

Visiting Georges Melies: A Cinematic World Lost And Found. A 3D Model Of The Boulevard Des Italiens, Where Early Cinema Emerged

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ABSTRACT: This project combines a street view of the turn of the 20th century Boulevard des Italiens in Paris with textual research. The Théâtre Robert-Houdin at 8, Boulevard des Italiens which was run by stage magician and film pioneer Georges Méliès [1] at the time, is the focal point of our research. The site no longer exists today due to the extension of Boulevard Haussmann in 1924, which created a new intersection at the cost of demolition of the house numbers 2-18. The aim is to recreate the original look and extend our understanding of the Boulevard des Italiens as a cultural site and how it inspired Méliès in his creativity. 3D simulation technologies make it possible to visualize the boulevard, to reconstruct the localities of cultural venues and most importantly, to rediscover the connection between the Méliès' inspiration and the sociocultural environment of the site. The recreation of cultural heritage in a VR space is a novel approach. Since its availability it has been applied to virtually reconstruct architectural sites of past civilisations. We use it for a more recently lost structure and combine it with archival documentation to turn it into a topographical network. This allows researchers to navigate, to ponder and to understand a long lost world in an intuitive way.

1. INTRODUCTION

Based on the private collection of about 200 historic photographic images and cadastre information spanning from the 1870s to the 1920s the Boulevard des Italiens was modelled in collaboration with the University of Applied Science in Architecture, Civil Engineering and Geomatics. Using photogrammetric and 3D reconstruction methods the model was computed and is presented in a virtual reality application. A 3D reconstruction of a street view in its actual proportions, as it looked a hundred years ago, poses a big set of challenges. The available methods are much harder to apply when no photographic material can be acquired with modern equipment but just historic images of varying photographic quality are available.

The outcome of the collaboration is a model accurate in its architectural proportions with the looks of the individual facades faithful to their appearance at the time. How can computerised methods be an aid in

understanding urban space and the creative force behind early cinema pioneers such as Méliès? This work-in-progress project shows that a representation in a virtual reality environment can be an engaging portal to encourage the viewer's interest, adapting to the visual language of the generations of future researchers. While the 3D model gives a good idea of how the Boulevard des Italiens looked at the turn of the 20th century, our goal is to refine the visual experience and to further enhance the model with interactive multimedia information about the Boulevard des Italiens as an emerging urban space. A modern day viewer becomes a flâneur of the boulevards of 19th century Paris with an option to explore in depth information.

2.1 HISTORICAL BACKGROUND

In the late nineteenth century, visual culture in France was dramatically changed by the emergence of cinema. Georges Méliès has a central position amidst this transitional moment of image-making history as his works merge artistic, theatrical and cinematic

practices and were widely circulated and seen mainly in Europe and the United States.

This project starts by situating Méliès as a city stroller to examine in particular the shaping of his career in relation to the development of urban space in the late nineteenth century. In the thriving visual culture that was unfolding at the time, Théâtre Robert-Houdin in Paris stood as a landmark in a highly competitive entertainment world. The Théâtre Robert-Houdin was named after the famous French magician Jean Eugene Robert-Houdin who ran his own theatre originally at the Palais Royal in 1845. Later in 1854, Houdin's successor, Hamilton (Pierre Etienne Chocat), moved the theatre to number 8, Boulevard des Italiens. In 1888, Méliès purchased this theatre and started planning performances with the conjuror Duperrey. In December of the same year, they presented their first show 'La Stroubaika Persane'.

The spots indicated on the map shown in *Figure 1* are key sites related to Méliès' life and career: 1. His birth place at Boulevard St. Martin. 2. His family's shoe factory nearby at Rue Taylor. 3. The Théâtre Robert-Houdin at 8, Boulevard des Italiens. 4. The Grand Café at Place de l'Opéra, where Lumière presented the first public film projection to an audience in

December 1895. 5. Méliès' film laboratory and the company office of his Star Film brand in the Passage de l'Opéra at 10, Boulevard des Italiens. These main sites were located closely together on a route which joins several boulevards. This allows us to sketch out Méliès' daily routines, probably centered around the Boulevard des Italiens and Passage de l'Opéra. Therefore, understanding the urban geography of the area is helpful in situating his career activities in the contemporary 'boulevard culture'. The development of boulevard theatres should be considered together with the rebuilding plan of Paris conducted by Georges Eugène Haussmann between 1853 and 1870.[3] 'Boulevard culture' during the second half of the nineteenth century was an amalgamation of long-term urban practices that were recast in the light of Haussmannization. The construction and engineering of this radical urban plan was carried out by Haussmann under the command of Napoleon III. The altered landscape of Paris foregrounded the emergence of boulevard theatres. Compared to grand theatres such as L'Opéra and La Comédie-Française, the scale of boulevard theatres tended to be small and their repertoires were more elaborate and experimental.

