

## **Overview**

Etymology of the word „model“

Typology according to the etymology

Symbolic models

- Altars in form of nuraghes in Sardinia
- Chinese burial traditions
- Offerings for Greek deities
- Greco-Roman and Christian votive practices
- Further votive /ancient miniature offerings (wild collection)

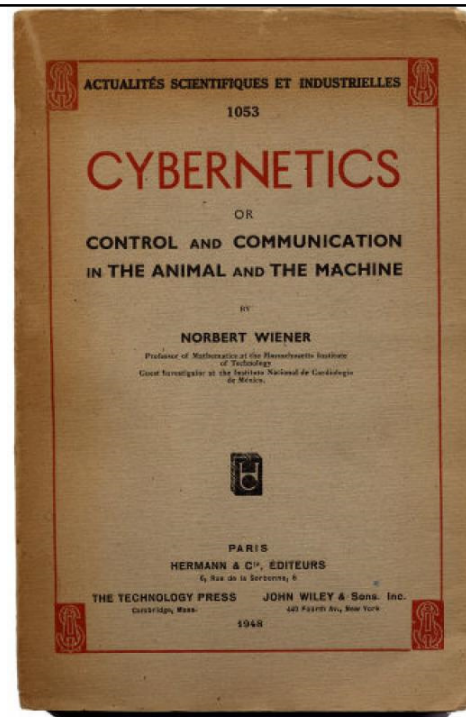
**Etymology**

Cybernetics / Kybernetik

Definition:

**„Cybernetics is a transdisciplinary approach for exploring regulatory systems—their structures, constraints, and possibilities.“**

Wiener, Norbert: Cybernetics: Or Control and Communication in the Animal and the Machine, MIT Press: Cambridge 1948.

**Etymology**

Cybernetics / Kybernetik

=>Ancient Greek: *kybernētēs* = steering person on a ship



Boats cup, detail of the interior showing a frieze of five boats in contest. Attic black-figured cup, ca. 520 BC. From Cerveteri.

**word family**

mould / das Model (imprinting)

model / das Modell (multifaceted)

modulus / der Modul (harmoniously calculating)

module / der Modul (subdividing)

modello (designing, passing on)

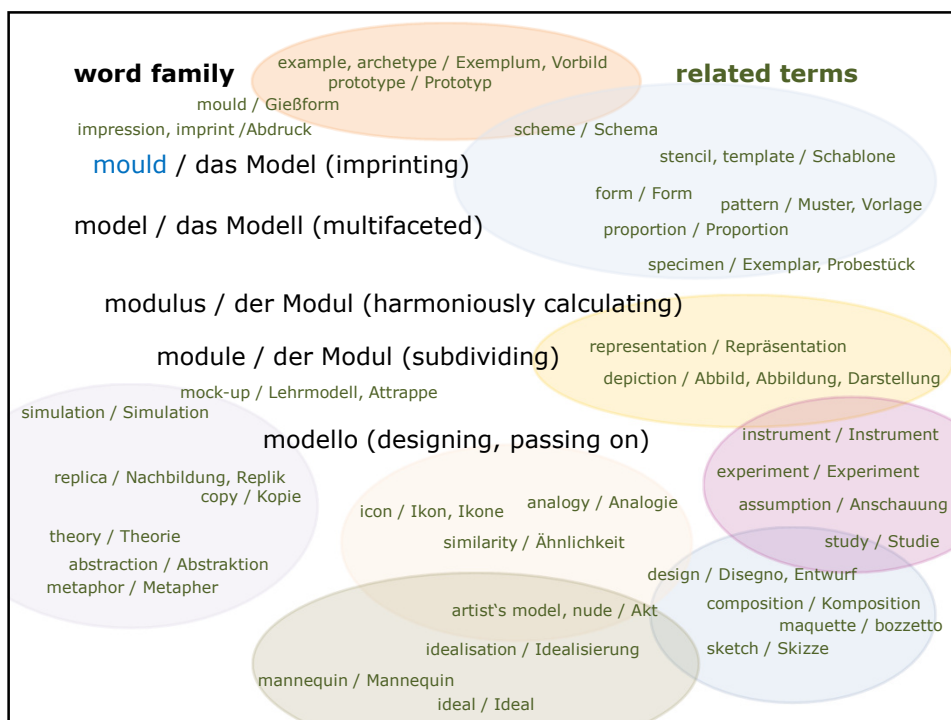
„While scientists and philosophers have on the whole taken diagrams for granted, they have been forced to fret at some length about the nature and function of models. Few terms are used in popular and scientific discourse more promiscuously than ‘model’. A model is something to be admired or emulated, a pattern, a case in point, a type, a prototype, a specimen, a mock-up, a mathematical description—almost anything from a naked blonde to a quadratic equation—and may bear to what it models almost any relation of symbolization.

In many cases, a model is an exemplar or instance of what it models: the model citizen is a fine example of citizenship, the sculptor’s model a sample of the human body, the fashion model a wearer, the model house a sample of the developer’s offerings, and the model of a set of axioms is a compliant universe.

In other cases, the roles are reversed: the model denotes, or has as an instance, what it models: the car of a certain model belongs to a certain class. And a mathematical model is a formula that applies to the process or state or object modelled. What is modelled is the particular case that fits the description.“

Nelson Goodman: Languages of Art. An Approach to a Theory of Symbols, Hackett Publishing: Indianapolis 1976, pp. 171–172.

word family	example, archetype / Exemplum, Vorbild prototype / Prototyp	related terms
mould / Gießform		
impression, imprint / Abdruck	scheme / Schema	
<b>mould / das Model (imprinting)</b>		stencil, template / Schablone
	form / Form	pattern / Muster, Vorlage
<b>model / das Modell (multifaceted)</b>	proportion / Proportion	
	specimen / Exemplar, Probestück	
<b>modulus / der Modul (harmoniously calculating)</b>		
<b>module / der Modul (subdividing)</b>	representation / Repräsentation	
mock-up / Lehrmodell, Attrappe	depiction / Abbild, Abbildung, Darstellung	
simulation / Simulation		
<b>modello (designing, passing on)</b>	instrument / Instrument	
replica / Nachbildung, Replik	experiment / Experiment	
copy / Kopie	analogy / Analogie	assumption / Anschauung
theory / Theorie	icon / Ikon, Ikone	similarity / Ähnlichkeit
abstraction / Abstraktion		study / Studie
metaphor / Metapher	design / Disegno, Entwurf	
	artist's model, nude / Akt	composition / Komposition
	idealisation / Idealisierung	maquette / bozzetto
		sketch / Skizze
	mannequin / Mannequin	
	ideal / Ideal	





**word family**

**mould** / das Model (imprinting)

**model** / das Modell (multifaceted)

**modulus** / der Modul (harmoniously calculating)

**module** / der Modul (subdividing)

modello (designing, passing on)

**etymology**

Gr. **medein** / to measure / messen

Lat. **meditari** / to meditate / meditieren

Lat. **modo** / with measure / mit Maßen

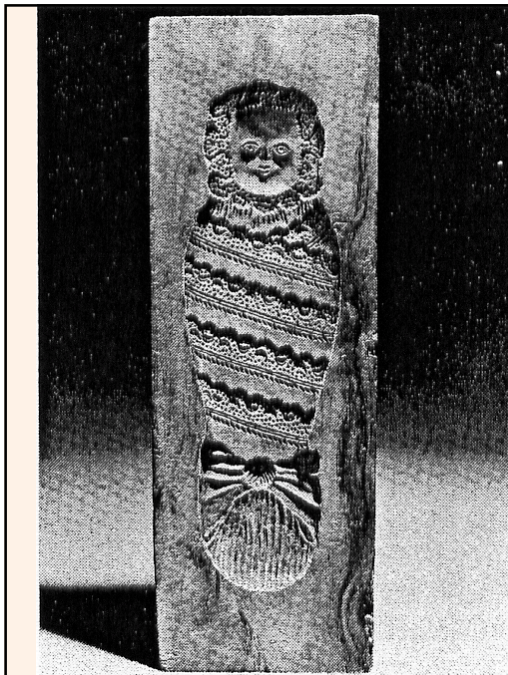
Lat. **modestus** / modest / maßvoll, bescheiden

Lat. **modus** / mode, measurement, mass / Modus, Maßstab, Größe, Menge, Masse

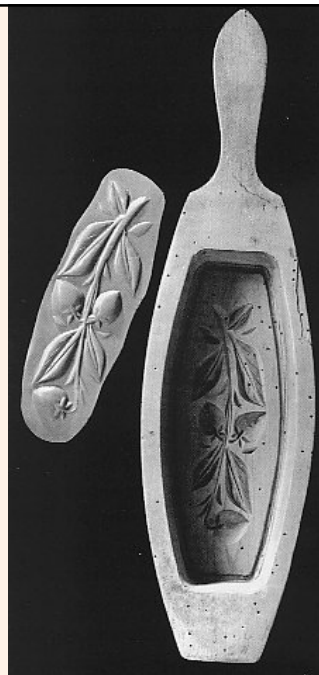
Lat. **modulus** = diminutive of **modus**

Old High German. **mez** = **mensura**, **modus** / measure / Maß [cf. „Stein**metz**“]

**mould / das Model  
(imprinting)**



Baking mould, 1797. Museum für Volkskunst Dresden.



