called to a farm where a landowner had discovered missing trees. The trees were black walnut, a valuable wood used to make expensive furniture. The officer found six stumps where once there were living trees. The limbs and branches were left behind. Scattered around the woods were 20 empty beer cans.

The officer examined the area and found tracks left by a truck leading across a neighbor's field; the perpetrator of the theft had then cut through the boundary fence. By following the tracks, the officer found where the truck had slid sideways and scraped against a tree, leaving a small smear of paint. These pieces of evidence were photographed and sampled.

The landowner remembered having seen similar tire marks leading into another wooded area two miles up the road. The officer investigated these marks and found several more black walnut stumps and more empty beer cans. The officer documented numerous forms of evidence—a paint sample from the truck, tire tread impressions, and one fingerprint lifted from a beer can. The thefts stopped, and the case was considered unsolved.

Two years later, a man was caught stealing black walnut trees a couple of counties away, and his truck was impounded. The officer compared the original paint sample to match



©Mauro Ferriariello/Photo Researchers, Inc.

An investigator examines paint evidence.

ing paint from the truck. A receipt in the truck from a veneer mill (veneer is the thin layer of high-value wood put on the surface of low-quality woods to be used in furniture) suggested that the man had been selling logs for some time.

The paint on his truck was consistent with paint found at the crime scene, and his fingerprints matched the fingerprint found on the beer can at the scene. Based on the evidence, he was convicted, fined, and sent to prison for six years. An observant investigator was able to collect sufficient evidence for a jury to find the man guilty of stealing the trees.





## SCENARIO

What evidence was the most valuable in convicting the suspect? Why?  
What tools did the investigator use to gather the evidence?



# I. What is forensic science?

A. Study of evidence in a crime to be used in a legal system



## B. Forensic Science applies

- Chemistry
- Biology
- Physics
- Geology



**to civil and criminal law**

C. Places physical evidence into a professional discipline.



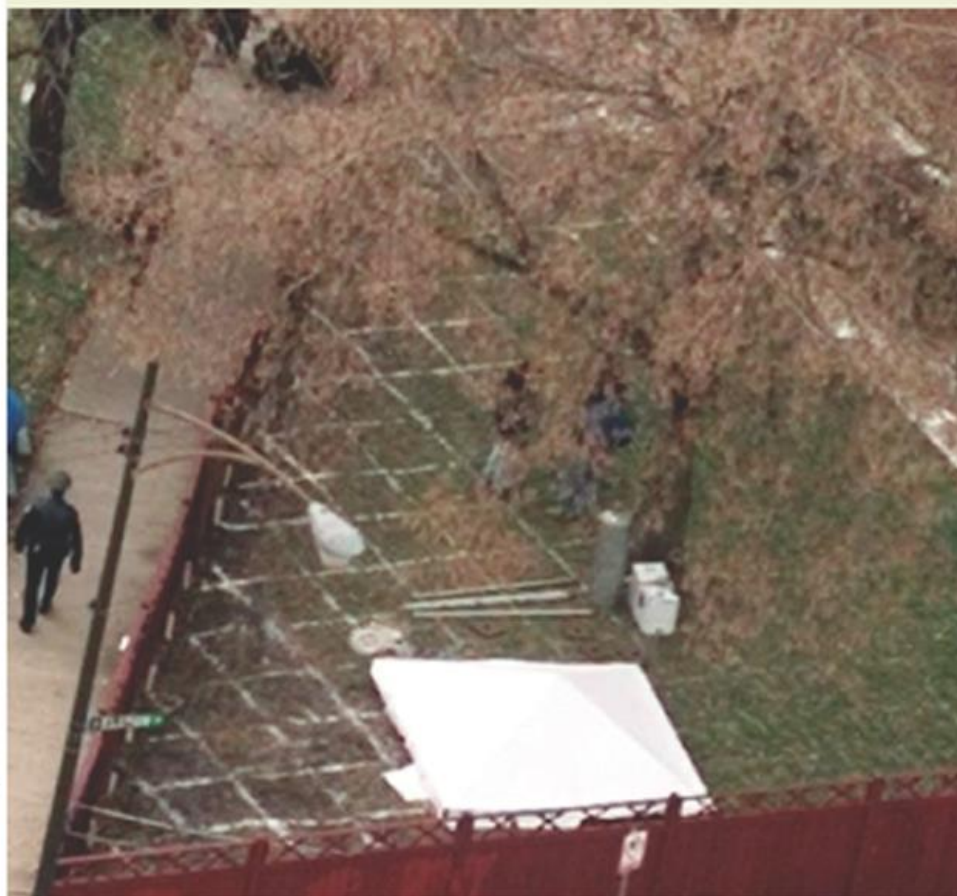
## D. What Forensic Scientist Do

- 1.find**—identify the evidence
- 2.document**—record the evidence
- 3.interpret**—accurately determine the significance of the evidence

