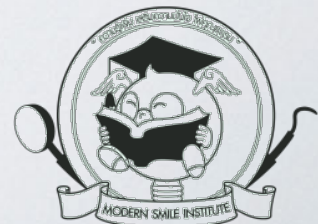
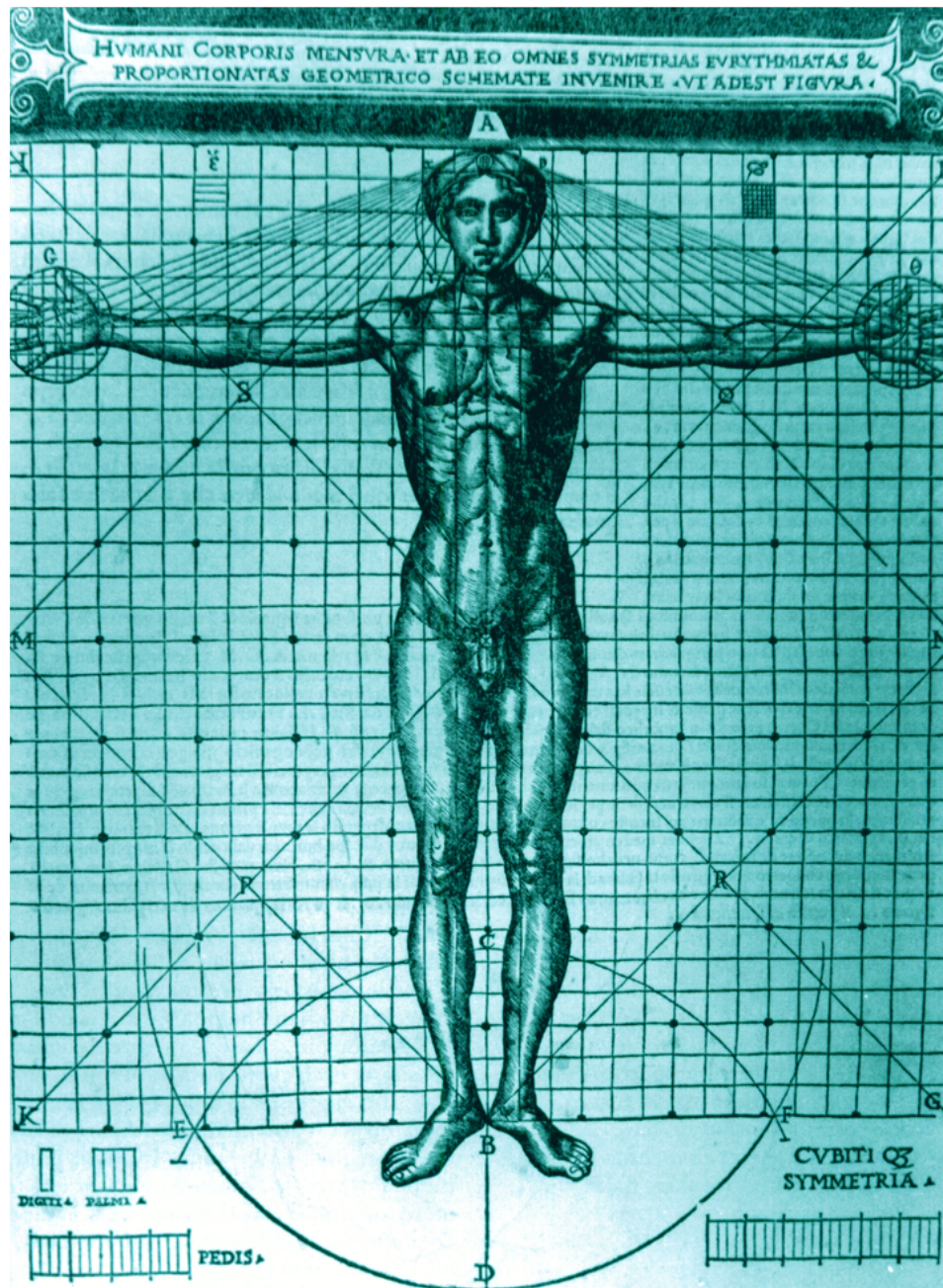


# History of Cephalometry and its Development

## Human Form Measurement

Who needs this kind of information ?

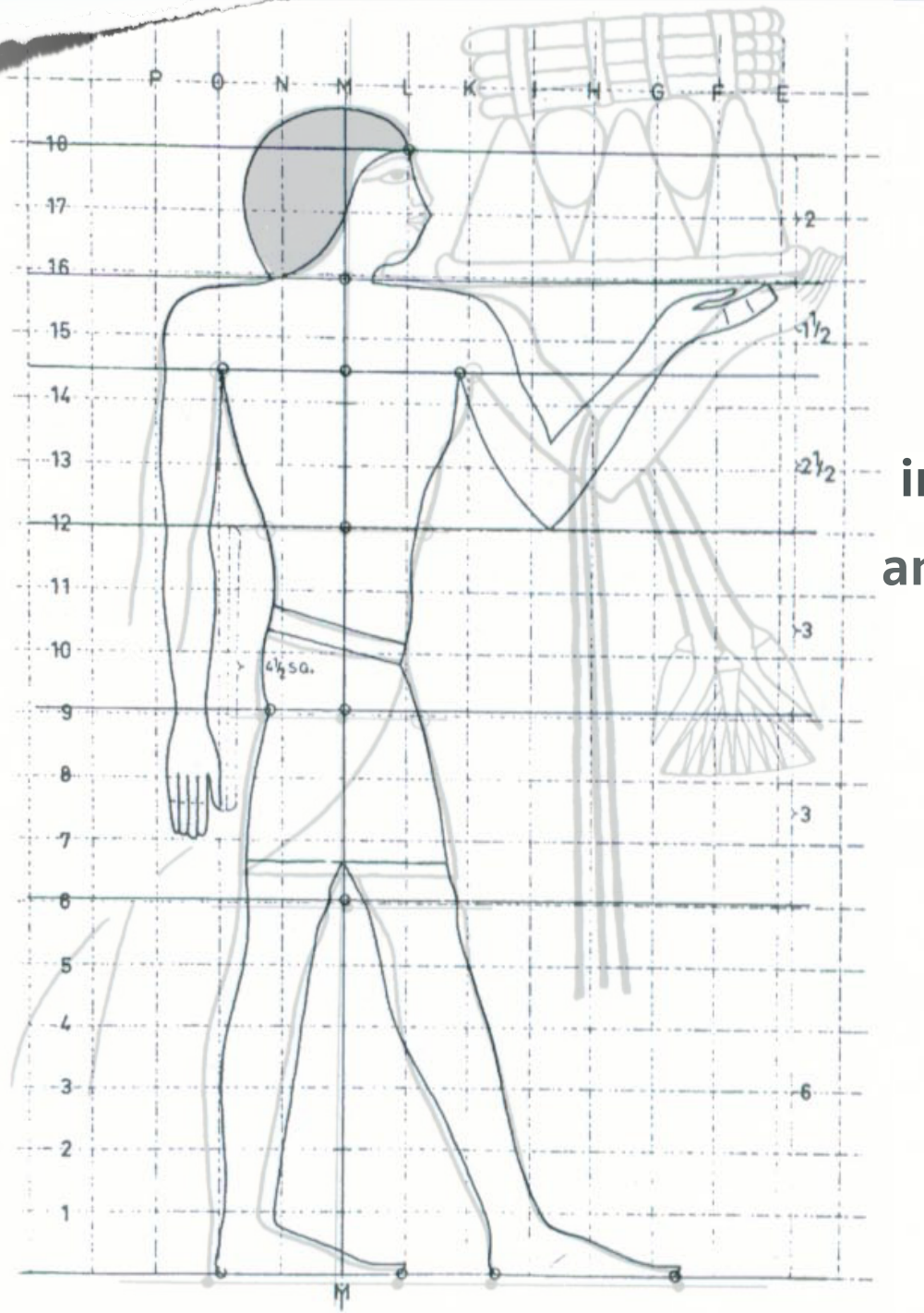
- Sculpture , Drawing, Painting
- Plastic Surgeon
- Antiquity
- Physical makeup
- Orthodontist



