THE ARCHITECTURE OF PHOTOGRAPHY

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1.

The architectonics of photography

Architecture is inherently part of photography. The invention of photography presupposed the architecture of a dark chamber in order to project its naturally formed image. In the earliest known representations of the *camera obscura* principle, purpose built architectural spaces were drawn to explain the phenomenon. **(Fig. 1)** The bigger picture is that all photography exists only trough a miniaturized version of this obscured architectural space. The design of a photo camera is the reduced version of the camera obscura room; the name is an autonym. **(Fig. 2)** Since the inception of photography there have been numerous hybrid experiments between photography and architecture that exemplify a continuous influence of architecture on photography and vice versa. In *The Architecture of Photography* I will research the physical, sculptural, and architectural aspects of photography in a historical overview from the 16th century obscured chamber to the 21st century digital processes.[1]

The contraction of the words *architecture* and *photography* immediately evokes the idea of photographing architecture. The premise of this PhD in the Arts, however, is not to discuss what is depicted in the illusionistic window of the image, but to analyze the photograph as a spatial, sculptural, even architectural object. The illusionistic window into another world is indisputably more important than the photograph's materiality. But because of this obliterating certain fact, there has always been a tendency to ignore that it is also made up out of matter. In this study, the content of the image is of secondary importance to its physical presence. The gaze through the viewfinder is regarded as the mere registration of light reflected from objects, while the photographic print is deemed palpable. Quintessential in understanding this research is the conceptual change in perception of the photographic print as a two-dimensional illusionistic window into a three-dimensional object with a physical consistency. The invention of photography was marked by capturing an ephemeral projection on a three-dimensional support. From its inception, the photograph has been inextricably tied to its materiality, endowed with weight and volume. The first photograph was physically imprinted in bitumen asphalt, natural oils, and pewter; a trace that light carves into a physical substance. **(Fig. 3)** At a time where analogue photography is being replaced by digital recordings, which has profoundly changed the relationship between the ephemeral image and its palpable support, I would like to look back at the amazing amount of matter photography has constructed over these last centuries.

[1] The following lines were the original questions posed in the spring of 2012, copied from my application form for this PhD in the Arts. Each should be read followed by the words "if yes, then": What is the effect of time, place and context on the architectural remains of world's fairs? Is photography an adequate tool to prove this? How can these images be shown? What is the contribution of world's fairs to the photograph as a three-dimensional exhibition model? Which relations do there exist between photography and the temporality of world's fair pavilions? Is the modernist idea of a synthesis of new media still applicable today? What are the most important precedents? Does the photograph, despite its increasing dematerialization, still have a physical presence or has it superseded its materiality? How can a third dimension be gained from a two-dimensional photograph? To what degree will the image of newly recorded photographs be influenced when they are intended to become three-dimensional? How can a hybrid of photography, installation, and architecture manifest itself? What would be the architectonics of photography? What is the architecture of photography? Can photography be architecture?

The impact of photography on architecture is well known, but it is much larger than assumed. Because of its ability to deliver evidence, photography has strongly influenced the creation of newly built architectures. Photographing architecture will be discussed within the scope of this text, but the focus lies on the architectural construction of the photographic object. Architecture is here defined as an artificial construction or spatial environment, as a general term to describe buildings and other physical structures. This might sound reductive towards the high art of architecture, but the words *construction* or *building* are not sufficient. The style and the aesthetic meaning we attribute to the concept of architecture is often strongly reduced: to a pragmatic container to trigger a certain effect in function of photography, to describe the design of a photographic object, to discuss the profile of a frame. But as will be demonstrated in the following case studies, the influence of architecture on photography often leads to *high* architecture or interior design.

An alternative history appears when the separate histories of photography and architecture are blended and treated as a unity. The camera obscura pavilion exemplifies this alternative history. The architecture of the camera obscura pavilion has always been described unilaterally in favour of the natural occurrence it provoked. This does not have to be justified, since the phenomenon was an essential evolutionary step towards the development of photography. Nonetheless, an uncountable amount of ornamented camera obscura pavilions have been built since the 16th century, as part of palaces or private homes, portable or on wheels. In architectural history, the purpose built black box with a pinhole was considered as pragmatic, rather than grand architecture. But the fascination for this pre-cinema pavilion persists until today as an experimental practice, signalling the importance of its architectural shell. The pavilion is, however, still treated as an empty shell, a folly experiment, assigning importance only to the construction of the pavilion itself. An interdisciplinary reinterpretation of certain details in these separate histories of photography and architecture is necessary to fully understand the dual importance of the camera obscura pavilion. An interdisciplinary reinterpretation also gives the concept of an 'architecture of photography' a multitude of meanings. It can refer to the interference of spatial structures with the camera obscura principle. It can refer to photographing architecture, if the creation of the architectural design is influenced by its photographic representation. It can refer to purpose built photographer's studios, to photo-sculptures, to cinematographic spaces, to the architectural frame, to the influence of exhibition design on the photographic object, to photographic installations, etc. **(Fig. 4-6)**

In order to fully grasp the concept of 'architecture of photography' an even wider scope is desirable, including that of the history of art, technology and politics. The particular history of world exhibitions embraces all of these aspects. World's fairs reflect a microcosm; they are a representation of the real world. The exhibition grounds of world's fairs proved to be fertile environments for experimental architecture and photography. Most of these world's fair experiments have been forgotten, dismissed by the history of art and photography. **(Fig. 7 & 8)** Clearly caused by the poor display of contemporary world's fairs today, they have been classified as *low* popular festivities. In the history of architecture this is somewhat different, as numerous grand structures have been built for world's fairs. Their architects and commissioners were very well aware of the power of photography, as demonstrated by the assignments they have

given to photographers to highlight the aesthetic effect of its *high* architecture. But in the history of architecture this is again exclusively described merely as documenting architecture through photography. I will argue in the following pages that the ephemeral nature of temporary world's fair pavilions vitally needed photography as proof of their short-lived existence and that it is no coincidence that the tradition of world's fairs started immediately after the invention of photography. These temporary buildings were only constructed because there was the possibility of recording the proof of their transitory existence. They were built to be photographed.

The history of photography is utterly intertwined with the history of world exhibitions and many of the following case studies have been part of these international expositions. From the beginning, world's fairs have been instrumental in exhibiting photography. The new medium was involved in a still ongoing discussion if it was to be regarded as art or science. The international expositions offered a solution, since they were grounded on both. Moreover, they were the only places dedicated to showing contemporaneous art on such a grand scale, in contrast to the few existing museums of the era. For example, in 1876 the *Philadelphia Centennial International Exhibition* granted the medium of photography its own temporary museum for the very first time. On these expositions, photography often prevailed over the fine arts. A massive amount of new lens-based processes premiered on world's fairs; one of them was the *photosculpture* technique, a 19th century method to extrude sculptures from photographs that laid the ground principles for the 3D scanner and 3D printer. The new invention of cinema had its most radical experiment built for the *Exposition Universelle* of 1900 in Paris: a 360 degrees panoramic film projection in a purpose-built cinema complex. The first synthesis between photography and architecture was El Lissitzky's interior design for the Soviet section at the *International Press Exhibition* in Cologne in 1928. For the Parisian *International Exposition of Art and Technology in Modern Life* of 1937, Charlotte Perriand expanded the photographic environment from an interior design project to a photographic pavilion constructed with giant photomurals. Hereafter, the persuasive power of the photographic environment was deployed worldwide, by nations and artists of very divergent ideologies. The world's fair participations of the United States between the 1950s and 1970s show a multitude of photographic environments and pavilions. After the collapse of the political meta-narratives on human progress, the tradition of world's fairs declined into a myriad of smaller, specialized projects.

The propagandistic photographic environment has since pervaded into all aspects of daily life, beyond the microcosm of world's fairs. The more interesting evolution of the photographic environment after 1970 comes from the visual arts. While fragments of world's fairs specialized into museums of contemporary art, art fairs and biennials, the photographic synthesis became part of the visual arts. The visual narrative of the scripted photographic environment was critiqued by artists in the 1960s and 1970s and was exchanged for unscripted photographic installations. **(Fig. 9 & 10)** These exhibitions design strategies have been pioneered by artists such as Richard Hamilton, Robert Heinecken, and Dennis Adams. The exhibition *Photography into Sculpture* at the Museum of Modern Art in New York in 1970 presented artists who exclusively used the photographic medium to create three-dimensional objects. The *Children's Pavilion*, a joint project by Dan Graham and Jeff Wall marked the end of the paradigm of the photographic pavilion. Since the 1980s, photography rather returned to painting than

sculpture or architecture as its model. The idea of photographic synthesis was completely abandoned. New photographic techniques offered the possibility to create enormous prints and the widespread introduction of the white walled contemporary art museum reintroduced the *tableau* format in photography. The photograph started to be recognized as an artistic medium an added more value to the tangible aspects of the photographic print: size, paper, frames and editions. Wolfgang Tillmans adapted these strategies of the unscripted photographic environment to create his palpable installations. He is the last artist discussed in this series of case studies, since he is the epitome of an artist crossing from analogue to digital photography. Since this research investigates the scope of photography since its synergetic formation as a materialized image, it limits itself to the history of analogue photography.
Not that with the invention of digital photography, there is less substance in photography. The binary codes that now define an image have their own materiality. The medium has become so expansive that thinking of the photograph merely as a window on the world is extremely reductive. But printing photographs is now a matter of choice. Since the proliferation of digital photography, we have seemingly lost the ability to see the substance, the sharpness or the beauty of a photographic print. Precisely because of the ephemeral nature of the digital image, we now only see what is depicted in its window. I do not regard this regressive state as a negative one, as long as there is an awareness of past experiments and as long as new additions are being made to old techniques. However novel the new techniques are, we are often stepping in the footprints of old ideas. In this particular field of material synthesis, so much has been created that is not remembered. Our collective amnesia, caused by an overload of fragmented information, is only to hold partially responsible. It has been disregarded because of the simple fact that photography is again perceived as a mechanically produced, multipliable, shareable, layered, virtual window. Although photography is an over-theorized medium today, there generally seems to be a mere superficial understanding about the subtleties of the print. **(Fig. 11)**

I am not a scholar and not a photographer. I am a visual artist interpreting the history of photography. At the start of this research, I knew very little of photography's history. Since then, I have been mainly looking at the materiality of photographic objects, rather than their conceptual content. I studied sculpture and installation art with a side course in photography. Ever since, I have been struggling with the relation between the two media. I am part of the last generations that grew up with analogue photography, with the Kodak Instamatic film camera, bulb flashes, and 110 film cases. I have spent countless hours processing installation views of my work in the darkroom. At one point, I exchanged the neutral background of these installation views for wide landscapes. I started fabricating objects to photograph, and exhibited these photographs together with the objects. My interest in temporary architecture eventually led me to the history of world's fairs. Posing the question if these utopian, temporary pavilions left a kind of residue behind, I started researching and travelling to world's fair sites. Suddenly I found myself operating as a documentary photographer, collecting and proving the condition of world's fair sites around the globe. I started experimenting with exhibiting photography, creating three-dimensional frames - adaptations from rare installation views of world's fair exhibitions. "To accept only the most obvious or utilitarian function of an image-making device is to deny the real potential of artistic involvement at its

deepest level," artist Robert Heinecken wrote.[2] In this PhD research in the Arts, I would like to show how the work of the before mentioned artists has influenced me to create new visual work. As a whole, it is a case study on how my theoretical research is steering the creation of my visual research.

