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Visualizing Spaces, Flows, Agents, and Networks of the Art Markets in the 18th Century: Some Methodological Challenges

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Abstract
This visualization project originated in a program entitled “Art Markets in Europe 1300-1800, Emergence, Development, Networks.” The latter focused mainly on the movement and dynamics of the art markets of the early modern age: Who were the agents of this mobility? What were its mechanisms? What idea do we have of the numbers of pictures circulating in Europe? Through what channels and networks were they distributed? These questions led the team to work out an experimental program of visualization aiming at endowing our research outcome with a visual and synthetic dimension that would help us renew our approaches and generate future research.

Résumé

*Sophie Raux is an associate professor of history of early modern art at the Université Lille 3 (UMR IRHiS). Her recent publications and current research focus mostly on the circulation and consumption of art in the southern Low Countries and Northern France and on the cultural and social construction of art value.
This experimental visualization project originated in a program entitled *Art Markets in Europe 1300-1800*, *Emergence, Development, Networks*, funded by France’s Agence Nationale de la Recherche (2008-2012). Devised and coordinated by Neil De Marchi, Hans J. Van Miegroet (Duke University) and myself, the program made it possible to assemble an international and interdisciplinary team of some 15 researchers in art history, economic and social history, and economics from twelve institutions and research bodies in Europe and the US.1 The team’s ambition was to make an original contribution to the study of Europe’s art markets by prioritizing two main approaches. The first approach was to study the role played by Flemish art dealers in developing and shaping European markets in the 16th and 17th centuries. It would research the commercial strategies adopted by these dealers, their sourcing methods, distribution channels, and circuits, their professional and family ties, and their impact on local visual cultures. Within the limits of our program and mindful of the need for coherence, the investigation focused on a geographical area that embraced the Dutch Republic and Spanish Netherlands, together with France and Italy. The second approach involved looking at changes in the art markets at the end of the 17th and throughout the 18th century, a period when major new centers came to the fore in Europe. These gradually replaced the supremacy Antwerp had possessed in the 16th century and Amsterdam in the 17th. We sought to focus in particular on matters related to the specialization and professionalization of the art dealers, the internationalization of the trade in imagery, the establishment of circuits of agents and intermediaries, and the development of an information market. London, Paris and Brussels would serve as points of reference.2

The team members were at pains to demonstrate that the art world of the early modern period was a world of circulation and exchange, of endless initiatives and constant movement. They worked with various sources and numerous sets of archive data in a bid to present an integrated and comparative analysis and avoid merely juxtaposing isolated empirical case studies. They tried to explore long-term trends so as to shed light on continuities and changes across both time and space. Nevertheless, it remained difficult to interpret these data sets – whether included in databases or described in narratives – in such a way as to grasp the complexity of these phenomena across the subjects taken individually or when synthesized. Gradually, the idea of developing specific systems of visualization tailored to our own expectations and questions became imperative. The aim was two-fold: to endow our research outcome where possible with a visual and synthetic dimension and to acquire innovative tools of analysis that would help us renew our approaches and generate future research.

Our belief in the usefulness of visualization techniques was further enhanced in September 2009 when the group met at Duke University, which is renowned for its involvement with Visual and Media Studies and the promotion of Visual Literacy.3 Since 2011, we have been collaborating with computer scientists, graphic designers, and experts in computer-generated imagery and information sciences from various universities in

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1 The team members are: Koenraad Brossens – History of Art Department, University of Leuven (KU Leuven); Isabella Cecchini – Università Ca Foscari, Venice; Carlo Corsato – Università degli Studi di Verona, Verona; Neil De Marchi – Department of Economics, Duke University (NC); Natalia Gazzano –Accademia Nazionale di Danza, Rome; Charlotte Guichard – CNRS – Institut de Recherches Historiques du Septentrion (IRHiS); Lille 3; Koenraad Jonckheere – Department of Art, Music and Theatre Sciences, Gent University; Christian Huemer – Collecting and Provenance Research Project, Getty Research Institute, Los Angeles; Drien Lyna – History Department, Radboud University, Nijmegen; Patrick Michel – Institut de Recherches Historiques du Septentrion (IRHiS-CNRS-Lille 3); Université Lille 3; Hans J. Van Miegroet – Department of Arts, Art History and Visual Studies, Duke University (NC); Bénédicte Miyamoto – Center for Research on the English-Speaking World (CREW), Université Sorbonne Nouvelle - Paris 3; Mickael Szanto – Centre André Chastel, Université Paris-Sorbonne, Paris 4; Filip Vernaeyen – Erasmus School of History, Culture and Communication, Erasmus University, Rotterdam. A presentation of this project and of the team members is available at: http://iris.recherche.univ-lille3.fr/00-M-Arts/anr/Home.html. Since 2012, the visualization project has been conducted under the Sciences et Cultures du Visuel program http://www.topic7.fr/. The Pont Notre-Dame aspect of the project (see above) has secured a funding from the Fonds Expériences Interactives.


