

# Visual Imaging in the Electronic Age

Distorted Perspective Geometries,  
Hidden Images and Illusionism

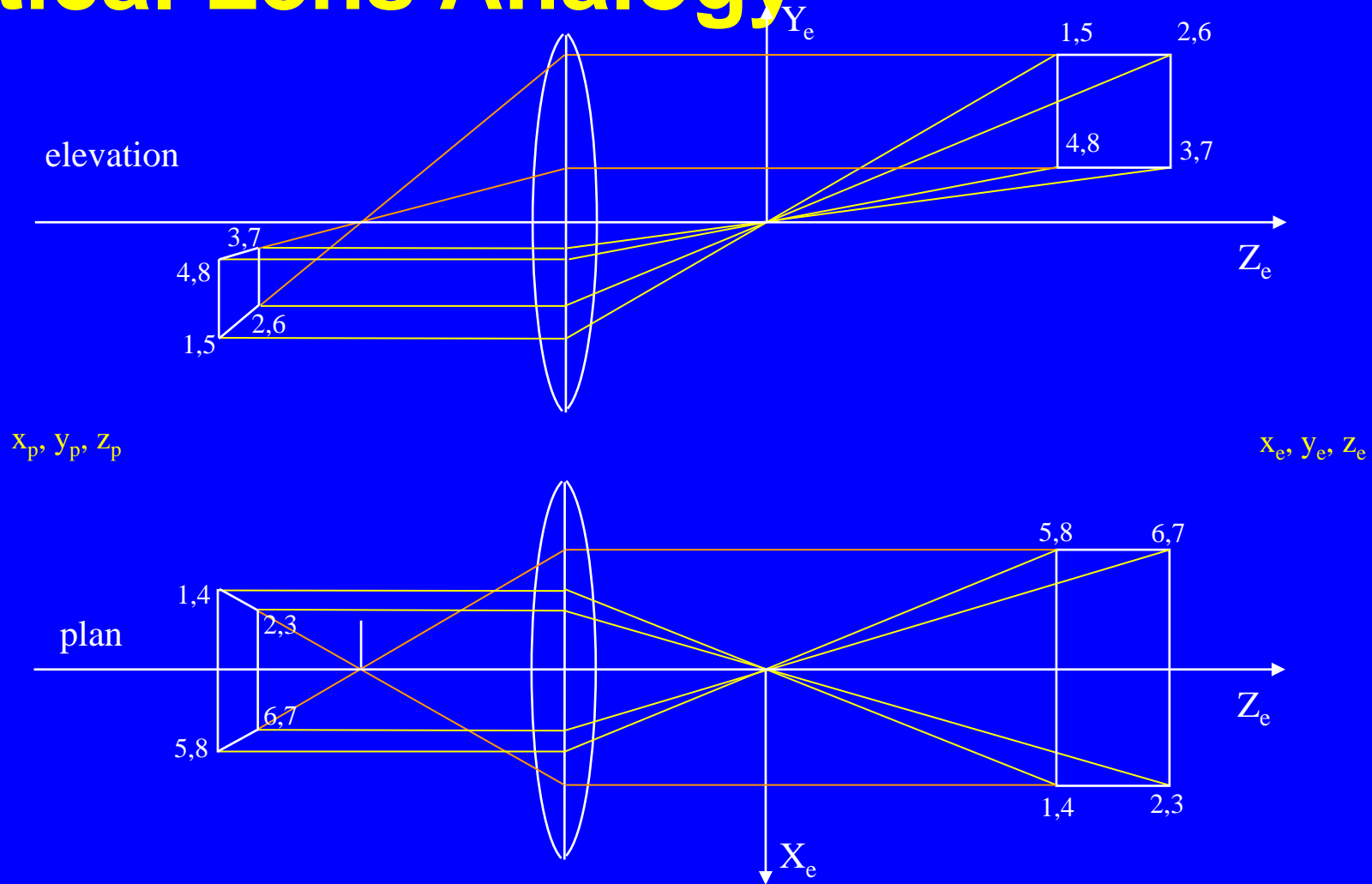
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Lecture # 4

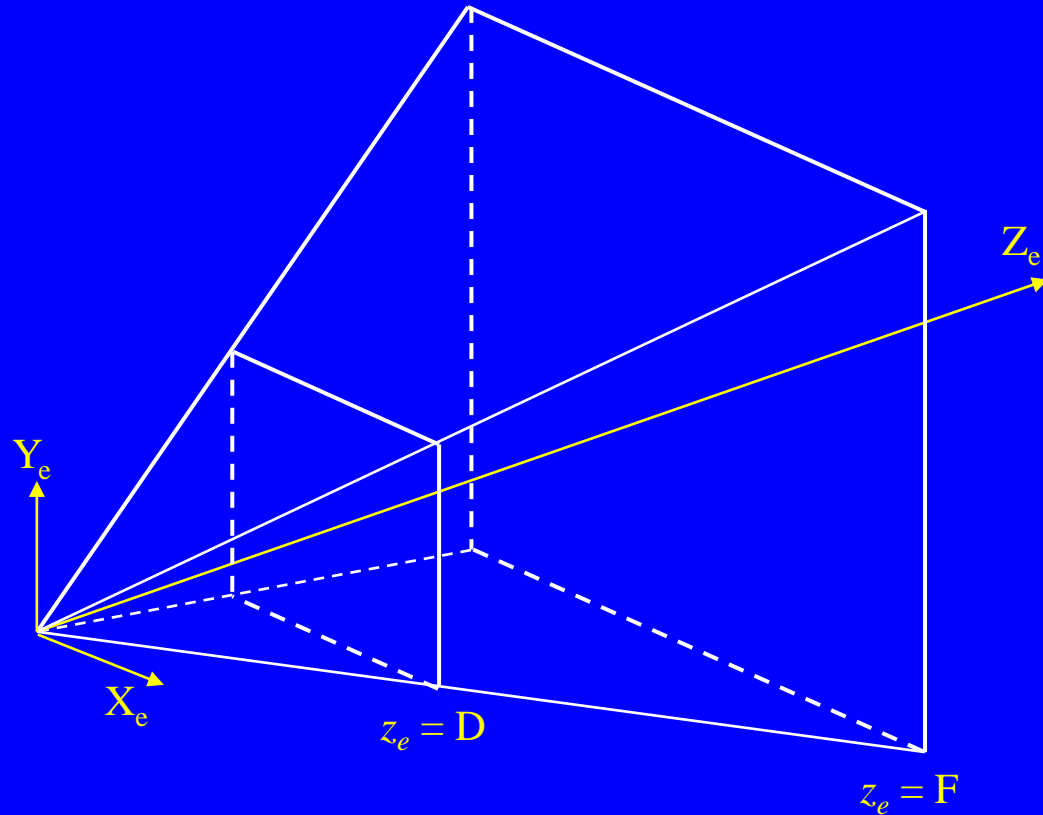
September 15, 2020

Prof. Donald P. Greenberg

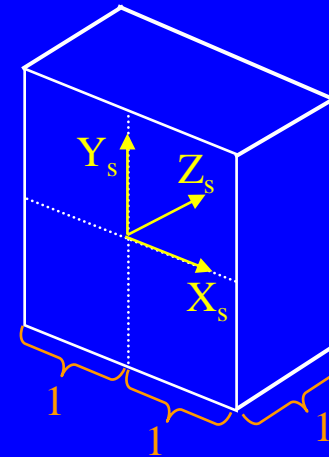
# Optical Lens Analogy



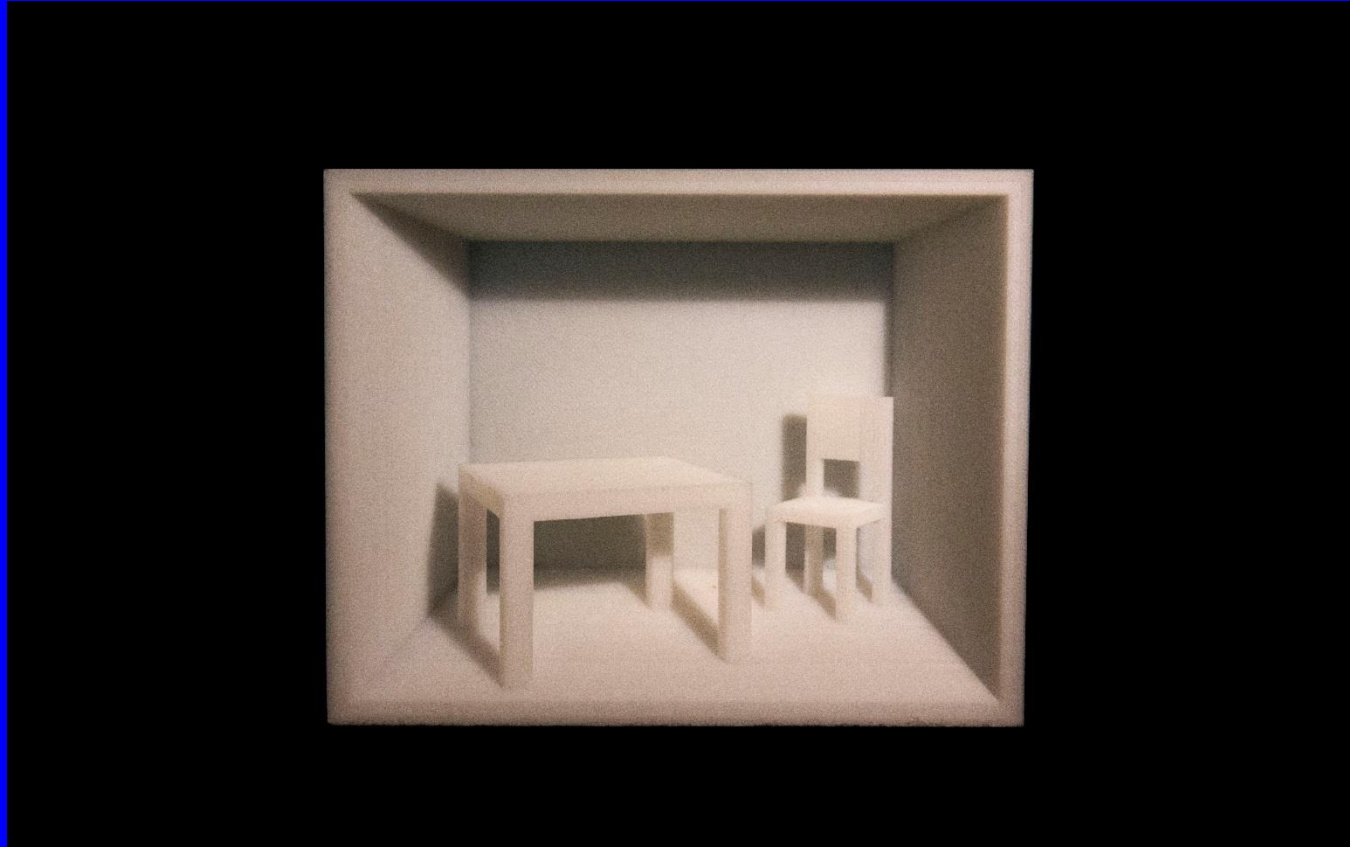
# Mapping a Viewing Frustum to a Standard Viewbox

