

26

Fertig sind begriffen vier bücher
von menschlicher Proportion durch Albrechten
Dürer von Nürnberg erfunden vnd be-
schriben zu nutz allen denen so zu di-
ser kunst lieb tragen.

M.D.XXVij. *Ap. 68.*

AD



Albrecht Dürer

Alena Šolcová

FIT CTU in Prague

October 29, 2012

Albrecht Dürer -1

- He was born in Nüremberg in 1471
- 19 years after Leonardo da Vinci.
- He was to Germany what Leonardo was to Italy -- a great artist, humanist, and student of nature. Still, the two were not at all alike.
- Dürer's greatest works were his marvelous prints. If you've seen nothing else, you've seen copies of his famous "Praying Hands."
- Those indignities are matched only by the ones inflicted on Leonardo's "Last Supper."

The Praying Hands - Dürer



Last Supper - Vinci



Albrecht Dürer - 2

- Dürer was trained as a goldsmith. Behind his art was the mind of a superb technologist.
- Leonardo was more the scientist, and Dürer more the engineer. Both were powerfully curious about the nature of things; but Leonardo was more determined in getting at truth through direct observation.
- Dürer, on the other hand, had greater technical control of his art. Leonardo's soaring imagination was expressed in his marvelous ability to show us what his eye saw.
- Dürer's was expressed in the powerful combination of startling realism with the symbolic language of his time.
- Dürer was in the center of the intellectual life of his day -- everything from the Protestant Reformation to mathematical analysis. He and Leonardo show us that subtle line between pure observation and analytical synthesis. They walked on different creative paths.

Albrecht Dürer -3

- In 1505 Dürer went to Italy to study Italian advances in perspective drawing. He learned what the Italians knew. Then he came back and recast that art in the language of Euclidian geometry.
- His first volume was titled "**A treatise on Constructions with Compasses and Rulers.**" An original copy in our library is hauntingly close to one of my old engineering texts. I see my old homework problems among his constructions.
- The second volume, titled "**Four Books on Human Proportion**", continues to exploit his fascination with, and his command of, formal geometry.
- Dürer's full mastery comes clear in his late engravings. Our eye roams these pictures from detail to detail, through layers of symbolism, then back to the whole. The depth of field is astonishing. As our eye takes us into the picture, we feel we're physically walking through rooms.
- Descriptive geometry originated with Dürer in this work although it was only put on a sound mathematical basis in the later work of Monge.
- Our interest is carried from element to element the same way it's carried by a fine storyteller.
- Dürer harnessed one of the really dazzling minds of the Renaissance to an engineer's clarity and analytical sense -- with astonishing results.