Northern France. The team has also expanded to include other history and art history researchers in order to benefit from their expertise on specific issues.

These are the experiments presented in this paper. For each of them, I shall briefly sketch out the scientific and methodological challenges they present and offer some thoughts on their heuristic value as innovative tools of analysis for art historical research. This visualization program should be viewed not as a finished project but as experimental in nature and so subject to change as it develops. There will be four on-going experimental protocols involving different types of visualization, each adapted to specific content, ranging from the general to the specific, from macro- to micro-scale, and from histograms to photo-realistic digital modeling.

1. Interactive Mapping of the Numbers of Paintings Sold at Public Sales in the Cities of Northern Europe (18th Century)

This visualization program opens with a project to map changes in the number of paintings sold at public auctions in 62 European cities from 1700-1799 in Germany, Belgium, France, and Scandinavia. For reasons of statistical consistency, we relied on a homogeneous data source, namely the Répertoire des catalogues de ventes by Frits Lugt, which was published in 1938. While the numerical data is obviously outdated in a number of ways at present, updating will be possible once the eighteenth century segment of the Getty Provenance Index database is complete. Indeed the PHP system is flexible enough to accommodate changes and regular updates as we go along. These will enable us to refine our results without serious impact on the major trends that visualization is already able to highlight.

On the basis of more than 335,000 lots of paintings, recorded in nearly 3,200 auction catalogues for 62 cities of Northern Europe, several types of visualization (histograms, mapping, scatter graphs) enabled us to produce data that included time and space variables (See Graph 1, and Map 1a-1d). It should come as no surprise that three cities stand out from the rest, namely Amsterdam, London and Paris. Together they accounted for 75 percent of the total number of sales and 66 percent of the total volume of paintings exchanged in Northern Europe throughout the 18th century. Interactive mapping of the breakdown per city using a scatter graph, including a size variable and a timeline, or chronological visualization, of the volumes involved, allowed synchronic and diachronic comparisons of each city's development which was broadly as follows. For more than 50 years until the end of the 1750s, Amsterdam dominated public sales of painting in Europe. London ranked second, with half of Amsterdam's overall volumes while Paris trailed a long way behind. Beginning in the 1760s, there was a significant increase in the frequency of public art sales in all European cities and the trend was suddenly turned on its head. London became definitively established as the leading European centre for the art market, while Amsterdam dropped to third position. As for Paris, it would undergo a steady increase in importance to take second place behind London and would even take over from the British capital during the 1780s, with a slightly greater number of sales.

More surprisingly, this dynamic map of Europe's public sales of paintings also makes it possible to visualize the substantial role played by German cities, notably Hamburg and Frankfurt, from the
beginning of the 1770s onwards. It also encourages us not to lose sight of a phenomenon that have been insufficiently acknowledged: the concentration of sales on Dutch territory, where, within a small geographical area, the cities of The Hague, Haarlem, Leyden, Middelburg, and Rotterdam contributed significantly—without reaching Amsterdam’s level—to sustained market activity in the Dutch Republic. During the 1760s, Dutch cities held twice as many sales as Paris and almost as many as London. The “traditional” atomization of auction geography in the former Low Countries contrasted with the extreme centralization of the rapidly expanding French and English markets: almost all public sales held on French and English territory took place in Paris and London. Nevertheless, we must bear in mind that these figures and statistics relate only to sales that had catalogues that have left a trace. As a result, they are far lower than the total volume of art market transactions. Paintings changing hands at sales that did not have catalogues or being sold through other (re)distribution channels cannot be taken in account. Although far from exhaustive, this mapping work is interesting from the heuristic point of view since it enables the visualization of the emergence, pre-eminence, disappearance, and marginalization of the art markets in European cities using a single source—the sales catalogue. The vehicle of choice for circulating information and promoting art, the catalogue was a new, innovative, and effective tool and its presence attests to the dynamism of markets which used them on a sustained and regular basis.