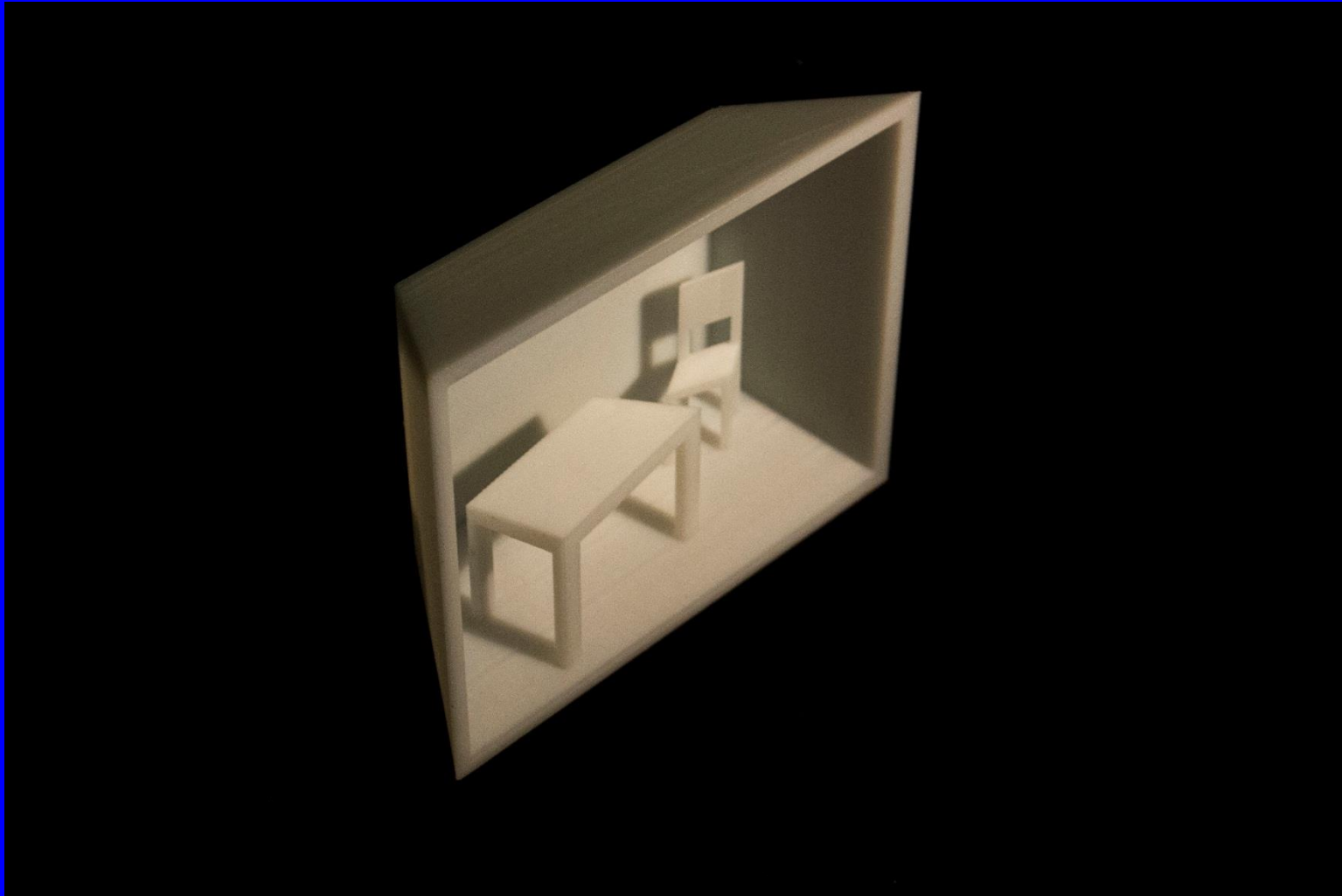


Frustum of vision



Screen coordinate system

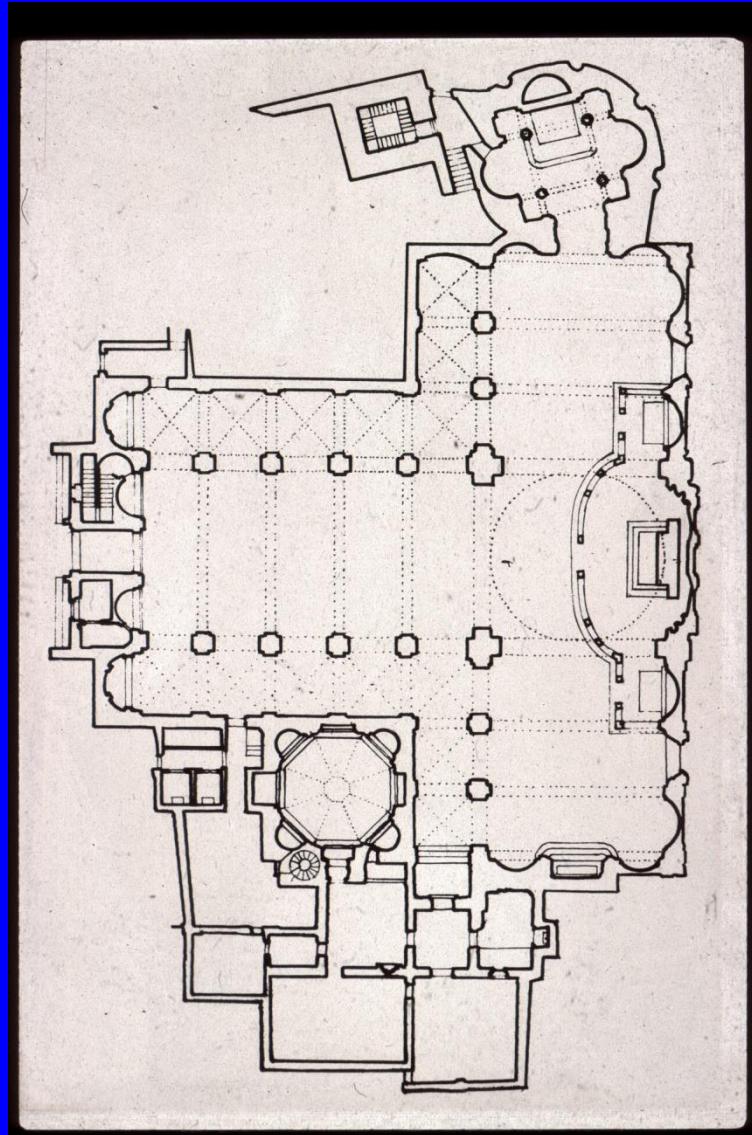




**End of Review**

# Uses of Distorted Perspective Geometries in Enlarging Architectural Space (3D)

# Santa Maria presso San Satiro





# Santa Maria presso San Satiro

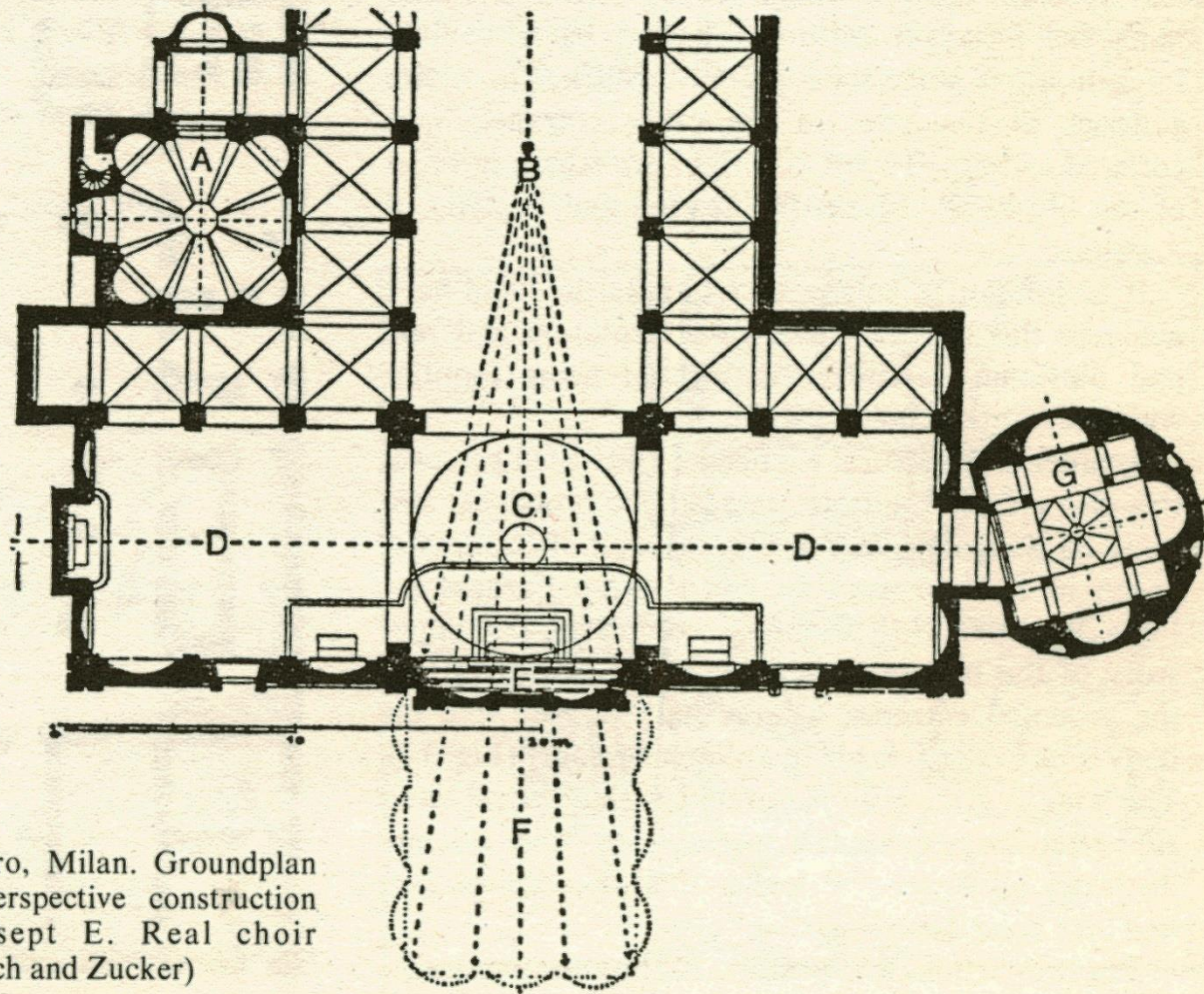


Fig. 18 S. Maria presso S. Satiro, Milan. Groundplan  
A. Sacristy B. Viewpoint for perspective construction  
C. Domed crossing D. Transept E. Real choir  
F. False choir G. Chapel (after Willich and Zucker)