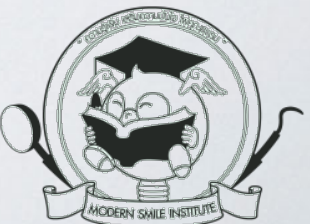


# Early history-The canons

Egyptians

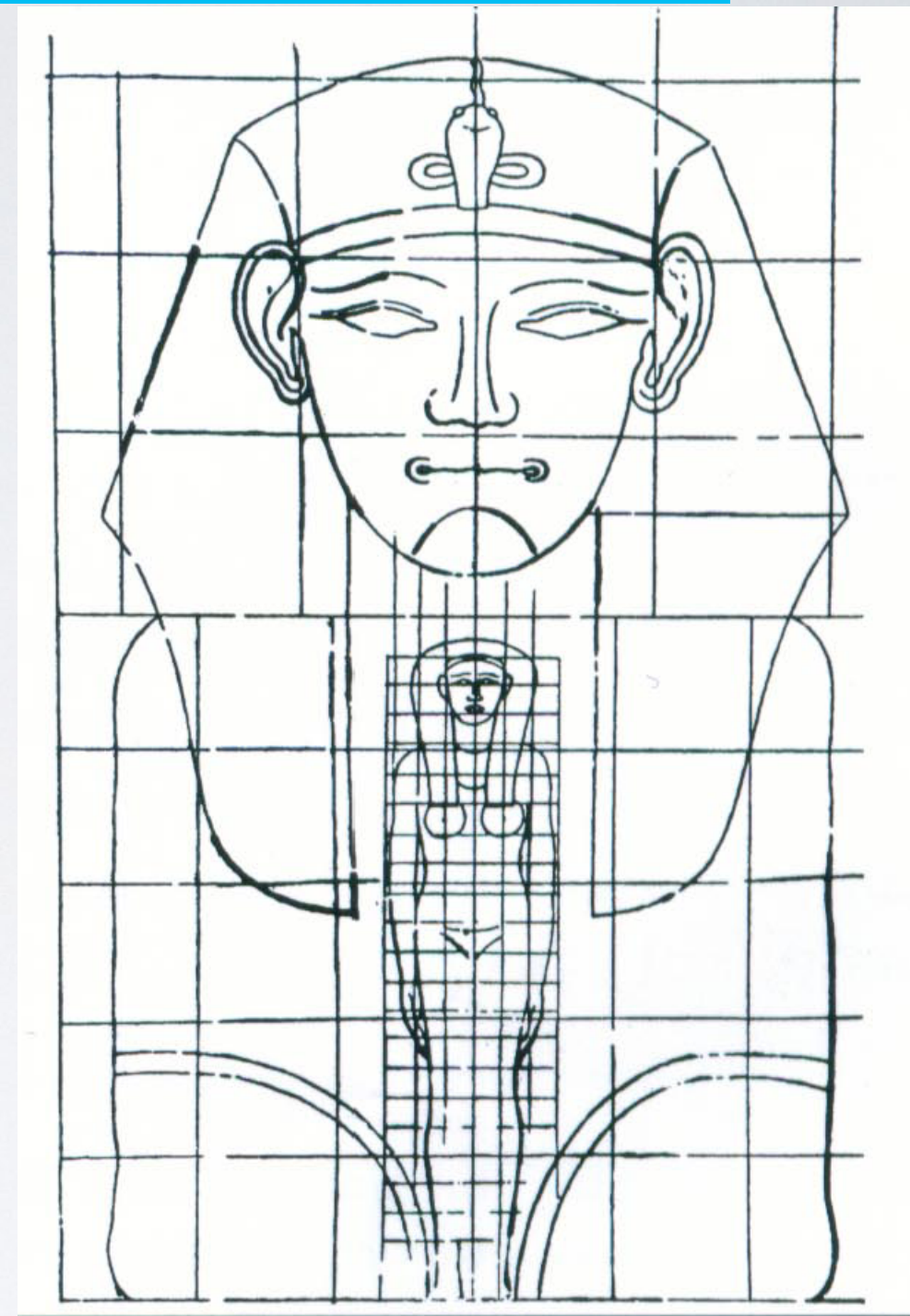
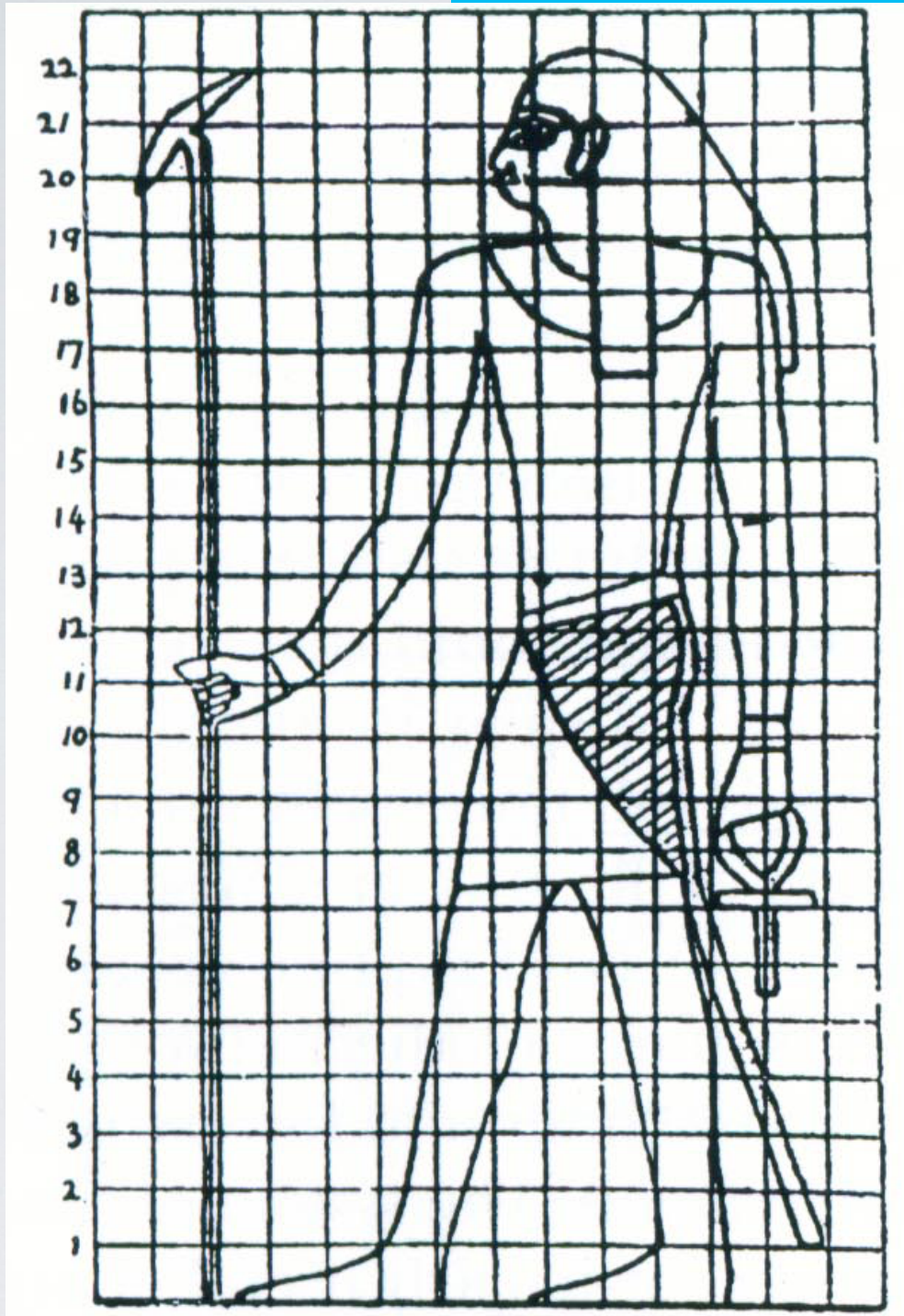


intermediate  
anatomic level





# Later canon of Egyptian

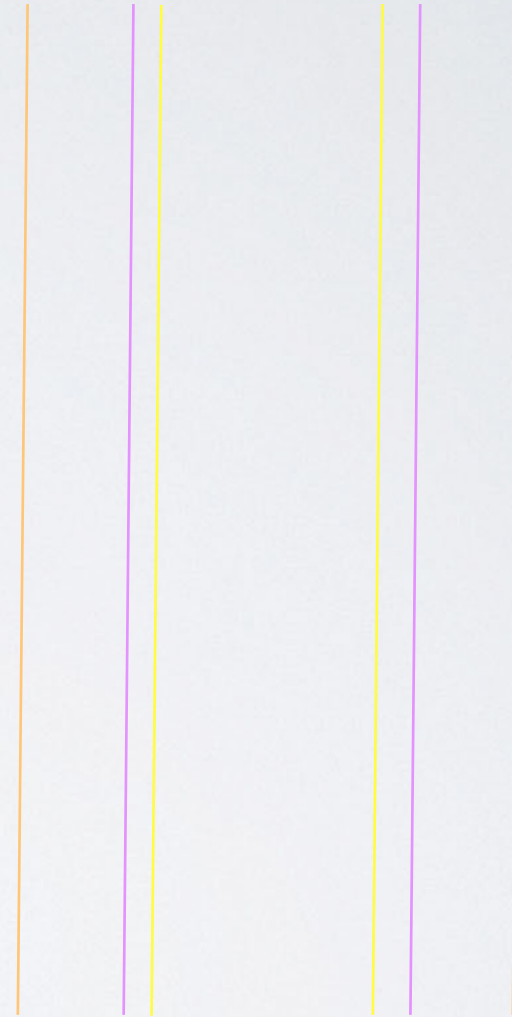
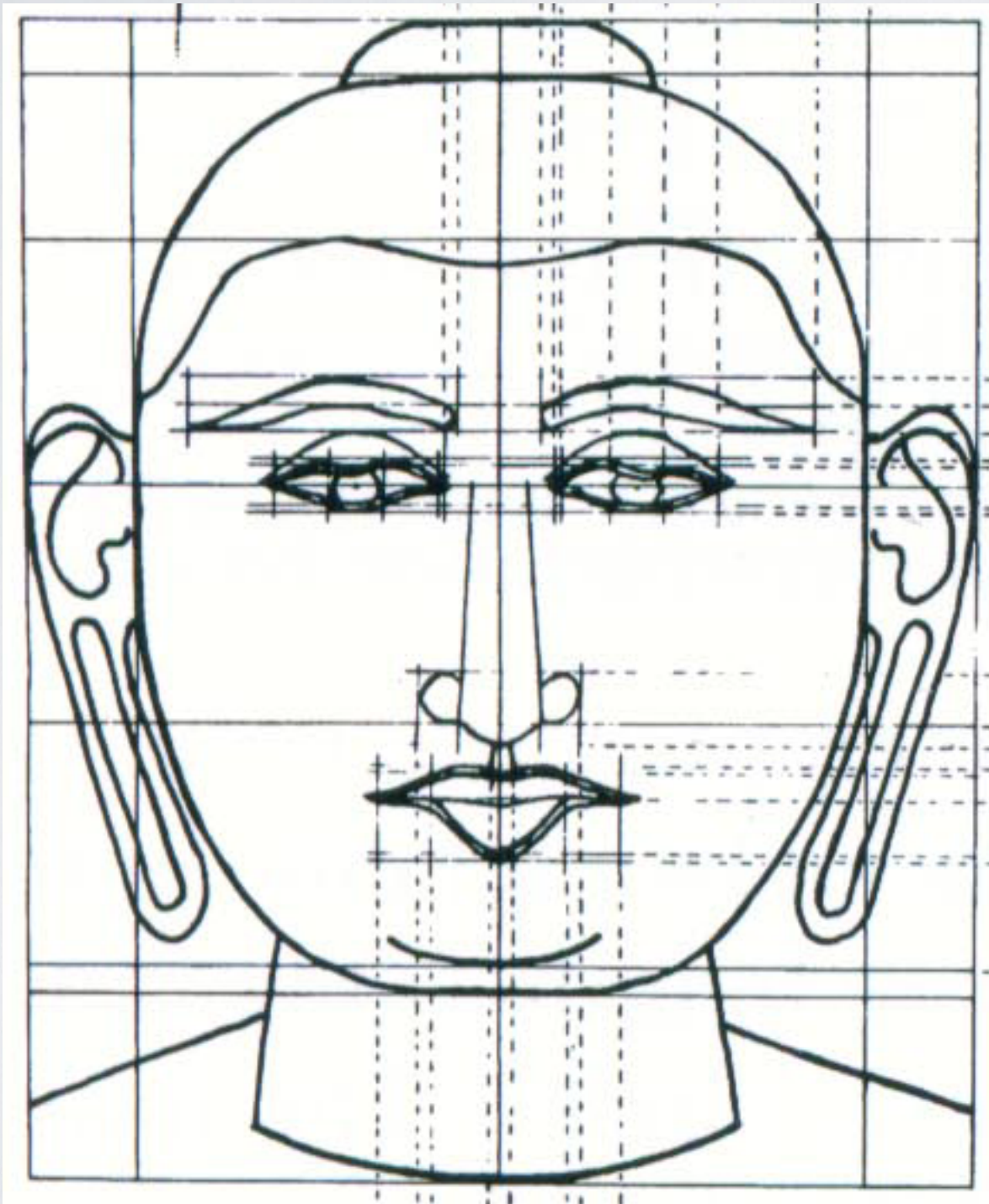


the grid system of the male body consisted of 22 squares,

The system of proportionate relationships was used for making sculptures from a block of stone or marble after it had been suitably planed<sup>4</sup>