In sum, the main interest of this mapping work is that it encourages the development of comparative studies on a European scale. These studies, in turn, may shed light on the specific contexts and conditions that accounted for the changes. Moreover, it is also possible to imagine other kinds of analysis focused on a specific city at a specific time so as to create a synthetic visualization of, say, the role played by individual dealers at the sales in order to measure their respective importance on the markets. For instance, in the 10 years from 1780-1789, according to the figures currently available, nearly 23,000 lots of paintings were auctioned in Paris, in sales conducted by about 15 dealers. However, 60 percent of those sales were actually conducted by just two dealers: Jean-Baptiste Le Brun and Alexandre-Joseph Paillet. The shift in focus from the possibilities offered by macro-historical approaches to market dynamics to the micro-historical study of their agents brings me to my next point.

2. Relational Mapping of Art Market Agents

Indeed, one of our team’s major goals has been to compile a database that provides the research community with documentation about the art market’s agents that is new in terms of both its content and the type of output. In its initial phase, the database is limited to data collected by the different collaborators in the program during their own research. It does not claim therefore to be comprehensive and should be seen instead as the first experimental step in a broader scientific venture to be pursued and expanded in the future. The database was conceived during in-depth methodological reflection on the notion of “agents.” This revealed the difficulties of understanding the activities of a group that was socially and professionally mobile and heterogeneous, and had practices that developed constantly over time and space as the local and international contexts changed.

The database, therefore, was devised to bring together information about the identity, activities, and the social and professional relationships of individuals who played a significant role in commercial transactions of artworks in the early modern period, even if not strictly designated as

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8 Lugt’s figures give 147 sales for the Dutch cities mentioned, against 72 for Paris and 169 for London.

10 This database will be available online in the near future.
“art dealers” in the sources. If in the Low Countries, the designation of art dealer (cunstvercapere), or the even more specialized picture dealer (cooopman van schilderijen), was recognized by corporative institutions as early as the 16th century,11 this was not the case in Paris, for instance. This did not, however, prevent – in the Low Countries as elsewhere – a vast array of agents with various socio-professional and often hybrid profiles from playing an active part on the European art markets, without necessarily having the social and professional qualifications to do so. The data collected takes into account – as far as possible – the diversity of these agents’ professional qualifications, the types of transactions they carried out, their sales volumes, and the types of objects involved. They are designed for research into the development of the professionalization and specialization of art dealers over the long term. Particular attention has been given to where agents were based and to their geographical mobility over time as well as to the extent of their family and professional ties based on prosopography data.

The sheer diversity of this information, as well as the complex webs and connections it creates, led us to include it in our visualization project so that it would be easier to understand and to interpret. It aims in particular at a better understanding of the strategies for action and mobility employed by art market agents, as well as their modes of collaborative and relational organization. The geo-location of the agents will be connected to links to the metadata contained in the database records. Here too, an interactive mapping system, including geo-referencing (GIS), coupled with a timeline spanning a period of over two centuries, is designed to reveal interconnected information that could not be synthesized and displayed without these technologies.

The two main goals of this endeavor consist, on the one hand, in making it easier to analyze trade circuits, and, on the other, in defining the nature and intensity of ties between agents so as to highlight the existence of social networks. The notion of network should be understood here as suggested by Emilio J. Castilla et al. “as a set of nodes or actors (persons or organizations) linked by social relationships or ties of a specified type. A tie or relation between two actors has both strength and content.”12 Analysis of the structure of networks enables a study of how they worked (their level of centrality, their hierarchical /rhizomatic organization) and of the strength of ties between agents and their geographical range. It is through these networks that the relations of trust and interdependence that were key to developing the art market were established.13

However, modeling such multiple data raises methodological issues that are more complex and challenging than those of the previous example. The data is heterogeneous. It comes from a wide variety of archives sources – legal, accounting, diplomatic, – and from secondary bibliographical sources. These are incomplete and often vague or uncertain. The heterogeneity of the sources invites us to think about how to visualize what is missing and the uncertainty that may represent how information accuracy varies in accordance with reliability. Finding a way of visualization that is able to translate the connections between art market agents into images on the basis of such imperfect data is one of the toughest challenges facing our team.