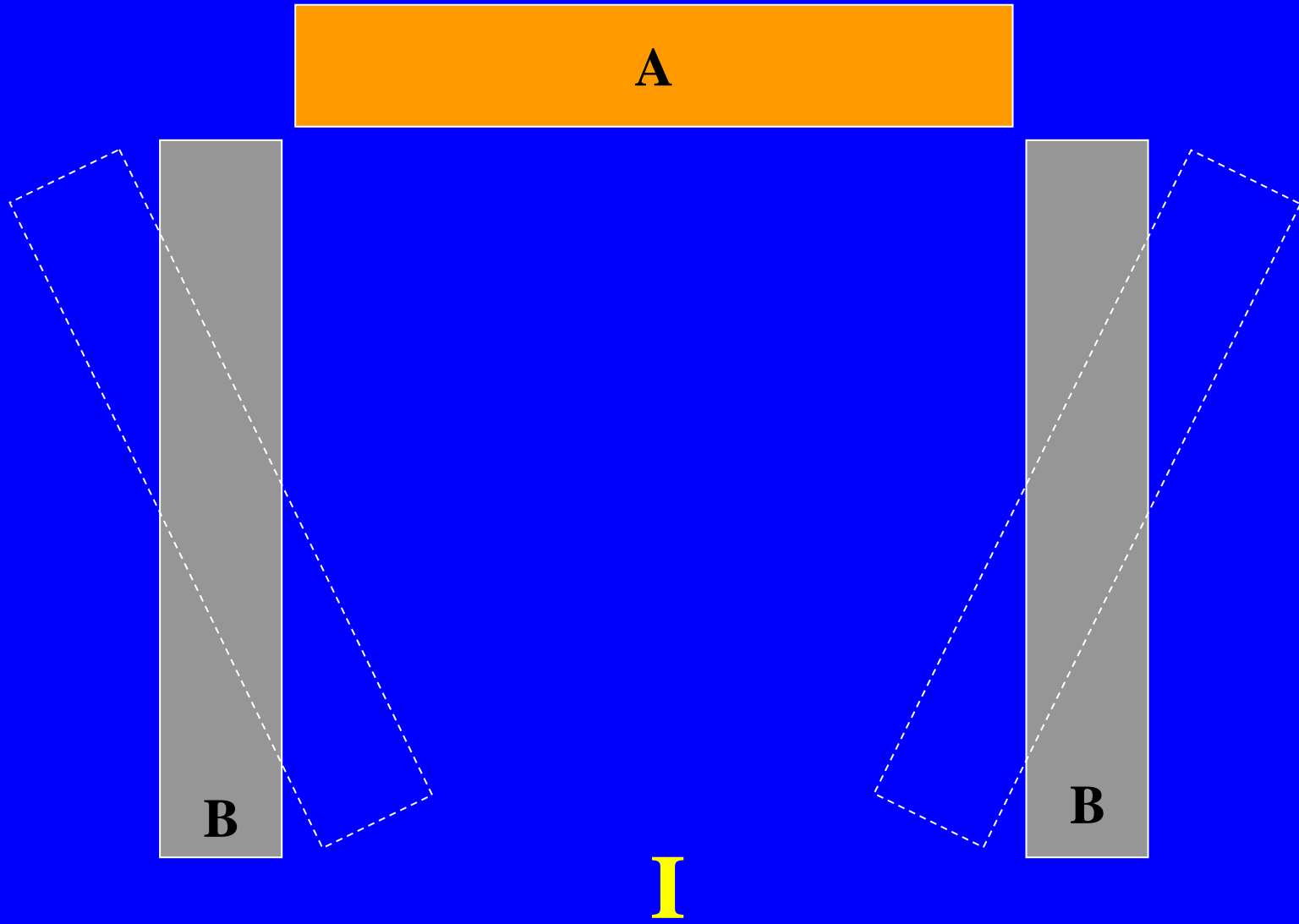
# Santa Maria presso San Satiro

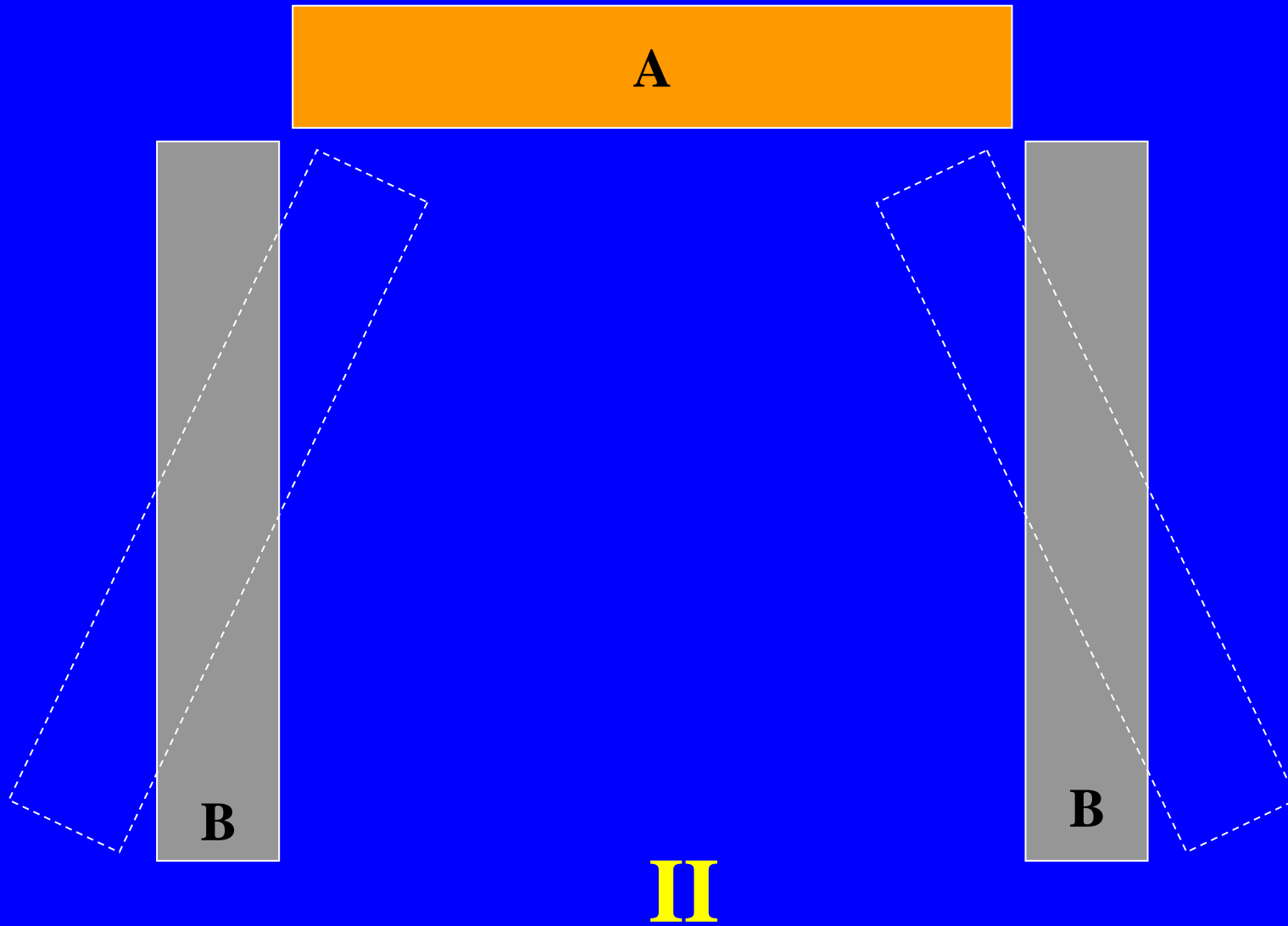


# Santa Maria presso San Satiro



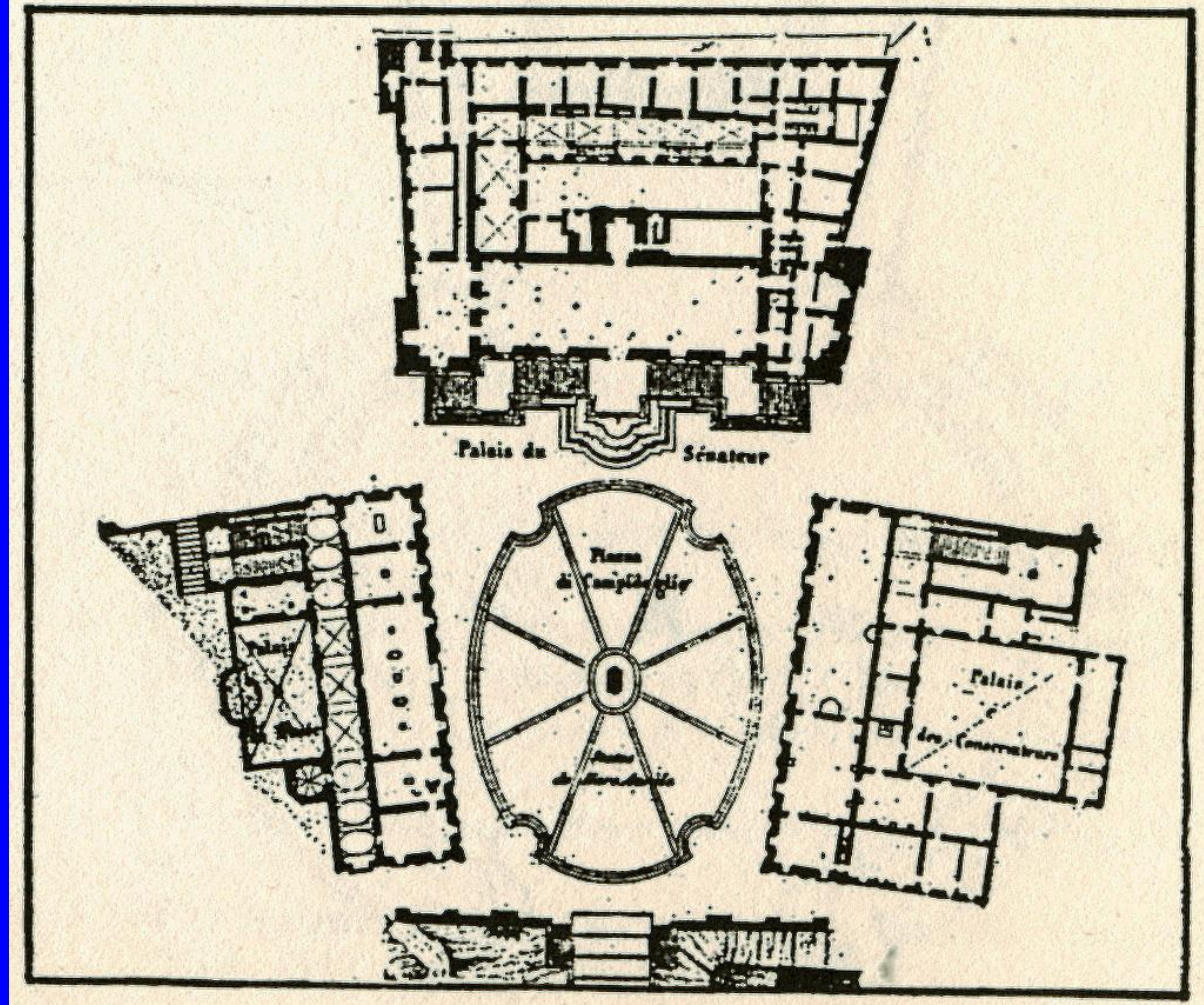
**To make the object A look larger (closer)  
which scheme do we use?**





# Michelangelo's Campidoglio Plan

Fig. 21 The Campidoglio, Rome. Groundplan



# Campidoglio

# Google Earth

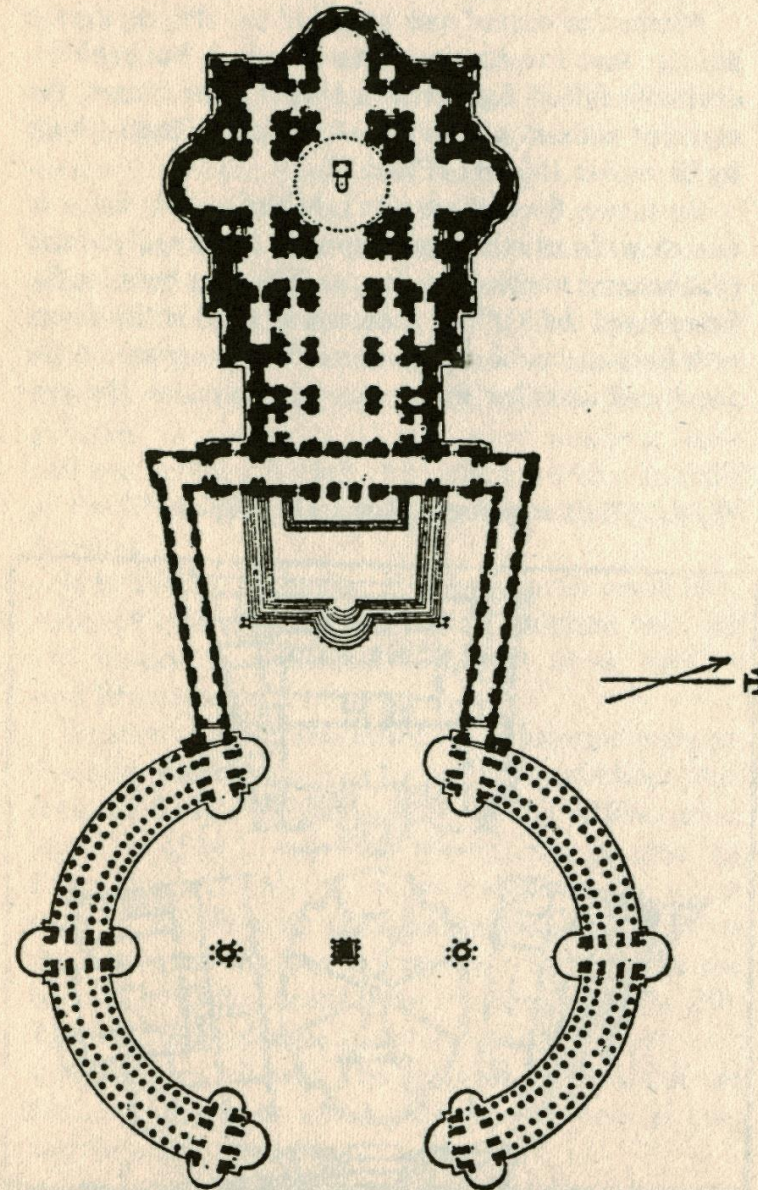






# St. Peter's Plan

Fig. 22 St. Peter's and St. Peter's Square, The Vatican.  
Planimetric drawing (after Cipriani)