**One of the key skills in doing this well is observation.**



**Figure 1-1** *A crime scene is often laid out in a grid to ensure that all evidence is found.*



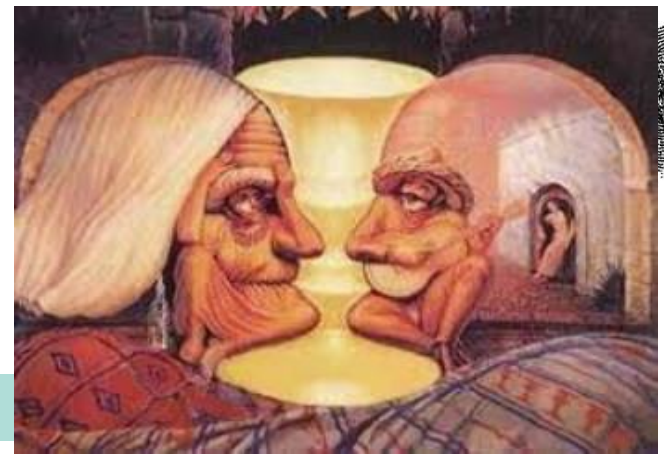
AP Images/Charles Bennett



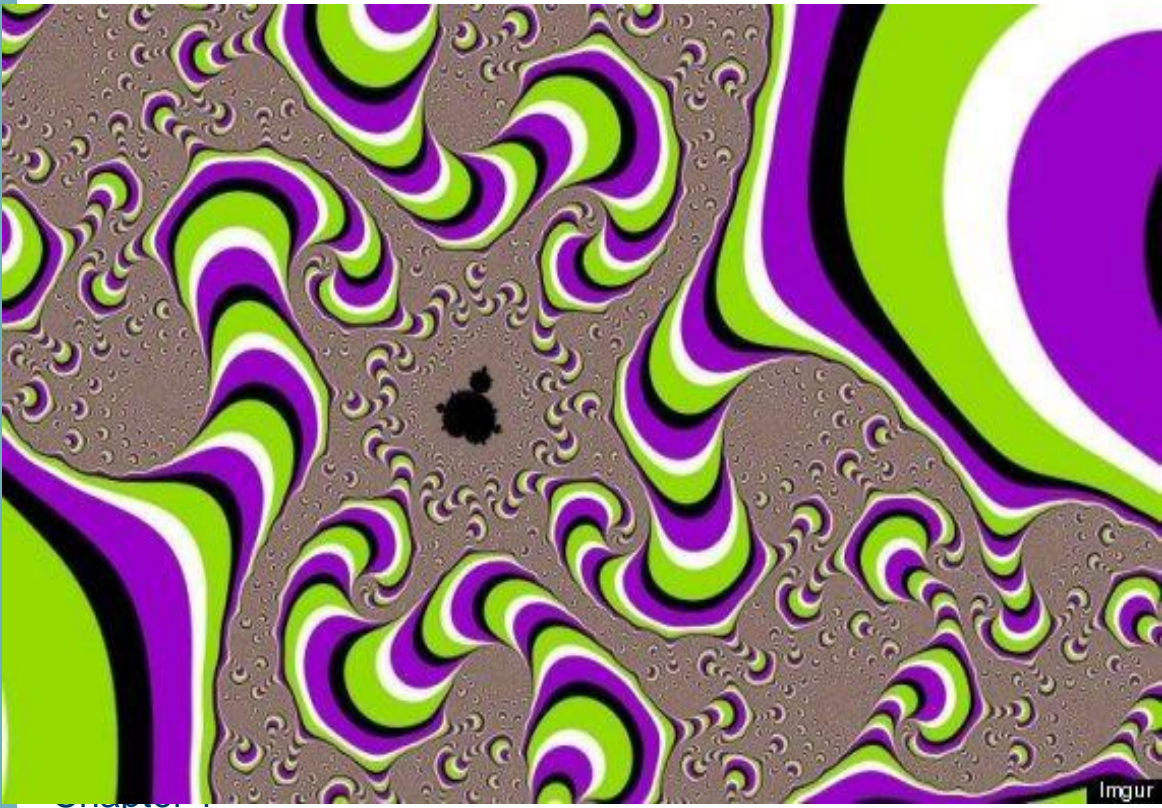
## II. What Is Observation?