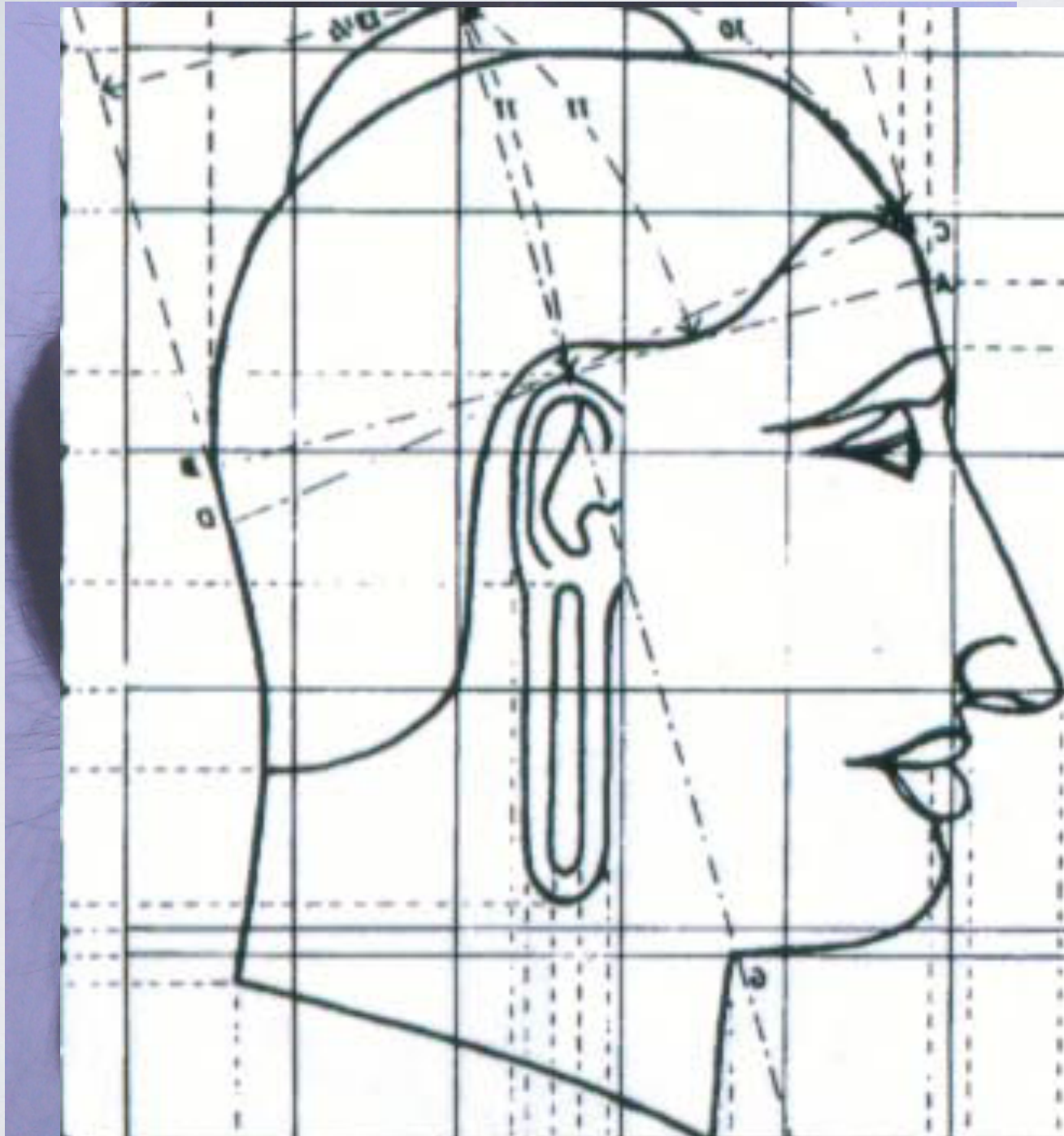


# Indian (Frontal)





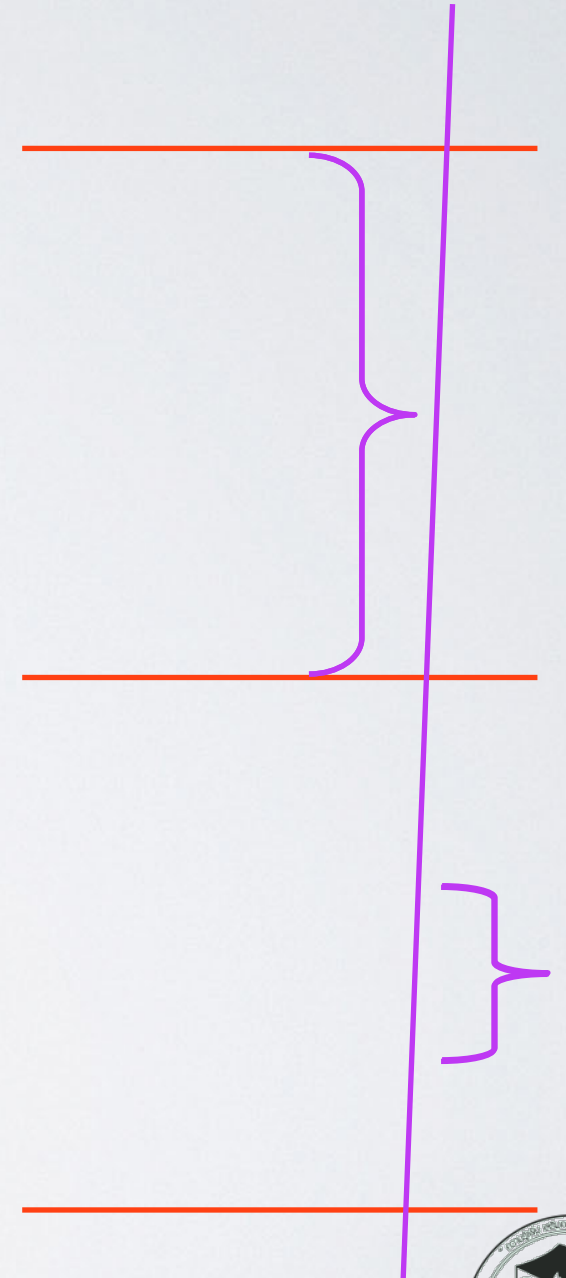
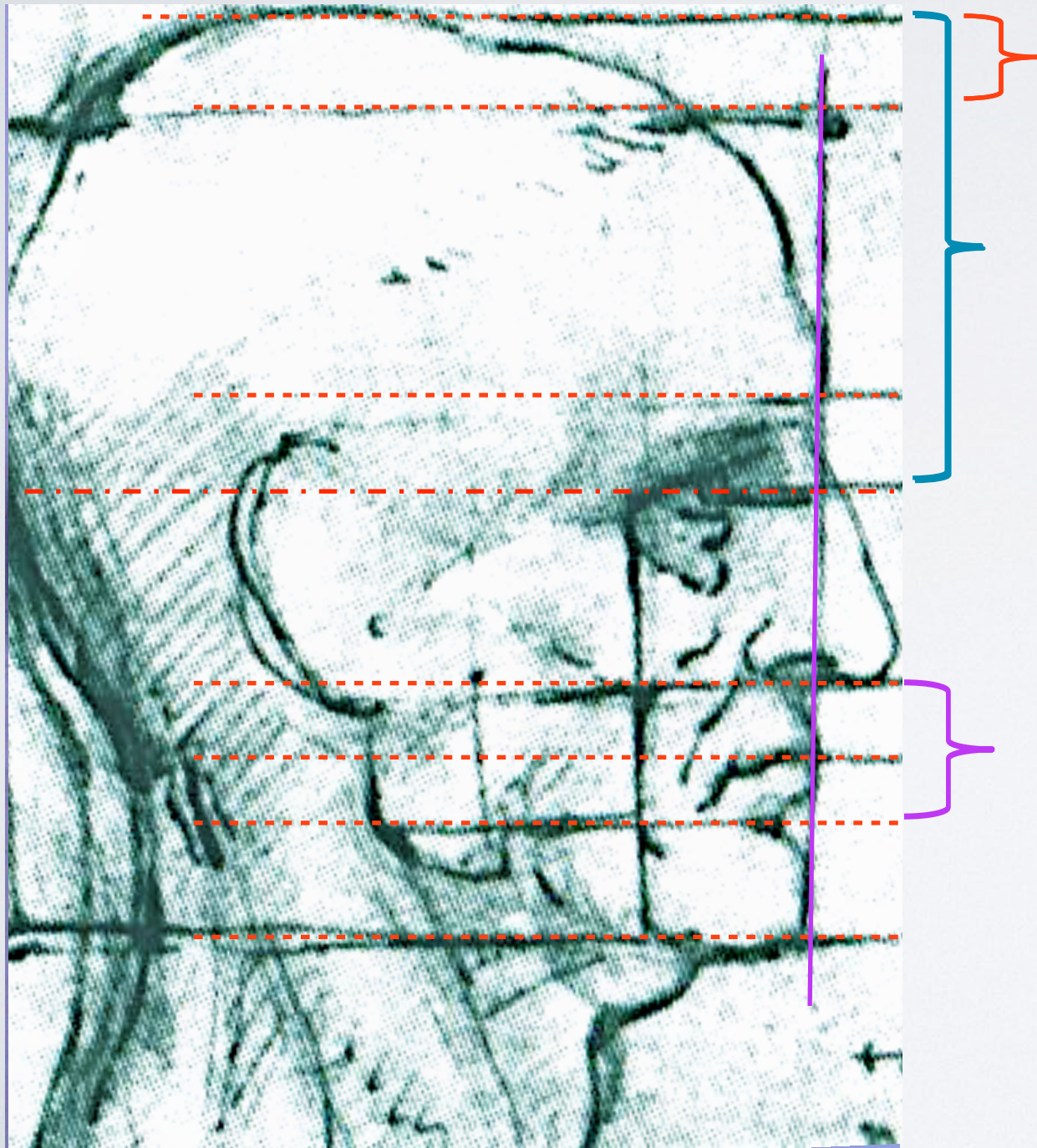
# Indian (Lateral)





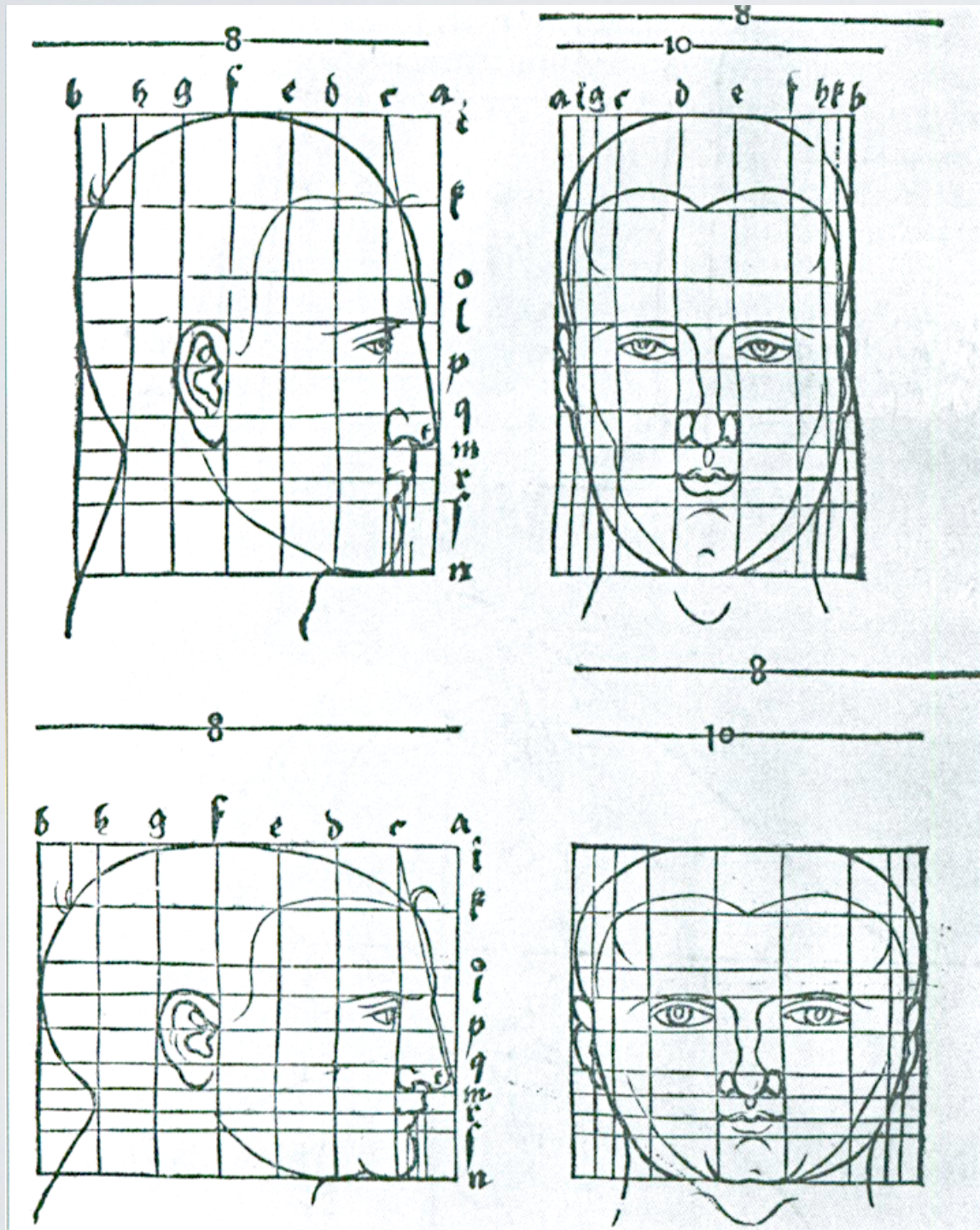
# Leonardo da Vinci (1459-1519)