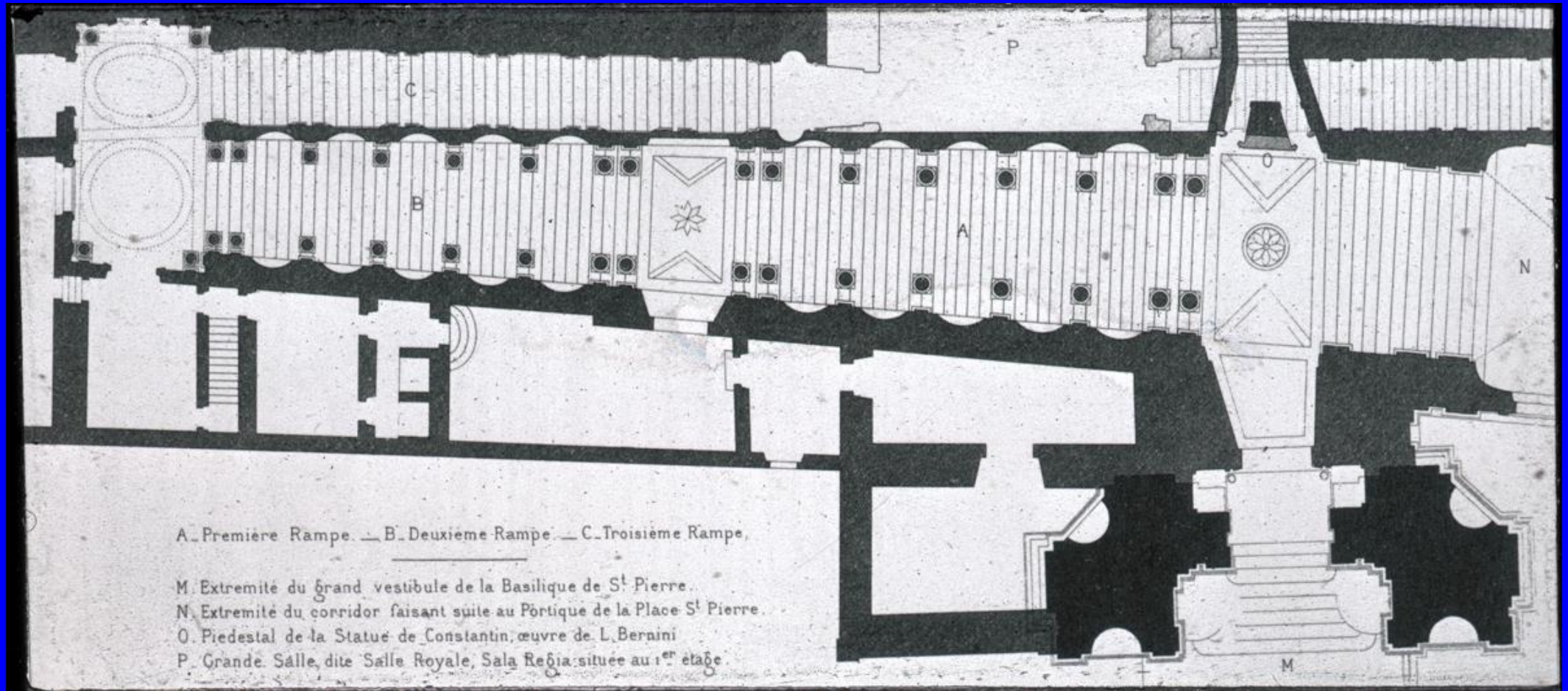






**To make the corridor appear longer what distortion should we use?**

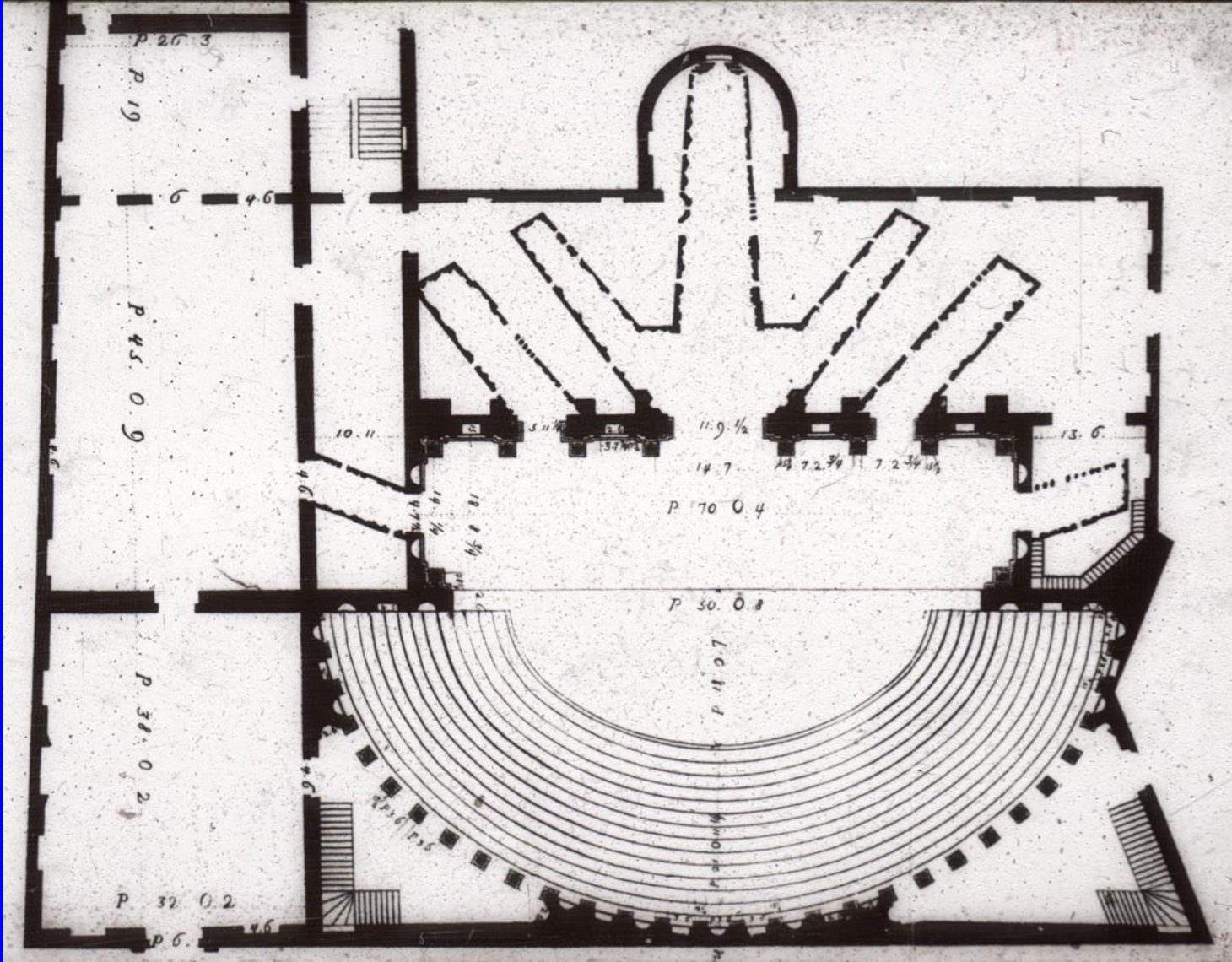
# Scala Regia Plan





# Teatro Olimpico Plan

*Palladio*





# Teatro Olimpico– Vicenza

Palladio



# Teatro Olimpico – Vicenza



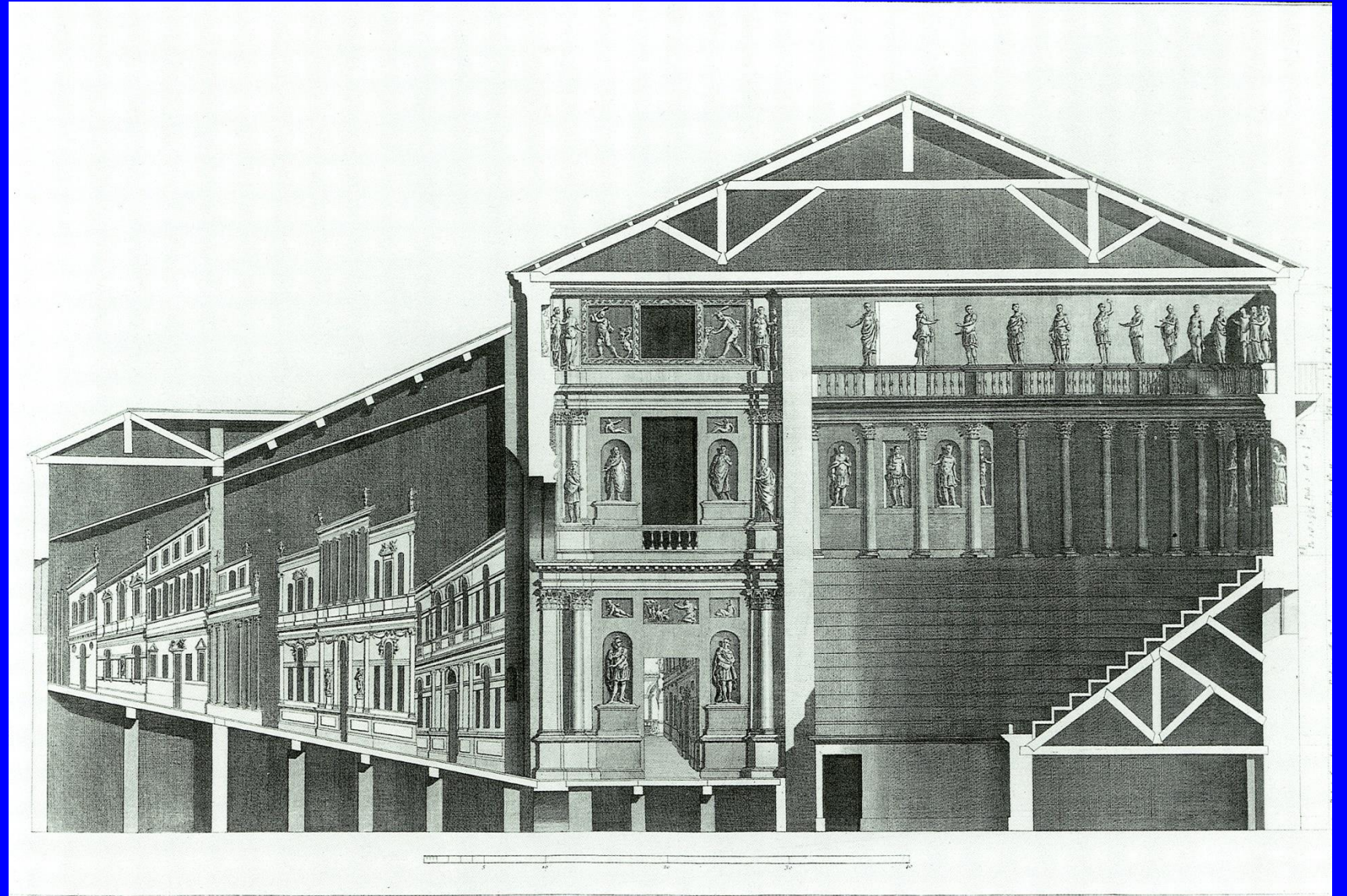
# Teatro Olimpico – Vicenza



**Scamozzi**



# Scamozzi



- What are the problems when the actors walk down the streets?

# Imss, Firenze 2004 - 3 Scenografia prospettica



# Farnesina - Perruzzi





# Farnesina - Perruzzi





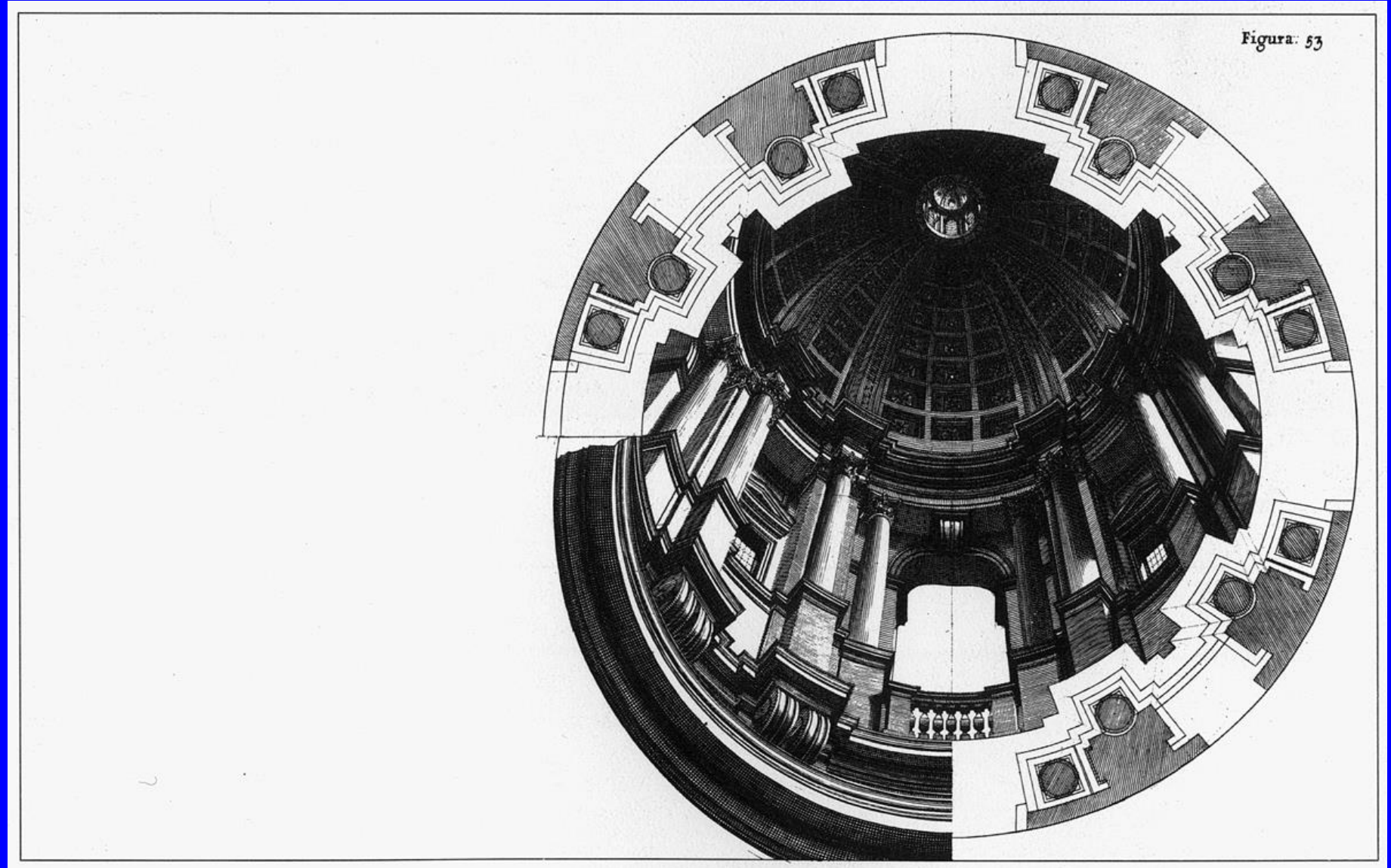
# Sant'Ignazio



# Sant'Ignazio



# Andrea Pozzo







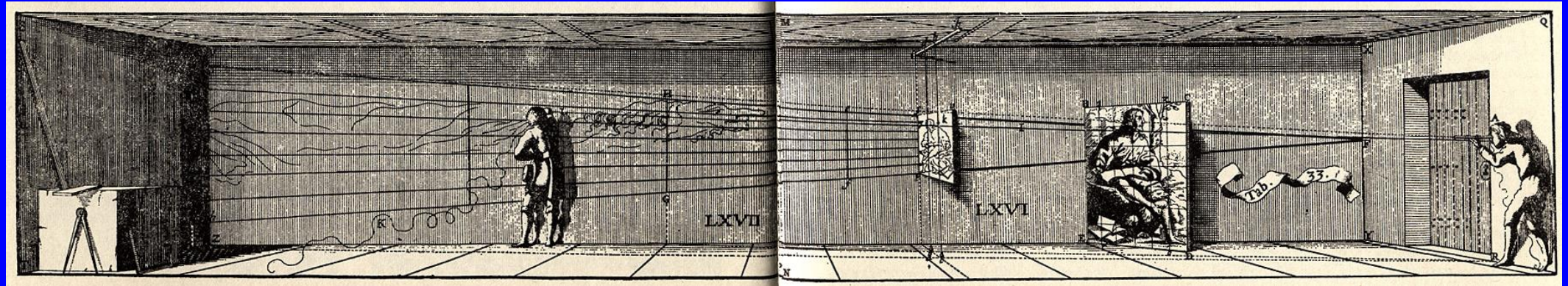
# **View Dependent Perspective Images**

## **Anamorphism**



# Hidden Images: From the Renaissance to the Present

1976 Harry Abrams



Jean-Francois Niceron. *Thaumaturgus opticus...* (Rome, 1646), illus. 25.

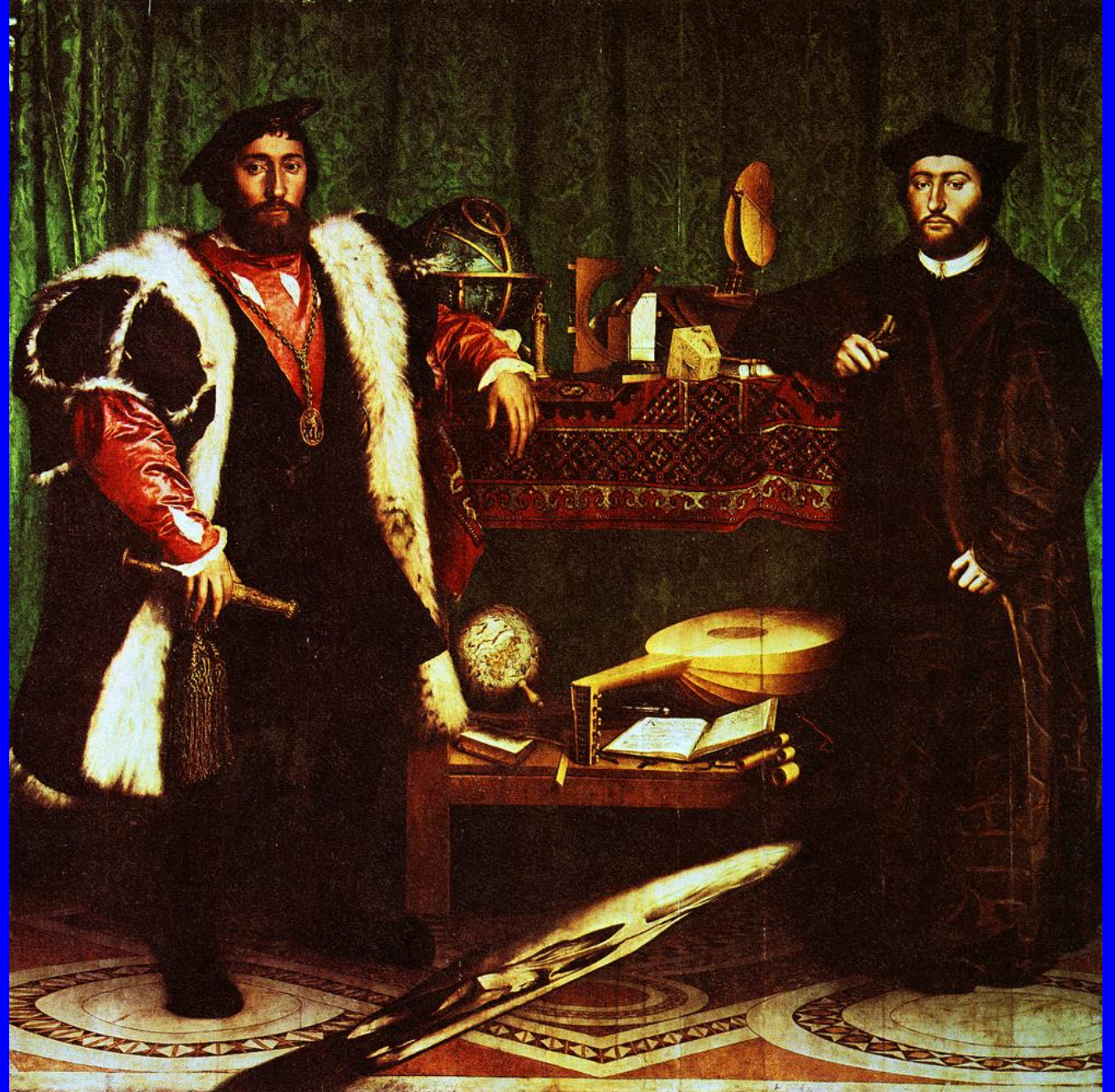
The projection of a screen or grid in anamorphic perspective makes the transfer of a representation possible.



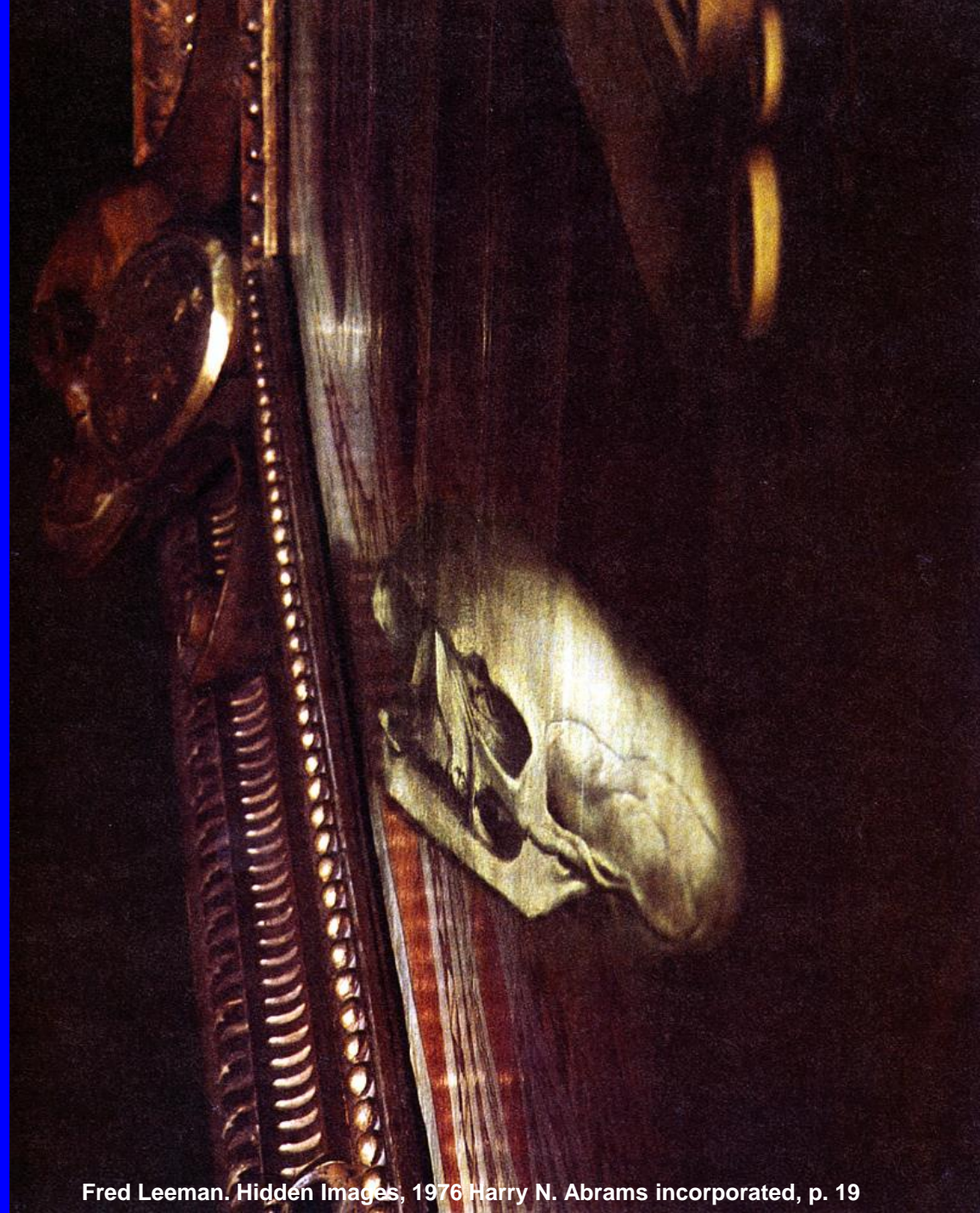
Erhard Schon. Picture puzzle: Out, You Old Fool c. 1535. Fred Leeman. Hidden Images, 1975, Harry N. Abrams.