This theoretical part of my PhD project is an analysis of historical events that contributed to the evolution of the hybrid photographic environment. I have set out to prove a very simple premise with extensive consequences: architecture is inherently part of photography. I have collected eighteen case studies, situated between photography and architecture. Most of them are chosen because they are primary experiments; the first of their kind ever made. Others, especially after 1950, are chosen out of many other experiments because of my personal interest in the quality of the works and their relevance to my own visual art practice. Many of these case studies have been described before in specialized surveys and by groundbreaking authors to whom I am very indebted.[3] In the past decade, there have been several good books and exhibitions made about the physical properties of conceptual photography, but which remain rather focused on concept instead of context.[4] During the scope of this research, there have been a few great exhibitions made on the relation between photography and sculpture, seen from a sculptor's perspective.[5] But to my knowledge, there are no studies on the vital importance of architecture in the development of photography. I do not claim to be the first. I am merely saying that a lack of information has instigated me to collect facts and to construct a layout for a historical overview that I can apply to my own art practice. I do not, and cannot, list every experiment that has been done, and I will omit very large amounts of historical information. This research precisely aims to visualize and contextualize the continuous influence of these primary experiments on one another in a chronological order and as such describes the evolutionary growth of architecture into photography.

In order to prove my case, I have relied on two main primary sources: installation photographs and the artist's statements. First of all, in every case study, the written or spoken words of the artist are at the heart of the essay. These words come from published interviews and texts written by the artist, and I have, by their generosity, interviewed all the living artists involved in this research project. The artist's words and the images the artist produces are of vital importance. Secondly, the installation view holds the most reliable proof. The history of photography is best to be witnessed through photography itself, as it is primarily an act of observing and describing. With the invention of photography, it slowly became less important to literally describe certain events, such as exhibitions. The nature of the installation photograph did most of the

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[2] Heinecken, Robert, "Manipulative Photography," *Robert Heinecken: Object Matter*, edited by Eva Respini, The Museum of Modern Art, New York, 2014, p. 157.

[3] Buchloh, Benjamin H. D., "From 'Faktura' to Factography," *October 30*, MIT Press, Cambridge MA, 1984, pp. 82-119; Staniszewski, Mary Ann, *The Power of Display: a history of exhibition installations at the Museum of Modern Art*, The MIT Press, Cambridge MA, 1998; Ribalta, Jorge, *Public Photographic Spaces: Exhibitions of Propaganda, from Pressa to The Family of Man, 1928-55*, MACBA, Barcelona, 2009; Pinson, Stephen C., *Speculating Daguerre: Art & Enterprise in the Work of L.J.M. Daguerre*, The University of Chicago Press, Chicago, 2012.

[4] Fogle, Douglas, *The Last Picture Show: Artists Using Photography 1960-1982*, Walker Art Center, Minneapolis, 2003; Fried, Michael, *Why Photography Matters as Art as Never Before*, Yale University Press, New Haven and London, 2008; Witkovsky, Matthew M., *Light Years: Conceptual Art and the Photograph 1964-1977*, The Art Institute of Chicago, Chicago, 2011.

[5] Menegoi, Simone, *The Camera's Blind Spot: Sculpture – Photography, recent examples*, MAN, Museo d'Arte Provincia di Nuoro, 2013; Molderings Herbert, *Lens-based Sculptures. The Transformation of Sculpture through Photography*, Akademie der Künste, Berlin, 2014.

explaining, replacing words and indexes in the process. World's fairs have also, besides all other aspects, been instrumental to the photographic visualization of exhibitions. The large scope and the temporary nature made extensive photographic surveys desirable. Contrastingly, installation views of museum and gallery exhibitions are remarkably rare until the mid-twentieth century. But from world's fairs we have more than indexes alone: large photographic reportages on the temporary buildings and their exhibitions have been published in world's fair catalogues from 1851 onwards. Today, however, the omnipresence of photography has clouded our eyes for a profound analysis of the photographic image. But precisely in the installation view, real answers can be found as they hold photographic proof. In the following pages, I will try to draw analytic conclusions out of an extensive amount of installation photographs and juxtapose these to artists' writings and interviews.

Parallel to this historical research, I am working on an artistic research project on hybrid photographic installations. I find the very idea of writing a PhD about the mechanisms of my own work less interesting than to chart a (little) known history of the architectonics of photography, in order to construct an operation manual to develop new forms of photography - that is very interesting to me. I find it an absolute necessity to uncover this information to the fullest extent so I can use it as a base in the future. It is a positive collateral effect, since the main goal in this PhD project is effectively to create new visual work. And this is my profound interest and the true quality of a PhD in the Arts: discursive research that instigates new and unexpected experiments in the visual art practice.

2.

The Camera Obscura Pavilion

"Il sole non vide mai nessuna ombra," Leonardo da Vinci wrote in his *Codex Atlanticus*. "The sun never sees a shadow." But it should be added that it creates many. The sun is inherently part of the photographic medium and light might be the very essence of photography, but in the shadow we find its modus operandi. When a ray of light from an external source passes through an aperture into darkness, it projects an upside-down image of the outside into the shadows. The phenomenon was described by Aristotle in the 4th century BC, when he saw the crescent-shaped image of the sun in partial eclipse projecting its shadow version through the canopy of a tree.[6] Such a phenomenon was only to be observed out in the open landscape when the exact position of the sun and the moon obscured the earth. The eclipse turned the surface of the earth into a dark room through which the universe observed itself. The precise amount of dusk allowed the apertures between leaves to project a multiplicity of inversed eclipses in the naturally formed darkroom of the shadow of a tree. Outside of an eclipse this phenomenon required architecture for its apparition. Even before Aristotle this shadow world had been noticed when it accidentally occurred in a well-suited cave. Over the centuries, the discovery of this pinhole principle found its way into more purpose built architectures. In the 15th century Leonardo da Vinci clearly described the phenomenon of the pinhole principle in relation to a domestic space:

> I say that if the front of a building – or any open piazza or field – which is illuminated by the sun has a dwelling opposite to it, and if, in the front which does not face the sun, you make a small round hole, all the illuminated objects will project their images through that hole and be visible inside the dwelling on the opposite wall which may be made white; and there, in fact, they will be upside down.[7]

In the earliest known representation of the phenomenon, an engraving in Gemma Frisius's 1558 *De radio astronomico et geometrico liber*, an intersection of a pavilion is depicted, which projects through an aperture a reversed image of the disc of the sun. **(Fig. 1)** The drawing shows a heavily ornamented garden pavilion that, due to the presence of the pinhole, seems to be purpose built specifically for solar observation. In 1609, an image was published after the experiments of scientist Johannes Kepler, showing the observation of an eclipse through a pinhole in what appears to be a large, obscured, rectangular room. Two years later, Kepler described the architecture, giving it the Latin name *Camera Obscura*. The camera obscura, or 'dark chamber,' presupposed the shadow of an enclosed room in order to appear. And these rooms needed to be large enough to enter with one or more persons. A multitude of these camera obscura

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[6] "Aristotle observed that the crescent-shaped image of the sun in partial eclipse was projected repeatedly on the ground by the tiny openings between the leaves of a tree." Szarkowski, John, *Photography Until Now*, The Museum of Modern Art, New York, 1989, p. 11.

[7] Da Vinci, Leonardo, from his notebooks, quoted in Hockney, David, *Secret Knowledge: Rediscovering the lost techniques of the Old Masters*, Thames & Hudson Ltd, 2006, pp. 206-207.

pavilions were eventually built to study the phenomenon. **(Fig. 2)** John Szarkowski wrote that "its more typical, serious use was for astronomical observation, for it allowed people to watch solar eclipses, sun spots, and even (in 1639) the transit of Venus across the sun without damaging their eyes."[8] The camera obscura quickly shifted from a technological construction, used for observing stellar phenomena, into a mirror for earthly observations, and subsequently into a model explaining the function of the human eye, as John Locke noted:

> External and internal sensations are the only passages that I can find of knowledge to the understanding. These alone, as far as I can discover, are the windows by which light is let into this *dark room*. For, methinks, the understanding is not much unlike a closet wholly shut from light, with only some little opening left (…) to let in external visible resemblances, or some ideas of things without; would the pictures coming into such a dark room but stay there and lie so orderly as to be found upon occasion it would very much resemble the understanding of a man.[9]

The dark chamber became a metaphor for man's darkest chamber. The camera obscura pavilion was interpreted as a spatial simulation of the operation of the intellect, used for introspection and self-observation.[10] This brings us close to the meaning of the modern photo camera. But the seriousness of the 'brain-box' was not always maintained. Giambattista Della Porta described in 1558 how he gave luscious parties, entertaining his guests with pinhole projections in a darkened room in his house. He staged "huntings, banquets, armies of enemies, plays, and all things else that one desireth," in his garden, which were subsequently projected and viewed in a "dark chamber by white sheets objected."[11]

> Upon that you shall set Trees in Order, also woods, Mountains, Rivers, and animals, that are really so, or made by Art, of Wood, or some other matter. You must frame little children in them, … and you must counterfeit Stags, Bores, Rhinocerets, Elephants, Lions, and what other creatures you please: Then by degrees they must appear, as coming out of their dens, upon the Plain: The Hunter he must come with his hunting Pole, Nets, Arrows, and other necessaries, that may represent hunting: Let there be Horns, Cornets, Trumpets sounded: those that are in the Chamber shall see Trees, Animals, Hunters Faces, and all the rest so plainly, that they cannot tell whether they be true or delusions: Swords drawn will glitter in at the hole, that they will make people almost afraid… I have often shewed this kind of Spectacle to my friends, who much admired it, and took pleasure to see such a deceit; and I could hardly by natural reasons, and reasons from the Opticks, remove them from their opinion, when I had discovered the secret.[12]

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[8] Szarkowski, John, *Photography Until Now*, p. 12.

[9] Locke, John, "An Essay Concerning Human Understanding," 1689, quoted in Crary, Jonathan, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century*, MIT Press, Cambridge MA, 1992, pp. 41-42.

[10] Crary, Jonathan, *Techniques of the Observer*, 1992, p. 42.

[11] Della Porta, Giambattista, "Magia Naturalis," 1558, quoted in Hockney, *David, Secret Knowledge*, 2006, pp. 208-209.

[12] Ibid.

In the same recounts of his pre-cinema experiments, Della Porta also described the use of convex and concave glasses for the pinhole, outlined the architecture, and remarked that these projections could be traced with a pencil in order to produce drawings.[13] The introduction of the lens gave the camera obscura a much brighter and sharper image. In order to improve image sharpness, white sheets on moveable screens were employed to focus the image. And since the projected image in the camera obscura was upside-down and left-right reversed, mirrors were subsequently introduced to reverse the image upright. As such, the mechanics of the camera obscura expanded in complex constructions. The improvement of the technique allowed an even more spectacular view on the inside. The increasing popularity spurred the construction of camera obscura pavilions for the garden and gradually made it part of the interior design of newly built homes, where it triggered architectural alterations to the houses itself. Specially designed rooms were equipped with the necessary lenses, sheets and mirrors, and fitted to receive guests. These rooms proved very popular among a wide variety of scientists and artists, who quickly embraced the use of the camera obscura.[14] Artists had one-person closet-sized versions built, which they could use as drawing aids; lightweight wooden constructions equipped with lenses that would project the outside images onto drawing paper – as if drawing inside the human eye. **(Fig. 3)** These quickly morphed into carry-on cabinets and into portable tents, used on location to register landscapes in hyper-real drawings. This *Camera Obscura Portabilis* gradually evolved into the modern photo-camera.[15]

Obviously, the greatest achievement of the obscured room is its reduction in size, shrinking the architectural features of the camera obscura pavilion into a small portable box. But I am more interested in its expansion than its reduction – or rather the combination of the two. Originally, the modern day analogue photo-camera was an architecturally sized room. But the invention of photography did not make the construction of camera obscura pavilions obsolete. On the contrary, when the phenomenon liberated itself from its architectural dimensions, it also liberated the camera obscura pavilion from its practical uses, making way for more pleasure oriented purposes. In the 19th century, a multitude of camera obscura pavilions appeared in the public parks of Paris and London. Much in the sense of Della Porta's happenings in the 16th century, these pavilions would attract curious tourists and *flâneurs* that willingly became part of the phenomenon. Some featured a pinhole on the side of the pavilion, triggering the odd phenomenon of an inverted image of the scene outside projected on the opposite interior wall. Others were equipped with a rotating lens and an angled mirror at the apex of the roof, projecting a panoramic view reflected onto a circular, horizontal table situated in the darkened viewing gallery below. These purpose-built pavilions took on circular or octagonal shapes, and in order to attract visitors, increasingly devoted more attention to its exterior. Because the interior of the pavilion did not require more than a dark featureless room, the architect of the pavilion was free to design the exterior in any way imagined. Its most interesting feature was to create an

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[13] "This is an Art worth learning. (…) Put a white paper against the hole, and you shall so long sit the men by the light, bringing them neer, or setting them further, until the Sun cast a perfect representation upon the Table against it: one that is skill'd in painting, and shall describe the manner of the countenance; so the Image being removed, the Picture will remain on the Table, and in the superficies it will be seen as an Image in a Glass. If you will. (…). Ibid.