- A. Observation:** What a person perceives using his or her senses
  - 1. Perception:** Interpreting information received from the senses

Investigations



Investigations, Chapter 1



12  
ABC  
14





- o Activity: Observe the next screen for 30 seconds. You are NOT allowed to write anything down. You CANNOT talk to anyone else.

# Items to remember ...





You have 2 minutes to list as many of the items as you can!



**How did you do?**

**All 20 – Awesome**

**15-19 – Great**

**10-14 – Pretty swell**

**5-9 – Could be better**

**4 or Less – Wake up**



# What Is Observation?

**Our brains can filter out information.**



Point out some of the details in this photo.



## Day 2

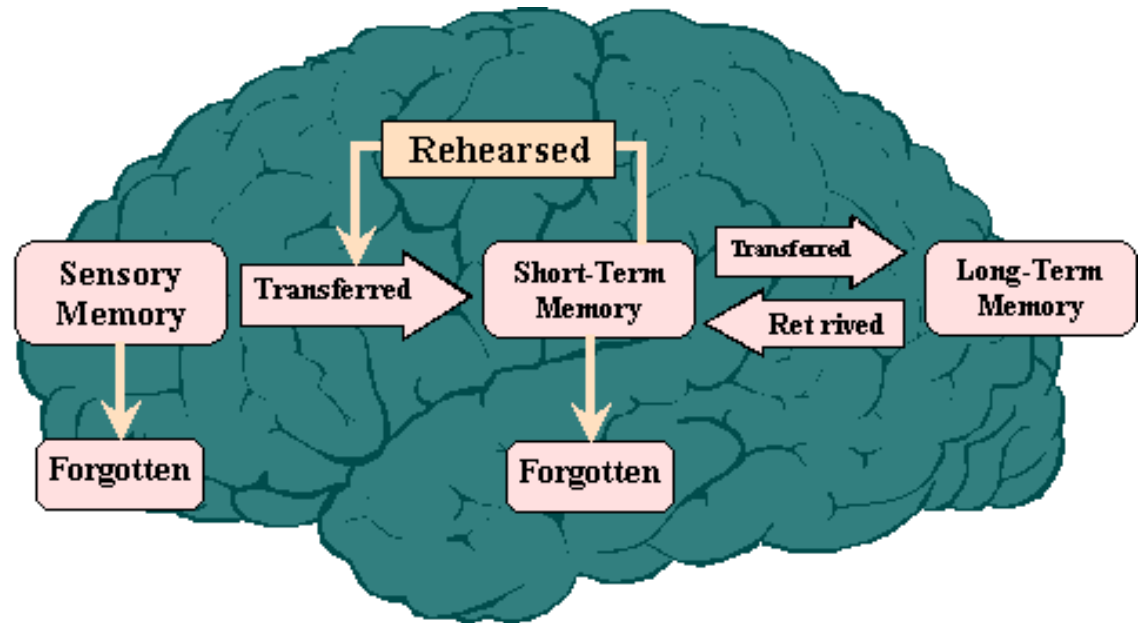
### Brain Games- Eyewitness Inaccuracy, Source Monitoring Error, and Misinformation Effect (16:50)