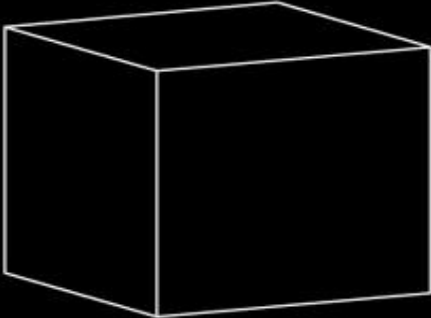
# Hans Holbein

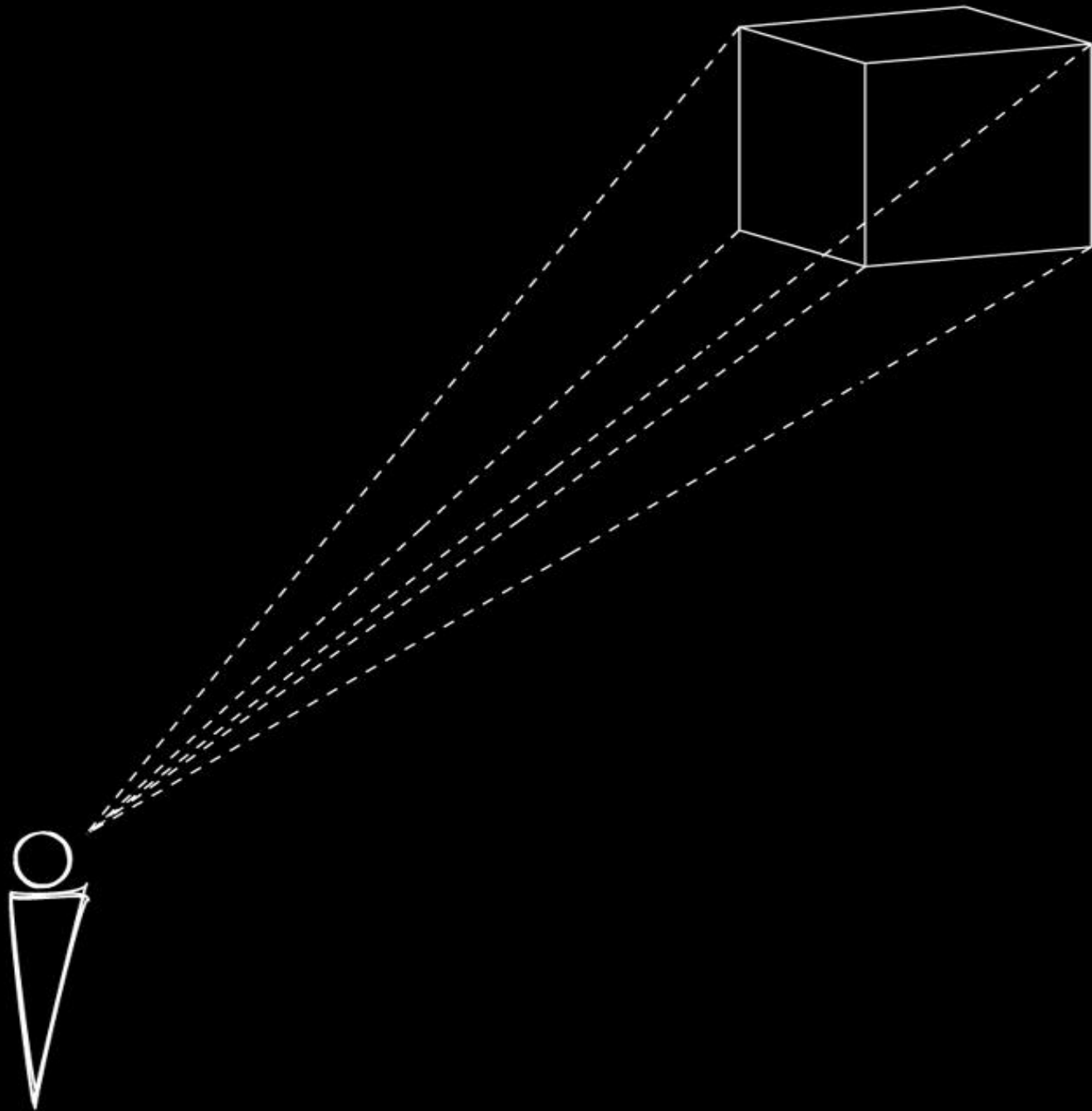
## The Ambassadors

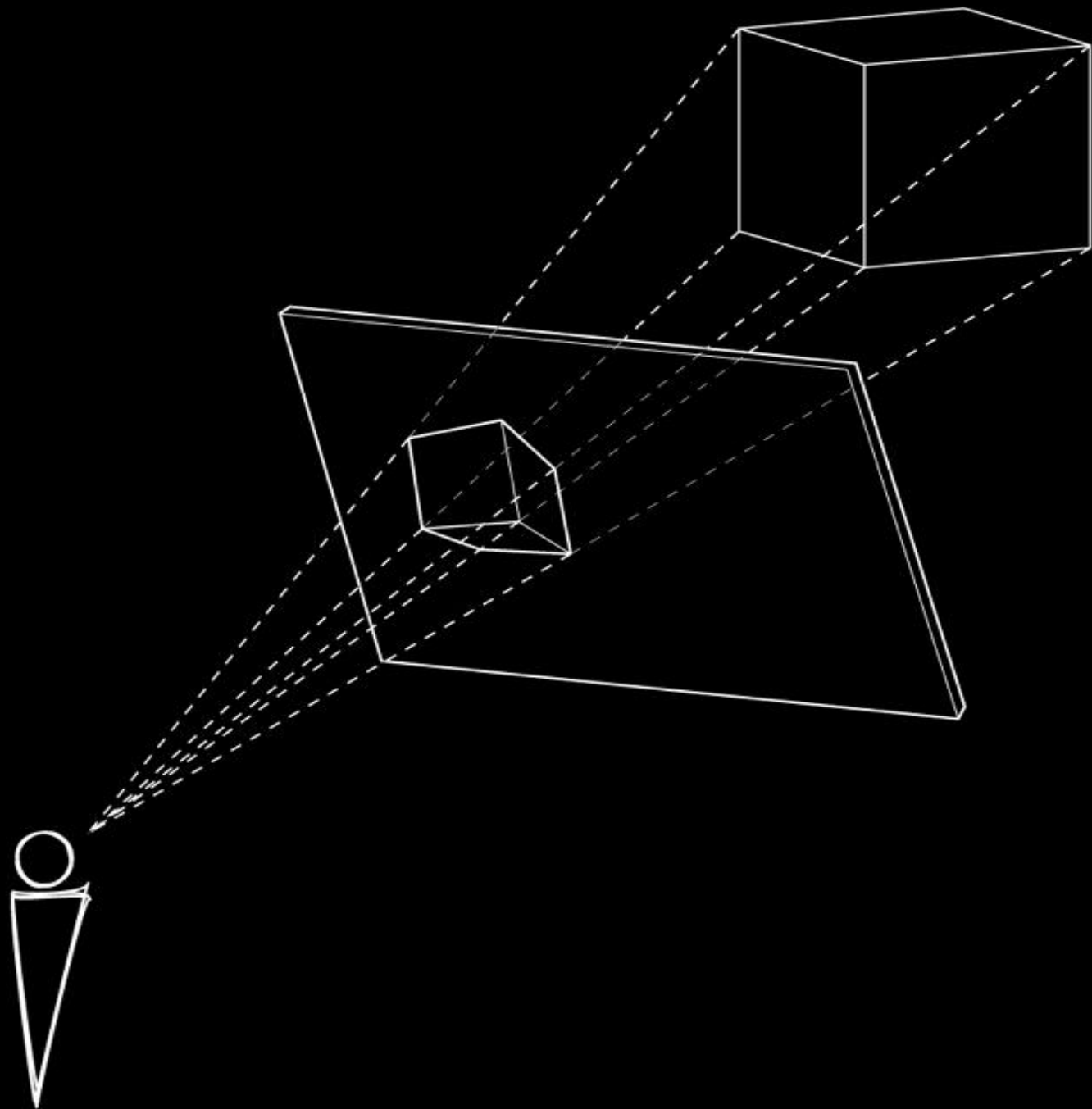


# Hans Holbein

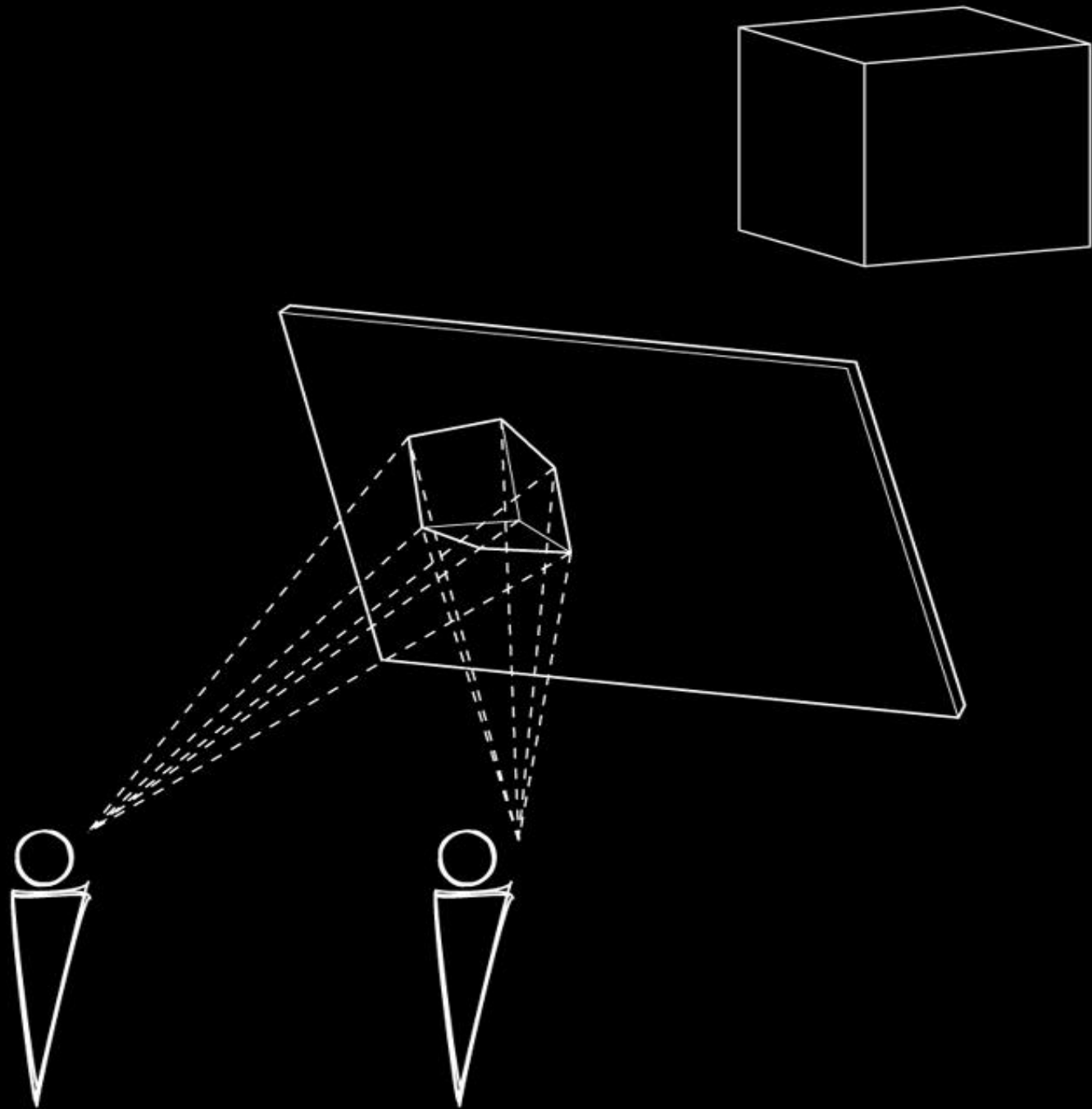


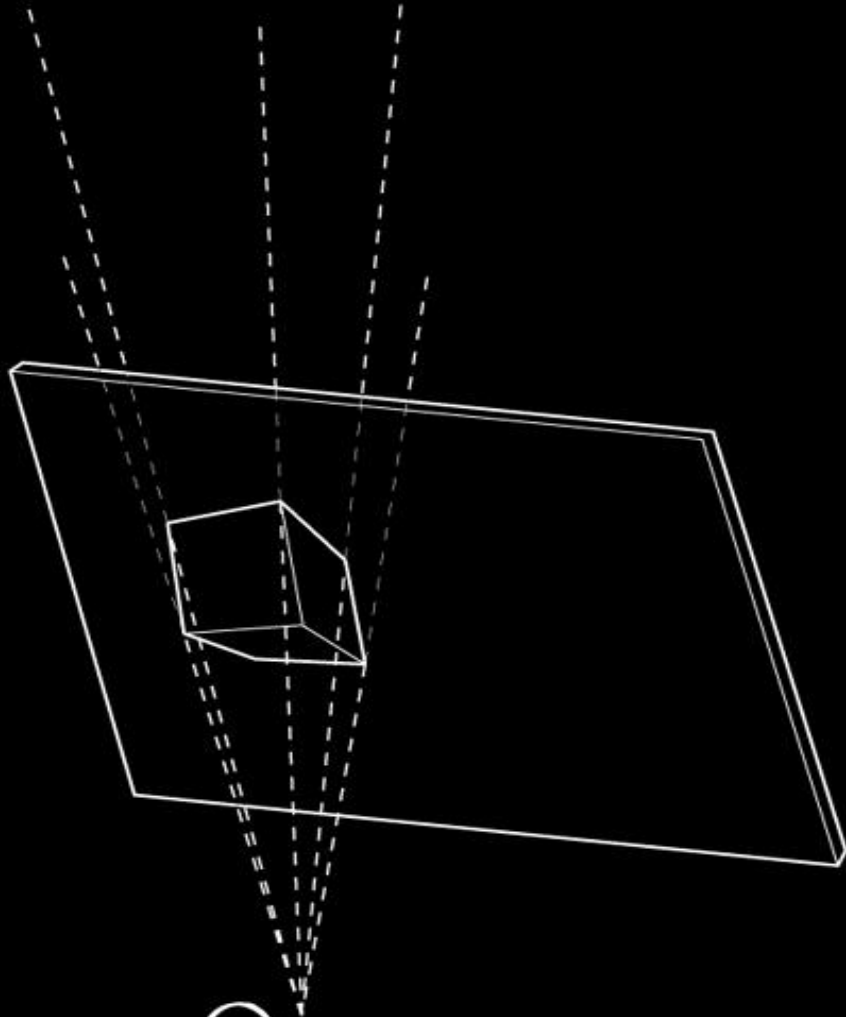


