Events

Jean François Niceron and Emmanuel Maignan. Two Minims, between Science and Faith. Deceptive fruits of an 'artificial magic'

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Deception and mathematical rigor: two seemingly antithetical dimensions. Yet sometimes oxymorons are reconciled. This is the subtext of the exhibition *Jean François Niceron and Emmanuel Maignan. Two Minims, between Science and Faith*, curated by Alessio Bortot, Agostino De Rosa and *Imago rerum*, which opened on October 7, 2023, at the shrine of St. Francesco di Paola [1].
The exhibition traces the studies carried out by the two French Minims in the 17th century between the convent of SS. Trinità dei Monti in Rome and the Mother House of the Minims in place Royale (now place des Vosges) in Paris, which was almost destroyed in the late 19th and early 20th centuries. The two convents were the casket in which Niceron and Maignan developed and applied their research on optics, catoptrics and gnomonics. The corpus of their studies is characterized by an antidogmatic approach that combines faith, science and mathematics according to a philosophical and cultural vision that recalls René Descartes' method of doubt. Nothing certain can be found in the representations of the two French scholars, constantly aimed at searching for a 'divine secret code' hidden in nature, that only mathematics and optics can reveal. It is a constant chase after the deceptive fruits of an 'artificial magic' applied to image construction and the theory of perception.
The two convent buildings that housed Niceron and Maignan are reproduced in the exhibition through representations, 3D reconstructions and virtual tours. The convent of SS. Trinità dei Monti was surveyed with digital technologies by *Imago rerum* of the IUAV University of Venice. This made it possible to propose evocative and effective virtual reconstructions of the corridors where three paradigmatic works of the two Minims are located: the anamorphic painting of *San Franceso di Paola raccolto in preghiera* (1642) created by Maignan in the western corridor; the anamorphosis of *San Giovanni Evangelista che scrive l'Apocalisse nell'isola di Pathmos* (1639-1640) painted by Niceron in the eastern corridor; Maignan's catoptric astrolabe (1637-1638) that connects the two corridors and of which a three-dimensional analog model is shown. A video presents a virtual tour of the monastic convent that concludes with a sequence from Werner Herzog's film *Salt and Fire* (2016). In it, the anamorphosis of St. Francesco of Paola is reproduced, digitally reconstructed by *Imago rerum*.
Of the no-longer-existing place Royale convent in Paris, a digital model, illustrative tables and a virtual tour leading to the convent church, the anamorphic galleries on the second floor, the library and the remains of the solar gnomon sundial have been created. Also, philological reconstructions of the two now-lost anamorphic paintings by Niceron are illustrated: *St. John the Evangelist Receiving the Apocalypse on the Island of Pathmos* (1644) and *Magdalene in Contemplation at the Sainte-Baume* (1645).
The exhibition offers a broad overview of the theoretical work and application experiments of the two Minims. One section is devoted to a comparative analysis of Niceron's two treatises, *La Perspective Curieuse* [Niceron 1638] and the *Thaumaturgus Opticus* [Niceron 1646] (published posthumously). In them a predominantly applied approach to solving graphical problems is evident. Anastatic copies of the two treatises are available for consultation by visitors.
Very striking is the section devoted to the perspective representation of complex hollow star solids. They remained only on paper and in Niceron's creative imagination, but in the exhibition, they find concrete realization through prototyping models in PLA. Studies of conical and pyramidal anamorphoses are investigated through complex geometric analyses and three three-dimensional models, reworkings of three

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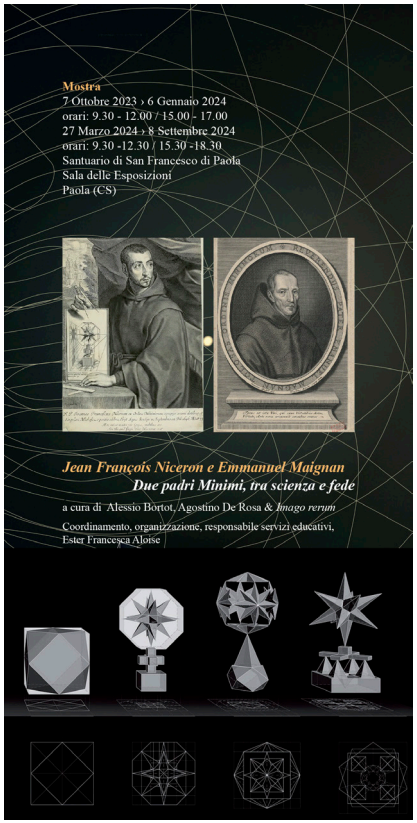

Fig. 1. Title page of the exhibition brochure.