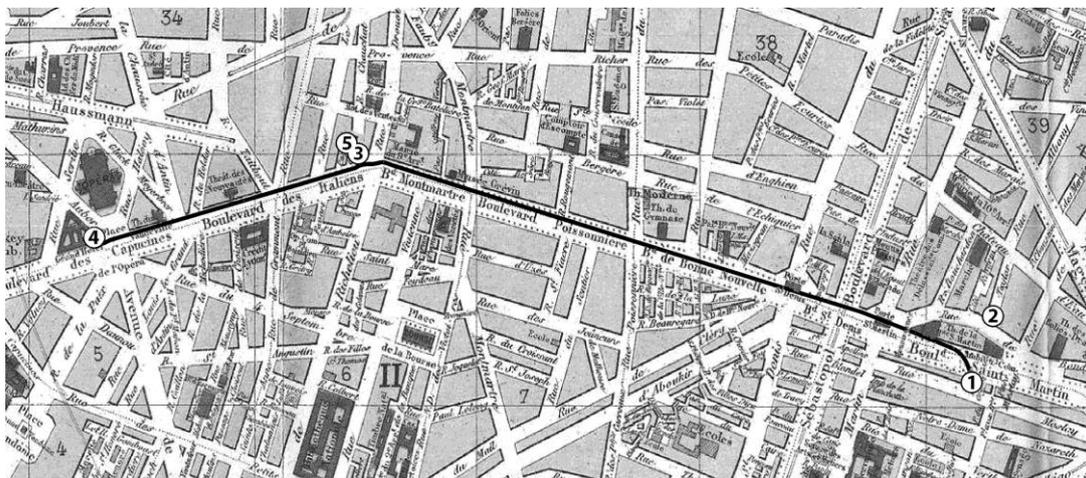


Figure 1: Regional map of Paris in 1892 with key sites related to Georges Méliès' life.[2]

Méliès' Théâtre Robert-Houdin was among those boulevard theatres which flourished during the second half of the nineteenth century. Once we have situated the Boulevard des Italiens in a network of entertainment venues we will be able to create a dynamic space in which to place the Théâtre Robert-Houdin within a zone where new

entertainments were constantly being experimented with, experienced and consumed.

In an expanding metropolitan city like Paris, large crowds gathered in which people from different classes, nationalities and cultural origins mingled. The emergence of a new

bourgeoise life had found its expression in architecture, fashion, consumer behaviour, cultural activities and social events.[4]

There are more examples that can reinforce our understanding of the Boulevard des Italiens as a heterogeneous zone of entertaining novelties and the consumption of visual culture.

From the mid of nineteenth century the boulevard was home to many photographic studios. The rise of the middle class played a role in the popularization of photography, through the increasing demand for personal and family portraits. Owning a portrait could be seen as a gesture of self-affirmation. In contrast to portrait painting, it was more affordable, and could be mass produced, copied, exchanged and circulated. Just by identifying the number and reputation of photographer's studios located at the Boulevard des Italiens, we can observe a vivid market in image production. In the same building where Méliès' theatre was located, there existed three photographic studios in succession: André Adolphe Eugène Disdéri, Emile Tourtin, and Clément Maurice. And right next door, number 6, was occupied again by André Adolphe Eugène Disdéri, and Clément Bannel. Not far away at number 24, Ferdinand Mulnier rented a studio. One of the names listed above had a role in contributing to early cinema as well. Clément Maurice was the photographer of 'Phono-Cinema-Théâtre' — a series of short films screened at the Paris Exposition Universelle 1900. It featured famous stage stars of the Belle Epoque — actors, dancers, opera and music hall singers.[5]

The attractions on the boulevard also included showrooms of technical novelties. One of Méliès' rivals, the Pathé frères, also occupied a place on the Boulevard des Italiens. In 1899, Pathé established a recreational venue called 'Salon du Phonographe'. This was a place where visitors could listen to recordings individually in a luxurious environment. The hall was equipped with individual cabins in which visitors could enjoy listening while retaining their privacy.[6] Another showroom established on the boulevard was the 'Maison Electrique' located at number 14. It was devised by the inventor Gëorgia Knap and opened doors in 1907. His idea was to create a house fully equipped with electric driven services and appliances.