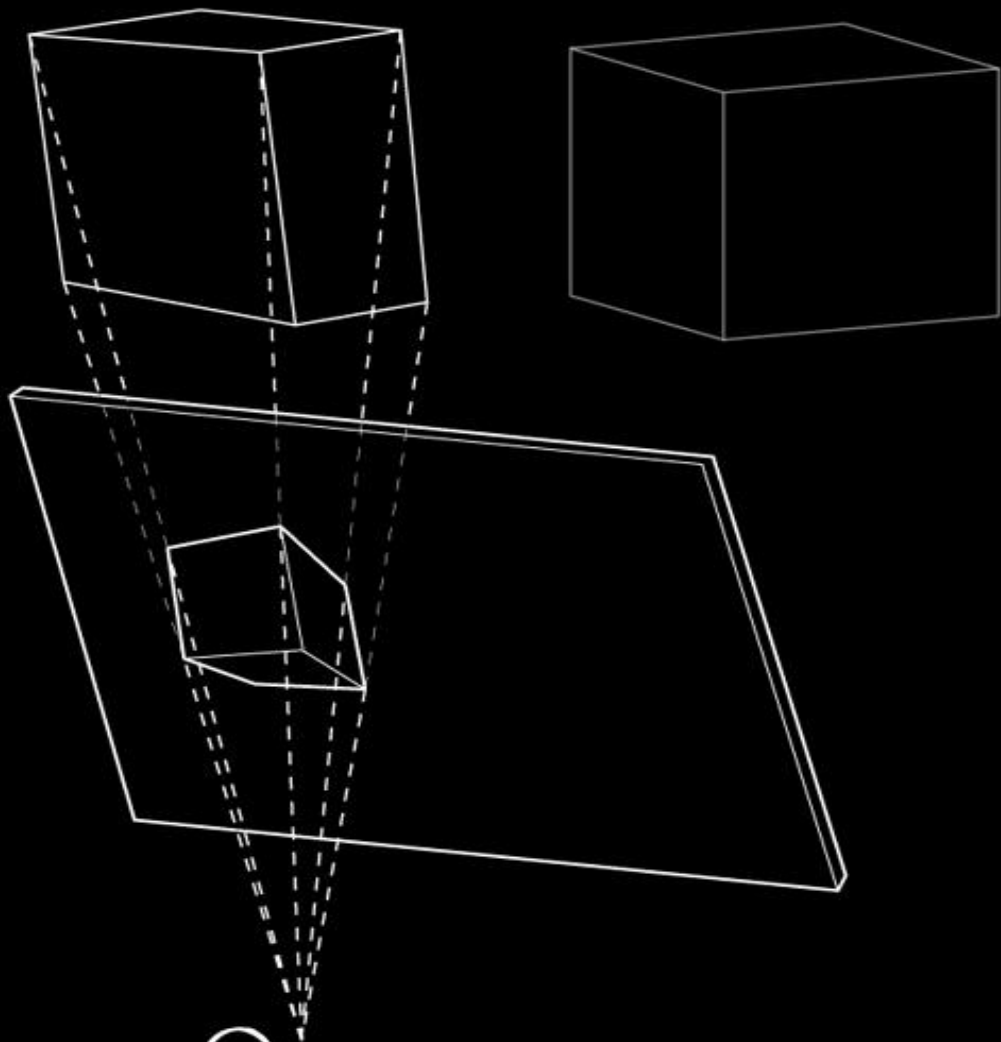


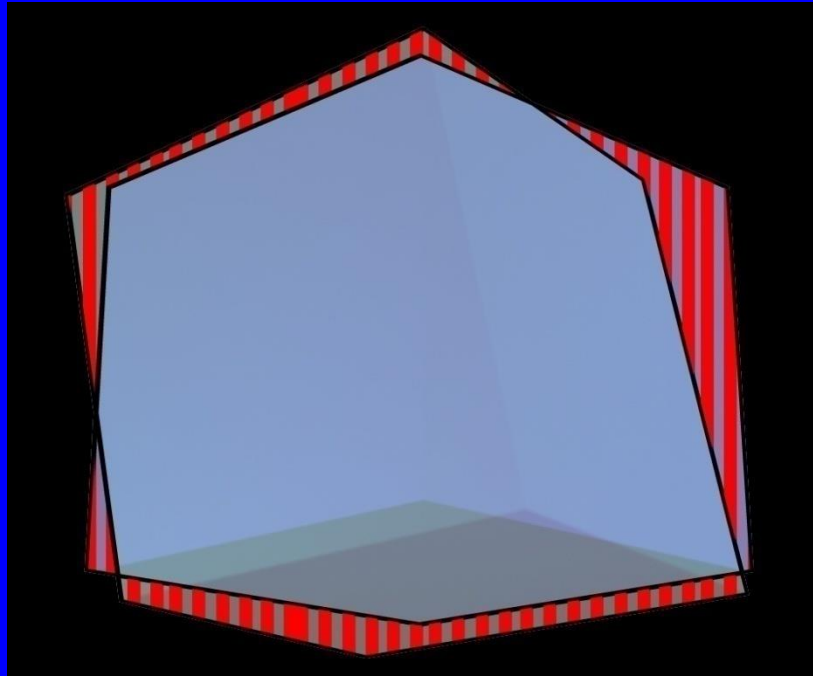










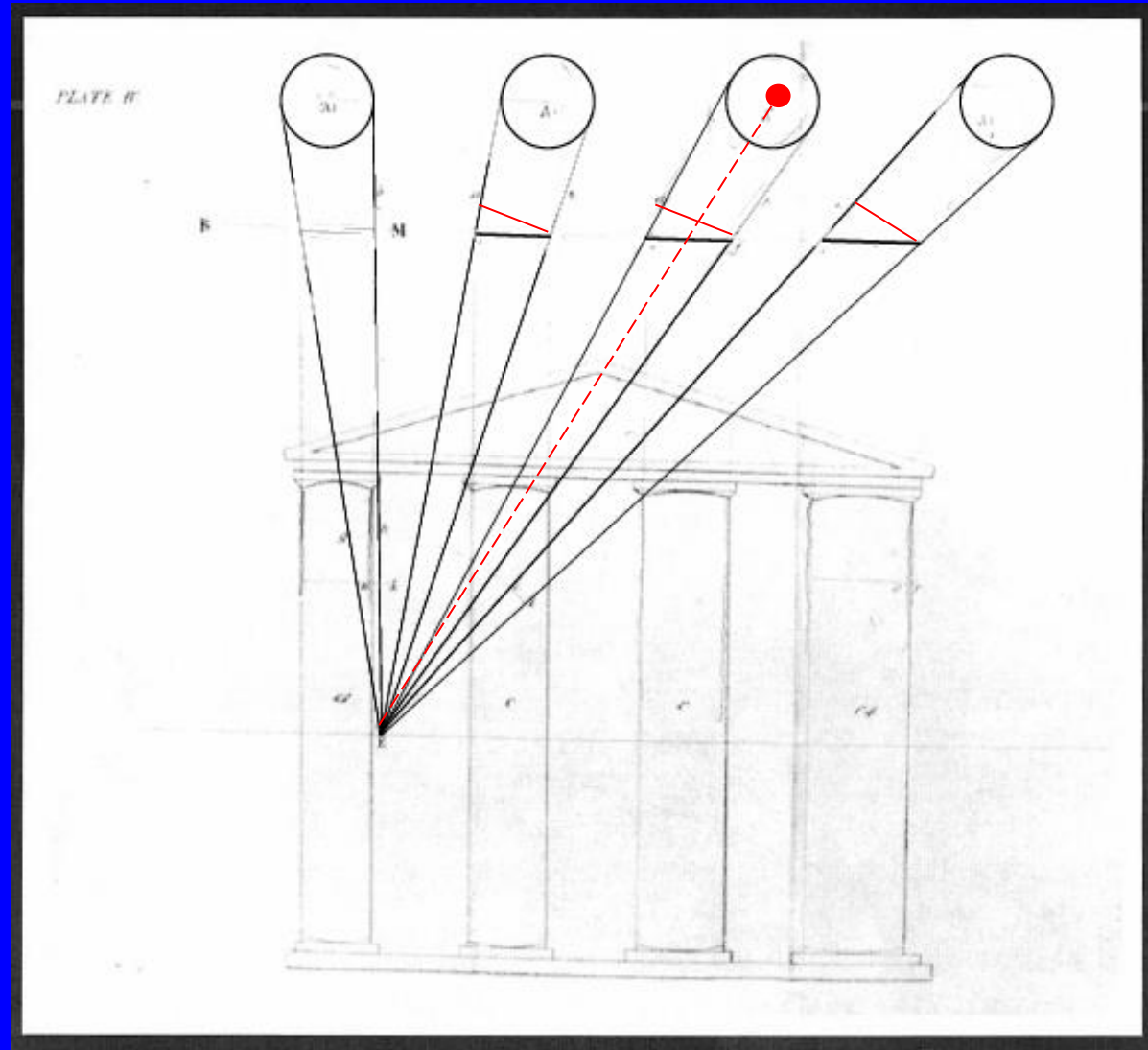


# Parthenon

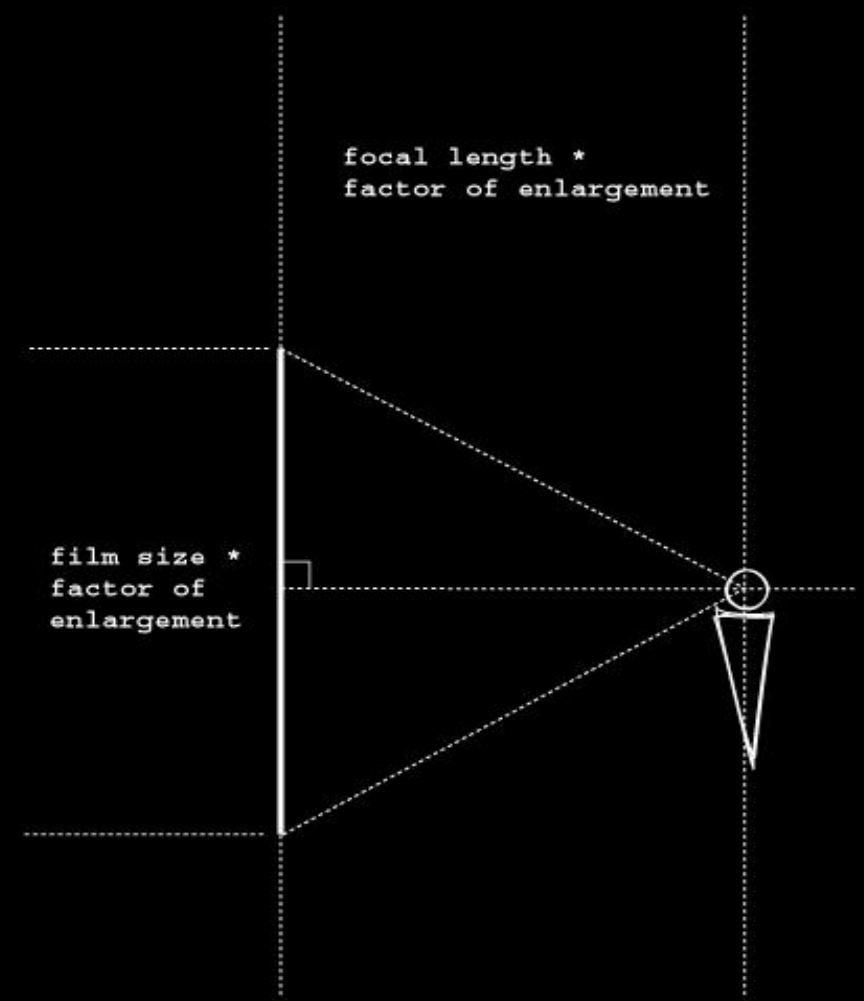
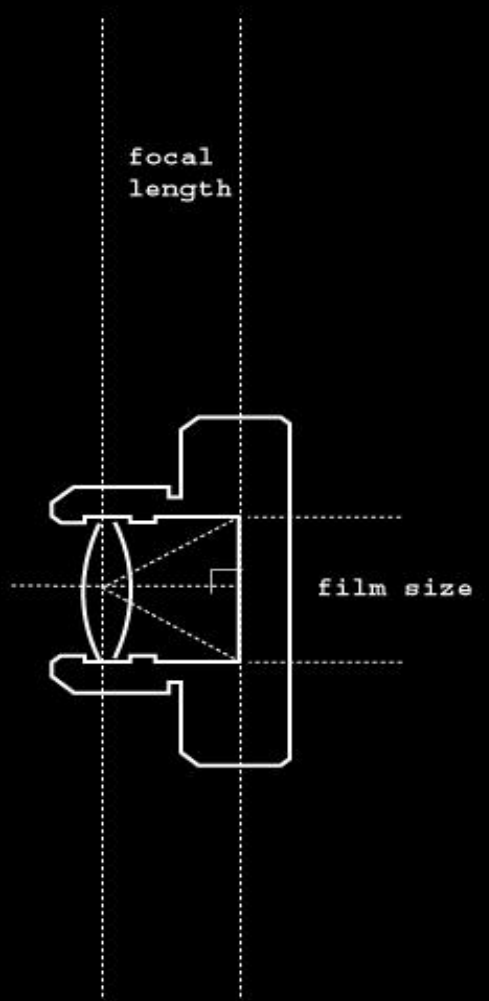