Wooden mould for wax.



Jever, blue print workshop. The blue printer presses the mould into the paste.



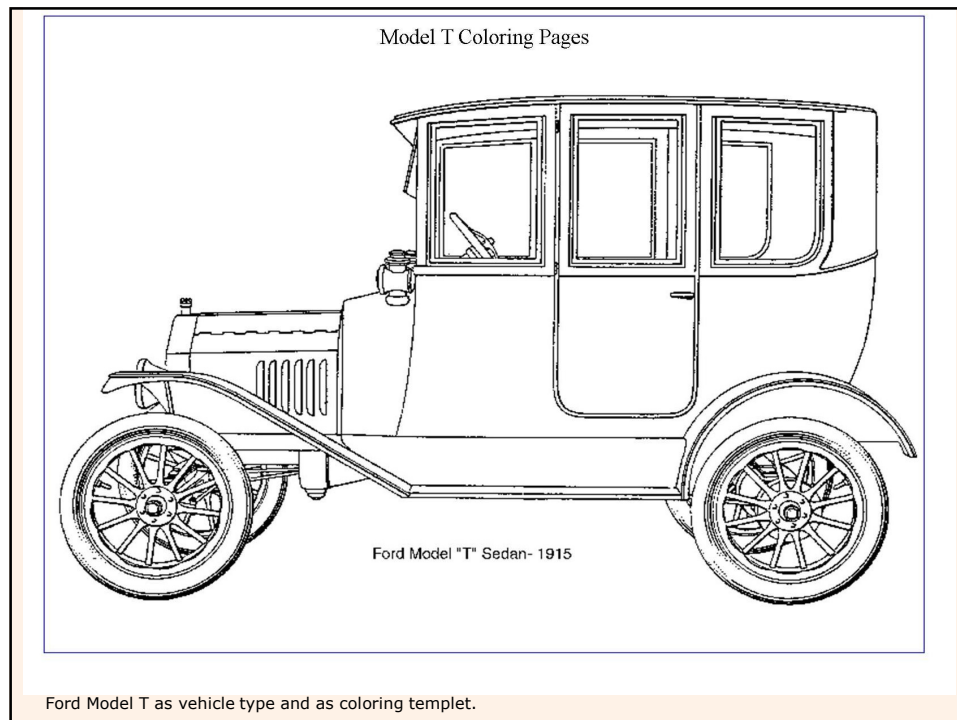
Ingolstadt, 15th century. Part of a figurative tile model (Kachelmodell).



Silicon rubber candle mould.  
Making of: <https://www.polytek.com/tutorial/tutorial-how-make-silicone-rubber-candle-mold>

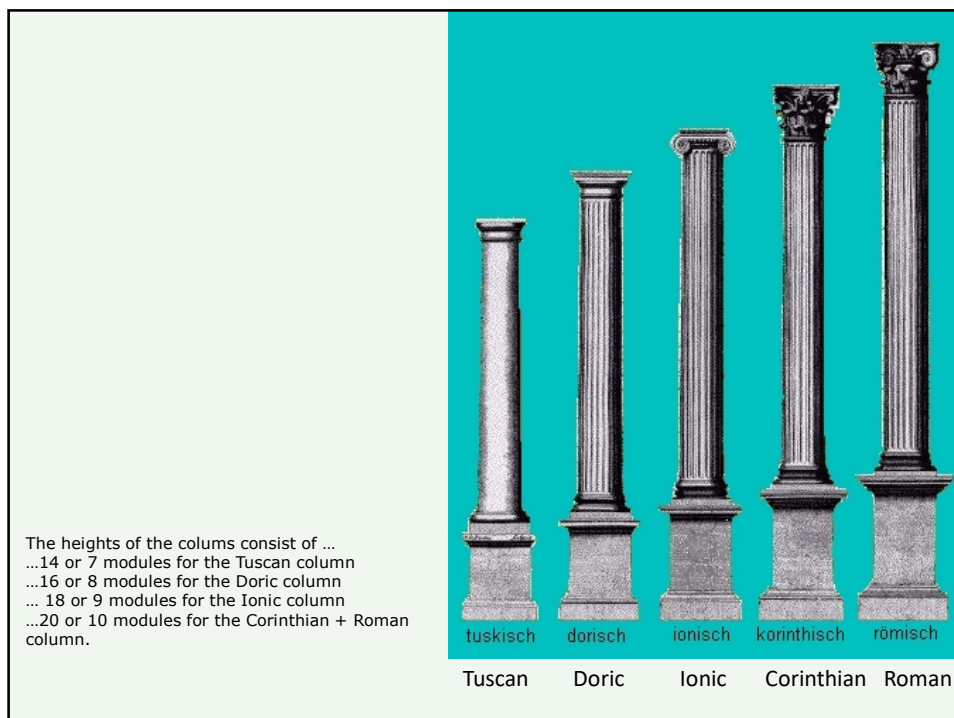
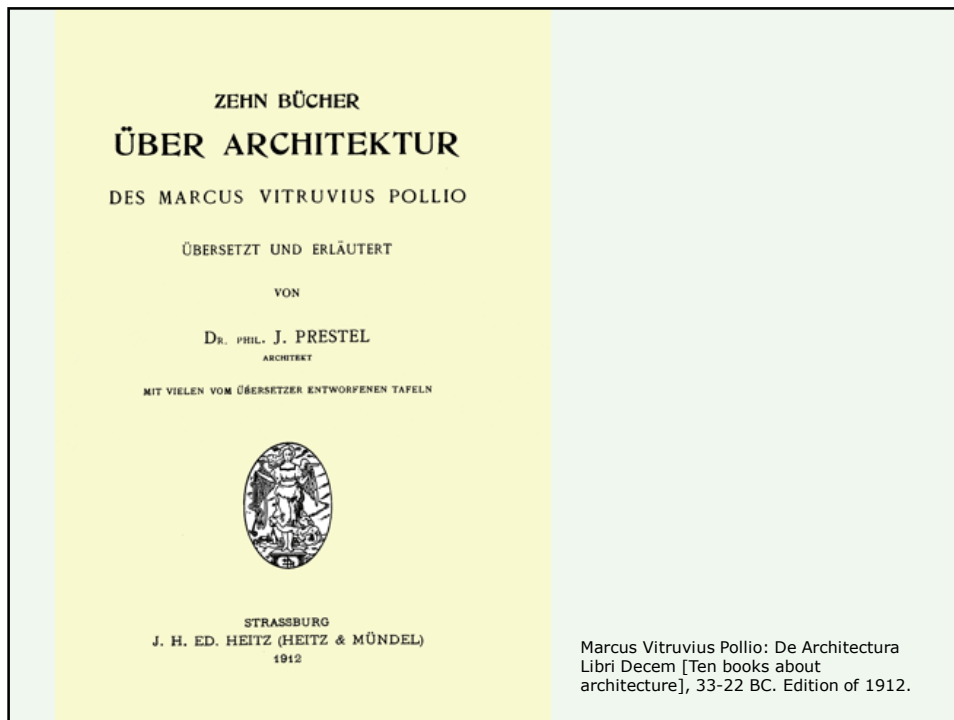