Figure 2: Vintage postcard of the electric kitchen of the Maison Electrique at 14, Boulevard des Italiens.[7]

The examples mentioned show that the Boulevard des Italiens was a place where the public could experience the latest media and inventions. Therefore this area gave Méliès' works a platform in which new ideas around spectacles, photography and technological novelties as cinema and audio entertainment could be tested, marketed, and consumed. A fact that is also reflected in Méliès' films, one example of which is shown in *Figure 3*.



Figure 3: Still image of 'La Photographie électrique à distance', a short film by Georges Méliès from 1908.[8]

The comedy 'La Photographie électrique à distance' shows the live transmission of moving images in a Skype-style setting.

Our project aims to consider and to restore these demographic compositions to better understand how the urban space of the Boulevard des Italiens was shaped and evolved.

2.2 PHOTOGRAPHIC EVIDENCE

The 19th century is the century of the emergence of photography and consequently it is the first century of which we enjoy photographic evidence. Through photos we

gain visual access to the everyday life led in the past two centuries in a way which would not be possible without. The level of visual evidence was exponentiated with the emergence of cinema and its availability as an industrial product in the late 1890s. Georges Méliès who made use of cinematography from its very beginning and who would not only direct but also act in his films is therefore very well represented throughout his career as an artist. However, the images from his films which we have today are 'scènes composées', or 'artificially arranged scenes'.^[9] In these representations we see a staged Méliès in a staged environment which is the product of his artistic expression. The images are inspired by his life and surrounding society. With the aim to find a greater understanding of him and his work, we would like to be able to visit him in his theatre, his studio, at home or in his office. When looking for visual evidence of the sites of his everyday life it becomes evident that it is rather scarce. Even worse, the building where his theatre used to be was destroyed in 1924 together with the whole block of houses making space for a new intersection as shown in **Figure 4**. However, due to the fact that his theatre was located at an epicentre of Parisian bourgeoisie life, many photos can be found which by pure chance give us a glimpse of the sites of interest.

Today, as a consequence of modern technological developments, we are able to travel to sites all over the world with the help of tools like Google Maps. The 'Street View' option allows us to explore streets and alleys of cities we have never visited. The urge to visit places of the past in the same way is a logical consequence for the mind coined by modern visual culture.



Figure 4: The extension of Boulevard Haussmann illustrated by two photos shot from the same position. Above: A vintage postcard stamped in 1923 [5]; Below: The view during construction. [10] 8, Boulevard des Italiens, the site of Théâtre Robert-Houdin, is indicated with a black frame.

Pfluger and Chen, enthusiasts of Méliès' works, Pfluger starting as a collector and Chen as a researcher, have assembled a collection of photographic evidence of the Théâtre Robert-Houdin which spans from the late 1870s to the early 1910s and thus goes even beyond the time of Georges Méliès' ownership and direction. Based on these materials they were able to first derive a history of the theatres' facade as displayed in **Figure 5**.

The insight of the interconnection of Méliès' works with where and how he lived spawned the idea to model the whole Boulevard des Italiens as an interactive 3D-model equipped with contextual information. An enhanced street view so to say, which aims to deliver an emotional and intellectual experience for students and researchers.