# Wide-Angle Perspective

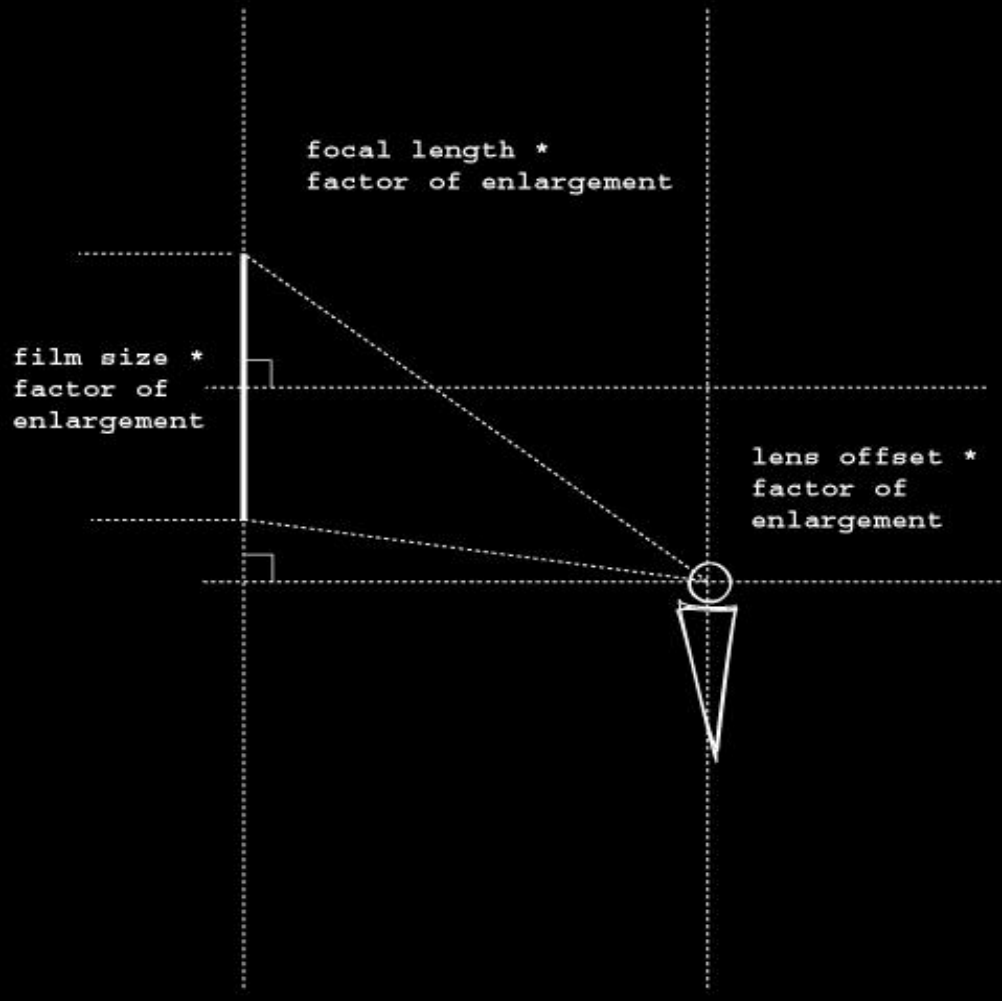
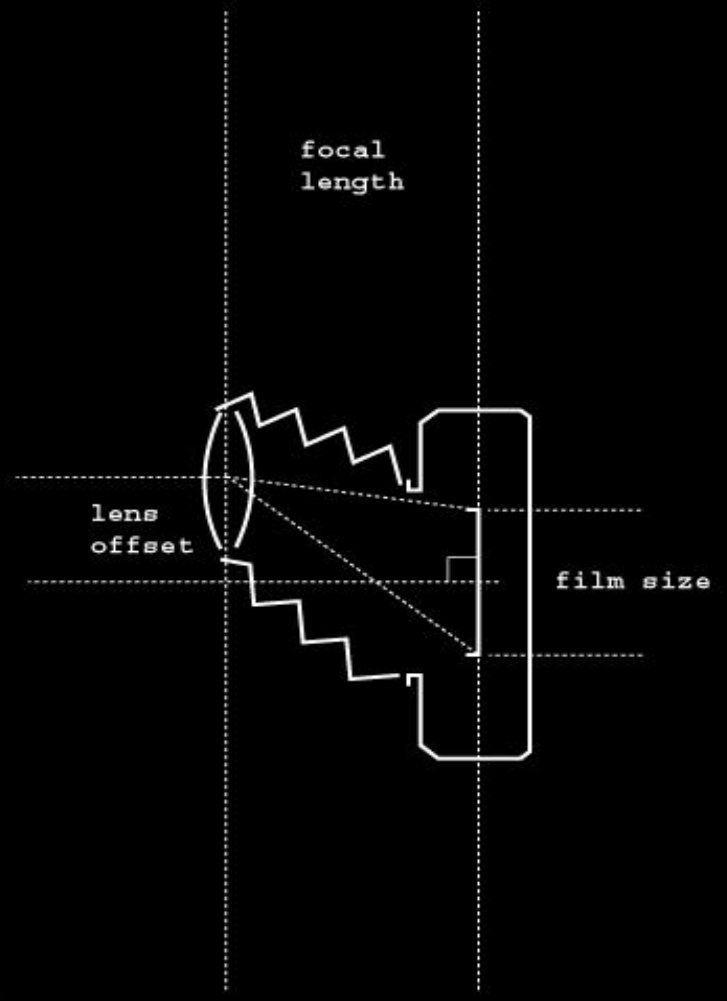
da Vinci



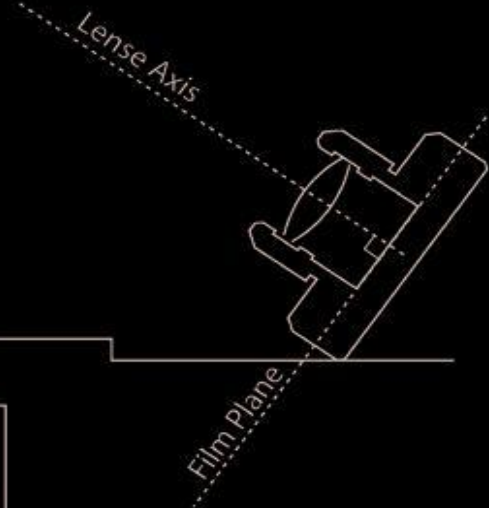
# Skew Camera



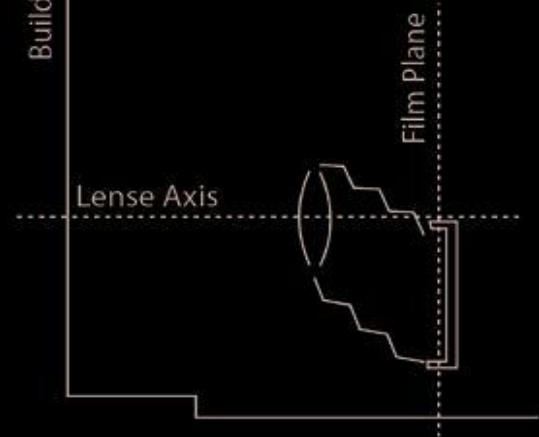




Building Facade



Building Facade



# Theater and Opera Set Design

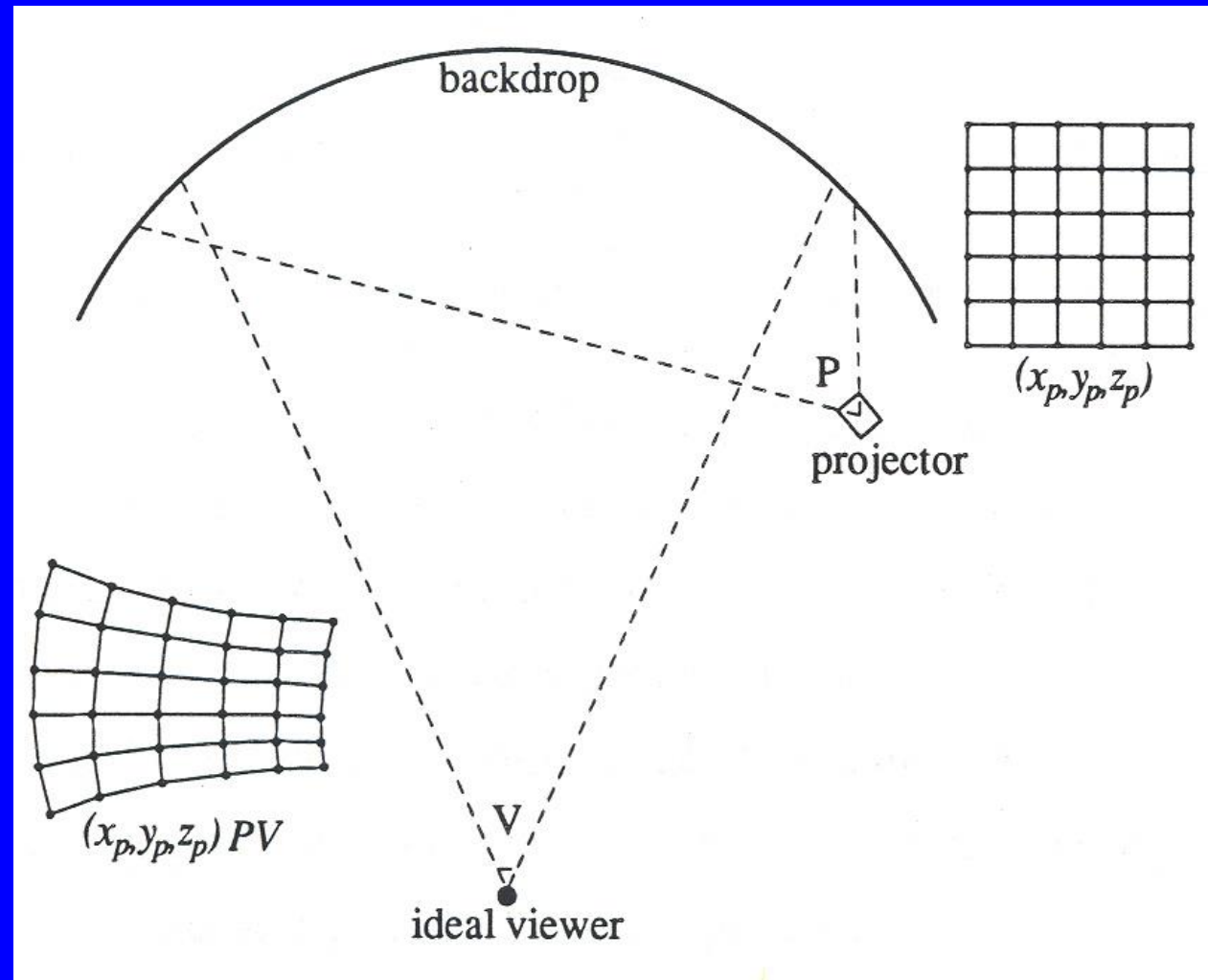
## *Known data –*

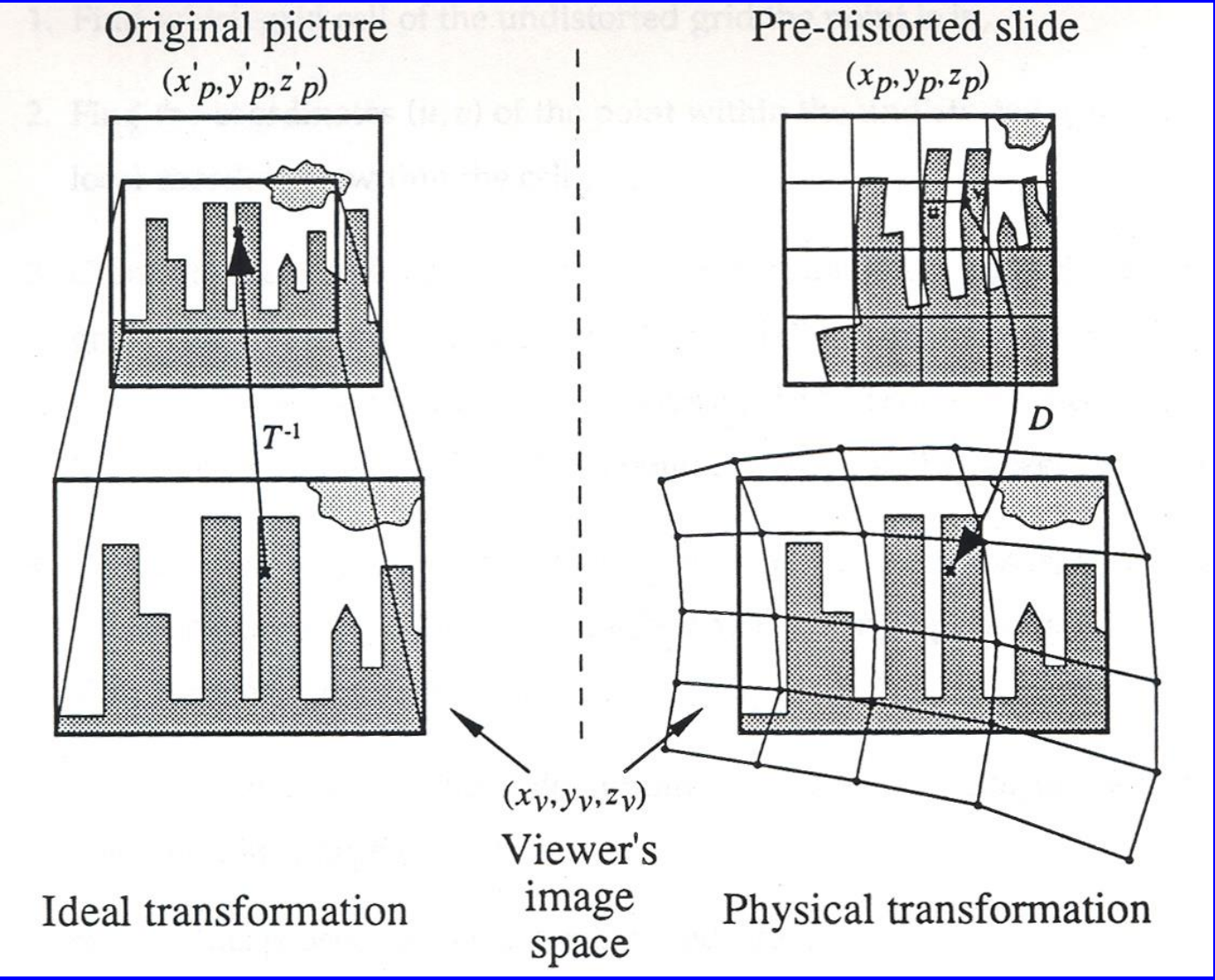
- Desired Virtual Geometry
- Stage Dimensions
- Position of Viewer (eighth row center orchestra)