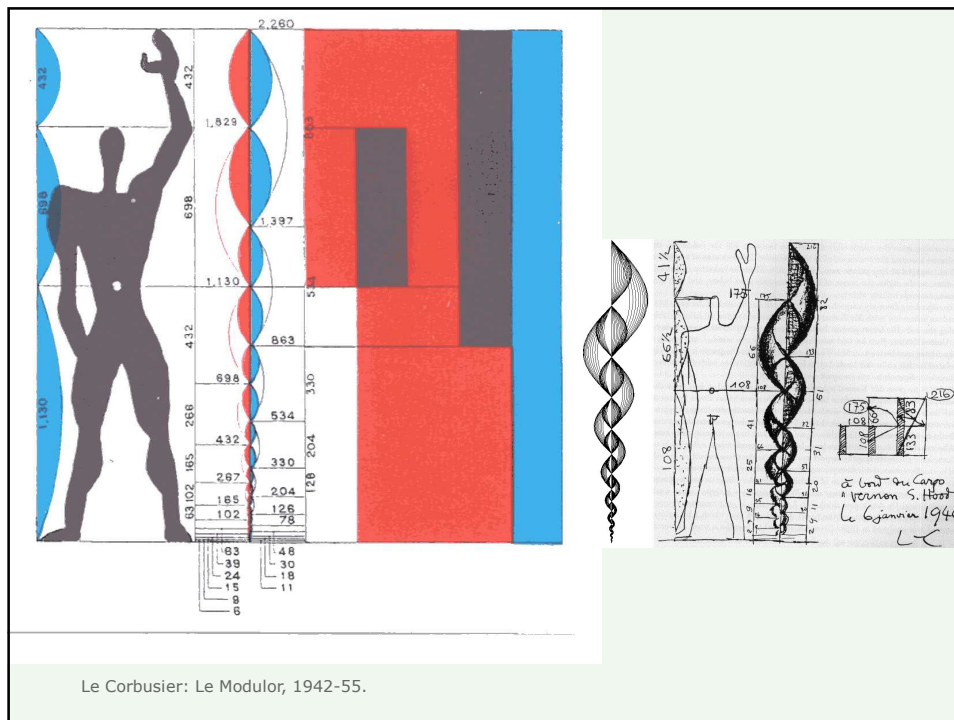




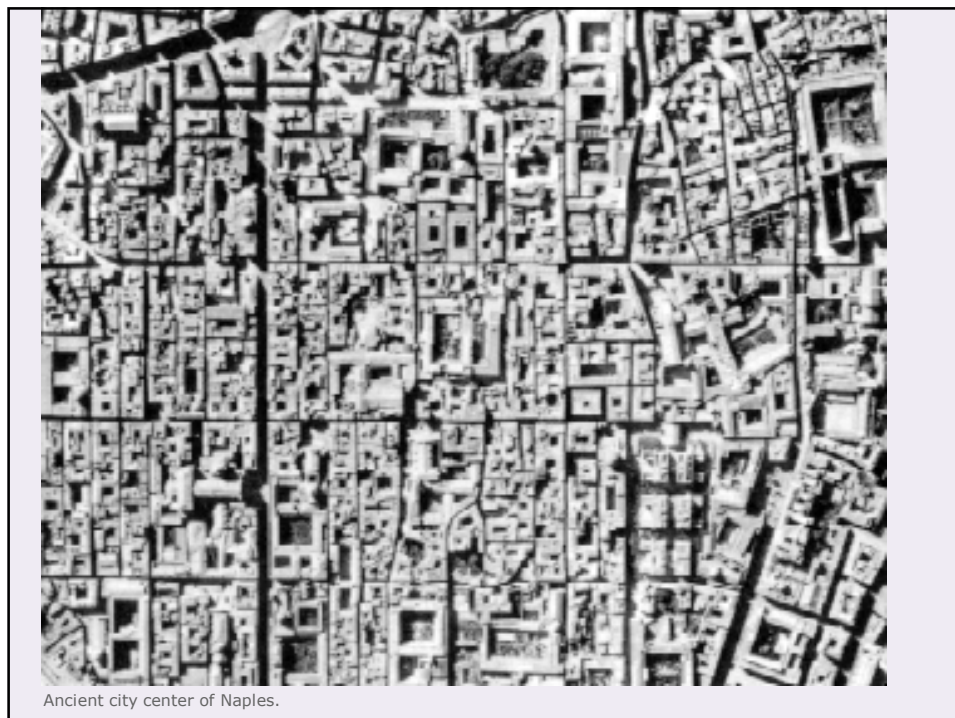
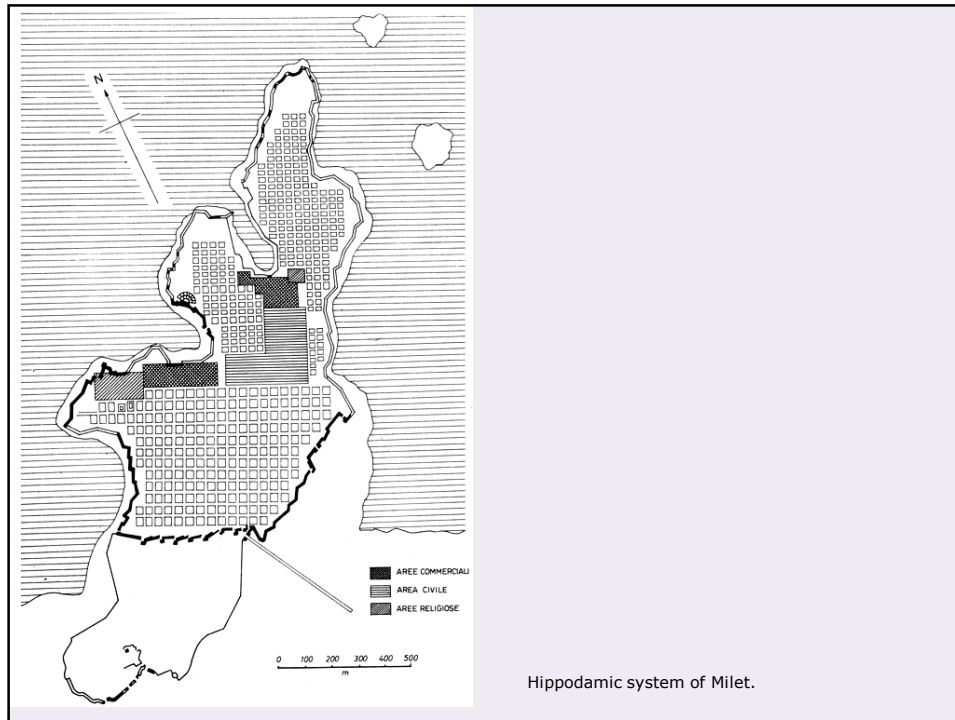
**modulus / der Modul**  
**(harmoniously calculating)**