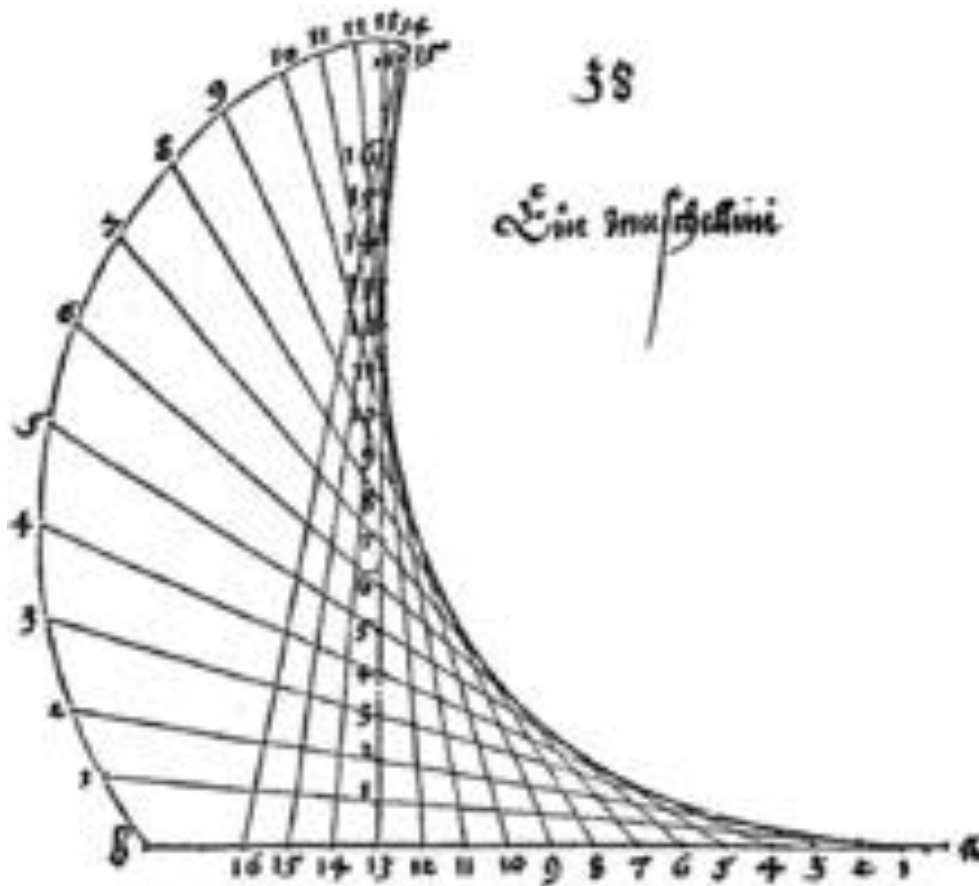
Source



First Book

- The first of the four books describes the construction of a large number of curves, including the Spiral of Archimedes, the Equiangular or Logarithmic Spiral, the Conchoid, Dürer's Shell Curves, the "muschellini", the Epicycloid, the Epitrochoid, the Hypocycloid, the Hypotrochoid, and the Limaçon of Pascal, although of course Dürer did not use that name.

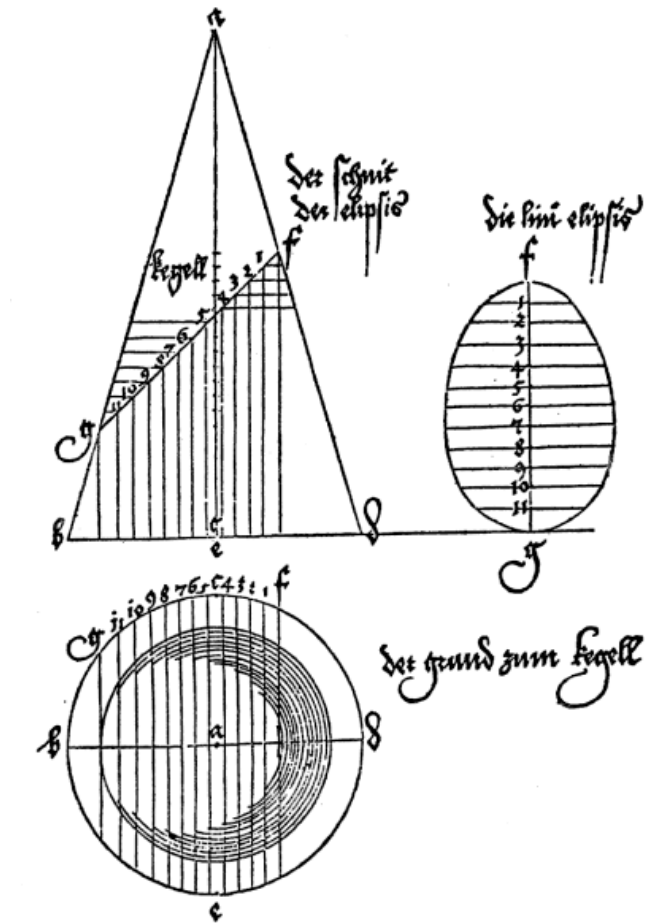
Example of a construction



Second Book

- In the second book he gave exact and approximate methods to construct regular polygons.
- Dürer's constructions of regular polygons with 5, 7, 9, 11 and 13 sides is discussed.
- Dürer also gave **approximate methods to square the circle using ruler and compass constructions** in this book.
- A method to obtain a good approximation to the trisector of an angle by Euclidean construction is also given.

