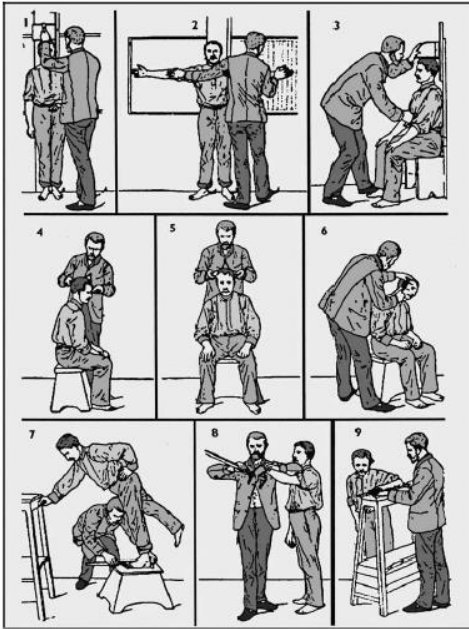


## **Bertillon Measurement System**

Prior to modern technologies, after a criminal was caught, there was absolutely no way to tell if the person had a history of criminal activity, or if he was wanted for crimes elsewhere. As a result, it was nearly impossible to enforce any laws regarding repeat offenders of any crime.

Today we use fingerprinting and DNA information, but before these were

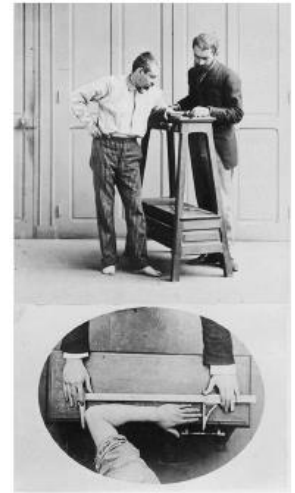


discovered as a means of identifying criminals, the Bertillon system of measurement (also known as **Bertillonage**) was considered the most reliable means of identifying an individual person. Named after its creator during the second half of the 19<sup>th</sup> century, **Alphonse Bertillon** was a police department file clerk in Paris; he developed this complex method of measuring and categorizing individuals.

The roots of the Bertillon system are in the field of **anthropometry**, a system of precise body measurements. The thought being that no one individual would have the same combination of body measurements as another, or at least the possibility would be negligible. Bertillon had calculated that the probability of two people having precisely the same 11 measurements was one in four million. A criminal might wear a fake beard or give a phony name, but Bertillon noted that "subjects cannot exercise the slightest

influence on their cranium diameters."

Bertillon's system of identification included three categories of information: body measurements, morphological descriptions, and a description of any marks on the body such as birthmarks, scars, and tattoos. He developed a filing system that put a person in one of three main categories based upon head size. He then subdivided them further according to the dimensions of the left middle finger, and so on down the line, using 11 different bodily measurements. It may seem archaic now but before the adoption of fingerprinting early in the 20<sup>th</sup> century, this system was at the forefront of evidence collection and recording keeping protocols. In French courts, where suspects were guilty until proven otherwise, proof of a past criminal record was a powerful tool for winning convictions, and Bertillon's star rose. In 1892 he was appointed director of the newly formed Bureau of Identification of the Paris police.



**Alphonse Bertillon**

### **Pre-Lab Questions:**

1. What are the two main methods of criminal identification today?
2. What is anthropometry?
3. What is the probability of two people having precisely the same 11 measurements?
4. Bertillon's system of identification included what three categories of information?

**Objectives:**

- ❑ Collect various anthropometric data in metric units
- ❑ Compare and analyze different sets of measurements
- ❑ List two sources of experimental error when using measured data
- ❑ Understand Bertillonage and its importance in Forensic History

**Directions:** Working with a partner or small group, take each other’s measurements and complete your own anthropometry sheet on the next page. **Use metric!** (1 inch = 2.54 cm)

- Use a meter stick, ruler, and calipers for the following measurements.
- Measurements must be made in centimeters (cm) or millimeters (mm).
- Numbers should be written to the nearest hundredth when possible.

<b>Bureau of Criminal Investigation</b>				No.			
Police Department			City of <span style="color: red;">[insert city here]</span>				
<b>Bertillon Measurements</b>							
Height (cm)	Head Length (cm)	Left Foot (cm)		Additional Observations (birth marks, tattoos, scars, etc.):			
Outer Arms (cm)	Head Width (cm)	Left Middle Finger (mm)					
Trunk (cm)	Right Cheek (mm)	Left Little Finger (mm)					
<b>* Measurements should be taken to the nearest tenth!</b>	Right Ear (mm)	Left Forearm (cm)					
Name							
Alias (Nickname)			Crime				
Age	Height Ft                  in.	Weight (optional for lab)				Build	
Hair Color	Eye Color	Complexion				Facial Hair	
Date and City of Birth			Occupation				
Date of Arrest			Officer (who took your measurements?)				

**How to take your measurements:**

- ❑ **Height-** Take off your shoes. Stand against a wall and use a flat surface to mark the top of your head. Measure to that mark. Record measurement in both cm (top of card) and feet/inches (bottom of card).

- ❑ **Outer arm stretch-** Hold your arms straight out to your sides. Have your group measure from your right middle fingertip to your left middle fingertip. Helpful if you use string then measure the string.
- ❑ **Trunk-** Sit in a chair. Measure from the chair to the top of your head. Do not slouch.
- ❑ **Head length-** Measure from the back of your head to front of your head →
- ❑ **Head width-** Measure the width of your head from above your left ear to above your right ear.
- ❑ **Right cheek-** Measure from the side of your right nostril to the side of your face.
- ❑ **Right ear-** Measure from the top of your right ear to the bottom
- ❑ **Left foot-** Take off your shoes (socks are ok for this activity). Measure from the back of your foot to the front of your foot (longest toe).
- ❑ **Left middle finger-** Bend finger so that it is at a 90 degree angle perpendicular to your hand, while still keeping finger straight. Measure from behind the knuckle to the tip of the left middle finger.
- ❑ **Left little finger-** Bend finger so that it is at a 90 degree angle perpendicular to your hand, while still keeping finger straight. Measure from behind the knuckle to the tip of the left little finger.
- ❑ **Left forearm-** Bend left arm to a 90 degree angle. Measure from the back of your elbow to the tips of your fingers.
- ❑ Complete the remainder of the bio geographical and morphological descriptions. Ask your teacher if you need help or don't know what something means.
- ❑ Compare your data to others in the class. Does anyone have one or more measurements the same as you?



### Post-Lab Questions:

1. What is the Bertillon System of Measurement? Answer in your own words.
2. Is the Bertillon System of Measurement effective? Why or why not?
3. Find someone in the class you feel is close to your overall size. Compare your data to their data.
  - a. What is their name?
  - b. What measurements did you have that were similar (within 5 mm or .5 cm of each other)?
  - c. What measurements did you have that were different (over 5 mm or .5 cm apart)?

Name two factors that could cause error in the measurements taken.

5. Would you consider this the best method of human classification? Support your answer with at least two reasons.
6. Read the scenario below. Was Will West the same person as William West? Use evidence to support your answer.