RECONSTRUCTING THE IMAGE OF THE IDEAL CITY IN RENAISSANCE PAINTING AND THEATRE: ITS INFLUENCE IN SPECIFIC URBAN ENVIRONMENTS. DIGITAL TECHNOLOGY AND VISUAL CULTURE*

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INTRODUCTION

The virtual reconstruction that we propose in this study aims to provide a model that allows visualizing how, in specific urban projects or reforms carried out since the Renaissance, the image of the ideal city represented in pictures and scenery still persists. Paraphrasing Foucault, our purpose is directed towards an «archaeology of the imaginary» or perhaps, more accurately, a «virtual» archaeology of the imaginary.

From this point of view, we consider it necessary to begin with a brief reflection on an idea that has been latent throughout the preparation of this work, a concern that has to do with what some researchers with a well-established trajectory in the field of Digital Humanities, and in particular, in the area of spatial analysis and reconstruction, have been proposing in recent years. We refer to the critical reflection on the part of fantasy and uncertainty that all virtual reconstruction entails. From this approach, it is accepted that most digital projects dedicated to the reconstruction of historical monuments, archaeological sites, or collections of museums, contain an element of deception, and require, therefore, the will and complicity of the viewer to accept the reality that is offered to them.

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To varying degrees, they ask the viewer to believe that he or she is “really there”. While admitting that the AutoCAD reconstruction is not the actual building, nor the museum catalog the physical collection, many presentations nonetheless ask viewers to assume Coleridge’s “willing suspension of disbelief” while viewing these substitutes.

To save this important hurdle, the discipline of Digital Humanities has adopted an ontological approach, often called «knowledge representation», a terminology which encourages readers and users of digital technology to recognize the problematic fidelity between the model and its referent. In this sense, we should not disregard the fact that all reconstruction is usually a matter of interpretation, especially when it comes to reconstructing an absent object or building.

Pamela Fletcher recently returned to the subject of the different degrees of uncertainty between reality and fantasy that a virtual reconstruction involves:

Researchers involved in such projects are also cautious about the fantasy of perfect historical accuracy. As projects increase in sophistication, they can seem to provide a total immersion in an alternative world, along the lines of Renaissance Italy as recreated in extraordinary detail for the video game Assassin’s Creed II. How do scholars represent relative degrees of uncertainty in their recreations?

In our case, besides, our commitment on the virtual lies in the intangible space of the imaginary, since what we try to reconstruct does not come directly from material culture, but from the visual culture of an era. To this avail, we previously address an approach to the characteristics of three specific and interrelated manifestations in the context of the Italian Renaissance: scenography, painting and urbanism.

1. PAINTING, SCENOGRAPHY AND URBAN ENVIRONMENT

Between the utopian city and the royal city of the Renaissance, there is a link which is the scenic town. The recreation of the city of classical antiquity, systematized by Vitruvius in the tragic scene, is a cliché of Renaissance scenery, but extends beyond the stages invading the pictorial and urban spaces.

The relationship between theatrical scenery and urban design during the Renaissance and the Baroque has been suggested by authorized voices in the subject of History of Urbanism, such as Pierre Lavedan or Antonio Bonet Correa. In addition, the close relationship between painting, scenography and urban environment from the 16th century in Italy was also established by Giorgio Simoncini in his comprehensive book on

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1 BONDE et al., 2009: 363.
2 FLETCHER, 2015.
the city and society in the Renaissance\textsuperscript{3}. With all this, today, the possibilities offered by digital technology allow us to point further and carry out a simulation of a kind of urban space that demonstrates how certain urban projects, as we will try to show in this article, correspond to the visual culture of a time, a culture of images taken from the theatre and painting\textsuperscript{4}.

The new way of contemplating the world, symbolically represented through the use of perspective, can be seen in paintings that represent the ideal city. We refer in particular to the famous tables of Urbino, Baltimore and Berlin, which for a time were related to scenic projects. In fact, the urban perspective showing the famous Berlin table (Fig. 1) was used by Eugenio Battisti in a hypothetical reconstruction of the scenography designed by Leon Battista Alberti for the performance of his comedy \textit{Filodoco}\textsuperscript{5}.