[14] As pointed out by the painter David Hockney in *Secret Knowledge*, visual artists started using optics, mirrors, the camera obscura, and the camera lucida from the 16th century onwards. Hockney, David, *Secret Knowledge*, 2006.

[15] Frizot, Michel, *A New History of Photography*, Könemann Verlagsgesellschaft mbH, Köln, 1998, p. 18.

affordable folly that demanded grand architecture. These ornamented pavilions became popular attractions in cities worldwide. On the *Exposition Universelle de Paris* of 1900, no less than thirteen camera obscura pavilions were counted. Even there, these pre-cinema contraptions kept boggling visitors, gazing at this natural occurrence. They were standing side by side with their much progressed siblings, such as the earliest film screenings of the Brothers Lumière. Appearing on world's fairs, in public parks, on ocean-side boardwalks and piers, they have persisted until today. **(Fig. 4)** They have maintained their attraction to tourists, have become challenging templates for architecture students, and have become a subject for many contemporary artists. Some recent examples, with a photographic residue, are Rodney Graham's *Camera Obscura* from 1979, Abelardo Morell's recordings of inverted pinhole projections in hotel rooms, or Gabor Ösz's *Liquid Horizon* project (1999 – 2002), which are photographed seascapes made by turning the bunkers of the Atlantic Wall into giant cameras.[16] **(Fig. 5 & 6)** More architectural examples, appealing to the ephemeral nature of the camera obscura, are Zoe Leonard's projections of new skyscrapers inside opposing old buildings, Maxie Schneider's portable and inflatable camera obscura cinema, or Olafur Eliasson's collection of experimental sculptures and pavilions made for the Danish Pavilion at the 50th Venice Biennale in 2003. **(Fig. 7)**

The evident deduction that the camera obscura presupposes architecture in order to function is often disregarded. Because of the effect of the pinhole projection and its importance in the evolution towards the development of photography, the role of its architecture was overlooked. However, its formula of success was a combination of attractive architecture built to trigger a phenomenon that defined the principle of photography. This confirms that the invention of photography was marked by the inclusion of architecture. Although the portable camera was a far more interesting object for the development of the history of photography, the camera obscura pavilion proved that architecture was inherent to the birth of photography.

[16] The largest photograph ever made, measuring 34 meters wide and 9,8 meters high and holding the Guinness World Record, "The Great Picture" was achieved by turning an airplane hangar into a camera obscura. The print was made by Jerry Burchfield, Mark Chamberlain, Jacques Garnier, Rob Johnson, Douglas McCulloh and Clayton Spada in 2006.

3.

The Panorama Pavilion

The camera obscura pavilion brought the outside world in, functioning as a real-time cinema. Its effects were limited, however, since the summoned image was bound to its location. Most camera obscura pavilions were therefore situated in parks or out in the landscape, opposing magnificent views. With the portable camera obscura, parties would set out to a particular view, enjoy the phenomenon of the projection and discuss its changing light and atmospheres before returning home. Artists used it to make precise drawings of the landscape in order to transfer them onto paintings. Before the invention of photography, paintings and engravings were to recount the realities of everyday news, as they were the only images available. The panorama pavilions were the epitome of such simulacra, reporting news from frontlines or disaster zones while placing the visitor in the middle as eyewitness. The effect of the paintings was praised for its sense of exactitude and verisimilitude. Walter Benjamin wrote that "in their attempt to produce deceptively lifelike changes in represented nature, the panoramas prepare the way not only for photography but for (silent) film and sound film."[17]

In 1785, the Irish painter Robert Barker conceived a circular painting; a large, long, and curved canvas that depicted a view on Edinburgh, the city he lived in. On the 3rd of July, 1787, he received a patent for his invention which he described as "an entire new contrivance or apparatus, which I call *La Nature à coup d'oeuil*, for the purpose of displaying views of nature at large by painting or drawing, fresco, watercolours, crayons or any other mode of painting or drawing."[18] When Barker exhibited his first full circle panorama painting in London the following year, he was immediately left with a few problems: in order to enter the panorama an opening had to be made between the two ends of the painting, and visitors could wander around the room without finding the right vantage point. In order to enhance the mimetic effects of the painting as an environmental experience, he found no other option as to construct a purpose-built pavilion. He erected a circular wooden building in the garden of his London residence where, in 1792, he displayed his first full panorama painting, *The English fleet anchored between Portsmouth and the Isle of Wight*, quickly followed by *View of the Cities of London and Westminster, Comprehending the Three Bridges*.[19] **(Fig. 1)** These paintings were attached along a cylindrical wall and were to be viewed from a raised platform located in the centre. After making a substantial profit he proceeded to build a permanent building in brick on Leicester Square. For this grand construction, the term *panorama* was coined, contracting the two Greek words 'pan', meaning 'all', and 'horama', meaning 'view.' The first purpose-built panorama pavilion in the world open for public was then named, quite literally, *The Panorama*. At the grand opening of the Leicester Square panorama in 1793, visitors received a descriptive brochure, which

[17] Benjamin, Walter, *The Arcades Project*, Harvard University Press, Cambridge MA, 1999, p. 5.
[18] From Barker's original patent request, quoted in Rombout, Ton, *The Panorama Phenomenon: Mesdag Panorama 1881-1981*, Foundation for the Preservation of the Centenarian Mesdag Panorama, The Hague/Rijswijk, 2006, p. 13.
[19] Gernsheim, Helmut & Alison, *J.L.M. Daguerre: The History of the Diorama and the Daguerreotype*, Dover Publications Inc., New York, 1968, p. 6.

pointed them to the most significant items in the painting, gave a word about the painter and described the pavilion's architecture. **(Fig. 2)**

The architecture of the building was pragmatically wrapped around its inner structure. It had a circular shape, made irregular by an entrance hallway and external staircase shafts. Everything about its exterior design was meant to contribute to the interior experience. The windowless rotunda had a conical roof made of glass that was supported by a steel framework. It provided natural overhead light to both viewing platforms. In the sectional drawings of its architect Robert Mitchell, we can see that there were two levels built in the round panorama building, containing a larger and a smaller viewing circle.[20] **(Fig. 3)** The space in the *Large Circle* measured 27 meter in diameter and 17 meters high. It could accommodate a canvas of about 3000 square meters. The *Upper Circle*, located immediately above the larger, could display panoramas of about 800 square meters.[21] The viewing chambers were built around a large central column and were connected by a labyrinth of staircases. The entrance to the building was a narrow, dimly lit corridor. As the visitors progressed through the shadowy, revolving staircases, their orientation would be lost. In order to achieve a circular panoramic painting, without beginning or end, the staircase would lead up to a raised viewing platform located in the centre of the circle. The viewers 'amphitheatre' in the *Large Circle* was separated about 10 meters from the painting, to maintain a set distance to the canvas. On the circular platform, spectators could roam freely from one side to the other, creating multiple vantage points. The floor terrain between the platform and the painting was covered with black drapes, hiding the painting's edges and suspension. The skylights were diffused by translucent cloth, creating the illusion of an endless horizon. Upon arriving in the viewing circle, the visitors, disoriented and slightly blinded by the sudden gust of fluctuating daylight, were expected to have a confusing moment of experiencing the landscape of the panorama as if really on the spot.[22]

What made *The Panorama* such a success was that it offered an all-encompassing *rêverie*. It displayed landscape views that were not on the other end of the wall, as in the camera obscura pavilion, but imported from distant, inaccessible places of wonder. Thus replacing a real image with a simulated one, presenting a perfect illusion. Nobody before had witnessed anything alike. The panorama conjured a hyper-realistic illusion of a 360 degrees perspective view. The physical environment of the panorama architecture evoked an actual presence somewhere else. The spectator was no longer gazing out of the window, but found himself in the middle of the landscape represented. In the course of waking up from this dream, visitors quickly became aware that it was a surrogate landscape, an interpretative painting made not by a higher power, but by the mortal hands of an artist. And this is where the natural occurrence of the camera obscura still had the upper hand. In 1622, Constantin Huygens wrote:

> I have at my house Drebbel's instrument, which without doubt produces, by means of reflection in a dark room, the admirable effects of painting; it is impossible for me to describe the beauty in words; all painting is consequently dead, because here is life itself, or something of a higher level, if words were not missing. Because the figures and the contours and the movements come together

[20] Oettermann, Stephan, *The Panorama: History of a Mass Medium*, Zone Books, New York, 1997, pp. 103-105.
[21] Rombout, Ton, *The Panorama Phenomenon*, 2006, p. 18.
[22] Ibid., p. 14.

> so naturally and in a great pleasing manner. The Degheyns are marvelously pleased, but our cousin Carel will be enraged.[23]

The camera obscura had challenged the medium of painting and already then a quest had started to capture and depict reality as lively and accurately as possible. As a consequence, artists started using the camera obscura in order to create uncannily realistic paintings. For the panorama painters, it became an indispensable tool to register the landscape on location. Already in the 17th century, it was noted that Johannes Kepler used his portable camera obscura tent, "a little black tent, exactly close and dark, save at one hole," with a rotatable lens to create topographic drawings, "by degrees till he hath designed the whole aspect of the field."[24] By the 18th century, the revolving camera obscura had become an invaluable asset for panorama painters. In fact, all the latest inventions were used in order to create a panorama painting, challenging the relation between art and technology. The painter would set off on an expedition to the site he wanted to depict and used his revolving camera obscura to make topographic tracings and atmospheric studies of the all-surrounding view. This comprehensive survey was used in the construction of the painting by transferring the drawings onto glass plates or glass cylinders. These were projected through the use of convex lenses and a strong light source, such as a magic lantern or a gas lamp. This projection was then traced on the large canvas with a system of quadrants. Finally, the artist had to paint a deformed cylindrical perspective, with the exact life-sized scales and a heightened sense of reality.[25] Painting a panorama involved sophisticated manipulations of wide-angle perspective through the mechanical use of the camera obscura and the newest optics – combined with a touch of the artist's hand.

Many of these optical systems were used in creating decors for theatres and opera houses, but not to the same extent. *The Panorama* distinguished itself by a magnificent play of perspective and a humongous size, but foremost by its experimental architecture. This was not yet encountered with any of its predecessors. Besides the numerous theatres, there were only a few public places of culture. The British Museum was founded in 1753 and opened to public in 1759, although it remained fairly inaccessible for the ordinary citizen. The museum mostly displayed historical art and captive treasures from colonial discoveries. The Society of Arts, founded in 1754 on the principle that "the creativity of ideas could enrich social progress," held it's first contemporary art exhibition in 1760. The London Royal Academy started its first annual exhibition in 1769. Exhibition spaces for contemporary artists were rare. Many artists, like Barker, temporarily rented random spaces to exhibit their work. It is no wonder that the artists of the time started constructing their own exhibition spaces. Since most artists of the time had a wealthy background, they also had the means and the network to do so. In order to attract visitors, they often engaged in hybrid forms of spectacular visual art and theatre. In 1781, prior to *The Panorama* and an example to Barker, the *Eidophusikon* had opened in London. It was a small, rented theatre that displayed shifting paintings on its stage, simulating "progressive movement and changes in light, to create a spectacle that reproduced natural effects in specific views." Its creator, Philippe-Jacques Loutherbourg who had a background in theatre, advertised the

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[23] Constantin Huygens, "From a letter to his parents," 13 April 1622, quoted in Hockney, David, *Secret Knowledge: Rediscovering the lost techniques of the Old Masters*, Thames & Hudson Ltd, 2006, pp. 210-211.
[24] Henry Wotten, "Letter to Francis Bacon following an encounter with the astronomer Johannes Kepler," 1620, quoted in Hockney, David, *Secret Knowledge*, 2006, p. 210.
[25] Oettermann, Stephan, *The Panorama*, 1997, pp. 51-57.