- <https://www.youtube.com/watch?v=RWO2UQ4MW7U>

# B. How is information processed in the Brain?

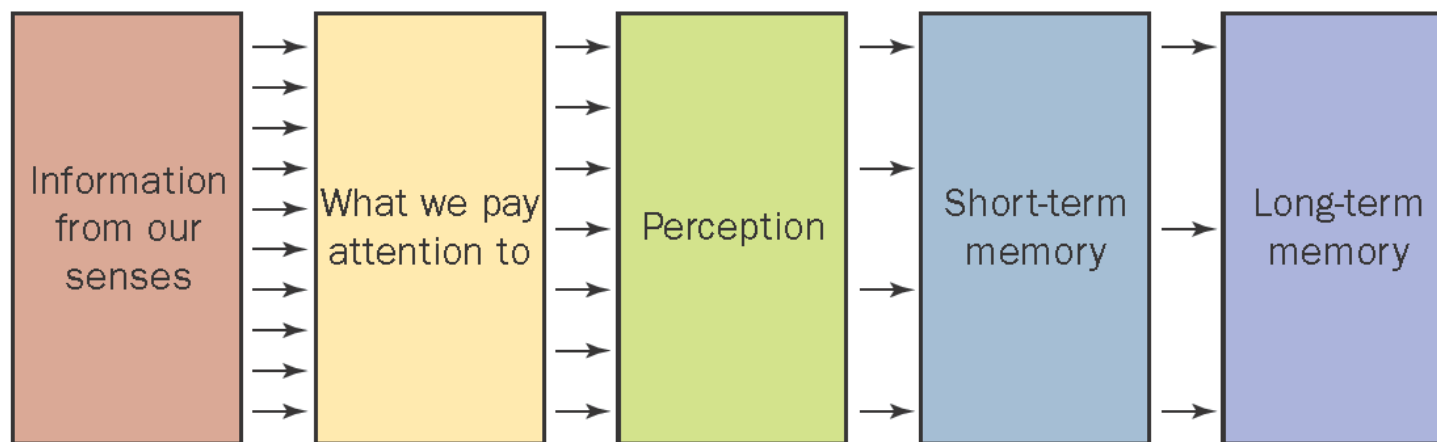


Information from Environment





**Figure 1-2** *How information is processed in the brain.*



# Crime Scene Challenge

- Now that your eyes and brain are warmed up, let's test your observation skills a bit more.
- You will have 2 minutes to study the photograph of a crime scene on the next slide.
- Try to pay attention to details as you will be asked 10 questions about the crime scene!
- You are not allowed to write anything down until after the time is up.
- Ready?







# Answer each question below.



1. What color coffee mug was in the picture?    Blue    Red    **Yellow**
2. When was the deadline?    Yesterday    **Today**    Tomorrow
3. What time was on the clock on the wall?    10:40    **11:05**    1:55
4. How many sticky notes were on the whiteboard?    Four    **Six**    Eight
5. Which of the following was NOT in the picture?    **Stapler**    Trash Can    Printer
6. What was the name on the plaque on the desk?    Bill    **Brian**    Carl
7. What color was the victim's shirt?    Black    **Blue**    Red
8. How many plants were in the picture?    None    One    **Two**
9. What was the color of the marker in the desk drawer?    Red    Blue    **Green**
10. Where was the book in the picture?    **On a box**    In the trash can    Under the body



# Discussion

After observing the picture, what type of information did you miss?

And what type of information did you assume?

# BMW Heist-

<https://www.youtube.com/watch?v=P-12wG6V46U>



After viewing it once:

1. What was the color of the car?
2. Was the main male character wearing a neck tie?
3. What was the hair of the toy shop lady?
4. What kind of toys did you see?
5. Did you see the license plate number?
6. What was the main female wearing? Did she have any ring on her finger? What was her hair color? What kind of footwear?

Discussion point: Filter what we want to see only.

1. What was the name of the street the jewelry shop was on?
2. What season was this?
3. Where was this shot? In America? Germany? Why do you think this?

Discussion point: Filling in gaps with our personal knowledge and experience.

# View BMW again no sound!



- After viewing the second time without sound:
- 1. What color was the tie on the jeweler?  
Handkerchief color?
- 2. Did the policemen have ties? What color were they? Did they have gloves on?
- 3. What was the license plate number?
- 4. Did the main character have ring on his finger?  
How old do you think he is? How tall was he?
- 5. How tall was the main female character? Was she taller or shorter than the male character?



# What Is Observation?

- C. brains selectively take in information.
  - 1.unconsciously apply filters.
  - 2.Paying attention to the details of your surroundings requires a conscious effort.