3. Interactive Mapping of the Agents and Locations of the Paris Picture Market in the 18th Century

A number of new questions from more targeted case studies may be addressed by switching the

focus to the level of the individual city. The experiment conducted by Charlotte Guichard casts new light on the geography of agents in Paris, one of the major centers of the art market in the 18th century. Using an old and detailed map of the city, the picture dealers and strategic locations of the art market are mapped out over time: institutions (corporation, academies, and art schools), exhibition sites, fairs, sales rooms and dealers’ shops are indicated by a graphic code. The interactive map is designed to visualize spatio-temporal changes during the century using a timeline. Information about the agents is accessed by clicking on links that take the user to the relevant records in the database, entitled “agents of the art market.”

The first results of this mapping make it possible to visualize the changes in the geography of the image market observed by Charlotte Guichard: if during the first half of the century, the area of the Cite, the Pont Notre-Dame and the embankments of the Seine were home to most of the picture dealers who had shops, things changed during the second half in keeping with an unprecedented boom in auction sales. The fact that four “modern” auction rooms sprang up on the right bank of the Seine, north of the Royal Academy and the Louvre, between Rue Saint Honoré, Rue de Richelieu and Rue de Cléry undoubtedly played a key role in shifting the commercial epicenter of the picture trade. And indeed, in 1791, three-quarters of the dealers in paintings were living and working in this narrow area.

This ongoing research also raises a set of methodological issues related to the heterogeneity of the sources and the difficulty of defining the professional identity of the picture dealer in Paris during the Ancien Régime. It would be reductive to restrict the inquiry to the “marchands de tableaux” (dealers in paintings) mentioned as such in the sources as this would amount to neglecting major players, like the marchands-merciers, master-
painters, and print dealers (to name just a few), who played a significant role in developing the art market. Moreover, contemporary sources often lack precision about the location of addresses when it comes to an individual area or street and the time data are far from comprehensive. These complexities necessitate rigorous analysis, identification, and location work as well as the implementation of an appropriate visualization protocol for these constraints and uncertainties. Ultimately, the visualization of locations of picture dealers in time and space will provide a vital tool for the study of neighborhood relationships and cognate forms of sociability, which remain underexplored for the art dealer community, and their entry into the emergent social space of the arts sphere. It will also enable the depiction of patterns of concentration, movement, and reconfiguration in keeping with changes in the markets themselves.

4. Visualizing the commercial activity of a major center of the Paris art trade: the Pont Notre-Dame.

Finally, with even greater precision, zooming in on the Pont Notre-Dame enables interactive visualization of how one of the most important centers of the art and luxury goods trade in Paris developed. The main goal is to present the outcome of current research by Mickaël Szanto. This research alters the perception historians and art historians have had of the bridge, which was of an importance for the painting trade that has been underestimated to date. It aims at a better understanding of the commercial importance of

17 Mickaël Szanto, “The Pont Notre-Dame, heart of the picture trade in France (16th–18th centuries),” in Moving Pictures.
this major urban route connecting the right bank of the Seine to the Ile de la Cité, which now looks nothing like it did during the Ancien Régime. From the start of the 16th century, both sides of the bridge were lined with a row of shops, 64 in total and all of them demolished in 1786. There are three strands to our ongoing work:

1. A reliable 3D digital reconstruction of the bridge with photorealistic rendering that will deliver a synthetic representation of information otherwise scattered across numerous, sometimes unreliable, or even contradictory, sources. To date, no-one, not even specialists with a thorough knowledge of the archive and iconographic sources related to the bridge, has a clear mental image of its configuration, its spaces and volumes, much less the visual impact its two rows of identical, narrow shops must have had.\(^\text{19}\)