Eidophusikon as "an imitation of natural phenomena, represented by moving pictures."[26] Another marvel of the time that circulated widely in professional circles was Etienne-Louis Boullée's *Cenotaph for Isaac Newton*. **(Fig. 4)** Its design, engraved and made public in 1784, proposed an obscured sphere of 150 meters in diameter. Pierced by countless holes in the vaulting it gave the illusion of stars in the nights sky, when illuminated by the sun. Although the structure was never built, it suggested the idea of an architecture purely built for its spectacular artistic effects. If realized, it would have triggered an equal amount of camera obscura projections. In the void between the small pre-existing hall of the *Eidophusikon* and the giant purpose-built *Cenotaph*, Robert Barker made his fortune. He created his own private exhibition space in a purpose-built pavilion, saturating the period's craving for spectacular staging's while balancing between architecture, theatre, fine art and journalism.

After the enormous success of his *Panorama*, Barker associated with the American Robert Fulton to carry his success over to Paris. In Paris, the Musée du Luxembourg had opened in 1750 and the Louvre in 1793. The *Académie* had rigidly controlled painting and sculpture from 1684 until 1791, when the first *Salon* opened to non-members. The First French Republic clearly marked the decline of aristocratic and state patronage, and opened the way for entrepreneurs like Barker and Fulton. "Fulton proceeded to build the first French rotunda in the garden of the former Capuchin convent by the *place Vendôme* and displayed the first panorama, a view of Paris, beginning in September 1799," Stephen Pinson wrote in his book *Speculating Daguerre*.[27] Pinson quoted a printed brochure handed out to visitors, which described the essential effects of the architecture of the building on the painting:

> In order to exhibit a painting most advantageously, the eye must not see anything but the representation of nature. A person on an elevated point is always at the centre of a circle bounded by the horizon. In order to represent this horizontal circle surrounding you, it is necessary to have built a circular building, inside of which the picture should be suspended. In the centre is found an amphitheatre, from which the public, as if from a tower, encounters from all points only the representation of nature. This view, from which nothing distracts, imprints the idea of an immense country upon the imagination, and especially an accurate idea of the country intended to be represented and to which the public is tempted to believe itself transported. Only the person gifted with reason is able to escape this illusion. An inclined roof around the amphitheatre impedes the spectators from seeing the bottom of the picture, which gives the idea of great depth. The ceiling is arranged so that the top of the picture and the windows that illuminate it cannot be seen; this gives the impression of a sky without limit. In a word, in any direction in which the spectator turns, he sees no object to distract him, and it is in this way that the illusion is produced."[28]

In short, there was no full panorama effect without the spherical conditions created by the building's architecture. The panorama pavilion was a hybrid of optics, drawing, painting and architecture. Its formula of success was copied relentlessly between 1800

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[26] Pinson, Stephen C., *Speculating Daguerre: Art & Enterprise in the Work of L.J.M. Daguerre*, The University of Chicago Press, Chicago, 2012, pp. 19-21.
[27] Pinson, Stephen C., *Speculating Daguerre*, 2012, p. 32.
[28] From a printed brochure, handed out to visitors around January 1800, quoted in Pinson, Stephen C., *Speculating Daguerre*, 2012, p. 32.

and 1830. The success of the Parisian panorama spurred an offspring of panorama pavilions throughout the city. **(Fig. 5)** A certain James Thayer immediately started construction work for a permanent single storey rotunda on the boulevard Montmartre, adjoined by a second one in 1805. Both pavilions were 17 meters in diameter, connected to each other, and connected to the *Théatre de Variétés* by one of the first glass covered arcades in Paris, the *Passage des Panoramas*.[29] **(Fig. 6)** In 1807, a year after Barker's death, James Thayer associated with Barker's main painter, Pierre Prévost to construct a third panorama pavilion on the Boulevard des Capuchines. The building measured 32 meters in diameter, nearly twice as big as the pavilions on the *Passage des Panoramas*. The paintings were 110 meters long by 16 meters high and its platform could carry 150 spectators.[30] When Barkers original patent expired in England, the panorama pavilion was copied all over Europe and North America. Benjamin commented that:

> Just as architecture, with the first appearance of iron construction, begins to outgrow art, so does painting, in its turn, with the first appearance of the panoramas. The high point in the diffusion of panoramas coincides with the introduction of arcades. One sought tirelessly, through technical devices, to make panoramas the scenes of a perfect imitation of nature. An attempt was made to reproduce the changing daylight in the landscape, the rising of the moon, the rush of waterfalls. (…) Announcing an upheaval in the relation of art to technology, panoramas are at the same time an expression of a new attitude towards life. The city dweller, whose political supremacy over the provinces is demonstrated many times in the course of the century, attempts to bring the countryside into town. In panoramas, the city opens out to landscape - as it will do later, in subtler fashion, for the *flâneurs*. Daguerre is a student of the panorama painter Prevost, whose establishment is located in the *Passage des Panoramas*.[31]

Although the panorama pavilion was more or less imitating the effects of the camera obscura pavilion, it went beyond the possibilities of its predecessor. It aspired to display a 360 degrees panoramic view of a landscape, inside its pavilion walls. Even a camera obscura pavilion with a rotating lens, could only partially project the landscape. The panorama pavilion attempted to show the entire perceptual view, not merely a cropped reality. Gazing over the balustrade, as if on the peak of a mountain or in the crow's nest of a ship at sea, the painting commanded a view of the entire horizon. "The invention of the panorama was a response to a particularly strong 19th century need for absolute dominance," Bernard Comment wrote. "Its audience were 'there to experience the (...) illusion that they were the masters of the world'"[32] Having experienced the veracity of the camera obscura, it was important to present scenes to the visitors that were indistinguishable from the actual world, aligning it with the mechanical arts of deception.[33] Especially because most of the panorama paintings often had political meaning, concealed in majestic landscapes. The *Grand Fleet at Spithead in 1791*, for example, depicted the Royal Fleet being mobilized under threat of the Russian Empire. And in France, panorama painters got exhausted in an attempt to follow the political

[29] Gernsheim, Helmut & Alison, *J.L.M. Daguerre*, 1968, pp. 14-48.
[30] Ibid.
[31] Benjamin, Walter, *The Arcades Project*, 1999, pp. 5-6.
[32] Comment, Bernard, *The Panorama: Treasures from the Bodleian Library*, Reaktion Books, London, 2003, p. 19.
[33] Ibid., p. 19.

changes of the time.[34] The sense of reality present in the panorama had a double function: it presented exotic places of wonder in a frivolous attempt to distract the senses, as well as presenting 'authentic' news from political turmoil. The hyper-reality of the panorama provided an extraordinary sense of convincing the bourgeoisie of these so-called 'facts.' As such, it was a strong and persuading tool of propaganda. But although this imitation almost eclipsed reality, it simply wasn't the real thing.

The panorama pavilions, with their frameless pictures, flourished until the 1830s. In the meantime the new bourgeoisie, engaging in the pleasures of boredom, wandering through the glass arcades and while visiting one of the many panoramas, exchanged their magnificent awe for a yawn. Time had caught up with its element of surprise. Like the commercialization of the camera obscura pavilion, the panorama degraded from being the newest scientific, optical masterpiece to yet another *spectacle de curiosité*. Alongside the panorama pavilion, many new popular amusement halls had arrived to the scene that became strong competitors in an enduring strive for being the most spectacular. "We have *Panoramas*, *Cosmoramas*, *Panstereoramas*, a *Diaphanorama*, and soon, we will have a *Diorama*," an excited journalist from a Parisian newspaper wrote in 1821.[35] Louis Daguerre, the former pupil of "the panorama painter Prevost," opened his *Diorama* in 1822. Here, the spectator was again looking at the frame of a normal painting, gazing out of its window - but it was a giant window in which the landscape moved as real as in a camera obscura projection.[36] In 1826, Charles Delanglard built a structure in Paris that went beyond the framework of painting and beyond the comprehensible horizon of the panorama pavilion: a 360 by 180 degrees painting, expanding the rectangular canvas of the panorama painting into a full sphere. In his *Georama*, visitors would look from a platform onto an inversed image of the Earth, with a viewpoint situated in the volcanic core of the globe. **(Fig. 7)** The spectator was no longer standing in the middle of a landscape, but found himself inside a panoramic orb. All these spectacles gradually disappeared by the end of the 19th century through the invention of photography and cinema. Walter Benjamin wrote in his *Arcades* that the panorama pavilion was a residue of an old dream world, and in the process of awakening in a changed social reality, "it bears its end within itself." "With the destabilizing of the market economy, we begin to recognize the monuments of the bourgeoisie as ruins even before they have crumbled."[37] Reality brought new technology. As Benjamin also remarked, Daguerre was a young panorama painter on a relentless quest for exactitude. While the original London *Panorama* remained open until 1863 - and some were even yet to be built as an anomaly

[34] "In all three buildings Prévost exhibited panoramas glorifying the Emperor: the camp of Napoleon's invasion forces and fleet against England at Boulogne in 1804, The battle of Wagram, and the interview of Napoleon with Alexander I at Tilsitt in 1807. Greatly flattered, the emperor planned to have eight of his victorious battles immortalized by Prévost, but the failure of the Russian campaign in 1812 put and end to the project. The restoration of the Bourbons was celebrated by a panorama of the disembarkation of Louis XVIII at Calais." Gernsheim, Helmut & Alison, *J.L.M. Daguerre*, 1968, pp. 14-48.

[35] Journal du commerce, no.118, 28 April 1821, quoted in Pinson, Stephen C., *Speculating Daguerre*, 2012, p. 30.

[36] I will not discuss the further life of the panorama pavilion, since it is only important to establish the value of the construction for the further evolution of the photographic environment. Daguerre's *Diorama* will be treated in the next chapter, and some aspects of the further life of the panorama pavilion will be discussed when necessary.

[37] "They are residues of a dream world. The realization of dream elements, in the course of waking up, is the paradigm of dialectical thinking. Thus, dialectical thinking is the organ of historical awakening. Every epoch, in fact, not only dreams the one to follow but, in dreaming, precipitates it's awakening. It bears its end within itself and unfolds it - as Hegel already noticed - by cunning. With the destabilizing of the market economy, we begin to recognize the monuments of the bourgeoisie as ruins even before they have crumbled." Benjamin, Walter, *The Arcades Project*, 1999, p. 13.

in time - all others gradually closed through bankruptcy and disinterest, leaving only a few wrinkled paintings and crumbled ruins to restore. **(Fig. 8)**

> A panorama can never really be experienced in representation, in any other medium. (…) It itself expresses the fact that the panorama is 'unrepresentable.' Maybe this 'unrepresentability' was one of its great historical flaws. The fact that panoramas emerged so strikingly and then died out so quickly, suggests that they were an experimental response to a deeply felt need, a need for a medium that could surround the spectators and plunge them into a spectacular illusion. The panorama turned out to be entirely inadequate to the challenge. The cinema and the amusement park more or less accomplished what the panorama only indicated. The panorama has pretty much always been understood as a proto-cinematic phenomenon, a precursor also of other forms of mass culture. Lately, with 'virtual reality' devices, we've come back in a way to a 'panoramic aesthetic,' which doesn't want to have any boundaries. (…) I like the fact that these different technologies collide in the picture. The layering of technologies is part of the 19th century 'spirit of the panorama,' and we are still involved with that spirit in our own fascination with technological spectacle.[38]

The panorama pavilion was a painted version of the camera obscura pavilion, improved by its expanded view. It displayed an interpretation of reality, made through the use of the portable camera obscura and optical projection. In order to achieve a similar occurrence as in the camera obscura pavilion, verisimilitude became of the highest importance. The portable camera obscura was not only used to register the topography of a landscape, but also its spherical conditions, mimicking reality as close as possible. The panorama pavilion can therefore be regarded as a progression towards the fixation of the image and an evolutionary step towards the photographic environment.