Facial Proportion (vertical) posed in "natural head position"

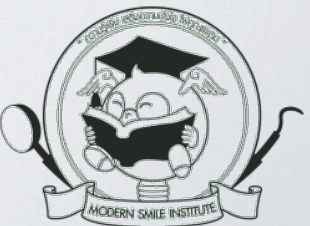




# Durer(1471-1528)

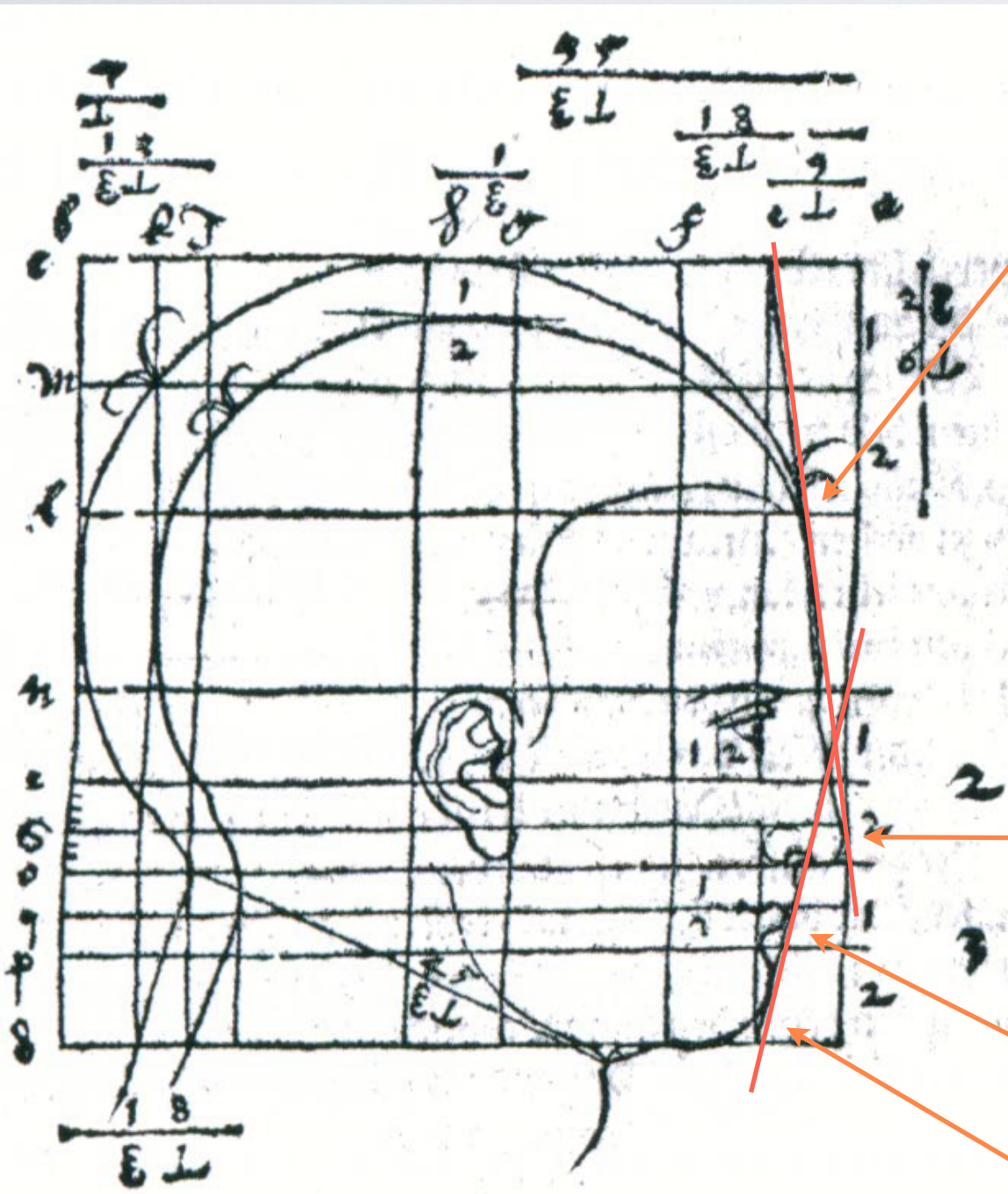


The human proportions are unequalled





# Durer's Facial Angle



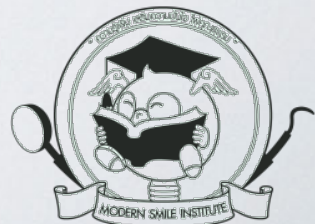
forehead (N')

A line draw a tangent to the forehead and nose and a line dawn tangent to the chin and the lower lip

nose tip

lower lip

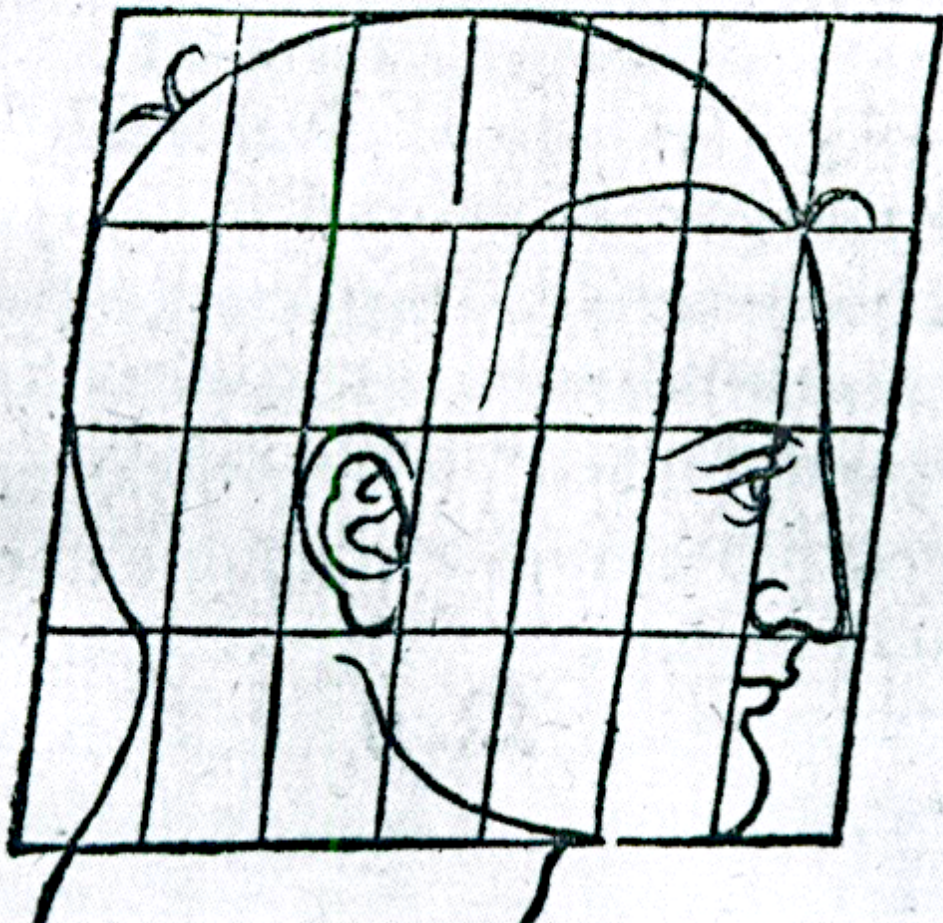
chin (Pog)





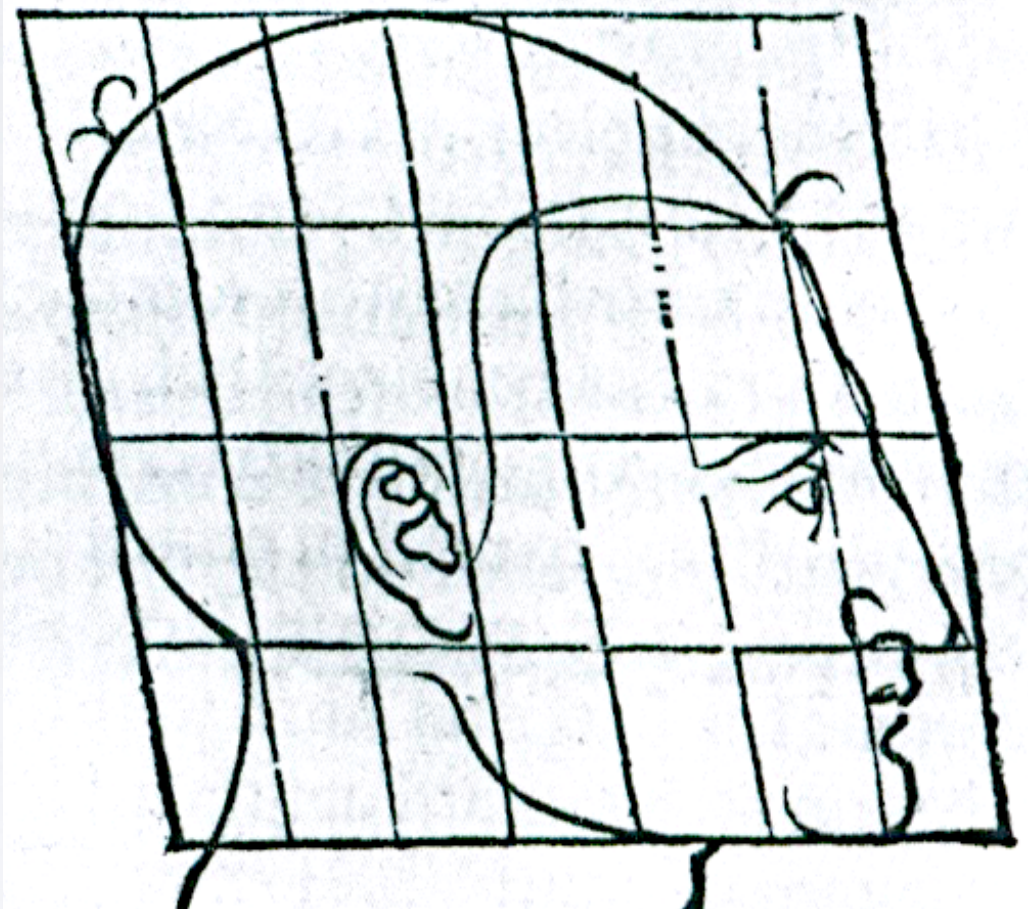
# DURER'S FOREHEAD-CHIN

Ein für sich hangent angefichte

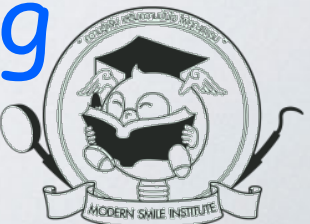


Backward Hanging  
(Retrognathic, Orthognathic)

Ein hinder sich hangent angeficht.