![Fig. 1. Ciudad ideal (c. 1477). Gemaldegalerie, Berlin](image)

The scenic practice was offering suggestive images of the ideal city in Italy. Castiglione described the staging of the \textit{Calandria} of Bibbiena in Urbino in 1513 in the following way: «La scena poi era finta una città bellissima con le strade, palazzi, chiese, torri, strade vere, e ogni cosa di rilievo, ma aiutata ancora da bonissima pittura, e prospettiva bene Intesa»\textsuperscript{6}.

Machiavelli, in his foreword to \textit{La Mandragola} (1518), also invited the spectator to visualize the design of a stage which corresponds to the standard typology of the utopian city (Fig. 2):

\textsuperscript{3} SIMONCINI, 1974: 232.
\textsuperscript{4} Vide GONZÁLEZ-ROMÁN, 2001: 143-165.
\textsuperscript{5} BATTISTI, 1990: 73-83.
\textsuperscript{6} Cf. PINELLI & ROSSI, 1971: 107.
Unlike such descriptions, or those contained in the social or moral utopias of the Renaissance, in which a completely new city was drawn, some artists and theorists of the Renaissance, who did not believe in the possibility of transforming the city as a whole, were inclined towards projects that could change the outward appearance of the buildings and, therefore, of the city.

Leon Battista Alberti (*De Re Aedificatoria*, 1452), who had restored Roman monuments commissioned by Pope Nicolás V, and had designed buildings in historically given environments, considered the ancient city as a contemporary problem. In this sense, Alberti seems to have realized that it was not the task of the architect to build the city *ex novo*, but characterize it monumentally

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7 MACHIAVELLI, [1518]. «See the decoration/That we present to you/This is your Florence/Pisa or Rome it will be tomorrow/The plot is right to die laughing/The door to your right hand/That is the house of a doctor/Who learned in his Boethius many laws/That way that is displayed at the end/Is the path of love/Where whoever falls never rises [...]/*The temple that is seen in front [...]*/. Recently, Antonio Bonet Correa, upon receiving his 2014 University of Málaga Honoris Causa Doctorate, gave a speech entitled: «La perspectiva, el territorio y la escenografía renacentista en Maquiavelo», where he developed the same idea that, at this point, we have expressed here.

Nearly a century later, a clear example of this type of urban development approach involving the adaptation of the existing city to the new ideals of the Renaissance can be found in Serlio, for whom — as Gaetana Cantone already held — the question was not to transform the entire city, but to reorganize the already existing one⁹.

Cantone’s suggestive hypothesis was developed by G. Romanelli, in a monograph published in 1980 (Architettura e utopia nella Venezia del Cinquecento). Romanelli related the Serlian tragic scene (Fig. 3) with a specific programme of renovation of Venice which took as a motif the «Piazzetta» of San Marcos¹⁰. It consisted, therefore, of renewing the urban structure in the area that was the heart of the City Government, providing it with symbolic buildings that preserved the myth of Venice as urb perennis.

¹⁰ ROMANELLI, 1980: 96.
It is in this Venetian context where the urban scheme designed by Serlio appears as scenographic background in numerous paintings, particularly in Tintoretto’s painting (Figs. 4 and 5).

![Fig. 4. (Left) Tintoretto. *The Lavatory* (detail) embedded within the Serlian theatre set design. (Right) Tintoretto. *The Lavatory* (detail) (c. 1547). Museo Nacional del Prado](image)

![Fig. 5. (Left) Tintoretto. *Christ with the Adulterous Woman* (c. 1555). Rijksmuseum, Amsterdam. (Right) The same painting embedded within the Serlian theatre set design](image)

We can identify intentions similar to those of Serlio, in regards to the reorganization of the city according to new urban ideals, in other artists like Leonardo or Raphael, for whom the relationship with the existing city is posed in terms of restoration or improvement of infrastructure\(^{11}\). The possibility of materializing the ideal city by modifying some key points of the urban fabric, as well as the revaluation of emblematic places of the city through some significant construction, is the direction that we find in the interventions of Palladio in Venice and Michelangelo in Rome, an urban planning of a marked scenographic accent.