[38] Schwander, Martin, "Interview with Jeff Wall: Restoration, 1994," *Jeff Wall: The Complete Edition*, edited by Thierry De Duve, Phaidon Press Ltd, London, 2009, p. 90

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Daguerre's Diorama

When Robert Barker first patented his *Panorama* in 1787, he had given it a French name: *La Nature à Coup d' Oeil*. This 'nature at a glance' was exquisitely evoked by a group of painters in both his London and Paris establishments. The panorama pavilion was celebrated for its astonishing and all-surrounding illusion of reality. Pierre Prévost was the chief painter for Robert Barker's panorama pavilion in Paris, and subsequently worked for James Thayer's competitive panorama building. In doing so, Prévost hired many assistants, among which there supposedly was a young artist that had recently come to Paris and was working at the *Opéra*: Louis Jacques Mandé Daguerre. Certain is that Daguerre had already studied the Parisian panoramas, visible in some sketches he made from the panorama painting of Rome, exhibited in Barkers establishment in 1804. **(Fig. 1)** He then worked as a painter, together with Prévost and Charles Marie-Bouton, in Thayer's panorama from 1807 until early 1816.[39] But Daguerre seemed determined to take this 'nature at a glance' a step further in his quest for exactitude.

Daguerre (1787- 1851) considered himself primarily an artist. He had sent his first entry to the *Salon* in 1814, his first real attempt as a young, independent artist, but he was not as successful as hoped for.[40] In his work, he kept away from too much politics, since the political scene in France was changing year by year. His contemporaries, on the other hand, were radically and successfully painting the most recent political news: Gericault's *Raft of the Medusa* (1818) or Delacroix's *Massacre at Chios* (1824), depicting the Greek war of independence. The sizes of these paintings were enormous in order to depict their protagonists in real size, mimicking reality as closely as possible. The amount of optical devices had increased considerably, beyond the camera obscura, and the mindset of the time subscribed an accurate sense of reality. The *Raft of the Medusa*, measuring around 5 by 7 meters, was exhibited publically at the *Salon* of 1819 and caused a tremendous uproar for its uncannily realism and sinister news, as did *Massacre at Chios* at the 1824 *Salon*. The reality of these paintings was indeed unsettling, raw, and different than the propaganda news of the panorama paintings. Perhaps they were much smaller in size than the *frameless pictures*, but they were much more agile in painting the latest news and were extremely precise in realistic detail. Although the mesmerizing effect of the panorama had lost its edge, it was what Daguerre could do best to make a living. He was among a new generation of artists-entrepreneurs that inherited the various practices of theatrical spectacle. Avoiding sensitive political topics, he sought for a new spectacle of extreme optical realism. Building on the achievements of the panorama pavilion, he introduced "to the panorama a temporal element, effected by changing the lighting on a series of transparent, painted, screens so as to show in turn

[39] Gernsheim, Helmut & Alison, *J.L.M. Daguerre: The History of the Diorama and the Daguerreotype*, Dover Publications Inc., New York, 1968, pp. 3-14.
[40] Pinson, Stephen C., *Speculating Daguerre: Art & Enterprise in the Work of L.J.M. Daguerre*, The University of Chicago Press, Chicago, 2012, pp. 9-10. This essay strongly relies on Stephen Pinson's book. It is the most recent and accurate study on Daguerre up to date, sourced directly from the National Archives of France.

the pictures on their fronts and backs."[41] Together with Charles Marie-Bouton he opened a new establishment in July 1822 named the *Diorama*.

> Messieurs Daguerre and Bouton felt that the perfection of these effects would be achieved only by offering to spectators the complete means of illusion through animating the pictures by the diverse movements of nature, such as the agitation of water, the passage of clouds and stars, the effect of the sun, moon, rain, snow, etc. These movements, appropriated from views chosen in the most agreeable sites of Europe, often contrasted through interior and exterior views of monuments, necessarily will cooperate in the success of an enterprise whose principal goal is to expand the bounds of painting by procuring for France the merit of an invention as agreeable as it is useful to the progress of the arts.[42]

The brick building was located on the corner of the *rue de Bondy* and the *rue de Sanson*. **(Fig. 2)** It was constructed around a circular, theatre-like seating area that had the ability to revolve. **(Fig. 3)** The rotation was used to turn the seated viewer from a first stage to a second. Both curtained stages were filled with an enormous rectangular painting, measuring about 14 meters high on 22 meters long - far exceeding Gericault's painting, but much shorter than the average panorama painting.[43] After the curtain of the first stage opened, Daguerre and Bouton offered a visual spectacle through animating the paintings by the most novel theatre techniques in which sunlight was most advantageously used. In this daytime spectacle, visitors could see strong fluctuating light, moving clouds, or the passing of day into night, within the paintings. This went far beyond the fluctuating natural light of the panorama pavilions.

> The pictures (…) were painted in oil mixed with turpentine on thin cotton. The paintings were lit from above by skylights and from behind by large windows. A system of pulleys allowed Daguerre to interpose coloured screens between the skylights and the painting in order to modify the colour and intensity of reflected light. The back lighting allowed the artist to emphasize certain passages of the painting through transparency. In this way, Daguerre used a single view to display numerous transitions of light, or 'effects,' the representation of which would normally require multiple pictures.[44]

After witnessing the first scene, the amphitheatre turned to the second stage. A complete show took about thirty minutes, with fifteen minutes per painting. In the Diorama, Daguerre had achieved a level of reality that was spectacular, addressing not just an expanded field of vision as in the panorama, but also by adding moving scenes very similar to those in the camera obscura pavilion.

The *Diorama* became a tremendous success and it soon travelled in the opposite direction as the *Panorama* had done before: from Paris to London. A large diorama building was erected in London under the auspices of John Arrowsmith in 1823. **(Fig. 4)** Daguerre and Bouton produced several new paintings each year that travelled to both establishments. To keep up with the audience's assimilated expectations, Daguerre

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[41] Szarkowski, John, *Photography Until Now*, The Museum of Modern Art, New York, 1989, p. 25.
[42] "Project d'association entre Bouton et Daguerre," quoted in Pinson, Stephen C., *Speculating Daguerre*, 2012, p. 31.
[43] Oettermann, Stephan, *The Panorama: History of a Mass Medium*, Zone Books, New York, 1997, p. 77.
[44] Pinson, Stephen C., *Speculating Daguerre*, 2012, p. 69.

began experimenting with new materials to enhance the *Diorama's* atmospheric effects. He started painting on glass plates that he treated with smoke, named *dessin-fumée*, and started experimenting with the newly found process of lithography. **(Fig. 5)** He was looking for a new effect of extreme exactitude that would astonish his visitors, as much as the marvel of the camera obscura pavilion once did. Beaumont Newhall wrote the following in 1951:

> In painting the pictures for the diorama so that they would carry complete conviction of reality, Daguerre had made use of the camera obscura. The camera was a common tool in the 1820's. It resembled a reflex camera: a box with a lens at one end, a mirror set at a 45 degree angle at the other, and a ground glass on top. The artist observed the image formed by the lens and could, if wished, trace it on thin paper. Daguerre thought, as others had thought before him, of capturing the ground glass image by chemical means.[45]

It was precisely this idea that cumulated in the meeting of Daguerre and Nicéphoire Niépce. Niépce was an inventor who was already experimenting with light-sensitive materials as far back as 1816. His main goal was "the reproduction of engravings," and on the other end, "obtaining direct images of nature in a camera obscura, with the same objective of producing multiple copies as engraved plates."[46] In 1826, he succeeded in making the first photograph in the world, by using *bitumen of Judea* on pewter. **(Fig. 6)** Niépce tried to get his discovery acknowledged, but his attempts were declined, since the image was not distinct enough. Daguerre, as well as Niépce, had much to gain from working together, although their goals were different. Niépce was much more interested in the idea of fixing and multiplying images, as opposed to Daguerre, who was initially more interested in using their experiments as effects in his *Diorama* paintings. Niépce had first contacted Daguerre in 1826, interested in Daguerre's painterly quest for reality and his experiments with chemical substances in achieving such results. They entered an official, mutually beneficial partnership in October 1829.

In the meantime, the *Diorama* had triggered a vogue of copies in Paris. In 1827, the year in which Delacroix made his revolutionary painting *Liberty Leading the People*, a competing diorama opened, the *Néorama*, soon to be followed by the *Diorama Montesqieu* in 1830. A remarkable invention was a portable, box version of a scrollable moving panorama named the *Panorama Voyageur*.[47] The panorama pavilion had evolved as well. From 1830 onwards, the disinterest in the panorama pavilion had spurred creators to invent new additions, such as the *Faux Terrain*. In this 'false terrain' the empty space between the painting and the viewing platform was used to place objects in order to create a three-dimensional effect to enhance the optical illusion. The *Faux Terrain* was introduced by Jean-Charles Langlois, a French colonel and painter who specialized in battle scenes. In his 1830 panorama the *Battle of Navarino*, he placed a cannon and ammunition cases in the landscaped foreground. Sand, trees, crates and other small objects, were placed in such a manner that they became part of the two-dimensional perspective, stretching the painting beyond its canvas, right up to the viewing platform.[48] The viewing platforms gradually became part of the whole. They

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[45] Newhall, Beaumont, *Monsieur Daguerre: His Life and His Work*, 1951, quoted in Pinson, Stephen C., *Speculating Daguerre*, 2012, p. 9.
[46] Frizot, Michael, *A New History of Photography*, Könemann Verlagsgesellschaft mbH, Köln, 1998, pp. 19-21.
[47] Pinson, Stephen C., *Speculating Daguerre*, 2012, p. 107.
[48] Gernsheim, Helmut & Alison, *J.L.M. Daguerre*, 1968, pp. 14-48.

took on the form of an entire ship, an Egyptian hall, or in the case of the *Colosseum* of 1829, the shape of scaffolding around the lantern on top of the roof of St. Paul's Cathedral. Music was played in many of them, actors were put on the stage of the *Faux Terrain*, and drinks were served by waiters dressed accordingly.

These spectacles were serious competition for Daguerre and Bouton. When they opened *The Valley of Chamonix* in November 1831, they had swayed for the public's insatiable demand for novelty. Daguerre apparently "imported a complete chalet with barn and outhouses and put on the stage a live goat eating hay in a shed."[49] The gap between the seating area and the painting was no longer an unobstructed view, but a crowded foreground that shifted back and forth between two- and three-dimensionality. This 'performance' of props heightened the reality of the painting and intensified the verisimilitude of the experience for the spectators. At the same time it emphasized that the artistic nature of the *Diorama* had turned into tasteless, popular amusement. Nonetheless the *Diorama* had to declare bankruptcy in 1832. The strong competition was worsened by economic depression and a cholera epidemic in Paris. Although the Diorama remained open to the public, Daguerre was left with a serious personal debt. His need for financial support seemed to have led him towards a more serious engagement with Niépce.