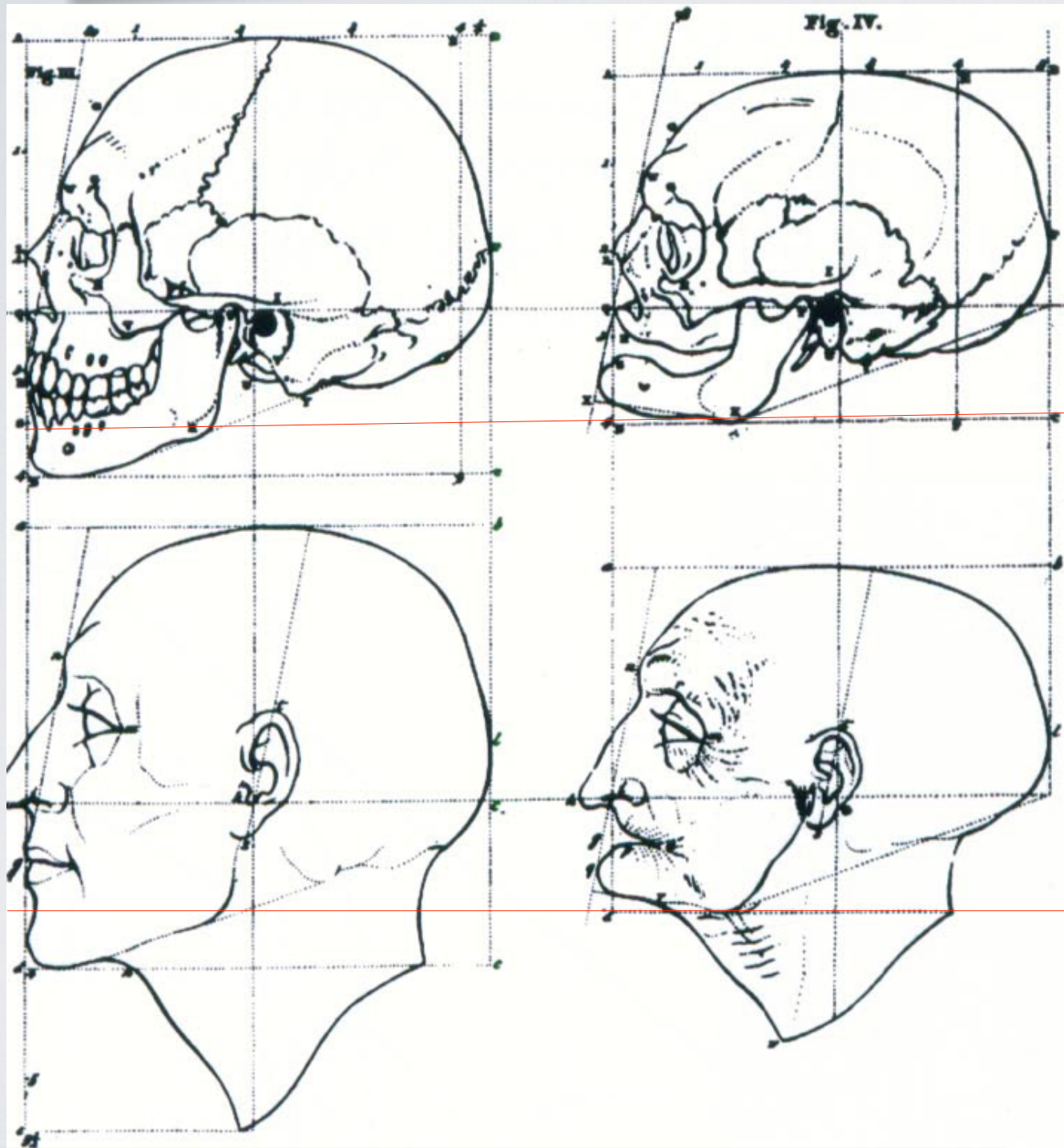
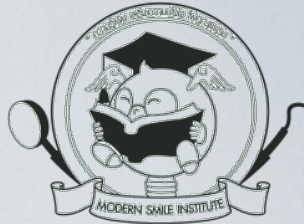


Forward Hanging  
(Prognathic)





# Reference Line & its development



## Campers horizontal line (1722-1789)

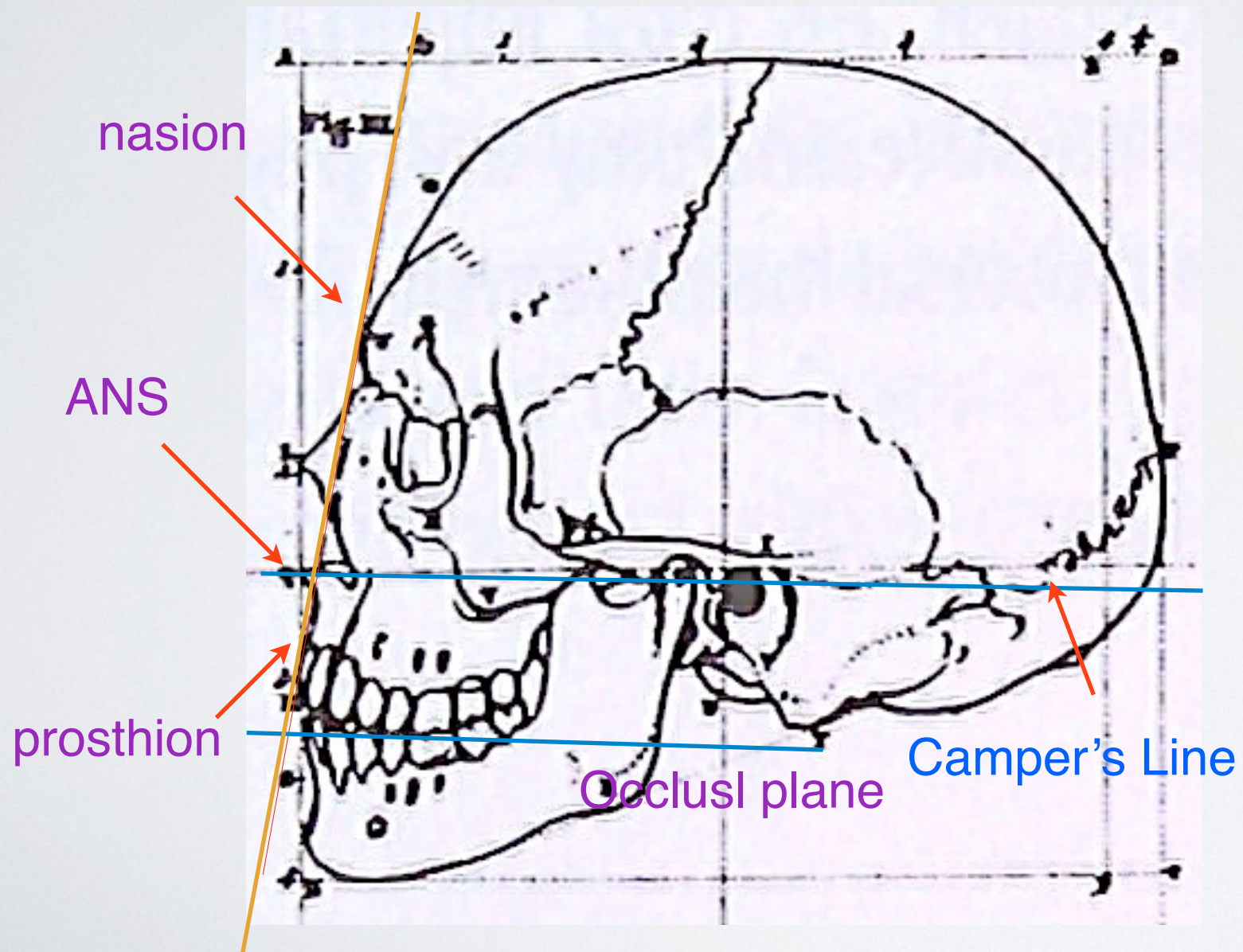
- Middle of the porus acoticus to a point below the nose (ANS) Parallel to **occlusal plane**
- The horizontal is still used in prosthodontics to estimate the cant of the occlusal plane for edentulous patients, because the "average" occlusal plane is parallel to it.

focused on comparative anatomy and physical anthropology.



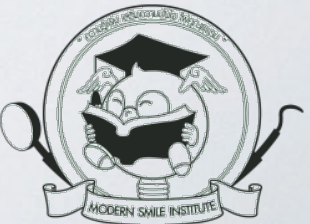
## CAMPER'S FACIAL ANGLE (FOREHEAD-MAXILLA)

PETRUS CAMPER (1722-1789)



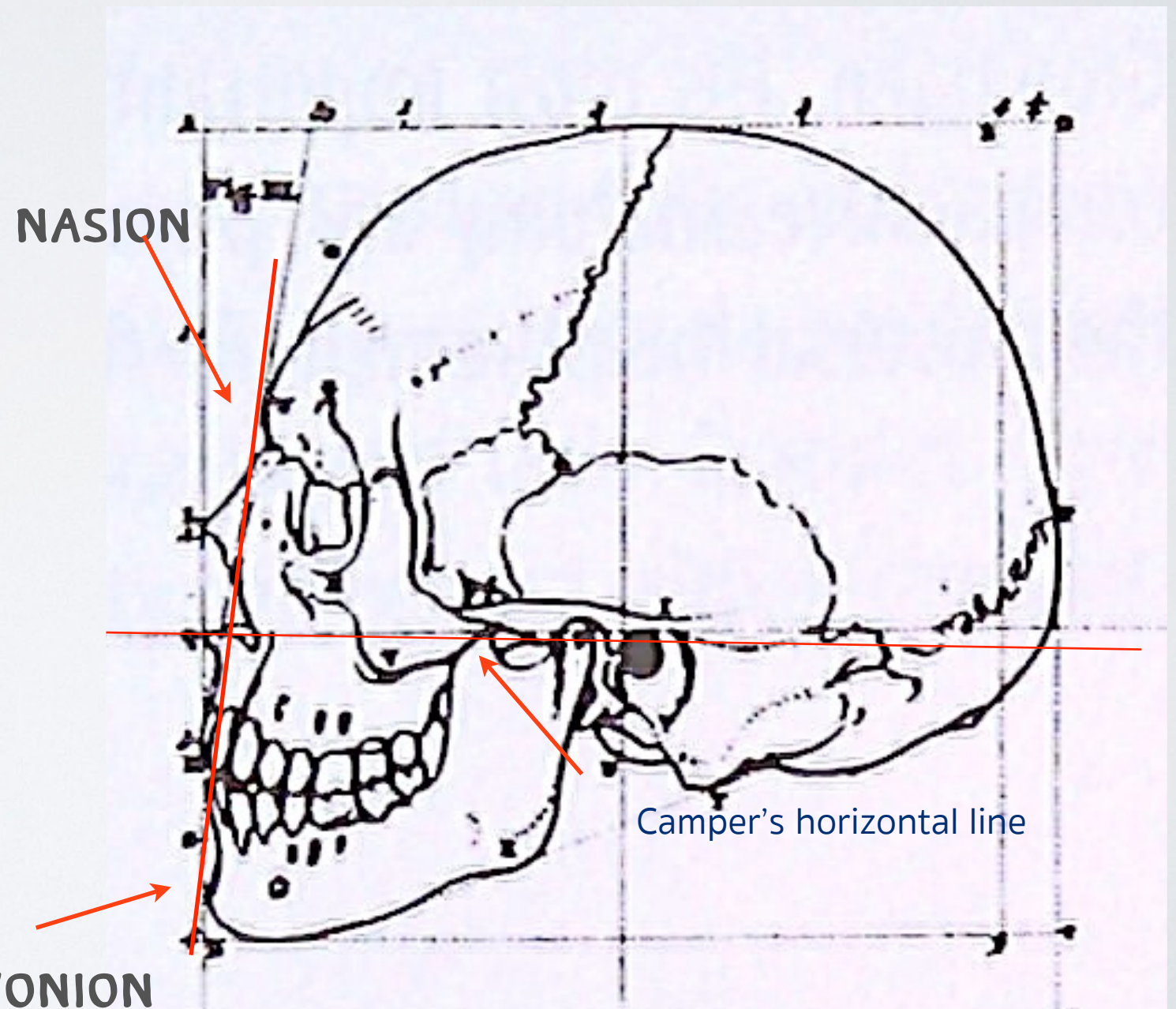
The horizontal line-the  
tangent nasion-prosthion

