Terracotta: two famous sculptures in Modena

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Chermat, Modena, January, 10 – 21
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The Compianto, San Giovanni’s Church

Guido Mazzoni, 1476 - 1477
The Deposition from the cross, San Francesco’s Church

Antonio Begarelli, 1530 - 1531
Terracotta: history

- In the XV century terracotta was considered as a minor art.

- It was considered less precious compared with marble or bronze sculptures.

- For art historiographer terracotta was a kind of people’s popular representation even though its malleability let the artist reach a great accuracy of details that wouldn’t have been possible with any other materials.

- The revaluation of terracotta began with Vasari who appreciated it for its intense impact on the viewer but to have complete treatises about Mazzoni and Begarelli we have to wait 1990 (A. Lugli) and 1992 (G. Bonsanti).
About “Compianti”

- It is a famous artistic subject both in painting and sculpture.

- The literal meaning is: to cry together for the death of somebody.

- There is a certain number of figures in the composition; some of them are taken from the Gospels, others could be Saints.

- Figures tend to be placed in half-circle around Christ.

- The purpose of these Compianti was to move the believers and make them part of the figure’s pain, and joy for the Resurrection of Jesus.
Comparison

- Representation of pain: Crying and screaming for Mazzoni; More self controlled for Begarelli

- Mazzoni:
  - Anatomic precision of details (veins in the arm of Jesus or teeth in Mary Magdalene’s mouth, wrinkles on men)
  - More realism and research for realism so much that he was defined as a precursor of expressionism movement (reckless)
  - There is a lot of pain is fully expressed especially on the Virgin Mary, and Mary Magdalene’s face

- Begarelli’s Virgin just faints and Mary Magdalene helps her but there’s no sufferance is more like a renaissance painting
What is clay?

- A sedimentary rock
- Formed by decantation or alluvial deposits
- Composed with a large part of minerals (kaolinite: most used for sculptures)

Cliché C.Sosson, « Les Côtes noires » (52)
Different types of clays

The 2 pictures show outcrops of clays

Outcrop of « Les Côtes Noires », France
Deposits of Albian, Cretaceous

Outcrop of Courville, France
Deposits of Lutetian, Palaeogene

Clichés C. Sosson
Why this material for a sculpture?

In adding water with the clay, the distance between each sheet increases: the clay becomes workable. It’s called plasticy.

After heating, clay becomes a very strong material. 

Terracotta
Constitution of Terracotta

Minerals:

- Smectite
- Illite
- Kaolinite

http://pubs.usgs.gov/dds/dds033/USGS_3D/ssx_gif/semkao.gif
Why does terracotta degrade?

- Physical reason: cutting into pieces
- Chemical reason: the minerals which compose the rocks will transform in another mineral by effects of the weather (exemple: rain, freezing, dissolution, etc.)
- Biological reason: bacterical, fungi…
Examples of Terracotta’s degradation
The technique of Begarelli

Step 1: Using wood to create the structure

Usually the artist built a wood frame to give the shape of the future sculpture.
Step 2: Addition of clays and modelage of the shape

Then he applies clay on the structure. This step is always done down to up to recover completely the structure.
Step 3: Cutting of the sculpture

- Cutting the sculpture in different parts, with rope or metallic wire for clay. This phase is made before the dye.
- To know how to joint different parts, Begarelli did landmarks (lines or words).
- A spray with kaolin pulverized, before the reconstitution
- Cooking
Mazzoni’s compianto (1477): Restorations

- 1509: Coloured layer already damaged (Francesco Ferrari)
- 1853: Very thick painted layer (Luigi Righi and Giovanni Tassi)
- 1993-1995: Removal of the eighteenth’s polychromy to give more importance to modeled (Nonfarmale).

- Tools: Scalpel, wraps and microspray of aluminum oxide
- Removal of ancient remakes
- Removal of iron rusty supports
- Protection with microcrystaline wax
Begarelli’s Deposition (1531): Restorations

- 1572: Applied new colours (Orazio Grillenzoni)
- 1812: Removal the polychromy of Grillenzoni (Borghi and Malavasi)
- 1829: Created an appropriate ventilation (Cavazza)
- 1978-1980: (Uber Ferrari)
  - Removal of ancient remakes of gypsum (6-7 kg in each figures)
  - Cleaning with wraps
  - Addition of steel pivot
  - Protection with microcrystaline wax
Preventive conservation works for the last restoration on Compianto

- **INTERNAL STRUCTURE**
  - RADIOGRAPHIC ANALYSES
  - ENDOSCOPIC ANALYSES

- **EXTERNAL COMPOSITION**
  - TERMOGRAPHY
  - THIN SECTIONS

- **OPTICAL MICROSCOPY (O.M.)**
  - STRATIGRAPHY POLYCHROMY
  - PIGMENT IDENTIFICATION
  - MINERALOGICAL ANALYSES
  - ELEMENTAL ANALYSES

- **ELECTRON MICROSCOPY (SEM - EDS)**
Preventive conservation works for the last restoration on Begarelli’s

Analyses have never been made

But colour investigation on another Begarelli’s work: Carlo Sigonio

1) SEM - EDS analyses
2) Optical Microscopy
3) ICP - AAS
4) X-ray Diffraction
5) FT-IR and histochemical assays

1) The clay contains >> Si, Al, Ca;
   > Fe, Mg, K, Na
1) Baking Temperature 900°C
2) Stratigraphy: Terracotta +
   preparation layer (animal glue) +
   lead white with lipidic binder
   (line seed oil)
Some complementary analyses

No destructive elemental analyses

IBA (Ion Beam Analyses) = PIXE, PIGE, IL

1) Studying objects in an homogeneous way
2) Detecting major, minor and trace elements with a much higher sensitivity and without any sample preparation
3) They can be combined with XRF analyses
4) They allow to find provenance and origin of pigments and monitoring the time evolution of materials and techniques

Molecular Analyses

(FTIR and MicroRAMAN)

1) Complementary analyses
2) Detecting organic and inorganic painting materials (pigments, binders, resins, wax)
Degradations
Churches: Indoor atmosphere

- Soot (Candles, vehicles emission…)
- O₃, CO₂
- Dust particles
- Temperature variations
- Relative Humidity
Begarelli: Degradations

- No major degradations
- Soiling +++
- Accumulation of white products
- Brown – yellowish colour: degradation or patina?
Mazzoni: Degradations (1/2)

More degradations observed

Material Loss

Soiling +++

Icomos - ISCS
Mazzoni: Degradations (2/2)

Cracks

Patinas

Discoloration

Icomos - ISCS
Conclusion

- Mazzoni’s work: well studied and restored

- Begarelli’s work:
  - At first sight, relatively good state
  - Precises analyses needed -> better accessibility needed

- Terracotta:
  - An important material in the Emilia Romagna’s cultural heritage but only recently studied (1990’s)
  - Necessary to improve the study of the environmental conditions
Thank you for your attention!

2. G. Bonsanti, a cura di, “Antonio Begarelli, il gruppo plastico di San Domenico”, Edizione Panini


7. A. Lugli, “Guido Mazzoni e la rinascita della terracotta nel Quattrocento”.