It is still unclear what both inventors had in mind, as the conception of what photography could be was unimaginable before its invention. Daguerre was looking for effects 'truer than true' for his failing *Diorama*, and Niépce was stubbornly obsessed with achieving copies from engravings. Together they eventually managed to work towards a proto-photographic process. But their experiments were abruptly ended when Niépce died in 1833. Daguerre relentlessly continued experimenting with light-sensitive materials in the basement of his *Diorama*, and kept applying them to his painting techniques. In his 1835 painting *Landslide in the valley of Goldau, Switzerland, on 2 September 1806* he recreated the disastrous avalanche that descended upon the Swiss village. **(Fig. 7)** In Walter Benjamin's *Arcades*, "a translator of Daguerre's own account of his two inventions" is quoted:

> The spectator sits in a small amphitheatre; the stage seems to him covered by a curtain which is still bathed in darkness. Gradually, however, this darkness yields to a twilight… : a landscape or prospect emerges more clearly; the dawn is beginning… Trees stand out from the shadows; the contours of mountains, of houses, become visible… ; the day has broken. (…) Grief-stricken men are standing at the edge of a landslide, its devastations lit up by the moon at the very spot where, shortly before, the Ruffiberg had formed the background to the lovely Swiss landscape of Goldau."[50]

In this work, Daguerre had mastered his quest for exactitude. He enhanced his transparent paintings to such extend that they were referred to as wonders that mirrored nature itself. This movement in his pictures was achieved by painting both sides of the painting, and transmitting light *onto* and *through* the canvas. It enabled him

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[49] Ibid.

[50] Benjamin, Walter, *The Arcades Project*, Harvard University Press, Cambridge MA, 1999, p. 690. Benjamin's source is cited as "Übersetzer von Daguerres Schrift über seine beiden Erfindungen (1839)," in Dolf Sternherger, "Das wunderbare Licht: Zum 150 Geburtstag Daguerres," Frankfurter Zeitung, 21, November 1937.

to create an enhanced double-effect, which could transform day into night, simulate an avalanche or render objects visible that were previously hidden. Benjamin wrote that because of "the entrance of the temporal factor into the panoramas, (…) the panorama transcends painting and anticipates photography."[51] It was a remarkable extension of the realm of mimesis, even anticipating the idea of cinema.

Once Daguerre stopped applying his chemical research to his paintings and abandoned the wish to enlarge the image to the enormous size of his canvasses, he focused more on his photosensitive research as an end in itself: capturing the fleeting image of the camera obscura. In the same year, he made his first photograph. In the spring of 1835 the *Journal des Artists* announced that Daguerre had succeeded in creating images so real that "the physical sciences have perhaps never seen a marvel comparable to this":

> It is said that he has found the means of obtaining, on a plate prepared by him, the image produced by the camera obscura, so that a portrait, a landscape, any view whatsoever, projected on this plate by an ordinary camera obscura, leaves its imprint in light and shadow, and thus presents the most perfect of all drawings.[52]

In the next years, Daguerre continued working on improving his process, mainly focusing on fixing the development of the image at the right moment. In 1837, he finally managed to record, clear and sharp, unique positive images on silver plates, registering still-lives of sculptures, and in 1838, taking several photographs from atop his *Diorama* building looking into the Boulevard du Temple. **(Fig. 8)** On the 8th of March 1838, the Paris *Diorama* burned down, together with most of the paintings and many of his photographic proofs. This financial disaster forced Daguerre to sell his new discovery to the French State in 1839. Daguerre and Niépce's son were awarded with life-long pensions "in exchange for ceding to the French state the processes 'serving to fix the images of the camera obscura,' as well as the 'processes of painting and physics' of the *Diorama*."[53] This marked the discovery of photography in the year 1839 and simultaneously left the new process open for the benefit of the nation's people.[54]

In his fabulous book *Speculating Daguerre*, Stephen Pinson proved, with extensive research in the primary sources of the National Archives of France, Walter Benjamin's remark that Daguerre had come to the invention of photography through his *Diorama* paintings. Pinson's theory is that Daguerre came to photography through his *dessin-fumée* and the double-effect technique. Daguerre's quest for exactitude did indeed anticipate photography. And here Pinson asked an interesting question about the *Diorama*: "Why was it constructed and, if valid, what does it reveal about the conventional formula 'art and photography?'" "If this paradigm is to be accepted," he reasons, "then the histories of art and photography must not be seen as discrete fields, permeable only to avant-garde figures or self-validating styles or aesthetic qualities."[55]

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[51] Benjamin, Walter, *The Arcades Project*, 1999, p. 690.
[52] Journal des artists, no 13, 27 September 1835, quoted in Pinson, Stephen C., *Speculating Daguerre*, 2012, p. 86.
[53] Pinson, Stephen C., *Speculating Daguerre*, 2012, p. 120.
[54] After the publication of his process, Daguerre attempted to introduce some improvements, but photography was no longer his exclusive affair. Because it was unpatented in France, photography was widely practiced and developed very quickly. Daguerre instructed new *daguerreotypists* in several master-classes before retreating in *Bry-sur-Marne*, where he returned to painting. Daguerre died suddenly of a heart attack on Thursday, July 10, 1851.
[55] "My overall argument does not seek to replace the paradigm by which the daguerreotype 'originates with Daguerre's pre-photographic work. Rather, I begin this study by probing the implications of such a paradigm: Why

What if we take that idea a bit further and assume that he came to the invention of photography, not just through the synthesis of painting and photography, but mainly through its architecture?

We have so far established that the idea of photography started as a spatial experience with the camera obscura phenomenon. The natural projection in a dark space led to the creation of the camera obscura pavilion, to the panorama pavilion and eventually to Daguerre's *Diorama*. The *Diorama* was an inseparable synthesis of media, a total work of art, where the painting merged with its lightning mechanism, where its lightning mechanism merged with the glass roof, and where the glass roof merged with the exterior architecture. Light, passing through mirrors and coloured glass became one with the painting, once its rays passed through the canvas. Daguerre was painting with light and operated the building as if it was giant prototype mirror-reflex camera. He shifted back and forth between the image evoked in the painting and the experience of the building as a whole, including its darkened entrance, revolving saloon, angular canvas and zenithal lightning. He shifted between its illusionistic landscape and the stage. Between day and night, light and dark, surface and depth. Between the two- and three-dimensional world, illusion and reality, projection and physical matter. This continuous shift, between the represented image and the actual object, transgressed straight into the *daguerreotype*. This was beautifully exemplified by the nature of its material, only visible when viewed at a certain angle, shifting back and forth between an extremely detailed image and a highly polished, mirror-like silver surface. The synthesis of the *Diorama* was the cradle of photography, imprinting the ephemeral image of the camera obscura into solid matter. It is, in my opinion, no coincidence that Daguerre took his earliest photographs from atop his *Diorama* building - honouring its creator.

was it constructed and, if valid, what does it reveal about the conventional formula 'art and photography?' If this paradigm is to be accepted, then the histories of art and photography must not be seen as discrete fields, permeable only to avant-garde figures or self-validating styles or aesthetic qualities." Pinson, Stephen C., *Speculating Daguerre*, 2012, p. 12.

5.

Talbot's Latticed Window

The greatest paradox in photography was born together with its invention. Nicéphore Niépce's photograph managed to capture a three-dimensional world in a two-dimensional image. His image evoked an illusionistic window into a three-dimensional world, but was in fact merely a light-sensitive chemical on a flat surface. The support on which the image was captured was a three-dimensional object with a certain size, thickness and weight. All analogue photographs from Niépce's print onwards should therefore be regarded as physical objects, present in our actual three-dimensional world. After Niépce's first print, photography did not remain an exclusive invention, or one process. The Industrial Revolution was at its peak in the 1830s and the zeitgeist was ready to mould an apparatus that could produce, fix and stabilize the images seen in the camera obscura. In its first decade, the photograph became a small, spatial object made of tar, metal or paper - and endless variations on these materials. Different inventors thought of a myriad of techniques in order to achieve a captured still from reality. "In conclusion," Daguerre wrote in his earliest pamphlet, "the daguerreotype is not merely an instrument which serves to draw Nature; on the contrary it is a chemical and physical process which gives her the power to reproduce herself."[56] The construction of Daguerre's camera was a box made of zinc, 36 centimetres high, 65 centimetres long and 36 centimetres wide. His daguerreotypes on silver plates were a bit smaller. A shrunken room that reproduced a miniature world. Within this materiality, in this physical substance smeared on its shiny surface, a self-descriptive world could undeniably be witnessed. In the earliest photographs, the parallel ideas of these different inventors had another mutual interest in their common goal: in their subject matter, they formed the earliest photographic proofs of architecture.

The correlation between the real and a substitute world was originally taken quite literally: this illusionistic window into the world was more then often photographed out of a window. The only photograph of Niépce that has survived is a view from his estate in Le Gras. The photograph, made in 1826, shows the rough shapes of the roof of his country house, with a distinctive tower and a landscape in the horizon. In his heliograph, the opposing walls of his courtyard were lit by the sun, betraying an exposure time of over eight hours that traced the sun's movement. Daguerre, the official inventor of photography, came to photography through the architecture of the *Diorama*. He took his earliest photographs, the famous views of the *Boulevard du Temple*, from atop his experimental building. Daguerre's photographs are the first architectural views of the city of Paris - of a city *tout court*. Hippolyte Bayard, who had also challenged Daguerre in his claim as the inventor of photography, found his own way of producing unique images on paper, already in 1839. He spent many days on his rooftop experimenting in natural sunlight, which resulted in vague images of roofs and chimneys. When William Henry Fox Talbot (1800 - 1877) recorded his *Latticed window in the south gallery of Lacock Abbey, Wiltshire* in August 1835, he provided in its title the name and place of the

[56] Gernsheim, Helmut & Alison, *J.L.M. Daguerre: The History of the Diorama and the Daguerreotype*, Dover Publications Inc., New York, 1968, pp. 48-98.

building seen on the image, indicating its importance. **(Fig. 1 & 2)** "When first made, the squares of glafs, about 200 in number, could be counted, with help of a lens," he noted on the piece of paper on which he had recorded the negative version of his 'sun picture.' But instead of picturing the first-at-hand view out of the window, Talbot took a step back and photographed the window itself. He then photographed the architecture of *Lacock Abbey* in several angles, emphasizing his focus on the entire building:

> In the summer of 1835 I made in this way a great number of representations of my house in the country, which is well suited to the purpose, from its ancient and remarkable architecture. And this building I believe to be the first that was ever yet known *to have drawn its own picture*.[57]

It was most certainly the first building that was regarded as a noteworthy subject. Very early on, from the cradle of photography, this conceptual change of subject predicted a long interdependency between the built environment and its representation, forever intertwining the fates of photography and architecture. **(Fig. 3)**

In France, Daguerre had listed the possible subjects of his new invention. In a pamphlet he printed to advertise an exhibition of his first examples in 1839, he only mentioned architecture as a theme that photography should record. And equally important, he indicated that photography, as a reproduction of that architecture, would be the only reliable evidence.

> By this process, without any idea of drawing, without any knowledge of chemistry and physics, it will be possible to take in a few minutes the most detailed views, the most picturesque scenery, for the manipulation is simple and does not demand any special knowledge, only care and a little practice is necessary in order to succeed perfectly. Everyone, with the aid of the daguerreotype, will make a view of his castle or country-house. People will form collections of all kinds, which will be the more precious because art cannot imitate their accuracy and perfection of detail; besides, they are unaltered by light.[58]

The unbelievable exactitude and finesse of the daguerreotype proved to be the perfect medium to record architecture. But as we can deduct from the several images Daguerre recorded from the *Boulevard Du Temple*, it was also constrained to record inanimate nature, such as architecture or sculpture, because of its lengthy exposure time. The always crowded and bustling boulevard seems ghostly deserted, and except for one man that stood still while his shoes were being polished, even the laziest *flâneurs* outwitted the slow emulsion. An accidental side effect or not, Daguerre, the businessman, made the production of architectural views and cityscapes a widespread Parisian vogue, by pulling his heavy camera on wheels around Paris while photographing public buildings and monuments.[59] After the official announcement of Daguerre's process on Monday,

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[57] Talbot, William Henry Fox, "Some account of the Art of Photogenic Drawing or, The Process by Which Natural Objects May Be Made to Delineate Themselves without the Aid of the Artist's Pencil," *Photography: Essays & Images*, edited by Beaumont Newhall, The Museum of Modern Art, New York, 1980, p. 28.
[58] Gernsheim, Helmut & Alison, *J.L.M. Daguerre*, 1968, pp. 80-81.
[59] "He attracted all the publicity he could by driving round Paris with the bulky apparatus weighing 50kg on a cart, photographing public buildings and monuments. (…) Within a few days all the physicists, chemists and savants of the

the 7th of January 1839, by Arago in the *Académie des Sciences*, all Paris was said to be in the hold of a 'daguerreotypomania.'