- the angle between a  
horizontal line and the line  
nasion-prosthion
- prognathic
- orthognathic

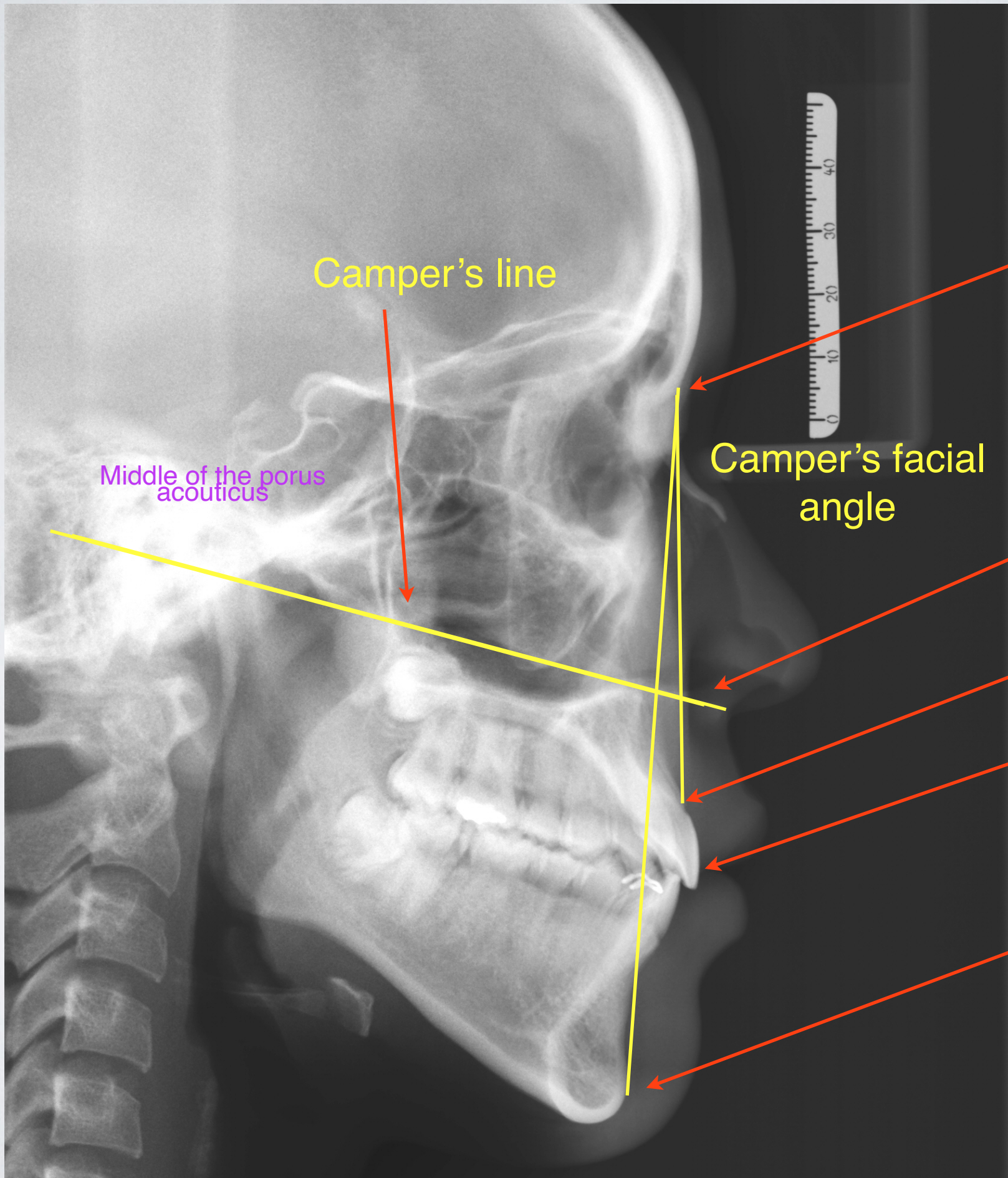




# CAMPER'S FACIAL ANGLE (FOREHEAD-CHIN)







Camper's line

Middle of the porus acouticus

Camper's facial angle

nasion

ANS

prosthion

Occlusal plane

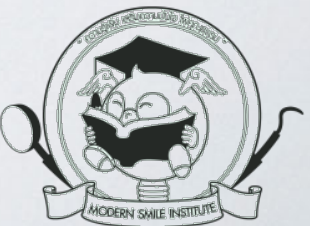
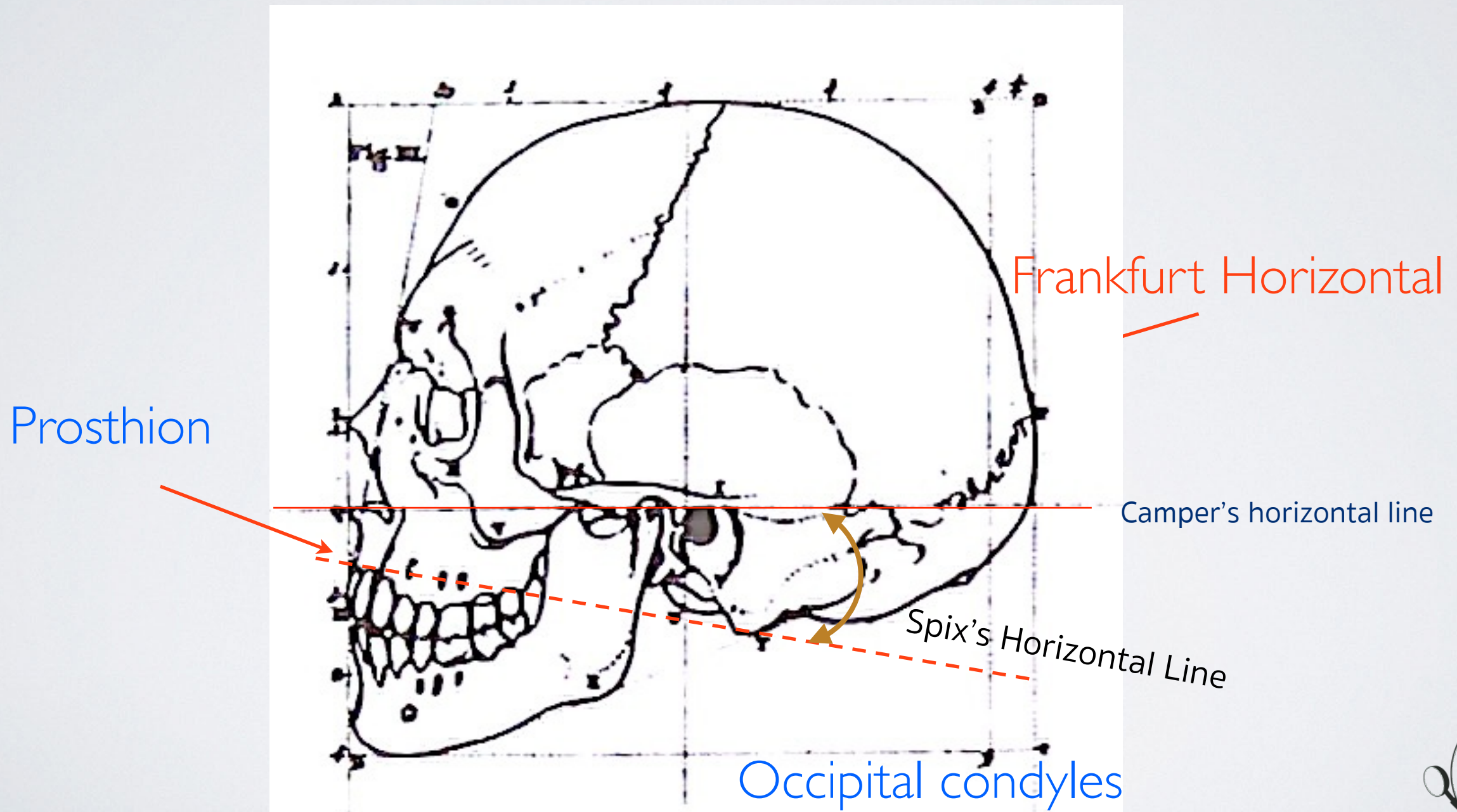
Pogonion