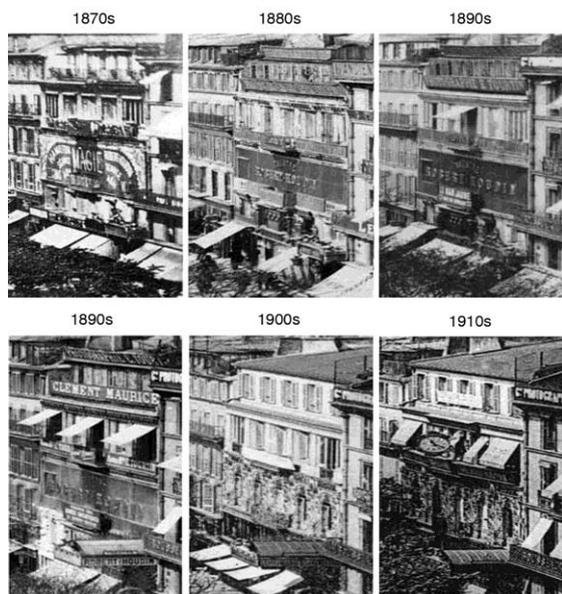


Figure 5: Facade of the Théâtre Robert-Houdin over the main five decades of its existence. The photo excerpts stem from vintage prints and postcards.[7] They have been stretched horizontally to improve the view.

2.3 3D RECONSTRUCTION

The technical 3D reconstruction was executed by Oliver Hasler at the University of Applied Science in Architecture, Civil Engineering and Geomatics, Muttenz, Switzerland.[11] It was based on the collection of historical photographs whose content covers most of the Boulevard des Italiens and were taken between 1875 and 1915. Apart from a series of original photographic prints, the collection mostly encompasses photo postcards. The photographic evidence was broadened by blueprints of some facades as well as cadastral maps from the mid 19th century. The analogue images were scanned in high resolution and completed with some images which were available only in digital form. **Figure 6** shows a typical postcard view of one of the landmarks of Boulevard des Italiens, the Café Riche. **Figure 7** shows a blueprint made to measure the central building of the Crédit Lyonnais which served as a reference for calculating the height of all of the street's buildings.

A reconstruction of houses was not possible with a photogrammetric approach alone. In spite of the abundance of images available the photos did not equally cover all of the street's areas and many images were of limited quality. Another obstacle is a line of trees planted along both sides of the boulevard, making

several images useless as large areas of the facades were covered up by leaves and branches.



Figure 6: Vintage postcard of the Café Riche at 16, Boulevard des Italiens.[7]



Figure 7: Blueprint of the main Building of Crédit Lyonnais at 17 - 19, Boulevard des Italiens. [12]

Some of the historical buildings still exist today. With the help of additional digital images found online, mostly made by tourists, a photogrammetric 3D-reconstruction became possible of select sites. The model which is created through photogrammetry is then refined and textured with the help of a historical photography as shown in **Figure 8**.

Many of the buildings have been demolished since the first World War, particularly the Numbers 2-18 which fell victim to the extension of Boulevard Haussmann in 1924. The buildings number 8 and 10 which housed the Théâtre Robert-Houdin and the Passage de l'Opéra are the focal point of interest. These buildings could not be reconstructed photogrammetrically due to the lack of images from various angles. The reconstruction by a single image is the suitable alternative route,

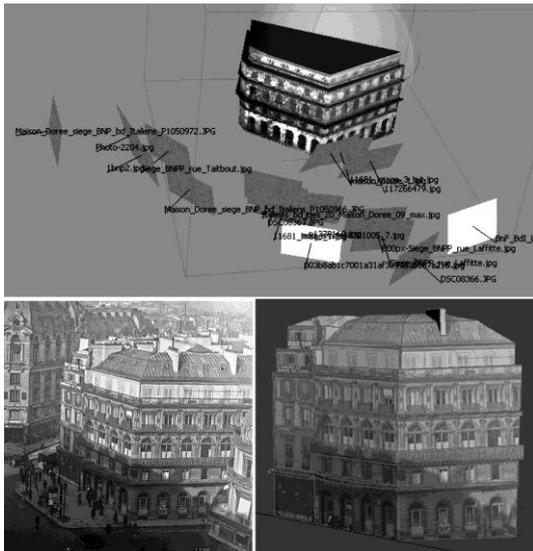


Figure 8: Photogrammetric 3D-reconstruction of the Maison Dorée at 20, Boulevard des Italiens.[13]

but the dimensions of the building need to be evaluated. The height is deducted from a known height based on the perspective.