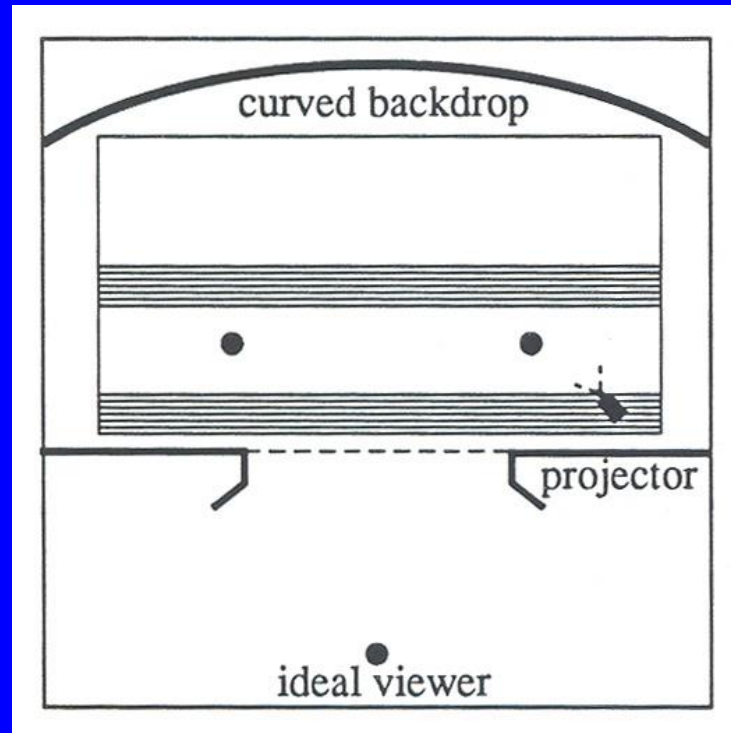
## *Unknown data –*

- Shape and Position of Distorted Virtual Objects  
(Stage Sets)













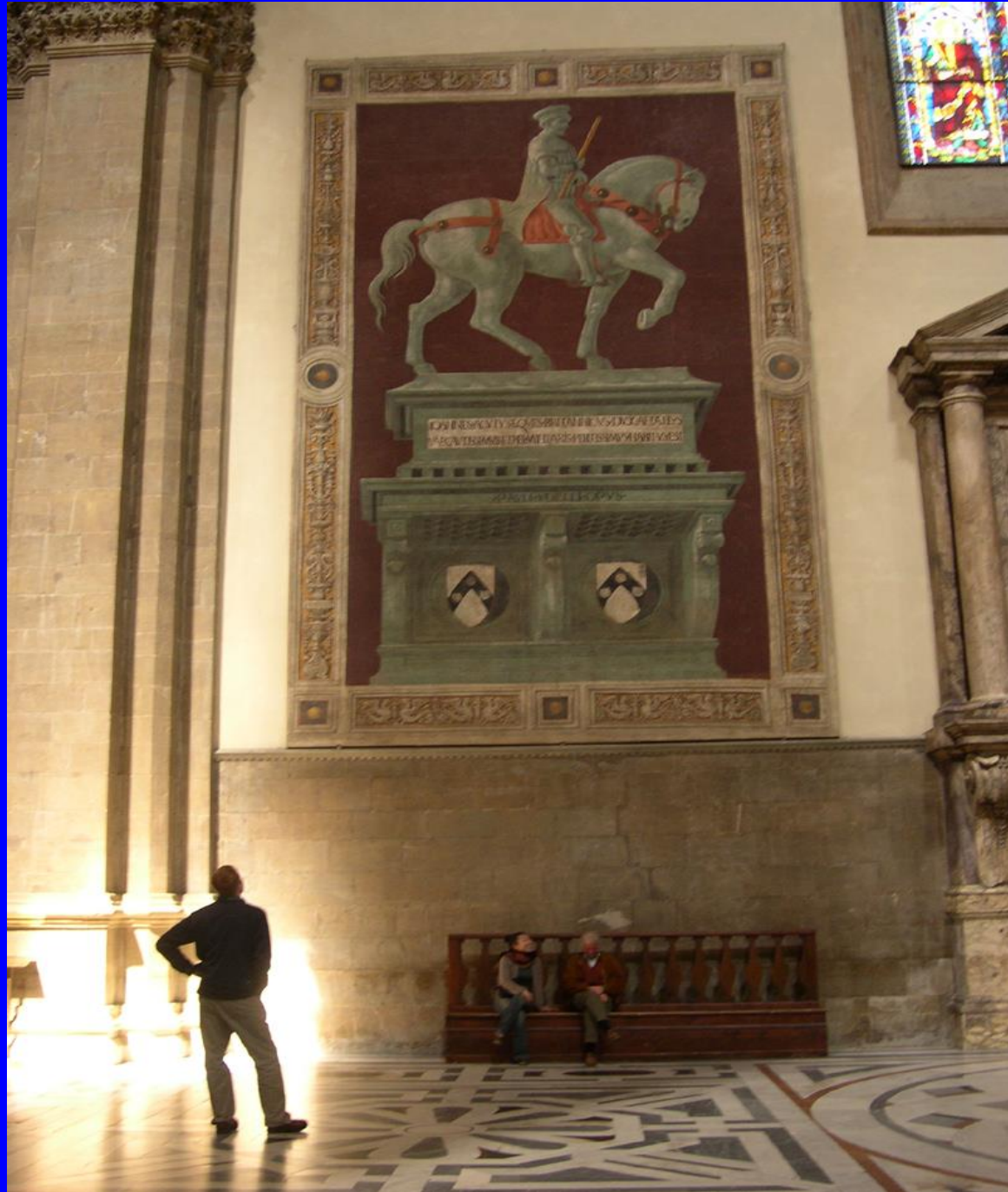




**Paolo Uccello**

**Funerary Monument  
Sir John Hawkwood**



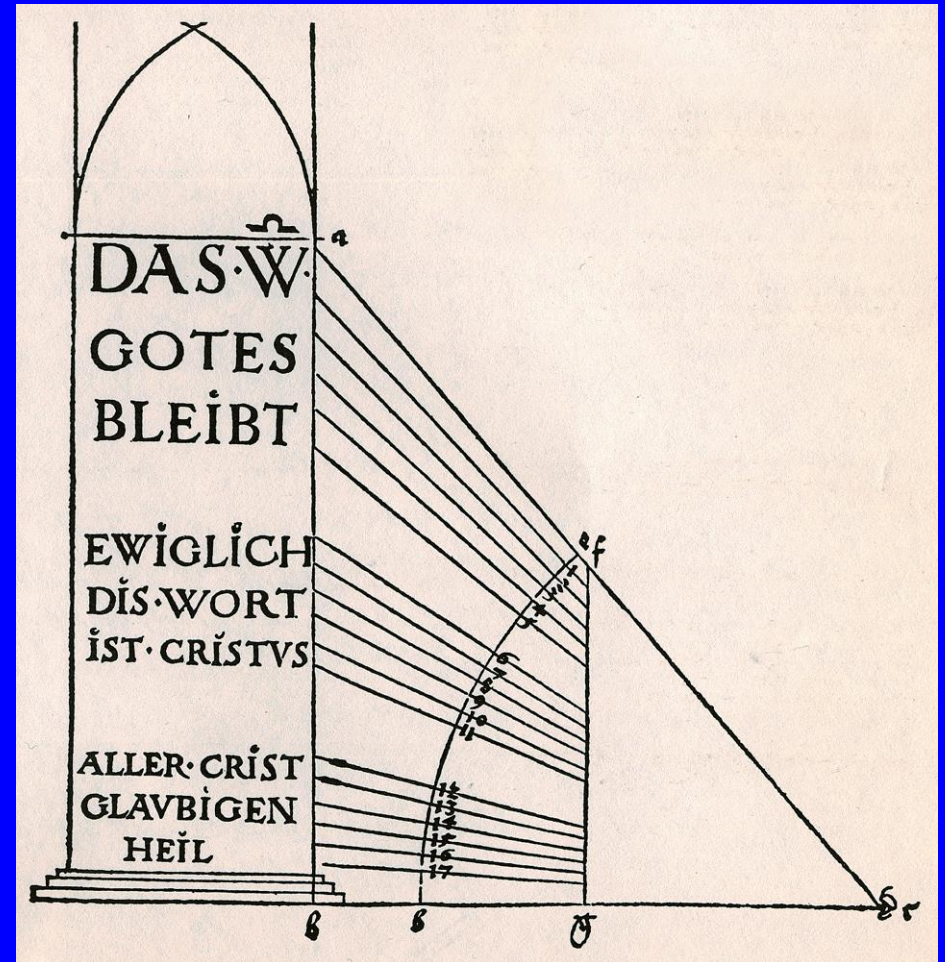


CONTRASPECTU REGUM IN REBUS SUDANUS  
PROVINCIAE DEVIANTIS PONTIS PONTIS



# Albrecht Dürer. *Underweysung der Messung. . .*(Nuremberg, 1525)

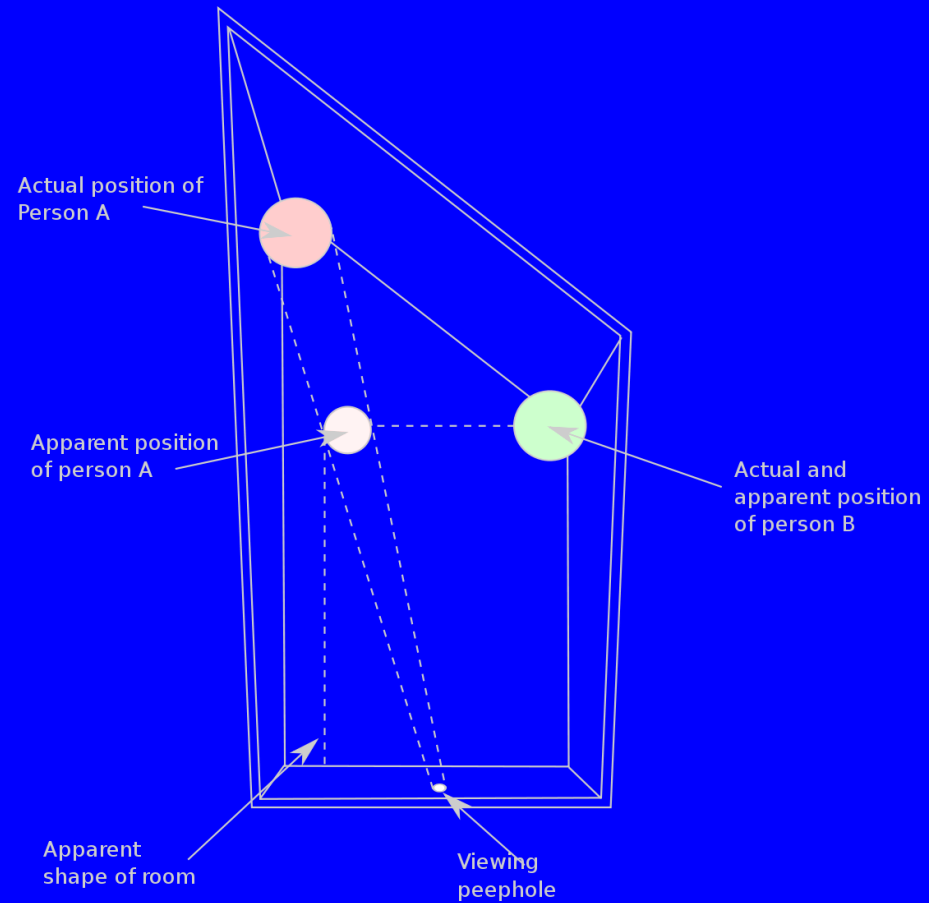
When inscriptions have to be placed on high walls, Dürer advises that the letters be made larger as they go upward. He assumes that the angle of vision remains constant.



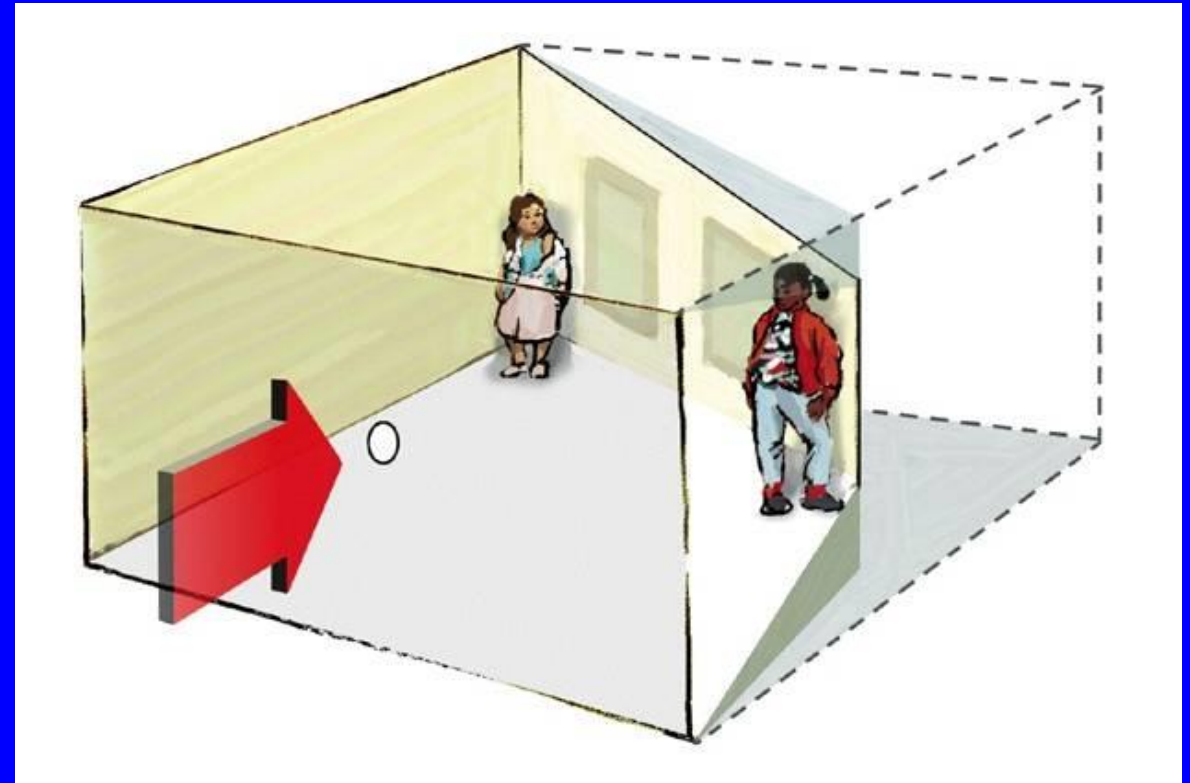
# Michelangelo's David



# Ames Room



# SF Exploratorium



**Ames Room**

**SF Exploratorium**





# Dutch Perspective Boxes



# Truck Art



# Truck Art



# *Julian Beever - Chalk Drawings*



# *Julian Beever - Chalk Drawings*



# Julian Beever Video



onetruemedia.com

# Julian Beever's Pavement Drawings



Aug. 28, 2017

**End...**