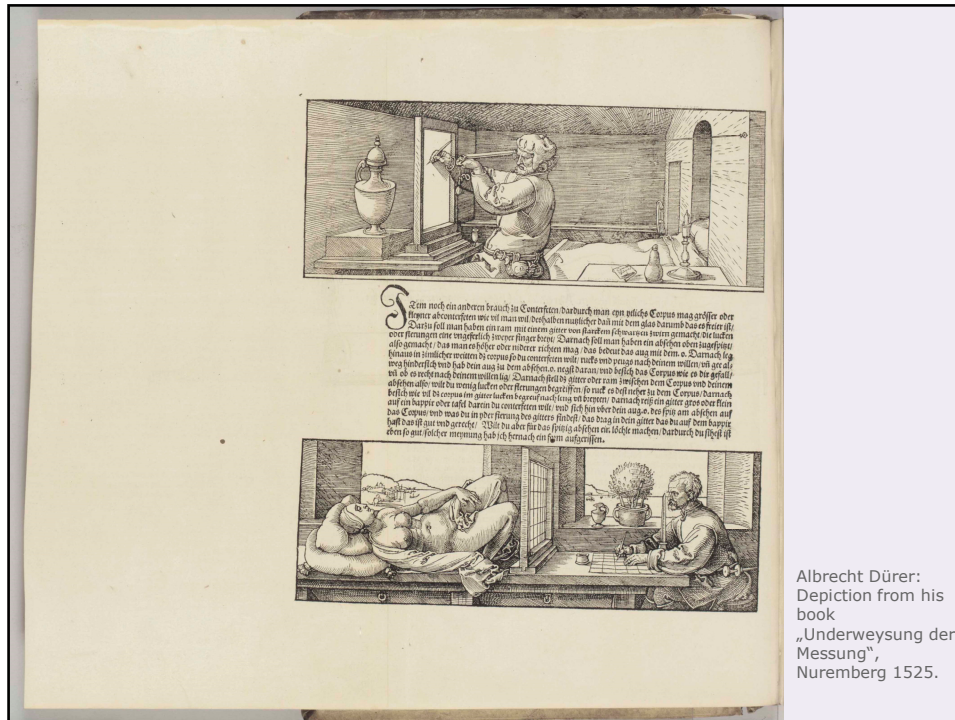




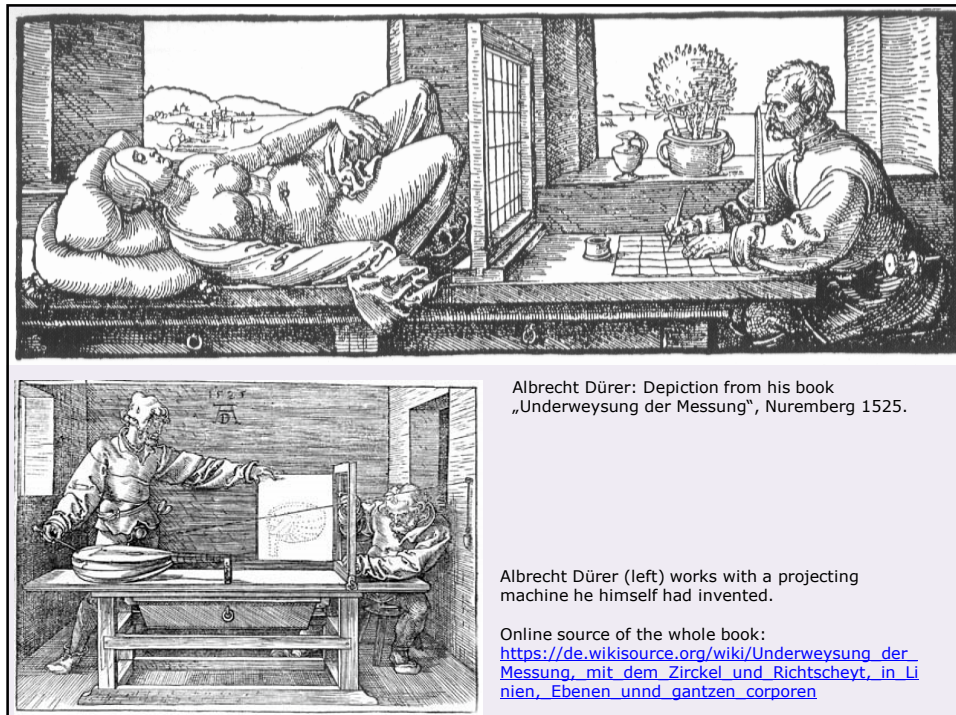


**module / der Modul**  
**(sectioning, subdividing)**

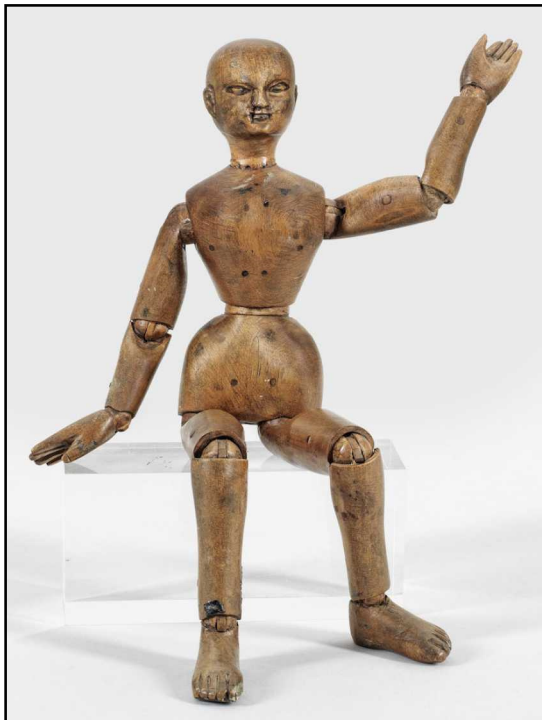




Albrecht Dürer:  
 Depiction from his  
 book  
 „Underweysung der  
 Messung“,  
 Nuremberg 1525.







Jointed doll / Gliederpuppe, Austria, around 1800. Wood, height: 34 cm.

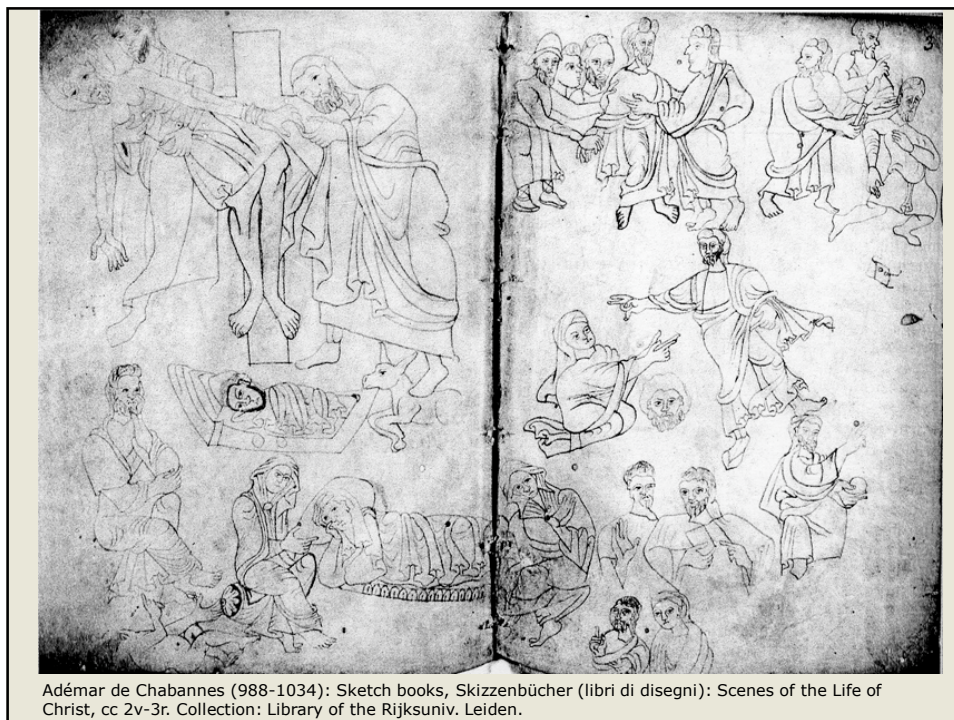


Wilhelm Eduard Daege: The invention of painting, 1832.





**modello (designing,  
passing on)**





Nicolas Poussin: Modello for A Bacchanalian Revel before a statue of Pan. 23,4 x 34,1 cm. London, British Museum.



Nicolas Poussin: A Bacchanalian Revel before a statue of Pan, 1631-1633. 100 x 142,5 cm. London, National Gallery.

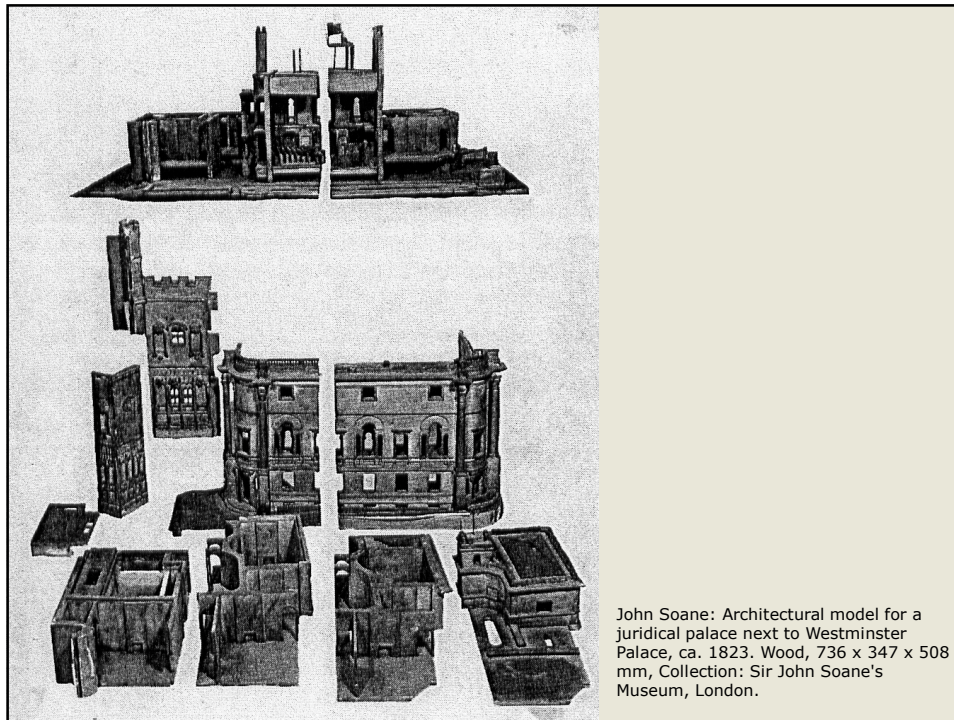


Antonio Labacco, modello della basilica di San Pietro in Vaticano secondo il progetto di Antonio da Sangallo il Giovane, 1539-1546, Città del Vaticano, Museo della Fabbrica di San Pietro. Scale 1:24.



Michelangelo: Modello for S. Pietro Roma, 1558-1561. Scale 1:15. Collection: Museo Storico-artistico (Tesoro di San Pietro) in Rome/Vatican.