plates found in *La Perspective Curieuse*. When observed from precise points of view, they render the real features of the faces portrayed.
In addition, the exhibition is enriched by cylindrical mirrored devices reproducing all the catoptric anamorphoses attributed to Niceron: one of his earliest realizations depicting Jaques d'Auzolles de Lapeyere; all the *anamorfosi Barberini* resulting from early experiments later reported in treatises of 1638 and 1646; and the catoptric anamorphosis of a *Mounted Soldier* (1620-1640) reworking an engraving by Hendrick Goltzius.
The central core of the exhibition reproduces large-scale photoplans of the two anamorphoses of the convent of SS. Trinità dei Monti. Two adhesive disks applied to the floor indicate the point of view from which it is possible to perceive the figures hidden by the optical-perceptive deception. Between the two representations is an additional photoplane reproducing the catoptric astrolabe made by Maignan between 1637 and 1638 in the convent's northern corridor. Such an optical-solar device made it possible to know the exact ante-meridian time of any place on the globe reached by the Minims. A graphic diagram placed under the photoplane allows visitors to interpret timelines and geographical locations.
The exhibition continues with more of Niceron's catoptric anamorphoses, in particular a three-dimensional reconstruction of the *tabula scalata*, a device consisting of triangular prisms –placed inside a box– on whose faces are shown portions of the face of Francis I of France alternating with lines reproducing a celebratory motto. The text and image are recomposed when perceived from a specific point of view and thanks to a tilted mirror. But perceptual deceptions do not end with optics and catoptrics. In fact, Niceron devotes *Book IV* of *La Perspective Curieuse* to dioptrics. He elaborates a series of studies in which a monocular telescope fitted with a prismatic lens, pointed at a table depicting multiple figures, allows a new image to be obtained by recomposing portions of those given. Here the deception comes by the fragmentation and convergence of the laws of refraction. *Imago rerum* reconstructs the device by applying it to *Table LXIX* with the busts of 12 Ottomans that, when observed through a prismatic-lens monocular telescope, are recomposed into the portrait of Louis XIII. Catoptric laws and perceptual deceptions bend to unequivocal political-theological messages.
The exhibition closes with a section devoted to Emmanuel Maignan whose studies on gnomonics that led him to make two cathopter astrolabes in Rome are highlighted: the already mentioned one from SS. Trinità dei Monti in 1637-1638 and the one from palazzo Spada in 1646. In addition, a hypothesis of an astrolabe also initially placed at SS. Trinità dei Monti and now lost is proposed.
Finally, very interesting is the digital reconstruction of a work by Maignan that was never realized. In the manuscript *Mathematica Pamphilianos hortos exornans* [Maignan 1650 ca.] he describes some scientific games that were to accompany the design of the villa Doria Pamphilj attributed to Francesco Borromini. Here we find some artifices related to the French father's studies on optics, gnomonics, acoustics and pneumatics. The work was never realized but the exhibition proposes a virtual enjoyment of it albeit in a digital dimension.
The exhibition concludes with a copy of the treatise *Perspectiva Horaria* [Maignan 1648], part of the collection of the *Biblioteca Charitas* of the convento di San Francesco di Paola, and a reproduction of the table illustrating the projective procedure by which Maignan created the anamorphosis of *San Francesco di Paola in preghiera*.
The exhibition is popularizing synthesis of a research conducted with extremely rigorous scientific method, both on theoretical content and on graphic analysis and anamorphic reconstructions. It represents a virtuous example

that elegantly and lightly reconciles the necessary requirements of scientific rigor with effective popularization skills. The curators of the exhibition have been able to enhance the natural predisposition to perceptual and emotional involvement that themes related to optical, catoptric and dioptric anamorphoses are able to solicit. It is a playful dimension that spontaneously realizes a *serious game* in which theoretical analysis of the treatises and rigorous geometric representations are placed side by side with engaging digital reconstructions and reproductions of devices [2] conceived by Niceron and Maignan, capable of soliciting awe and wonder. The exhibition hall is thus transformed into a stimulating optical-perceptual playground in which the visitor can delve into theoretical aspects while at the same time being attracted by virtual tours and three-dimensional reconstructions, wandering in search of a privileged vantage point that reveals the deception. It is an effective place of cultural dissemination but also an opportunity for educational growth in which, following in the footsteps of the two Minimal fathers, dogma gives way to reason and the constant search for what lies hidden between the occult folds of natural laws.

Fig. 2. Bottom: images from the exhibition. Top, from left to right: Jean François Niceron, Anamorphosis (Ritratto di Luigi XIII davanti al crocifisso), Gallerie Nazionali di Arte Antica, Roma; three-dimensional analog model of the catoptric astrolabe made by Emmanuel Maignan at the Convent of SS. Trinità dei Monti, Rome.

Notes

[1] The exhibition was organized in collaboration with the 'Fondazione San Francesco di Paola ONLUS' and can be visited from October 7, 2023, to January 6, 2024 and from March 27 to September 8, 2024. Ester Francesca Aloise oversaw coordination, organization and educational services.

[2] The Department of Architecture and Territory from the Mediterranea University of Reggio Calabria oversaw the optimization of 3D models and prototyping.

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