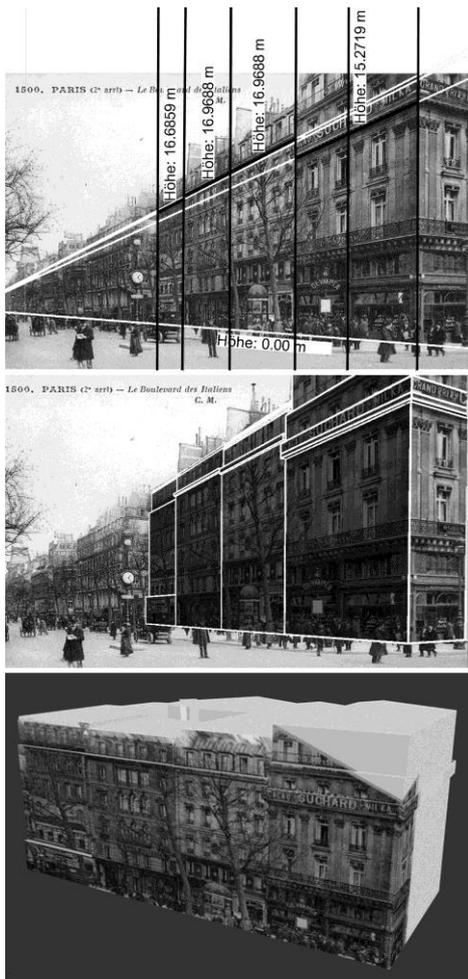


Figure 9: Geometrical reconstruction of a block of buildings based on a single image, a vintage postcard.[7]

A historical photography can then be oriented accordingly in a 3D-Software and the building is reconstructed with the help of the positioned image and references like lines known to be vertical. See **Figure 9**.

The modelled buildings are finally combined in the 3D engine Unity. The virtual cityscape can be explored with the help of a VR headset (**Figure 10**). Additional textual and image information can be called up in an interactive manner. Some facades are exchangeable according to different time periods. In this way we can compare significant changes of the site.

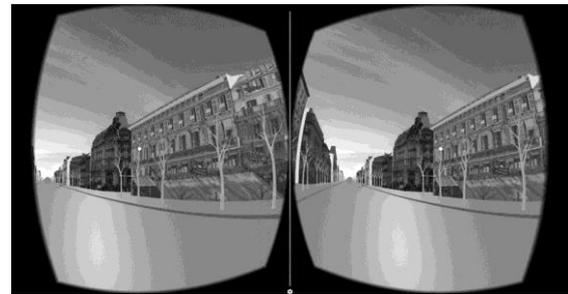


Figure 10: Screenshot from the view generated by the VR-application.

2.4 THE TECHNICAL APPROACH IN A HISTORICAL CONTEXT

The technical implementation of our project, using a virtual reality environment, reflects the technical side of the rising art form of cinematography at the turn of the 20th century. When Méliès entered the world of cinematography this new technology had just become available and was subsequently used by researchers and artists like him to create a new form of audiovisual experience. Echoing Méliès' innovative spirit of applying cinematography as a tool for his magic shows, we make use of the novel technology of virtual reality applications to animate archival materials and offer a new approach to early cinema studies. Virtual reality and enhanced reality applications are the logical further developments of the cinematographic world and they will evolve from a technical experiment to refined tools for research and entertainment.

The technical development of cinematography is the result of many different strands of technology and science whose beginnings date back far beyond the 19th century.[14] As much as the development of cinematography was a pivotal point in the history of audiovisual media the development did not stop at the turn

of the 20th century and it has not ever since. We are still witness of a constant change of audiovisual technology. The relatively recent advent of virtual and augmented reality applications puts us again at a turning point in this evolution. These technologies are in their infancy and by applying them in research and entertainment we forward their development as much as the film pioneers did with cinematography. As a work-in-progress project 'Visiting Georges Méliès: A Cinematographic World Lost and Found' tries to take this chance and thus forward the research in early cinema as well as the application of virtual reality environments in a research context.

3. CONCLUSION

This project combines two major challenges. One is the recreation of a street view of the late 19th century from mostly vintage photographic evidence. The second is enriching the resulting 3D environment with contextual materials to construct a topographical network of information. The obstacles lie on one hand in purely technical aspects of geomatics and on the other on how to efficiently and intuitively supply the visitor of the model with more in-depth information. The ultimate aim is to get a better understanding of the urban space which enriched film pioneer Georges Méliès' creativity. The model can show important aspects of his everyday life, inspiring research on an intellectual and intuitive base.

The project is in a state of work-in-progress. The existing 3D model has the basic features we were looking for but there is headroom for improvement regarding several aspects. We are looking for an exchange with other researchers concerning technique and content in respect to the interactive environment we have created.

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