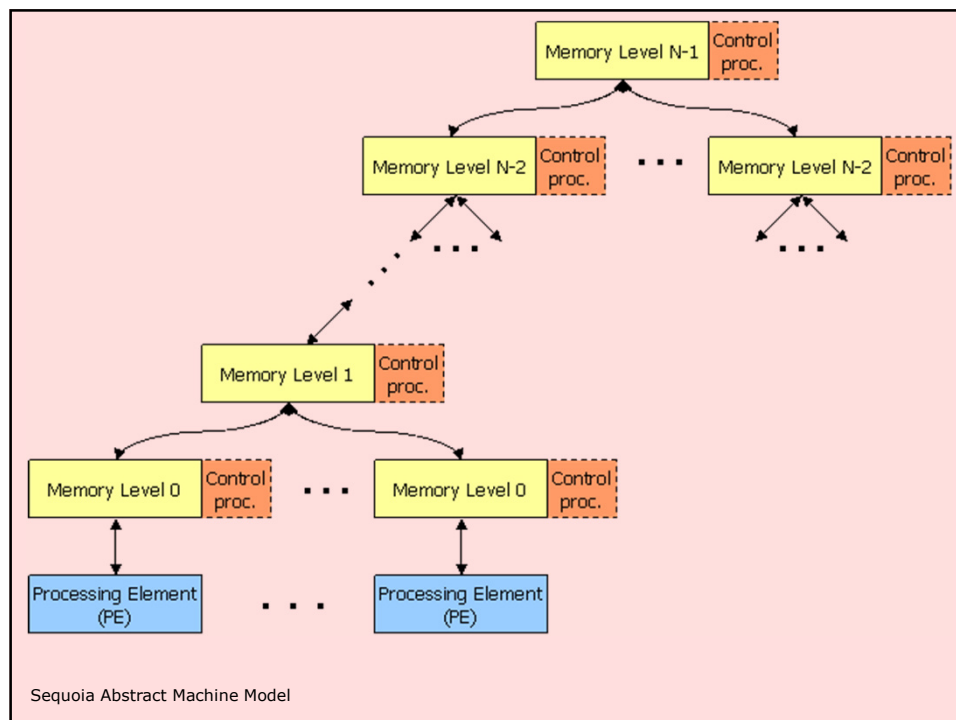


**model / das Modell  
(multifaceted)**

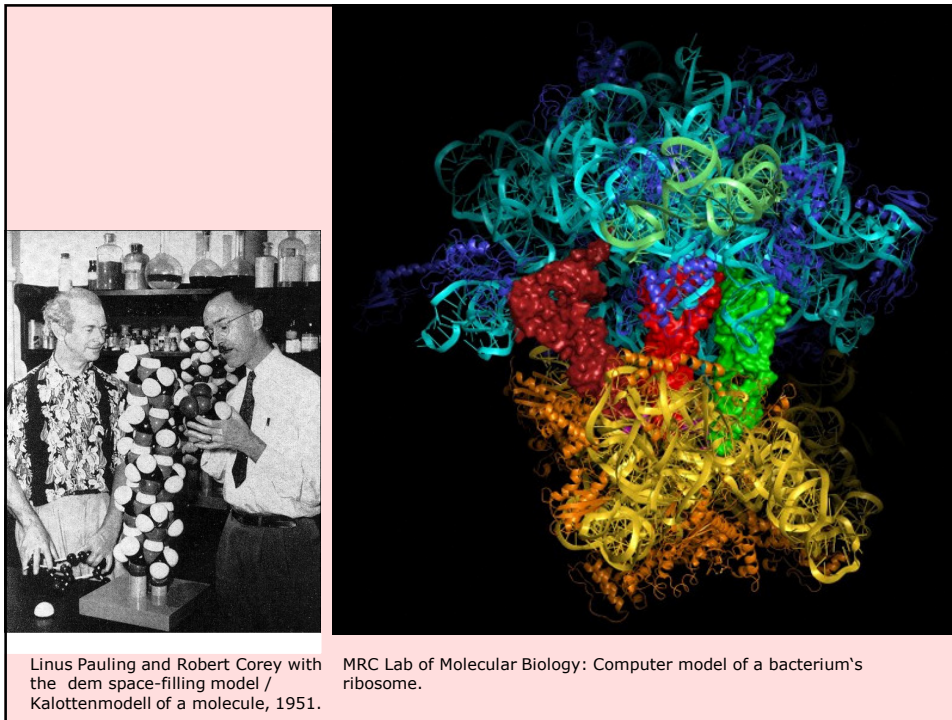
About architectural models:

An (architectural) model is here **"a tangible representation, whether the size be equal, or greater, or smaller, of an object which is either in actual existence, or has to be constructed in fact or in thought. More generally it denotes a thing, whether actually existing or only mentally conceived of, whose properties are to be copied. [...] Of a kindred character is the representation of distances by straight lines, of the course of events in time by curves &c. Still, neither in this case nor in that of maps, charts, musical notes, figures &c., can we legitimately speak of models, for these always involve a concrete spatial analogy in three dimensions. [...] indeed, there are self-evident advantages in comprehending things without resort to complicated models, which are difficult to make, and cannot be altered and adapted to extremely varied conditions so readily as can the easily adjusted symbols of thought, conception and calculation."**

L. Bo.: Model, in: The Encyclopaedia Britannica, Encyclopedia Britannica, Inc.: New York  
<sup>11</sup>1911, Vol. XVII, pp. 638-640.







Linus Pauling and Robert Corey with the dem space-filling model / Kalottenmodell of a molecule, 1951.

MRC Lab of Molecular Biology: Computer model of a bacterium's ribosome.

## Uses of models in the natural sciences

They serve ...

- the conceptualization of things or facts
- the formation of hypotheses
- the expansion of theory
- consistency testing
- the acquisition of knowledge
- prognosis
- the justification of predictions
- explanation
- demonstration
- teaching
- the visualization
- objectification of phenomena unobservable directly ...



La Specola Anatomical Collection – Florence.

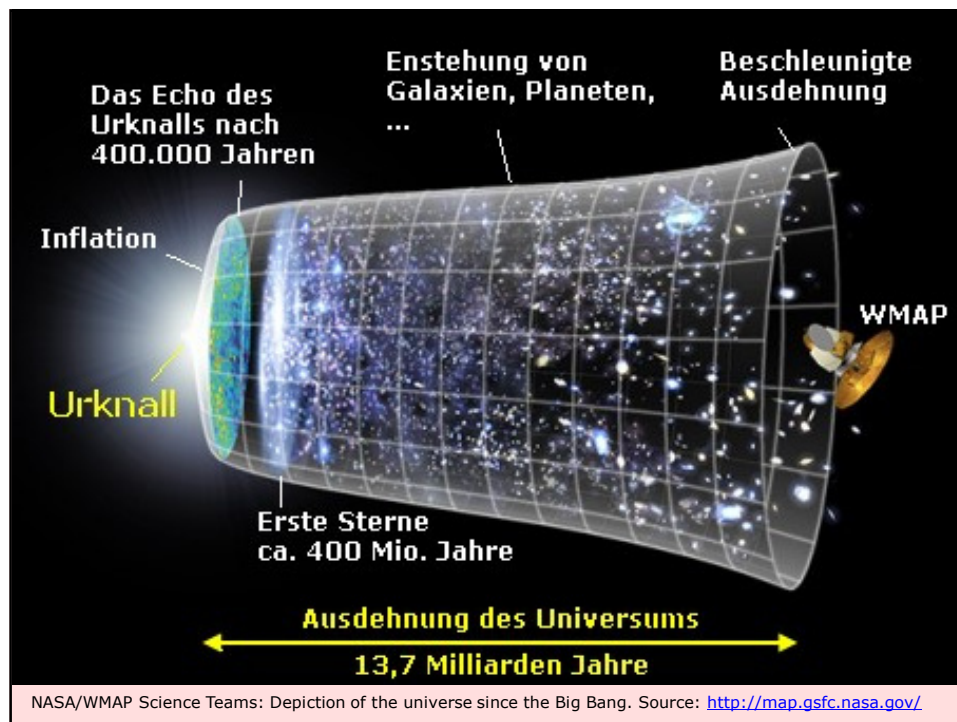
An anatomical wax model produced in Florence:  
1783-86. The Medical University of Vienna.

- ...
- mediation
  - knowledge bundling
  - indication
  - optimization



Model organism *Drosophila Melanogaster*.