# Spix (1815)

## Spix's Horizontal Line

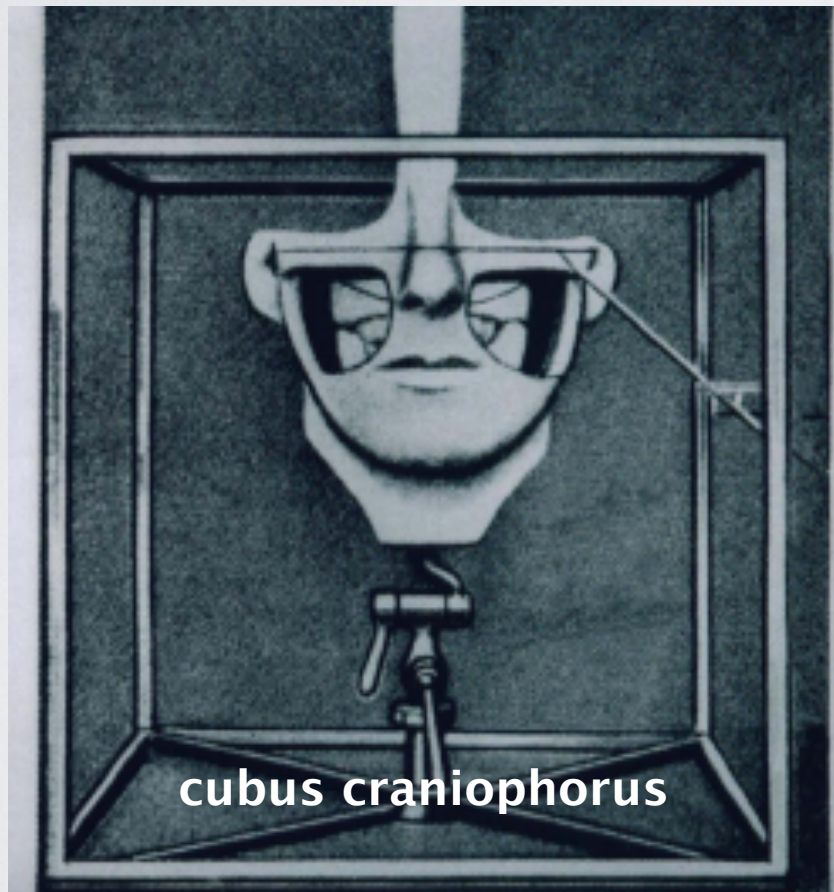




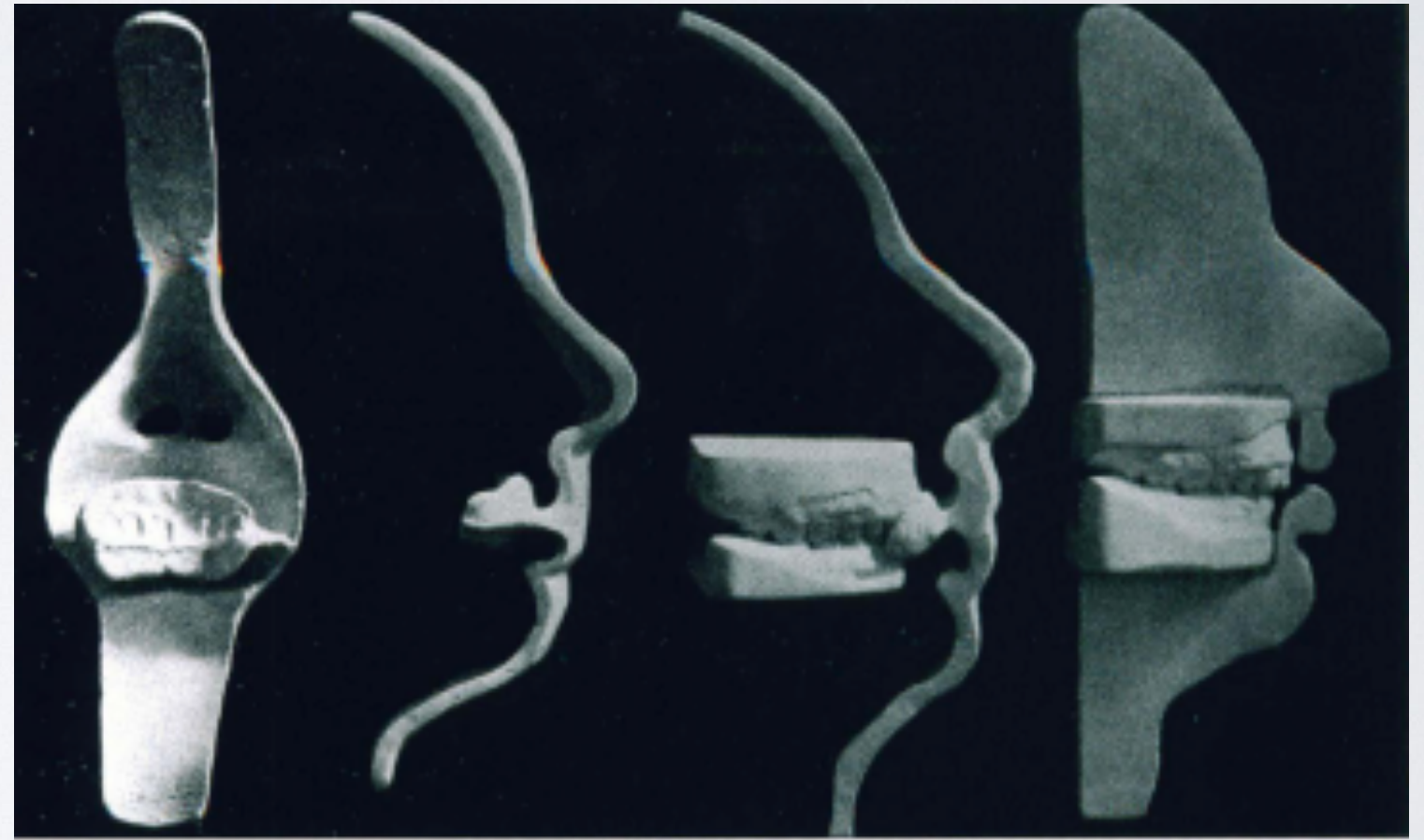
# Standardized Head Radiology & its development



## Van Loon (1915)



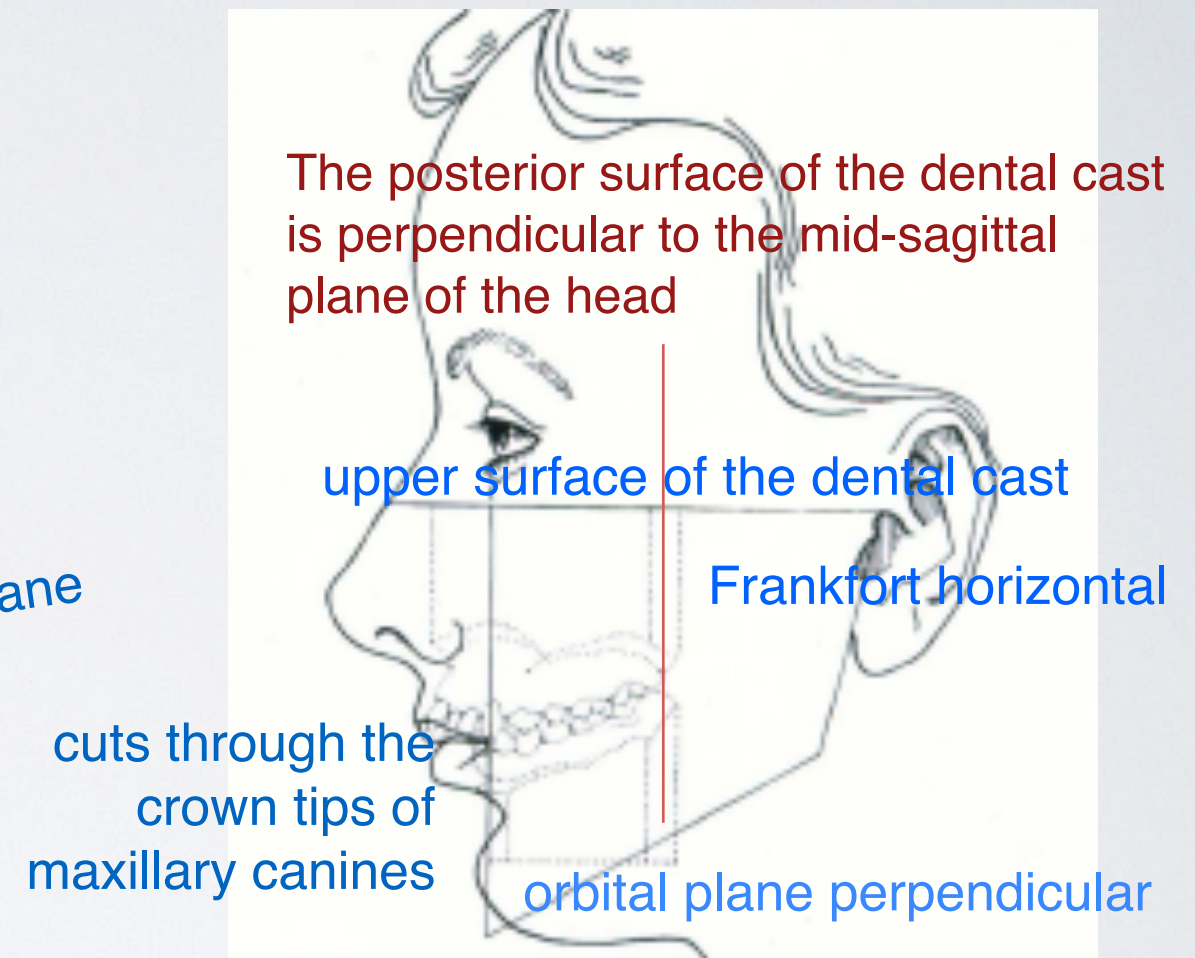
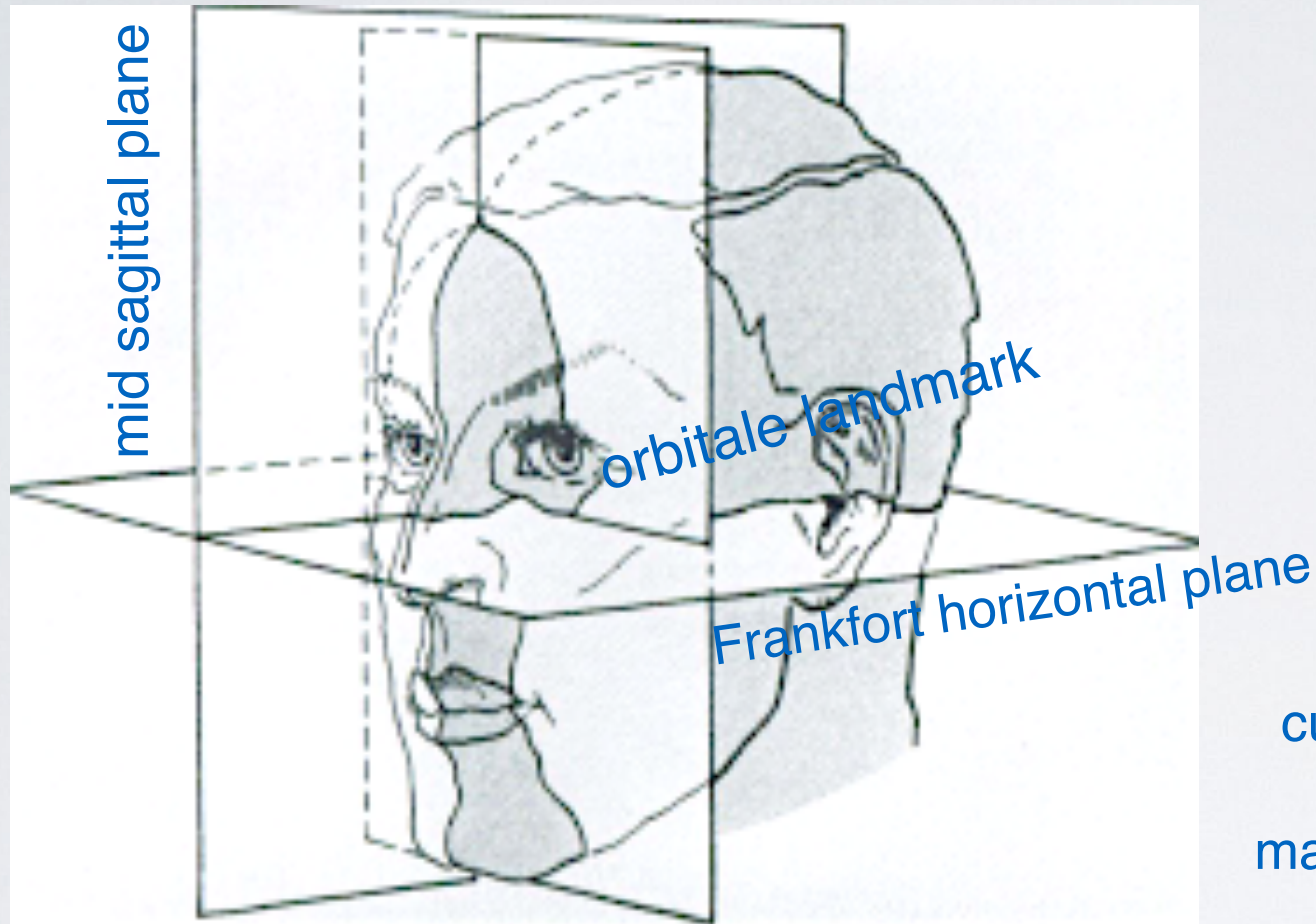
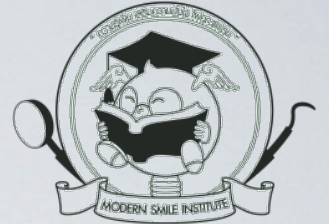
Facial mask of patient that contained the dental cast in exact relation to the face



a sectional plaster impression of the midface from glabella, to the nose, and covered the labial surfaces of the maxillary incisors,



# Paul W. Simon (1922)



The three dimensional relation of the dentition to the face was determined to the mid sagittal plane, the Frankfort horizontal plane, and a plane through the left orbitale landmark.

The trimming of the dental casts according to the proper relation and distance of the occlusal plane to the Frankfort plane.