\(^{11}\) CANTONE, 1978: 110-111.
The influence of the scenery in the configuration of the urban atmosphere seems to be present in the theoretical approaches of Palladio, when he states:

*Nondimeno in tal caso per maggior ornamento, e commodo della Città si debe far la strada più frequentrata dalle principali arti & da passaggieri forestieri, larga, & ornata di magnifiche, e superbe fabbriche, conciosiache i forestieri, che per quella passeranno, si daranno facilmente a credere, che alla larghezza, & belleza sua corrispondono anco le altre strade della Città*.

In fact, this definition of the «main street» of a city coincides with the design of a *frons scaenae* that Palladio himself made for the edition of Vitruvius’ *De architectura* by Daniele Barbaro (Fig. 6).

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PALLADIO, 1570: 8. «For more ornament and comfort of the city the street most frequented by the main arts and foreigners must be made wider and must be adorned with gorgeous and superb buildings so that the foreigners who walk along it will be inclined to think that its width and beauty also correspond to the other streets of the city». 
2. THE VIA PIA (ROME): SCENOGRAPHY AND URBAN IDEALS

Pope Pius IV (1560-1565) took the first steps for a complete recovery of the Quirinal and the «Monti» as development area for the Rome settlement. The axis of this urban development was the Via Pia, a straight street that, from the Quirinal square, leads to the Michelangelesque background of Porta Pia. At the northeastern end, the Pope commissioned this gate to Michelangelo in the Aurelian wall which, surprisingly, looks inward, toward the street, and not defensively outwards, which confirms our idea that its purpose was to be a «backdrop» of the street. When Sixtus V moved, years later, the Dioscuri from the nearby Baths of Constantine to the southwest end of the Via Pia (1586-1587), this street became a single work of art with two monumental foci on both ends, the first street with these features in Roman Renaissance (Fig. 7).

Fig. 7. The Quirinal and the Via Pia. Lateran Palace. Hall of the Popes

13 The Via Pia will go straight out of the wall into the Via Nomentana, a straight-lined street that arrives at the Basilica of Sant’Agnese and Mausoleum of Constanzia («fuori le mura»).
According to Marcello Fagiolo, the exemplary street had the value of «pilot enterprise», the first of such significance in the «Monti» area. But in addition, we must think that the urban project offered Pope Pius IV the opportunity to realize the image of the ideal city, in line with his humanistic ideals. Thus, one of his aims was to revalue a zone largely occupied by orchards and vineyards, as well as archaeological sites, with the aim of developing a new axis of expansion of the city of Rome. The focal point of such urban enterprise was the Porta Pia, a real scenographic background of this new urban axis around which new constructions would be built that, according to the intentions of Pope Pius IV, would boost the area. In addition, in Michelangelo’s original design (Fig. 8), the Porta Pia was flanked by two obelisks, which, should it have been carried out, would have contributed to further emphasizing the similarity with the background drawn by Serlio for the tragic scene (Fig. 9 left and right). On the other hand, it seems plausible that the Pope was advised by Michelangelo in regard to the design of the street in addition to the Porta Pia

Fig. 8. Porta Pia. Original design by Michelangelo. Bibliotheca Hertziana, Rome

14 The Porta Pia, originating from the «rustic façade» style, will have influence in the «rustic façade» of several «villas» projected along the street. Furthermore, the trapezoidal arch and the two obelisks — located, originally, on both sides of Michelangelo’s door — will appear, later, in the Fountain of Moses (cf. FAGILO, 2013: 317).
Since the pontificate of Pope Pius IV, the Via Pia was progressively completed with the construction of the Pontifical Palace of Monte Cavallo (Quirinale), started by Gregorio XIII and enlarged by Sixtus V and Clement VIII\textsuperscript{15}. Right in the centre of the rectilinear shaft between Porta Pia and the Quirinal Palace (Fig. 10), was erected years later the Fountain of Moses, by Domenico Fontana, a fountain that culminated the aqueduct commissioned by Gregorio XIII (successor of Pope Pius IV), who contributed with this project to the recovery of the Monti area, and in particular the new Palace of the Quirinale promoted by himself.