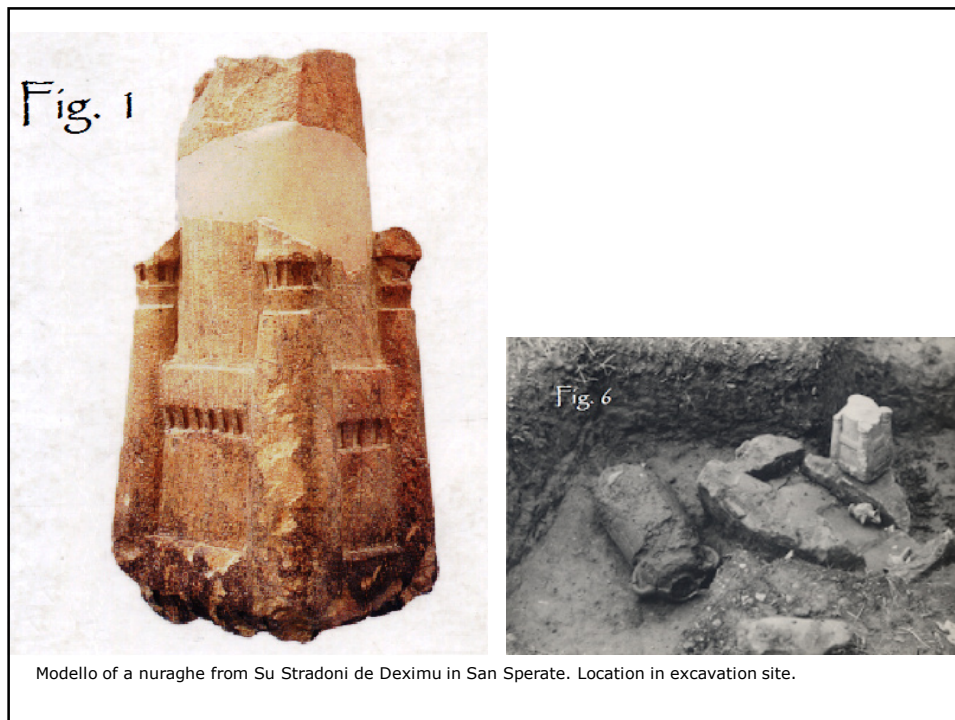




# Symbolic models

## **Altars in form of nuraghes in Sardinia**



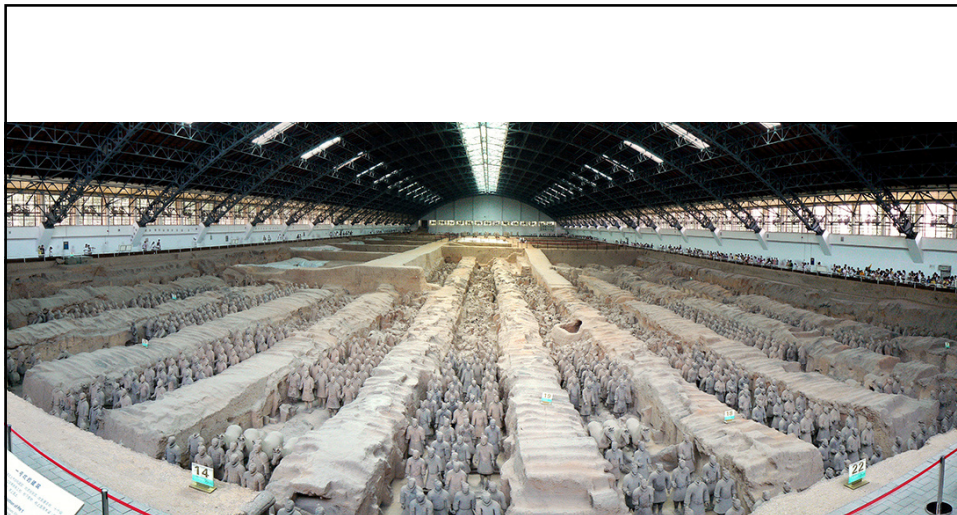


## Chinese Burial Traditions





Artist unknown: Primitive Farm House Model, Han Dynasty. Pottery, Size 10.5" by 5" by 9".



Terracotta warriors from the mausoleum of the first Qin emperor of China Qin Shihuang, c. 221-206 B.C.E., Qin Dynasty, painted terracotta, Terracotta Warriors and Horses Museum, Shaanxi, China.

The Han Dynasty:

**Western Han** 206 B.C.E.–9 C.E. (capital at Chang'an)

**Wang Mang** (also called Xin dynasty or Wang interregnum) 9–23 C.E.

**Eastern Han** 25–220 C.E. (capital at Luoyang)

B.C.E. = v. Chr.

C.E. = n. Chr.



House model, Eastern Han dynasty (25–220). China; Sichuan province. Low-fired ceramic. Asian Art Museum, The Avery Brundage Collection, B60P1802.



Storehouse. Eastern Han Dynasty (25–220 C.E.). China, Hubei Province. Earthenware with molded decoration and uneven lead glaze. Asian Art Museum, The Avery Brundage Collection, B60P130+.







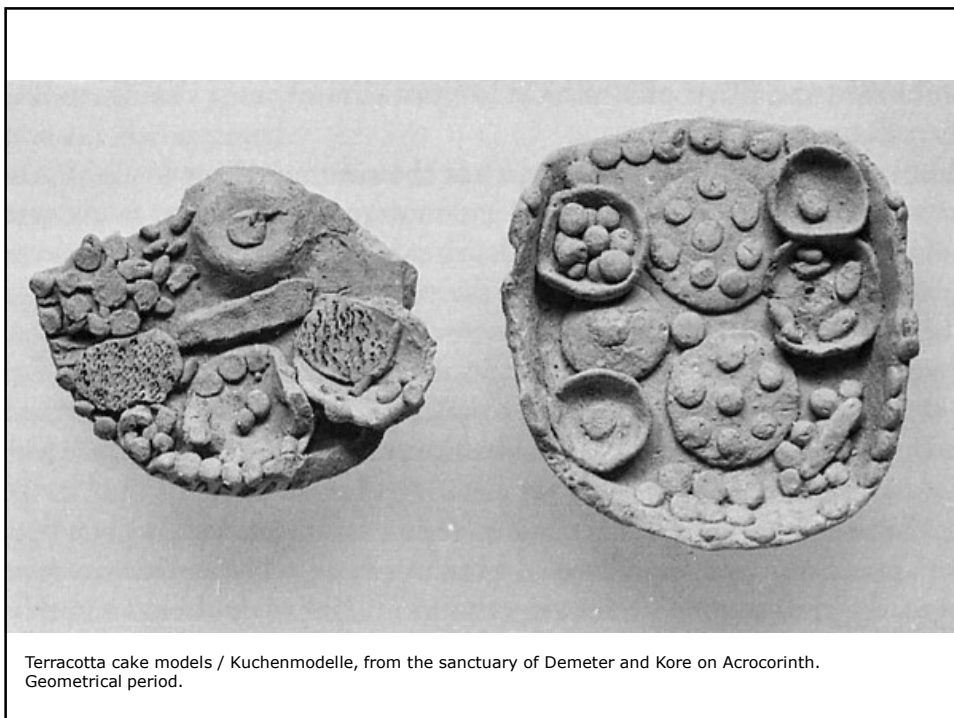
Tomb stove model with molded patterns and cooking utensils on top, Han Dynasty. Pottery, 10.5" x 7.5" x 4"



Model of a Stove, Chinese, Han Dynasty, Circa 206 BCE - 220 CE. Unglazed baked terracotta, 10 1/4" x 9 1/2" x 4 1/2" tall.



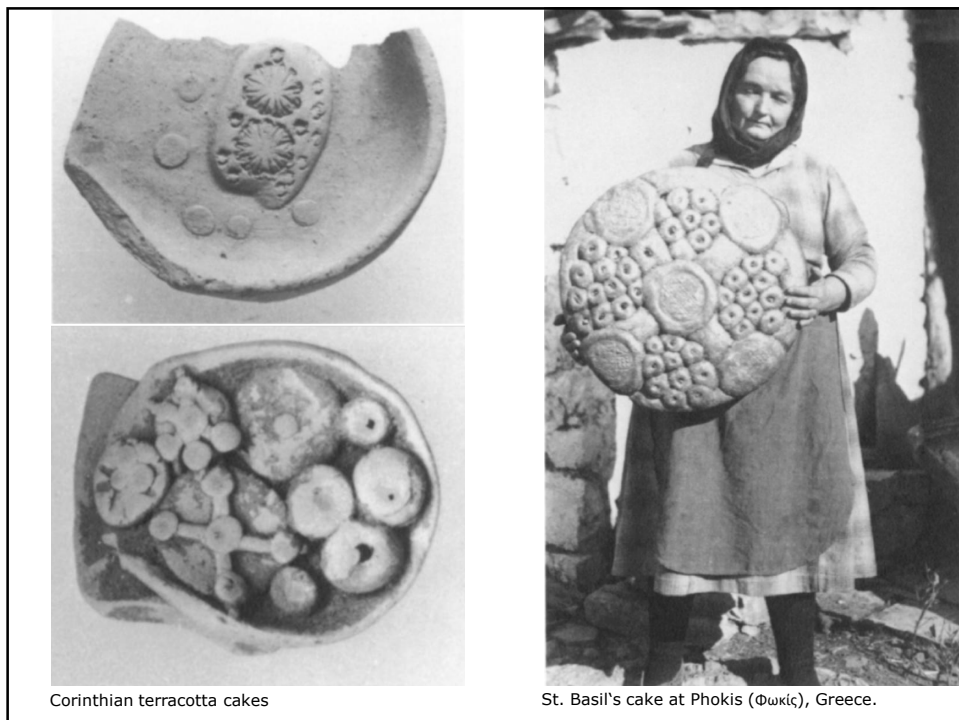
## Greco-Roman and Christian votive practices



Terracotta cake models / Kuchenmodelle, from the sanctuary of Demeter and Kore on Acrocorinth. Geometrical period.