# D. How do our brains influence our perception?



- 1. to make sense of what we perceive, our brains often enrich with detail what we see, taste, hear, smell, or feel
- 2. After an event, we can believe things were part of the background even though they were not
  - **Example:** If we were reading a sentence and a word was missing, we will often not notice the omission but instead predict the word that should be there and read the sentence as though it is complete.



- E. Perception is
  - 1. Limited
  - 2. Faulty
  - 3. Not always accurate
  - 4. Not always reflective of reality





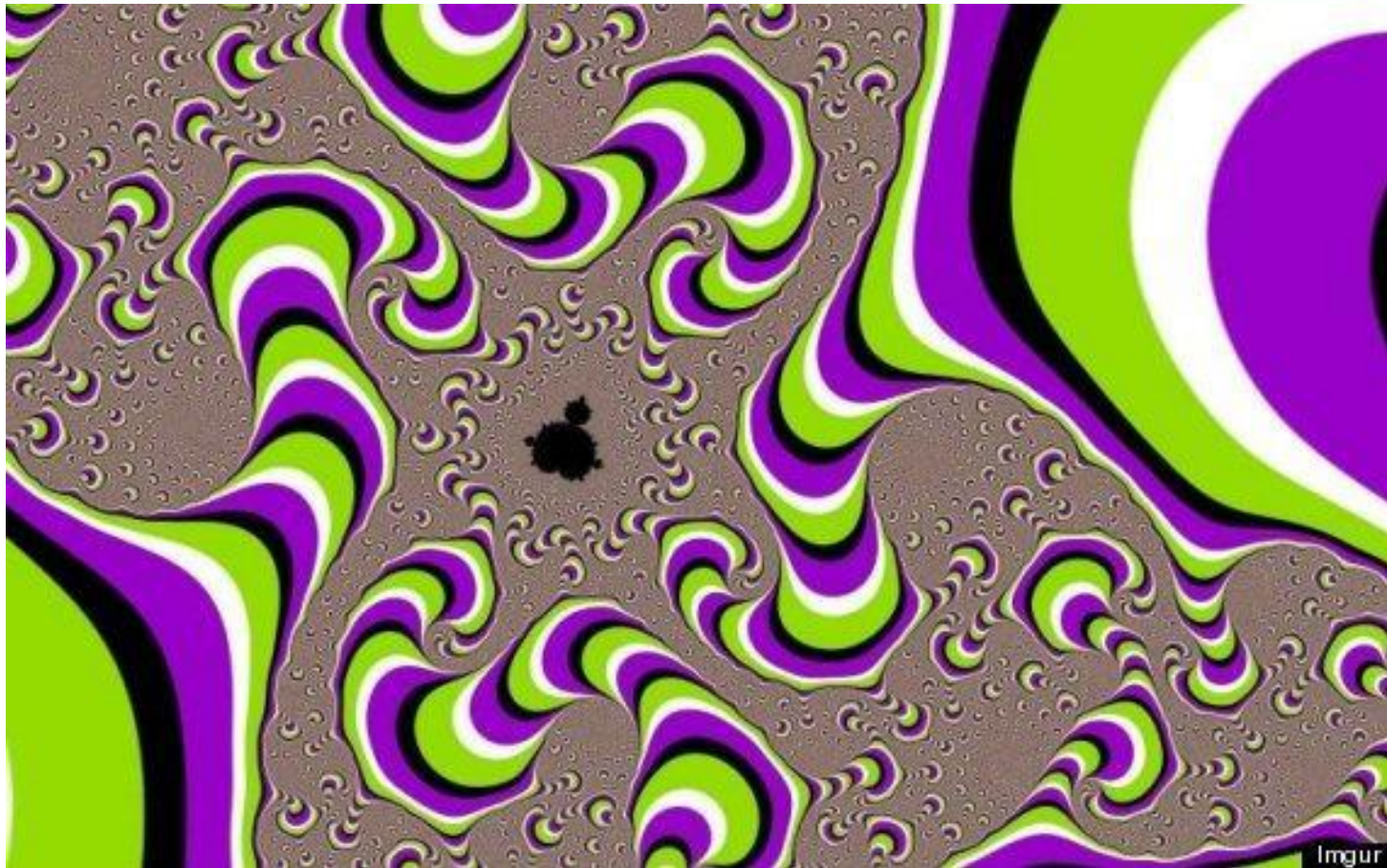
# Our Brains Plays Tricks on us!