In the following decades, important buildings were built in this intermediate zone of the Via Pia: the Church of Saint Susanna, completely renovated between 1595-1603, and the Church of Santa Maria della Vittoria (1608-1620). However, the rest of the adjoining land remained mostly occupied by villas until the end of the 19th century in which they will be replaced by modern buildings\textsuperscript{16}.

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\textsuperscript{15} TOTTI, 1689: 278.

\textsuperscript{16} FAGIOLO, 2013: 313-327. Fagiolo has suggested that the Via Pia is a kind of «Strada del Sole», a long street which had, on one side, the «Temple of the Sun» and, on the other side, the Mausoleum of Constanция that was, at that age, considered the «Temple of Bacus», another solar divinity.
If the Pincio or the Gianicolo hills were maintained as a place of meditation and contemplation, the Quirinale Hill prevailed as the hill for study and reflection on Antiquity, an idea fuelled by the vision of the great architectural monuments, by colossal statues, or by the continuous discovery of sculptures and ancient objects. Indeed, near the Via Pia, were found the remains of the Baths of Constantine and the ruins of the «Temple of the Sun», and at the other end, beyond the Michelangelesque arch, the street would connect with the mausoleum of Constance, a circular building that, although not visible from a distance, would evoke similar constructions present in the urban views of ideal cities both in paintings and theatrical sets of the Renaissance.
3. THE INTERSECTION OF THE «QUATTRO FONTANE»: A SUGGESTIVE URBAN THEATRE

Sixtus V continued the urban reform of Pope Pius IV and integrated into the area of the «Monti» the route of the Via Felice.

According to Marcello Fagiolo, above the space occupied by the villas was drawn up a kind of consecration cross. The resulting quadrivio — systematized by virtue of the will of Sixtus V and Muzio Mattei between 1588-1593 — represents for Fagiolo «the centre of an ideal ‘garden-city’, with the four small nymphaea projected by the myths and rites of a triumph of the water»

The idea of associating the resulting path of urbanization of this area of the city of Rome — occupied mostly by villas and gardens — with a «garden-city» is complemented, as has also been stated by other researchers, with the fact that the availability of fountains at the corners is a typical solution of the garden.

For our part, we find in the urban organization resulting from the crossing of the ancient Via Pia and Strada Felice — the space between «Quattro Fontane» — a sort of urban theatre combining the nymphaea located in chamfers with urban views in perspective made up of monumental scenographic backgrounds. The vedute of the Flemish artist Lievin Cruyl, preserved in the Cleveland Museum of Art (Fig. 11 left and right), show us the urban perspectives which, from the «theater of the quattro fountains», could be seen around 1665.

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Fig. 11. (Left and right) Lievin Cruyl. Diciotto Vedute di Roma. Veduta delle Quattro Fontane. Prospetto Primo y Segundo, 1665. The Cleveland Museum of Art

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17 FAGIOLO, 2013: 318.

18 This is the opinion pointed by E. Guidoni and A. Marino, who consider that the isolated architectonic elements, such as an obelisk, an ancient column, or a triumphal arch, constitute, in a similar way as a fountain, the monumental backdrops of the garden’s avenues of the second half of the 16th century (cf. GUIDONI & MARINO, 1985: 632).

19 The Flemish artist Lievin Cruyl is considered, like Giovanni Battista Falda and Israel Silvestre, a true innovator of the Roman veduta of the 17th century. He offers a non-idealized image of the modern city by using a bird perspective, a method developed in Cartography in the 16th century. That method allowed him to lengthen and distort the space in order to represent — in a particular way — certain places. Probably, those views weren’t designed on site but by heart (cf. LEONE et al., 2002: 124).
The similarity of the organization of this urban environment with the project of a large theater room that the German architect Joseph Furtenbach included in his *Mannhaffter Kunstspiegel* («The Noble Mirror of Art») treaty of 1663\(^{20}\) seems quite clear (12), although the model's migration could be in the opposite direction, i.e. from the city to the theatre.