Terracotta cake models / Kuchenmodelle, from the sanctuary of Demeter and Kore on Acrocorinth. Geometrical period.



Corinthian terracotta cakes

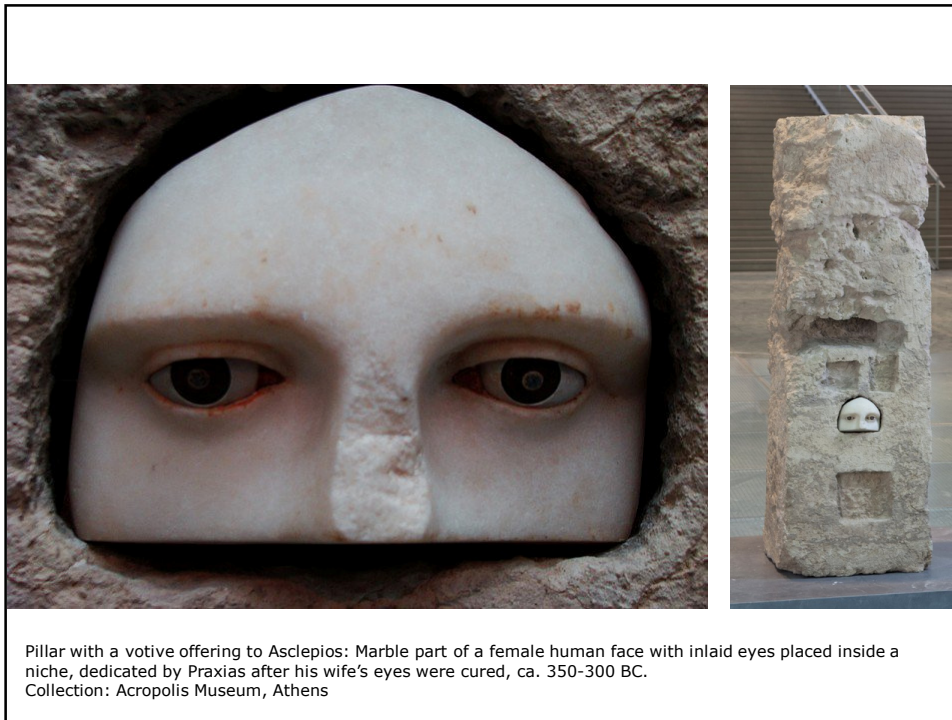
St. Basil's cake at Phokis (Φωκίς), Greece.