- It is difficult to believe, but our brains plays tricks on us. Our perception is limited, and the way we may view our surroundings may not accurately reflect what is really there.





# Our Brains Plays Tricks on Us!





## III. Observation By Witnesses

- A. Key component of any crime investigation.
  - 1. perceptions of witnesses can be faulty, even though a witness may be utterly convinced of what he or she saw.





- B. Observations are affected by:
  - 1. Emotional states
  - 2. Whether you are alone or with a group of people
  - 3. The number of people and/or animals in the area
  - 4. The type/amount of activity around you



# How can observation be faulty?

## Our brains fill in gaps in our perception.

- o <https://www.youtube.com/watch?v=eZIPzSeUDDw&list=PLHhZeHMI-x0DK25ey3W4Yx308YANo7eyC&index=28&t=0s>

**The Bunny Effect**  
**CBS News Video**



**Figure 1-3** *This eyewitness is searching a mug book for previous offenders who might have committed the crime she witnessed.*



Mikael Karlsson/Alamy





- C. Eyewitness accounts vary based on:
  - 1. Level of interest
  - 2. Stress
  - 3. Concentration
  - 4. The amount and kind of distractions present



# Eyewitness Accounts (continued)

- 5. Prejudices
- 6. Personal beliefs
- 7. Motives
- 8. Any lapse in time since the event





- Why eyewitnesses get it wrong- Fraser ted talk (17:10)
- [https://www.ted.com/talks/scott\\_fraser\\_the\\_problem\\_with\\_eyewitness\\_testimony#t-58295](https://www.ted.com/talks/scott_fraser_the_problem_with_eyewitness_testimony#t-58295)



## IV. The Innocence Project

- A. Created by Barry C. Scheck and Peter J. Neufeld in 1992
  - 1. Benjamin N. Cardozo School of Law NY
- B. Use DNA to examine post-conviction cases to decide guilt or innocence
- C. Faulty eyewitness id accounted 87% of wrongful convictions



- Forensic files All but certain (21:44)
- <https://www.youtube.com/watch?v=GyQx6uli9kc>
- <https://www.youtube.com/watch?v=u-SBTRLoPuo>  
eyewitness testimony part 1 (13:00)
- Part II (13:06)  
<https://www.youtube.com/watch?v=I4V6aoYuDcg>
- Innocence project: <https://www.innocenceproject.org/>



# How reliable is your memory: 17:36

## Elizabeth Loftus

- o Loftus
- o <https://www.youtube.com/watch?v=PB2Oegl6wvI&mp=&list=PLHhZeHMI-x0DK25ey3W4Yx308YANo7eyC&index=29&mp=&t=279s>



# V. How to be a Good Observer

## 1. Observe systematically

- Start at one part of a crime scene and run your eyes slowly over every space.
- Look carefully at details of all evidence
- Do not assume you will remember everything.



# How to be a Good Observer

## 2. Turn off filters

- o Consciously pay attention to all details
- o Do not pay attention to just what you *think* is important



# How to be a Good Observer

(continued)

3. Collect info first- interpret data later
  - Do not jump to conclusions
  - Find patterns / make connections
  - More info= better interpretations
- o Prejudices exist everywhere—
  - eyewitness accounts
  - your own thinking processes



# How to be a Good Observer

(continued)

## 4. Document everything

- Write down and photograph as much information as possible.
- Compensate for faulty memory
- Remember brains will fill in gaps with perceptions





**Figure 1-5** *Documentation is an essential part of observation.*



AP Images/Mary Altaffer



# VI. What Forensic Scientists Do

- A. Tasks
  - 1. not interested in making the suspect look guilty
  - 2. Works backwards from evidence to what led up to the crime
  - 3. uses deductive reasoning to verify the actual facts of a case



# What Forensic Scientists Do

- 4. Find, examine, and evaluate evidence
- 5. Apply scientific knowledge to analyze the crime scene (analytical skills)
- 6. Reports evidence to investigators and courts
- 7. convinces a jury that analysis is reliable and accurate

# We will now test your observation skills



- o Get out a piece of scrap paper
- o Activity 1-2 You're the Eyewitness

# Observational Skills

## ACTIVITY 1-1 LEARNING TO SEE



**Directions:** Study Photograph 1 for 15 seconds. When instructed by your teacher, turn over your question sheet and answer as many of the questions as you can. You will have three minutes. Repeat the process for Photographs 2 and 3.