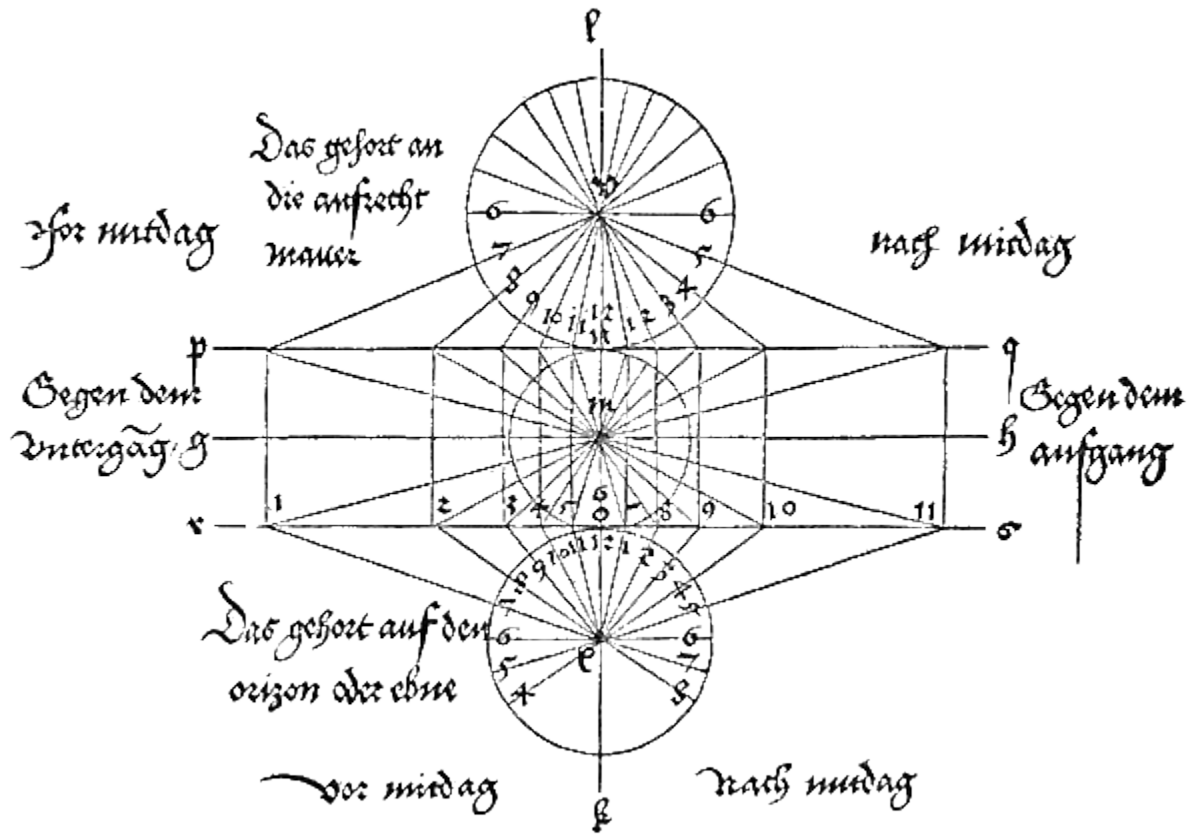
Dürer's Projection



Third Book

- Book three considers pyramids, cylinders and other solid bodies.
- The second part of this book studies sundials and other astronomical instruments.