2. A simplified graphic representation (a two-dimensional ground plan of the bridge) coupled with a timeline, so as to visualize changes over two centuries in the area occupied by picture dealers’ shops. Indeed, at some moments in its history, the Pont Notre-Dame hosted so great a concentration of picture dealers that it was unmatched in Europe, a fact of which researchers have made little mention to date. As early as the end of the 1620s, with eight shops selling paintings, the bridge was one of the major Parisian centers of the paintings trade. Its importance declined suddenly in the second half of the 17th century then rose to even greater heights in the 1710s. Around 1720, one-third of the shops on the bridge (some 20 altogether) were engaged in the painting trade. This percentage would fall slightly as of the 1740s to around 12 shops, and then remain steady until all the shops were pulled down in 1786.\(^\text{20}\)

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3. A detailed digital reconstruction of the inside of a particularly emblematic shop, that of the most innovative dealer of his day – François-Edmé Gersaint (1694-1750). The aim of this experiment is to take visual stock of the disconnect between the idea we might have of a painting dealer’s shop during the Ancien Régime and what it would actually have looked like; its tiny, dark and cluttered booth-like shops undoubtedly containing a great deal of bric-à-brac and quite unlike the idealized vision painted by Antoine Watteau in his celebrated shop sign, L’Enseigne de Gersaint, for the eponymous art dealer on the Pont Notre-Dame.21 This project is meant to be tested in a powerful virtual reality device offering the user an immersive and interactive experience enabling a physical exploration of the various different spaces and an accurate sense of their volumes and scale.

the impact of this commercial concentration on consumer behavior.22

Concluding remarks

This visualization project should not be considered an end in itself but rather an experimental endeavor aimed at testing the advantages and limits of applying visualization technologies to art historical research. Whatever its forms, visualization remains a means to make visible what is abstract (information, data) or what is not, or is no longer, visible (lost architecture). For Lev Manovich “the meanings of the word ‘visualize’ include ‘make visible’ and ‘make a mental image’. This implies that until we ‘visualize’ something, this ‘something’ does not have a visual form. It becomes an image through a process of visualization.”23

Indeed, the technologies of visualizing information offer the possibility to create visual syntheses of complex information and thereby to reveal changes over the long term and connections in time and space that databases and verbal descriptions cannot render so clearly. Manovich summed it up by saying that this type of visualization ‘relied on two key principles. The first principle is reduction. [It] uses graphical primitives such as points, straight lines, curves and simple geometric shapes to stand in for objects and relations between them. The second principle is the use of spatial variables (position, size, shape and more recently movement) to represent key differences in the data and reveal patterns and relations.”24 As for the visualization of lost heritage, this goes through a patient stage of digital modeling, mobilizing numerous incomplete and scattered data (architectural records, maps, textual descriptions, iconographic descriptions, archive data...).25 The reliability of traditional sources is put to the test and may help us devise new hypotheses in order to fill the gaps and resolve their contradictions. These reconfigurations fuel the critical debate over notions of “truth” in the historical sciences and over the value of the image as proof.

At the epistemological level, the use of these technologies calls for productive collaboration between researchers in the historical sciences, information science experts, and computer scientists, which encourages them to go beyond the traditions of their respective disciplines. Art historians, for instance, are pushed into refining their analyses when information is incomplete or vague instead of relying on lexical fuzziness and the malleability of language to off-set the omissions. Similarly, computer scientists and researchers in the information sciences must take into account a number of features of historical research such as the necessity to give visual form to concepts of doubt and uncertainty and to knowledge gaps.26 The adaptation of new visual technologies to the field of art history is undoubtedly a turning point in the ways of constructing and sharing knowledge. It may well be too soon to have a clear picture of its contribution from the cognitive and heuristic points of view. There is no doubt, however, that there will be a rapid expansion of these tools in the practices and methods of historical research in the years ahead.
Do Maps Lie?

Graph 1

Paintings sold at public sales in Europe, 1700-1799. © Frédéric Foveau – LISIC - ULCO
Map 1a
Paintings sold at public sales in Europe, in 1710. © Frédéric Foveau – LISIC - ULCO

Map 1b
Paintings sold at public sales in Europe, in 1740. © Frédéric Foveau – LISIC - ULCO
Map 1c
Paintings sold at public sales in Europe, in 1780. © Frédéric Foveau – LISIC - ULCO

Map 1d
Paintings sold at public sales in Europe, in 1799. © Frédéric Foveau – LISIC - ULCO