# Photograph #1





1. At what location was the photograph taken?
2. How many cars are pictured?
3. What color are the cars?
4. What types of offices are located in the building?
5. How many small trees are in the picture?
6. The photograph was taken New York State during which season?
7. How many people are in the photograph?



1. At what location was the photograph taken? **Glenville Municipal Center**
2. How many cars are pictured? **2**
3. What color are the cars? **Tan & gray**
4. What types of offices are located in the building? **Town, police and court offices**
5. How many small trees are in the picture? **2**
6. The photograph was taken New York State during which season? **Spring or summer**
7. How many people are in the photograph? **None**



# Photograph #2





1. What is pictured in Photograph #2?
2. Describe the shape of the object pictured?
3. What are the colors of the object?
4. What color edged the top of the object?
5. Upon what is the object displayed?
6. Describe or sketch the design on the object?
7. What is the approximate size of the object?



1. What is pictured in Photograph #2? **Urn or pot**
2. Describe the shape of the object pictured? **Like a flowerpot**
3. What are the colors of the object? **Red, green, tan, blue, white brown**
4. What color edged the top of the object? **Blue**
5. Upon what is the object displayed? **A wooden chair**
6. Describe or sketch the design on the object? **See above**
7. What is the approximate size of the object? **~12"-14" wide, ~ 16" tall**

# Photograph #3





1. How many people are in Photograph #3?
2. What is the sex of the person in the picture?
3. What is the approximate age of the person in the photograph?
4. What color is the person's hair?
5. Does the person have long hair or short hair?
6. Does the person have any distinguishing features? Glasses?
7. Can you describe the person's clothing?
8. Is the person wearing any jewelry? If so, describe it.
9. Can you describe where the picture was taken?
10. Based on evidence in the photograph, can you form a hypothesis about the person's occupation?
11. Is it possible to identify the interests of the person based upon evidence in the room?
12. Do you think it is easier to answer questions about a photograph if a person is in the picture?



1. How many people are in Photograph #3? **One**
2. What is the sex of the person in the picture? **Female**
3. What is the approximate age of the person in the photograph? **55**
4. What color is the person's hair? **Blonde (dyed)**
5. Does the person have long hair or short hair? **Short**
6. Does the person have any distinguishing features? **Glasses? Yes**
7. Can you describe the person's clothing? **See photograph above for description**
8. Is the person wearing any jewelry? If so, describe it. **Gold necklace and earrings**
9. Can you describe where the picture was taken? **School room or office**
10. Based on evidence in the photograph, can you form a hypothesis about the person's occupation? **Teacher**
11. Is it possible to identify the interests of the person based upon evidence in the room? **Forensics and biology books imply this might be a science teacher**
12. Do you think it is easier to answer questions about a photograph if a person is in the picture? **Yes because we can recognize familiar surroundings and situations.**



# Summary

- Our ability to observe is affected by our environment and the natural filters of sensory information in our brains.
- The observations of witnesses to crimes can be faulty, but in some cases can be precise.
- The Innocence Project has found that up to 87 percent of their wrongful conviction cases resulted from flawed eyewitness testimony.



## Summary (continued)

- Police officers and crime-scene investigators are trained in good observation practices.
- Forensic scientists find, examine, photograph, document, and evaluate evidence from a crime scene and provide expert testimony to courts.





- <https://www.youtube.com/watch?v=RWO2UQ4MW7U> brain game day 1
- <https://www.youtube.com/watch?v=u-SBTRLoPuo> eyewitness testimony part 1
- Part II  
<https://www.youtube.com/watch?v=I4V6aoYuDcg>
- FF a clutch of witnesses  
<https://www.youtube.com/watch?v=CHeEDUKAy9A>
- FF material witness  
<https://www.youtube.com/watch?v=ppGWy2kCKjg>
- Rookie training csi web <http://forensics.rice.edu/>
- Lab safety  
<https://www.youtube.com/watch?v=VRWRmIEHr3A>