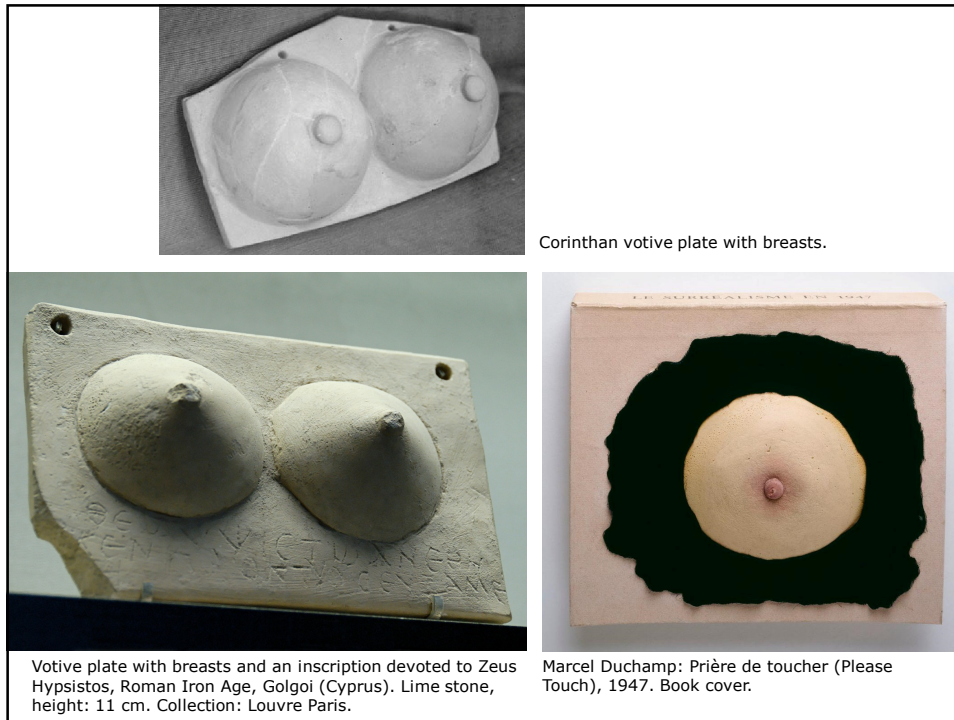






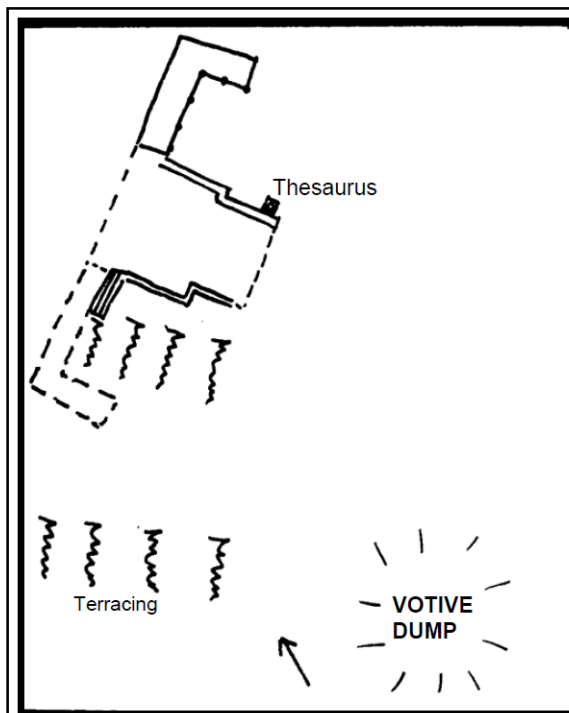








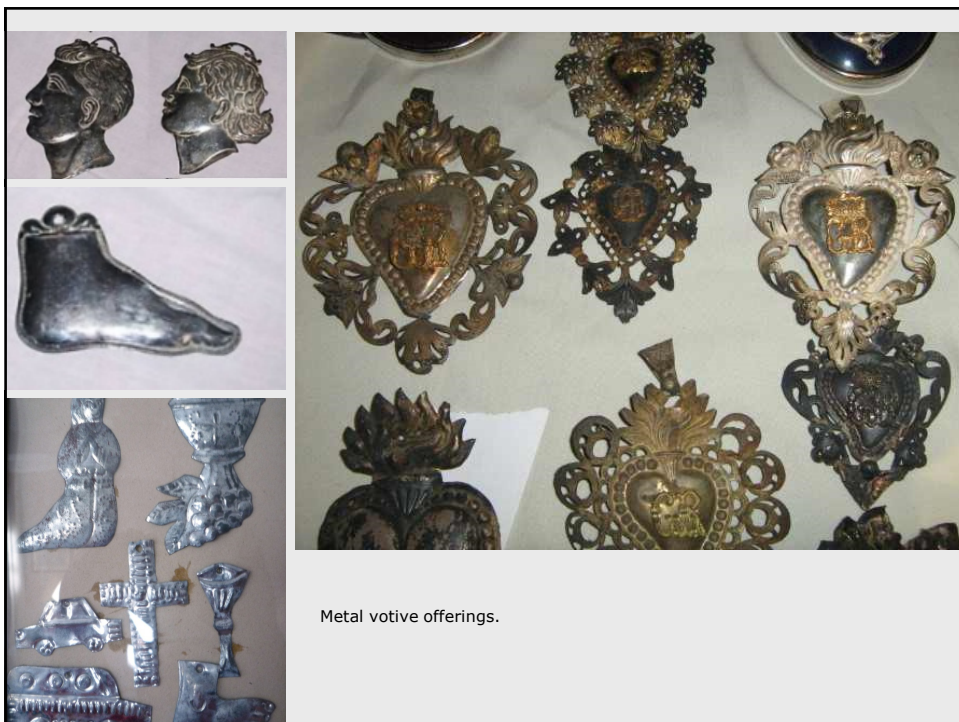
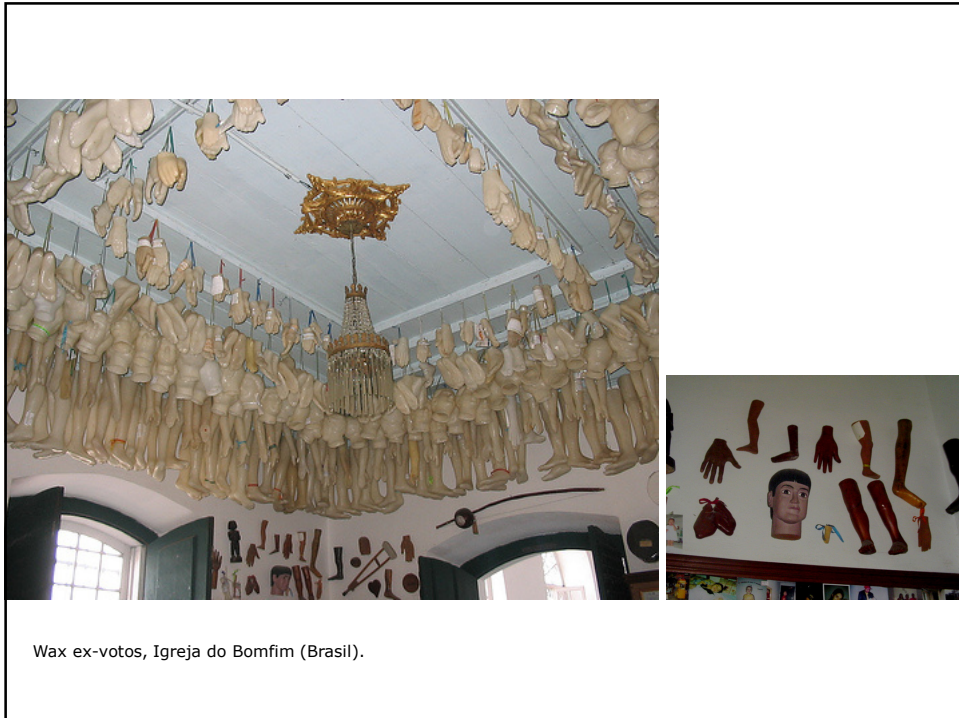
Paolo Lipari: Scale model of the Sanctuary of Malophoros, Selinous, Italy. Viewed from the east side. Cork model by scale 1:100. Collection: Baglio Florio Museum, Selinunte Archaeological Park, Sicily.



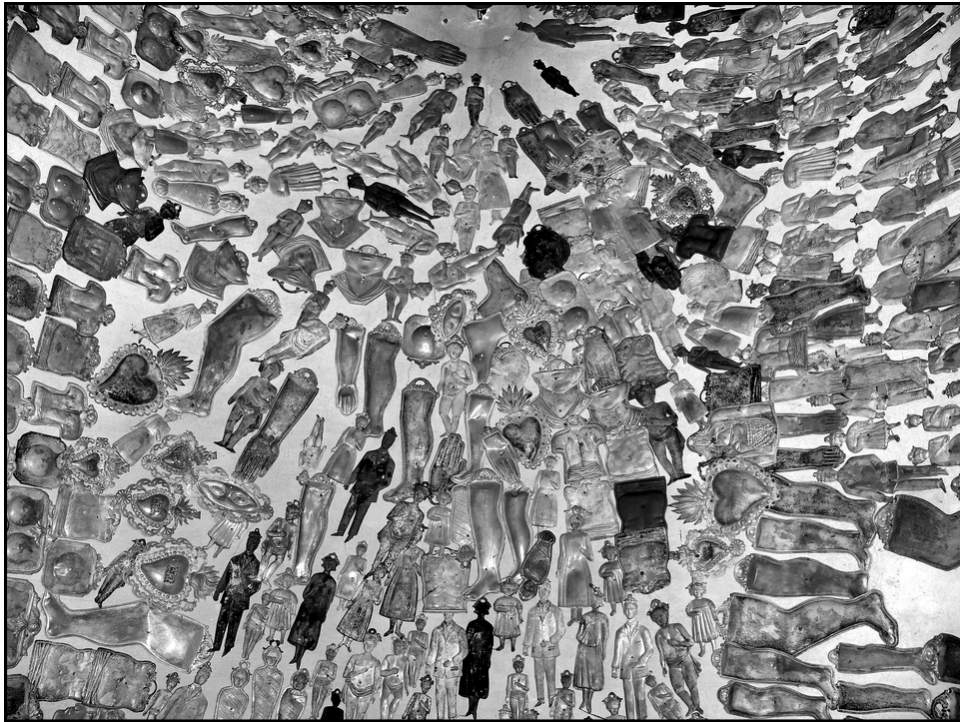
Votive offering in the shape of a bladder, Roman, 200 BCE-20. Collection: Science Museum, London.

Plan of the Sanctuary of Aesculapius at Fregellae (After Coarelli 1986: 164)









Wax baby (doll type) in the Panagia Angeloktisti church, Kiti, Cyprus, recently manufactured.



Wax baby (hand-made type) in the Panagia Angeloktisti church, Kiti



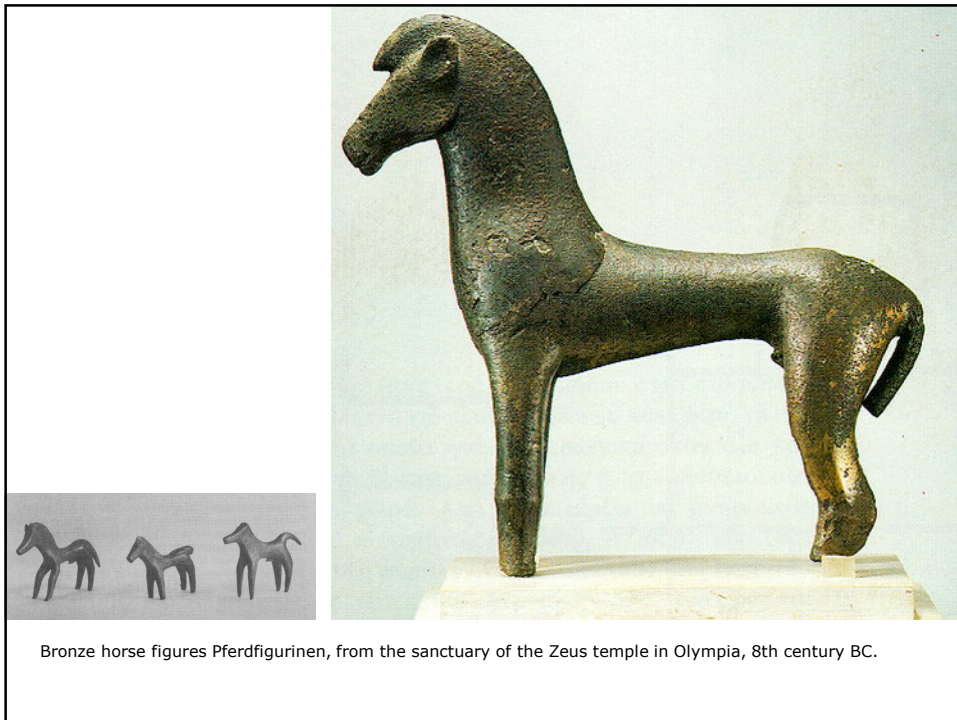


**Further votive /ancient miniature models**



Ancient bronze model bull-driven cart. Collection: Jerusalem Bible Lands Museum.





Bronze horse figures Pferdfigurinen, from the sanctuary of the Zeus temple in Olympia, 8th century BC.



Votive donations for Zeus, Collection: Olympia Museum.





Byzantine pottery lantern in the form of a house.



Italian Faience Majolica Maiolica Bird Cage Chandelier Lamp, mid 20<sup>th</sup> century.



Votive terracottas displayed at the Adivasi Museum in Chhota Udaipur, Gujarat. Collection: Design Innovation and Craft Resource Centre (DICRC), CEPT University.

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[lots of encyclopedic sources in there]

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