> We all felt an extraordinary emotion and unknown sensations, which made us madly gay… Everyone wanted to copy the view offered by his window and very happy was he who at the first attempt obtained a silhouette of roofs against the sky: he was in ecstasies over the stove-pipes; he did not cease to count the tiles on the roofs and the bricks of the chimneys; he was astonished to see the cement between each brick; in a word, the poorest picture caused him unutterable joy, inasmuch as the process was then new and appeared deservedly marvellous.[60]

This source from 1844 clearly described how the 'view outside of the window' became a hype on its own. Every person with the financial means to do so engaged in the leisure of photographing architecture, turning away from the spectacular distractions of the panorama pavilion and its kin, in order to lean out of the window. This creation of an illusionistic window out on the world, taken out of an actual window, was also described in a source from 1851:

> Following Arago's report to the Chamber: "A few hours later, opticians' shops were besieged; there were not enough lenses, not enough camera obscuras to satisfy the zeal of so many eager amateurs. They watched with regretful eye the setting sun on the horizon, as it carried away the raw material of the experiment. But on the morrow, during the first hours of the day, a great number of these experimenters could he seen at their windows, striving, with all sorts of anxious precautions, to capture on a prepared plate the image of a dormer-window opposite, or the view of a group of chimneys."[61]

In this description, twelve years after photography's invention and the year of Daguerre's passing, Talbot's parallel was remembered: the illusionistic window out on the world was not only taken out of an actual window; the subject of its illusionistic window was in fact another window. But I believe that in its mirror image, it recognized its own potential: to systematically document architectural monuments, to propagandize its grandeur for the less mobile, and to prove its existence for future generations.

When Arago outlined "all the advantages of M. Daguerre's invention for travellers, and all that it offers today to learned societies and to private gentlemen who spend so much energy in delineating famous buildings in various parts of the country," he proposed to do exactly that: photographing France's architecture in a systematic, scientific manner.[62] Documenting architecture was already a common practice before the invention of photography. It was not just a side effect of the incompetence of slow photographic

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capital were pointing their cameras at the principal monuments." Gernsheim, Helmut & Alison, *J.L.M. Daguerre*, 1968, pp. 98-129.

[60] Gaudin, M.A., "Traité pratique de Photographie," Paris, 1844, p.7, quoted in Gernsheim, Helmut & Alison, *J.L.M. Daguerre*, 1968, pp. 101-102.

[61] Figuier, Louis, "La Photographie: Exposition et histoire des principales decouvertes scientifiques modernes," Paris, 1851, quoted in Benjamin, Walter, *The Arcades Project*, Harvard University Press, Cambridge MA, 1999, p. 677.

[62] "I have tried to set out all the advantages of M. Daguerre's invention for travellers, and all that it offers today to learned societies and to private gentlemen who spend so much energy in delineating famous buildings in various parts of the country." Arago, François, meeting of the Académie des sciences, Monday, 7 January, 1839, quoted in Gernsheim, Helmut & Alison, *J.L.M. Daguerre*, 1968, pp. 82-83.

emulsions. It was already a recent phenomenon to record the highest achievements of humankind, as recent as the new inventions and architectures of the Industrial Revolution. Before photography's invention, the documentation of architectural patronage was done by hand. Engravings and lithographs were published in extensive surveys such as the *Voyages Pittoresques*. The *Voyages pittoresques et romantiques dans l'ancienne France* was a collection of engravings, made by multiple travelling artists that set out to chart the French architectural patrimony. It was initiated by Baron Isidore Séverin Justin Taylor and Charles Nodier and periodically published from 1820 on. The aim of the project was to document famous buildings, churches and palaces, as well as the picturesque farms of rural France. It seemed particularly important, at a moment of continuous revolution and the period's eagerness to build and destroy, to create a nostalgic awareness for the protection of monuments. The problem that arose together with the invention of photography was that these engravings could not prove their truthfulness any longer. "Daguerreotypes were a great contrast to the romantic views published during the previous decades," the Gernsheims wrote, "when there was a craze for embellishing, exaggerating height, and extending spaces."[63] Daguerre himself was one of the travelling artists that made drawings for the *Voyages Pittoresques*, but eventually became responsible for its downfall. **(Fig. 4)** When the daguerreotype saw the light of day, its exactitude offered, for the first time in history, accurate proof of the constructed world. And its accurateness promised the public truthful representations of architecture. **(Fig. 5)**

> Still life, architecture – these are the triumphs of the apparatus which M. Daguerre wants to call after his own name the Daguerreotype. (…) Travellers, you will soon be able, perhaps, at the cost of some hundred francs, to acquire the apparatus invented by M. Daguerre, and you will be able to bring back to France, the most beautiful monuments, the most beautiful scenes of the whole world.[64]

In 1841, the *Voyages Pittoresques* were outdone by the *Excursions Daguerriennes*. These travels had the same principle, except that they brought back photographs instead of drawings. A certain Noël Marie Paymal Lerebours commissioned a group of photographers to travel around France, to bring back images that he could transpose to photographic engravings. This vogue of publishing delightful scenery proved very popular. Lerebours' next step was to send out daguerreotypists to the then faraway places abroad. His photographers travelled to Italy, Spain, Greece, Corsica, Egypt, Palestine and Syria to bring back views of the finest ancient monuments. These were the first photographic images to deliver credible evidence of the landscapes and architectures of the more exotic parts of the world, sparking a new wave of *orientalism*.[65] These were not just romantic voyages, but arduous quests for knowledge. The disclosure of information through these accessible photographic publications was key to a new history of architecture. There was but one problem Daguerre didn't anticipate in his artistic search for uniqueness: the expenses connected to the silver

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[63] Gernsheim, Helmut & Alison, *J.L.M. Daguerre*, 1968, pp. 98-129.
[64] Gaucheraud, H., "A New Discovery," La Gazette de France, Paris, January 6, 1839, quoted in Newhall, Beaumont, *Photography: Essays & Images*, The Museum of Modern Art, New York, 1980, pp. 17-18.
[65] "Some of the finest architectural and landscape views of the early period were taken by a French amateur, Joseph-Philibert Girault de Prangey (1804-1892). He was an expert on Arabian architecture. In 1842 de Prangey undertook a long journey through Italy, Egypt, Syria, Palestine, and Greece, arriving home two years later with about a thousand fine daguerreotypes. Some of the close-ups – as far as we know the first ever taken - formed the basis of the illustrations in his book "Monuments arabes d'Egypte, de Syrie et d'Asie Mineure," Paris, 1846." Gernsheim, Helmut & Alison, *J.L.M. Daguerre*, 1968, pp. 98-129.

plates of the daguerreotype, and the almost irreproducible transposition of these unique positive images into engravings, made these undertakings particularly unprofitable and rare. Now that the validity of depictive evidence belonged exclusively to the new medium, it was of utmost importance that this evidence could be disseminated as widely as possible.

In Britain, Talbot had simultaneously laid the foundations for a profoundly different photographic technique that would result in an affordable and widespread practice of publicizing books on architectural photography: his *Latticed window in the south gallery of Lacock Abbey, Wiltshire* from 1835 was a paper negative. This radically different technique, which he baptized as *photogenic drawings*, reversed the tonal values of the recorded image. This principle of negative/positive reversal – or first and second drawings as Talbot originally called them - had been noticed by Daguerre as well as Bayard, but deemed a failure of their procedures. Talbot, who was not an artist but a scientist, quickly understood that his negative could produce a positive version, and that this negative could theoretically produce an infinite number of duplicates. On the 31st of January 1839, Talbot presented an account of his work done since 1835 to the Royal Society. He published a twelve-page booklet with the title *Some account of the Art of Photogenic Drawing or, The Process by Which Natural Objects May Be Made to Delineate Themselves without the Aid of the Artist's Pencil*, in which he meticulously described "the most curious application of this art."[66] In the chapter *Architecture, Landscape and external Nature*, he carefully explained how he photographed "different situations around the building" of Lacock Abbey. He further described "the beautiful effects which are produced by a camera obscura" to create a "vivid picture," and its use for the "traveller in distant lands":

> To the traveller in distant lands, who is ignorant, as too many unfortunately are, of the art of drawing, this little invention may prove of real service; and even to the artist himself, however skilful he may be. For although this natural process does not produce an effect much resembling the productions of his pencil, and therefore cannot be considered as capable of replacing them, yet it is to be recollected that he may often be so situated as to be able to devote only a single hour to the delineation of some very interesting locality. Now, since nothing prevents him from simultaneously disposing, in different positions, any number of these little *camerae*, it is evident that their collective results, when examined afterwards, may furnish him with a large body of interesting memorials, and with numerous details which he had not had himself time either to note down or to delineate.[67]

By 1840, Talbot had greatly improved his photogenic process. He enhanced the photosensitivity of his paper, reduced exposure times, and most importantly, discovered the concept of an invisible, latent image to be developed in a later stage. In a subsequent publication he presented to the Royal Society on the 10th of June 1841, he described his enhanced process that he had named 'beautiful picture,' or *calotype*: "It receives a *virtual* instead of an *actual* impression from the light, which it requires a subsequent process to

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[66] Talbot, William Henry Fox, "Some account of the Art of Photogenic Drawing," *Photography: Essays & Images*, edited by Beaumont Newhall, 1980, p. 28.
[67] Ibid., p. 28.

develop."[68] In practice, it meant that there was no longer need for immediate development on site, which made photographic equipment a lot lighter. The lightweight negatives, the absence of developing equipment, and the reduced exposure time, made his paper process an excellent agent for travelling photographers. Talbot was well aware of his groundbreaking improvements and patented his calotype process in 1841, and a second time with a more detailed patent in 1843. In 1844, he published the first part of a new booklet: *The Pencil of Nature*. The booklet was published in six, thin volumes, printed separately between 1844 and 1846. Each volume was richly illustrated with three to seven original photographs pasted inside. These were no lithographs or engravings copied from photographs, but actual photographs printed on the same edition as the booklet. The first volume had five photographs and opened with two architectural views from Queens's College in Oxford and a Parisian boulevard. **(Fig. 6)** The introduction stated that:

> The plates of the present work are impressed by the agency of Light alone, without any aid whatever from the artist's pencil. They are the sun-pictures themselves, and not, as some persons have imagined, engravings in imitation.[69]

This last remark again evidences that a few years after photography's invention, engravings were already deemed deceitful. In his accompanying text he emphasized the medium's ability to factually reproduce architecture. Fifteen from the twenty-four photographs he inserted in *The Pencil of Nature* were architectural views: *The Bridge of Orléans*, the *Gate of Christchurch*, *Westminster Abbey* and several images of his beloved *Lacock Abbey*. With the 'sun-pictures' of his own country-house, he not only recorded the earliest proofs of architecture, he also produced the solution to disseminate them. As a scientist, Talbot anticipated the importance of reproduction with cheap, multipliable photosensitive paper.