In our virtual reconstruction, we have rotated the axes drawn in that fantastic large theatre room designed by Furtenbach, making the design of the four stages with a perspective coincide with the two streets that crossed the «Quattro Fontane». In this reconstruction, we have inserted the views of Lievin Cruyl, adding and remarking the original monumental backdrops. This scenographic urban axis is completed by the four fountains located on the chamfers (Fig. 13).

\(^{20}\) The *Mannhaffter Kunstspiegel* is a collection or sixteen treatises about Arithmetic, Geometry, Fireworks, Stage Design, Perspective, etc., where Furtenbach devotes a chapter to the civil architecture and includes a design for a large room with four stages: the *Schawspilsaal*. 
Following such compositional scheme, at one end of the via Pia we find as a backdrop the Porta Pia. At the other end stood, originally, the fountain of the Dioscurs, at the Quirinal square, a fountain made by Domenico Fontana, who had moved the sculptures of the Dioscurs — coming from the nearby Baths of Constantine — to a more central point of that square (Fig. 14), being thus used to close the stage of the long Via Pia (current Via del Quirinale and Via XX Settembre)\textsuperscript{21}.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{fig13.png}
\caption{Adaptation of the design of theatre room with four stages (Schawspilsaal) by Joseph Furttenbach in the crossing of the «Quattro Fontane» (Rome)}
\end{figure}

\textsuperscript{21} It would remain this way until 1782, when the Pope Pius VI carried out a project to redesign the square, thus dismantling the fountain and repositioning the Dioscurs on a pedestal on both sides of an obelisk originating from Augustus’s tomb.
On the other axis, from the intersection of the four fountains, at one end the perspective closes monumentally with the Sixtine Obelisk and the apse of Santa Maria Maggiore (Fig. 15 left and right) and, on the opposite side, the backdrop was Santa Trinità dei Monti and Villa Medici.
4. FINAL CONSIDERATIONS

As we pointed out at the beginning, all virtual reconstruction represents a bet and a scientific challenge. The researchers, as is our case, that have decided to use digital technology to translate aspects of material or immaterial culture heritage in images assume that risk. However, the opportunity to visually illustrate a specific aspect of the imagery of an era, as it is the relationship between certain planning projects and images of the ideal city present in the painting and the scenery of the Renaissance, compensates for, we believe, the degree of uncertainty or fantasy implicit in such reconstructions.

In the case that concerns us, we use tools based on current digital technologies to make virtual reconstructions that are based on images obtained through the digitized funds of museums, as well as tools such as Google Street View.

In the process, we have established work protocols with advanced methodologies, with the intention of introducing a virtual reality with the help of a historical narrative, thus creating a scenic city which is an illusion, using images of the royal city of the Renaissance with overlays of the utopian city. The virtuality obtained changes the temporal and spatial pattern of written media, providing a spatial dimension of reality in real time.

In order to achieve the main purpose of this research, a simultaneous reading of the different images, it has been necessary to coordinate image, text and video, being able to read it in the stage of painting, scenography and urban environment. Thanks to the application of image editing techniques to photographs through digital media, new images have been created from the editing of existing ones. Such editing has consisted of selecting, arranging and merging different sketches of selected images, according to the idea proposed in our research, and turning them into a scene that appears to be real.

This environment generated with computer technology must be interconnected with a three-dimensional reality, to be able to see the world through the use of the perspective that the artists of the Renaissance invoked.

Thus, it has been necessary to create 3D graphics with the help of software in a mathematical process on 3D geometric shapes which has allowed us to generate a flat visual projection. Furthermore, the city has been shaped lighting it with an atmosphere modified using RGB values which, despite being primary colours, require a great physical understanding of the light in the new scene created, benefiting from the programming interfaces of applications specialized in the creation of graphics, so essential in this field.

On the other hand, we have animated images and performed a rendering process to achieve an effect that is closer to reality through the redirection of time.
BIBLIOGRAPHY