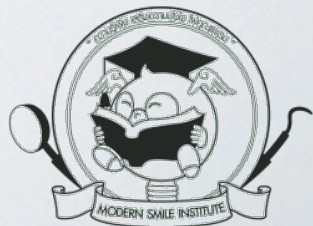
# The Advent of Standardised Head Radiology

1922, Pacini

a large fixed distance from the x-ray source to the cassette. The head of the subject, placed adjacent to a standard holding the cassette,

1931, Broadbent  
and Hofrath

-a constant focal-spot-to-object distance  
-a constant object-to-film distance.  
(5 feet in the US and originally 5 meters in Europe) ,

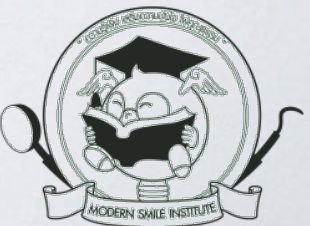








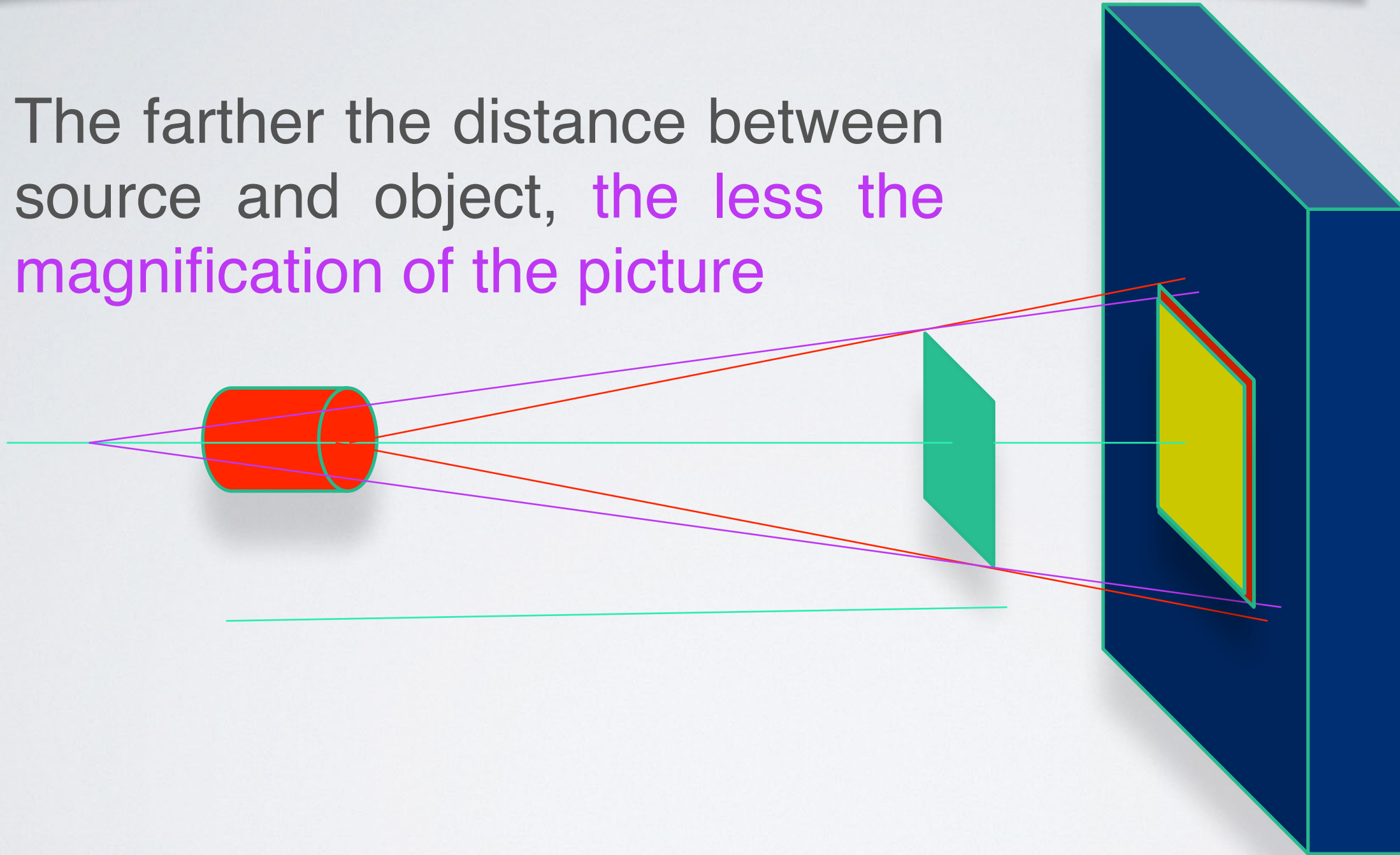
Why do we have to use specific cephalogram unit ?





# Factors affecting cephalometric radiographs

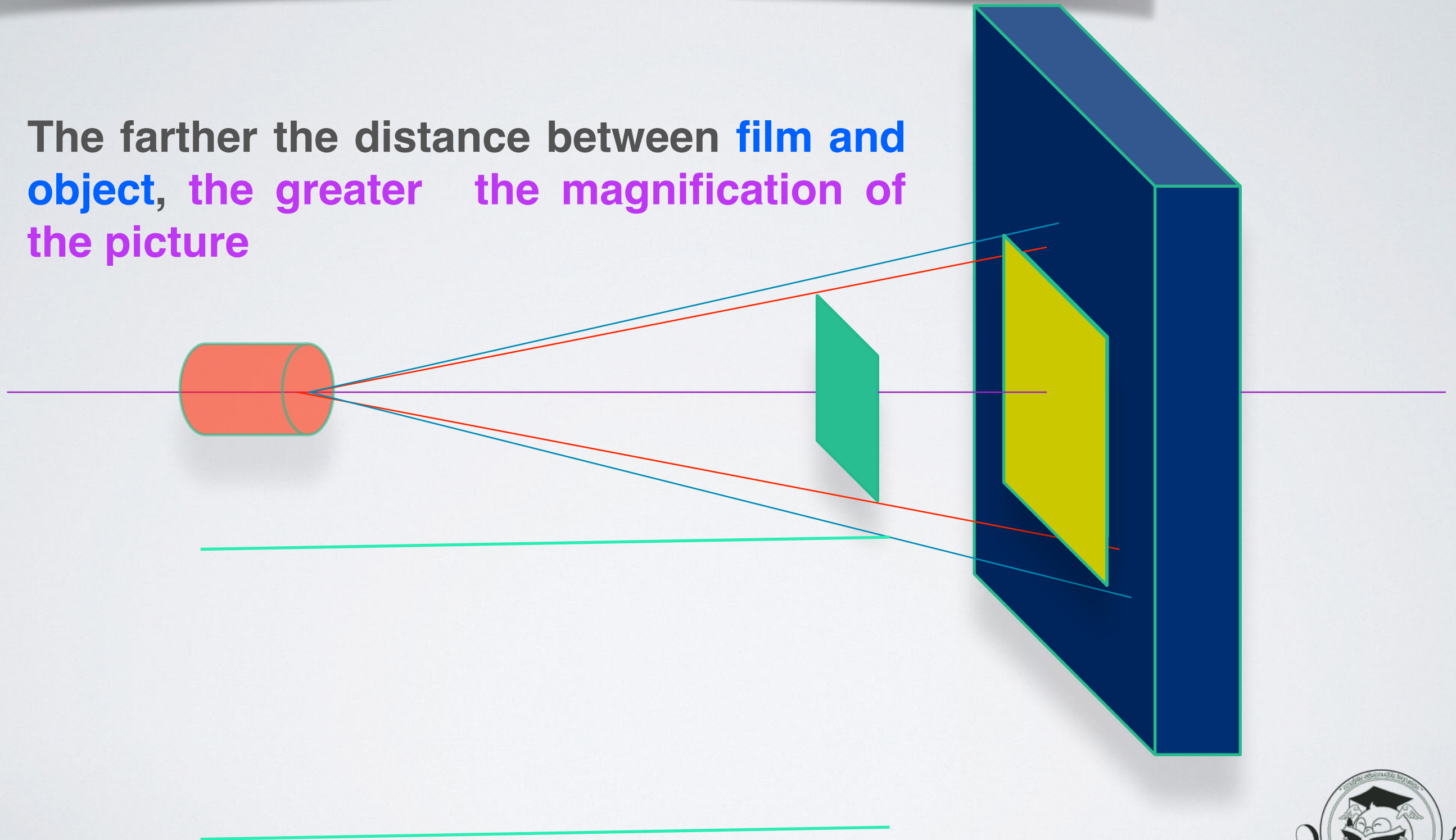
The farther the distance between source and object, the less the magnification of the picture





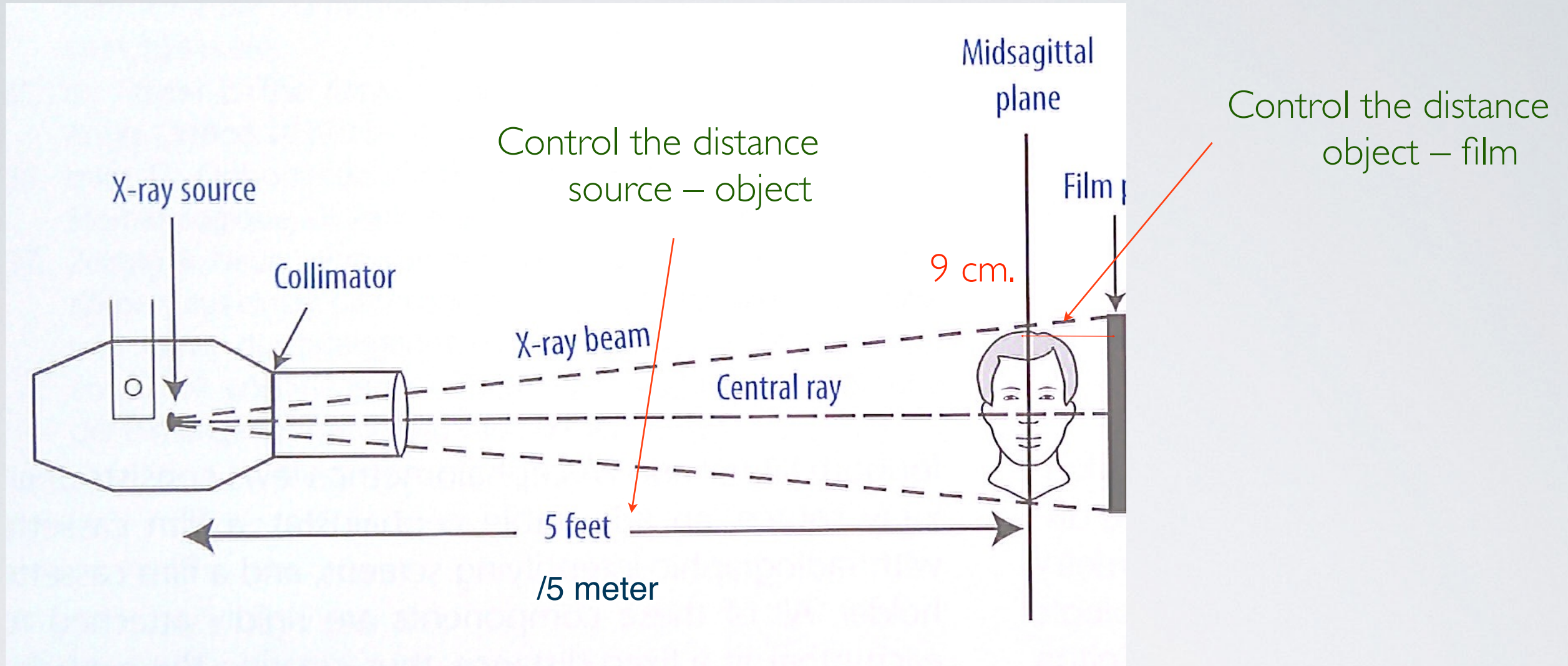
# Factors affecting cephalometric radiographs

The farther the distance between **film and object**, the **greater** the magnification of the picture





# THE MAGNIFICATION OF THE PICTURE



is inevitable but the amount of magnification can be controllable by compensating the magnified picture by calculation