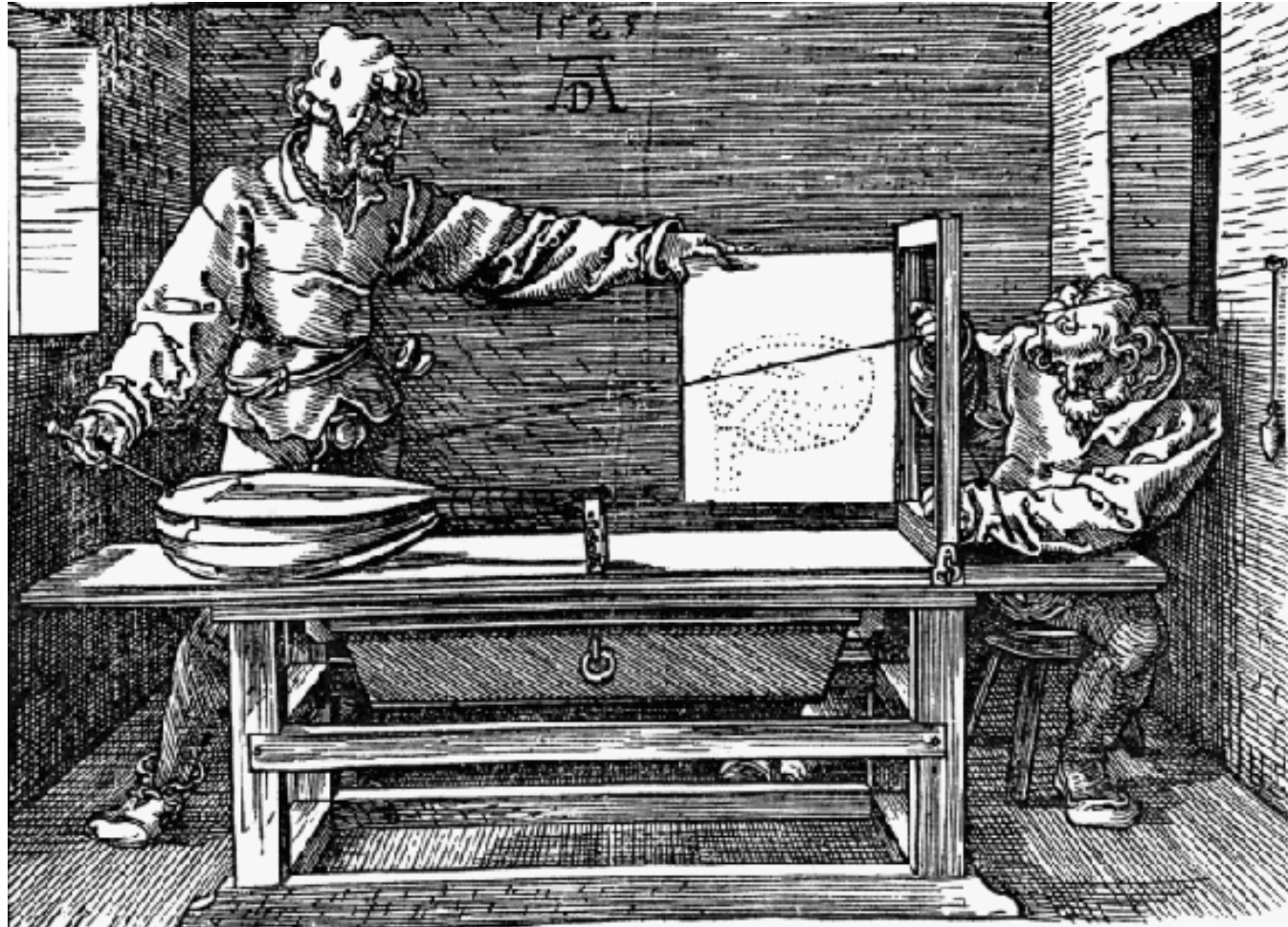
Dürer's Sundials



Fourth Book

- The final book studies the five Platonic solids as well as the semi-regular Archimedean solids.
- Also in this book is Dürer's theory of shadows and an introduction to the theory of perspective.

Durer's Projection



Dürer's Letters for printing