Talbot had also foreseen the industrialization of photography. In order to print multiple copies of his following books, he opened a photo-printing studio in Reading together with his assistant Nikolaas Henneman. **(Fig. 7)** They printed several books, gradually raising the production level. *Sun pictures in Scotland*, a travel book following the footsteps of Sir Walter Scott, was published in 1845 and contained twenty-three photographs. It was printed on a higher edition than *The Pencil of Nature*, which meant printing more photographs. The *Annals of the Artists of Spain*, published in 1848, held sixty-six calotypes.[70] It is estimated that between 1844 and 1848, the *Reading Establishment* produced around 20.000 prints.[71] Talbot's facility, in all its modesty, showed how quickly the industrialization of photography took on its own architectural form: it was the first purpose built photographic factory.

The idea quickly caught on and inspired others to build more elaborate production facilities. The construction of lens-equipped cameras and the physical process of

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[68] "The Calotype picture is a *negative* one, in which the lights of nature are represented by shades; but the copies are *positive*, having the lights conformable to nature. (…) It receives a *virtual* instead of an *actual* impression from the light, which it requires a subsequent process to develop." Talbot, William Henry Fox, "The Process of Calotype Photogenic Drawing," *Photography: Essays & Images*, edited by Beaumont Newhall, 1980, pp. 33-35. Introducing Talbot's text, Newhall wrote, in 1980, before the invention of digital photography, that "this discovery of the latent image was basic and epochal: all photographic processes in use today are dependent upon it."
[69] Talbot, William Henry Fox, *The Pencil of Nature*, 1844.
[70] Frizot, Michel, *A New History of Photography*, Könemann Verlagsgesellschaft mbH, Köln, 1998, pp. 63-64
[71] Szarkowski, John, *Photography Until Now*, The Museum of Modern Art, New York, 1989, p. 51.

photography became big business. Laboratories were built for preparing, recording and developing images, the invention's first direct impact on architecture. While Talbot vigorously defended his patent in England, his techniques were copied and enhanced in France. The paper negatives were not infinitely reproducible, becoming more weak and fragile after each reproduction. Gustave Le Gray improved the strength of Talbot's negatives by delivering stronger wax-paper negatives, extending the amount of reprints. The invention of albumen paper - made of photosensitive silver salts mixed with adhesive chicken's egg whites - by Louis Désiré Blanquart-Evrard in 1847, delivered an incredibly cheap means of reproduction. The same idea was applied to create a new and indestructible negative. Niépce's cousin, Abel Niépce de Saint-Victor, developed a process to use glass plates as a support, coated with a light-sensitive layer of albumen substance that attached to the surface of glass.[72] This negative allowed for an infinite number of reprints to be made. The *albumen-on-glass process* was perfected by Blanquart-Evrard, who turned it into an industrial application. In 1851, he opened the first commercially exploitable photographic printing factory, the *Imprimerie photographique Blanquart-Evrard a Lille*. His enterprise had an assembly line of women mixing egg white and producing albumen paper, and rows and rows of outdoor racks to reprint photographs by bathing them in the natural light of the sun. He manufactured his albumen paper for international sale, and printed his own photographic publications. The *Imprimerie* produced "200 to 300 prints per day from a single negative."[73] In a few years time, he produced 24 books, containing 550 photographs in total, on high editions. The majority of these books were about architectural monuments: French religious architecture and sculpture, Belgian landscapes with architecture, cityscapes of Brussels and Paris, exotic temples and monuments from Egypt, Nubia, Palestine, Syria.[74] **(Fig. 8)** By 1851, photographing and publicizing architecture had become a serious practice, so serious that its modus operandi required its own architecture.

The mass production of architectural views again led to publically commissioned architectural surveys. The architectural view had gained such an importance by 1851 that it cumulated in its first public commission to record the architectural patrimony for widespread publication. This *Mission Héliographique* was appointed by the *Commission des Monuments Historiques* from Louis Napoleon Bonaparte's French State to record the most important historic monuments in France. Five photographers, among who Hippolyte Bayard and Gustave Le Gray, were "given an itinerary with a list of buildings to photograph." According to Frizot, "the Heliographic Mission had been the first official attempt at recognizing some of photography's advantages: recording information, preservation of an object, faithfulness of recording."[75]

While it slowly became a commodity in France, the emergence of the architectural view went much slower in the Kingdom of Great Britain. Talbot fiercely defended his patent in England, leaving only a few dozen professional calotype photographers in the England of

[72] Frizot, Michel, *A New History of Photography*, 1998, p. 91.
[73] Ibid., pp. 68-83.
[74] "Melancholy, the sense of ruin and the inevitable, a desire to understand, and curiosity about another life are combined, sometimes seeming to challenge the apparent objectivity of photographic recording. Maxime Du Camp set off in 1849 in Flaubert's company, not with purely archeological motives, but tempted by the exotic associations of ancient history. He brought back, at the end of 1851, more than 200 paper negatives, of which 125 would be published by Blanquart-Evrard under the title Egypte, Nubie, Palestine et Syrie: dessin photographiques recueillis pendant les années 1849, 1850 et 1851 (…) par Maxime du camp." Frizot, Michel, *A New History of Photography*, 1998, p. 79.
[75] Ibid., p. 66.

1851.[76] While stalling the development of English photography, David Brewster - a physicist specialized in optics, an astronomer, inventor of the kaleidoscope and the 'lenticular' stereoscope, and a friend of Talbot - suggested that he would restrict his patent on the island to England, leaving Scotland beyond its the geographical limits. There, photography flourished and the first photographic club in the world formed in 1843, led by Brewster: the *Edinburgh Calotype Club*. Its members consisted of pioneering photographers such as Roger Fenton, Hugh Owen and Frederic Scott Archer.[77] Together with Brewster, they would write history in 1851, but this I will leave for our next chapter. Before that moment, they produced several extensive publications of architectural views and landscapes. Related to the *Calotype Club*, photographers David Octavious Hill and Robert Adamson produced some of the most sophisticated and intriguing recordings of Scottish architecture, documenting Victorian buildings and urban scenes in Edinburgh. Frederic Scott Archer, *Calotype Club* member and sculptor by profession, challenged Talbot's patent with a new, groundbreaking improvement: the *wet-collodion negative*. Building on the difficult and unpractical albumen-on-glass negative, he invented a new technique for making negatives on glass by adding light-sensitive materials to collodion, a gelatinous and adhesive – and combustible - material. While it was still wet, the collodion was poured over a glass plate, and was to be exposed before drying. It had to be developed on site in a mobile darkroom. But these disadvantages were outweighed by an extremely reduced exposure time, a wealth of image detail, on a glass negative with the ability to print infinite paper copies. Published shortly before Daguerre's death in *The Chemist* in March 1851, Archer's unpatented technique ended Talbot's reign by 1854.[78] It left photography a free enterprise in England, fundamentally boosting its practice from 1851 onwards. **(Fig. 9)**

Talbot's vantage point had introduced a new topic in photography. From then onwards, photography assumed a self-conscious role in registering the vestiges of times past and the architectural marvels yet to come. Besides delivering accurate architectural and topographical information, the impressions of the architectural view started to influence the perception of architecture. His inventions - the negative/positive process, the latent image, and paper prints - had enabled the publication of architectural books. The improvements on his technique had allowed a widespread dissemination, and were directly responsible for commissioned architectural surveys. But within a few years time, these improvements superseded both the daguerreotype and the calotype. This was something Talbot had not anticipated. His *Latticed window* had predicted his own demise: his paper negative was ironically outwitted by glass plates.

> The new glass-plate pictures were almost as transparent as air; they seem less like objects of art than windows, behind which lay the fragmentary, scruffy particularity of unedited experience.[79]

Szarkowski had already noted that Talbot had started with photographing glass, after which photography became glass. **(Fig. 10)** His negative had introduced transparency to the medium of photography, which was reflected in the newly invented sheet glass negatives. Like glass had opened architecture to draw the outside world in, the glass

[76] Szarkowski, John, *Photography Until Now*, 1989, pp. 35-64.
[77] Frizot, Michel, *A New History of Photography*, 1998, p. 70.
[78] Archer, Frederic Scott, "The use of Collodion in Photography," *Photography: Essays & Images*, edited by Beaumont Newhall, 1980, pp. 51-52.
[79] Szarkowski, John, *Photography Until Now*, 1989, p. 107.

negatives had opened the view on the world. The view out of a window became an illusionistic window that first offered us a view onto a window. **(Fig. 11)** With the glass negatives, the view *out* of a window *onto* a window now seemed to be recorded *on* a window.

Like a crystal orb, Talbot's glass panes in his *Latticed window in the south gallery of Lacock Abbey, Wiltshire* had predicted many phenomena. It was the first clear image of a building known "to have drawn its own picture." The objectivity of his architectural view triggered serial studies on architecture. The transparency of his negatives held the key to the glass negative. The glass negative was essential for the mass-production of photographic books, democratizing the medium of photography. Glass would become photography's most loyal assistant in the coming decades. Photography and architecture would enter into a stable equilibrium of interdependency. And eventually, the practice of photography would influence the mother-art of architecture itself. In 1851, all these speculations were beautifully reflected in the latticed windows of the *Crystal Palace*. **(Fig. 12)**

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Delamotte's Crystal Palace

The practice of photographing architectural views rapidly started to influence the practice of architecture itself. In a primary stage, the construction of new buildings was photographically documented from start to finish. In a second stage, these buildings did not necessarily need to reach future generations, as long as reliable evidence of their existence did. The propaganda of photography started turning the roles of both media around: architecture had premeditated photography, but now photography started premeditating architecture. In this case study I will argue that, only ten years after photography's invention, temporary architecture was being built on a much grander scale then ever before, because it could be photographed. The history of world's fairs and their grand temporary architectures did not coincidentally coincide with the times newest and most revolutionary invention. The first Universal World Exposition in 1851 staged one of the most iconic, ephemeral buildings in the history of architecture: the *Crystal Palace*. It became the subject of the first extensive photographic survey of a particular architecture: *Progress of the Crystal Palace at Sydenham*, recorded by Philip Henry Delamotte.

Shortly after the opening of *The Great Exhibition of All Nations and Industries*, *The Illustrated London News* published a story on the 26th of July 1851 related to the death of L. J. M. Daguerre, who had passed away two weeks earlier. This story was told by a certain Jean Baptiste Dumas, a French scientist and member of the *Académie des Sciences*:

> One day in 1827, after lecturing at the Sorbonne, the famous chemist Jean Baptiste André Dumas was approached by a lady who seemed to be in a very worried state of mind. "Monsieur Dumas," she said, "I have to ask you a question of vital importance to myself. I am the wife of Daguerre, the painter. He has for some time been possessed by the idea that he can fix the images of the camera. He is always at the thought, he cannot sleep at night for it. I am afraid he is out of his mind. Do you, a man of science, think it can ever be done, or is he mad?" "In the present state of our knowledge," replied Dumas, "it cannot be done; but I cannot say it will always remain impossible, nor set the man down as mad who seeks to do it."[80]

Madness it was not. *The Great Exhibition* became the first great international exhibition of the newly discovered medium of photography. The *Members of the Jury* of the Great Exhibition honoured Daguerre in writing:

> Since the epoch when M. Daguerre and Mr. Talbot first divulged their respective processes for impressing photographic images on silver and on paper, scientific men, both at home and abroad, have, by their increasing researches and

[80] The Illustrated London News, 26 July, 1851, quoted in Gernsheim, Helmut & Alison, *J.L.M. Daguerre: The History of the Diorama and the Daguerreotype*, Dover Publications Inc., New York, 1968, p. 1.

> improvements, brought Photography to a degree of perfection, which, however short of what it may one day acquire, yet seems incredible, considering its brief existence. (…) In him was lost one of the lights of the age.[81]

On the 1st of May 1851, The Great Exhibition of All Nations and Industries had opened in Hyde Park, London. **(Fig. 1 & 2)** This temporary event, lasting almost six months, was the first international exhibition of its kind. It was the heir of several smaller exhibits of industry and contemporary art held in Britain from 1760 onwards. These were organised by the *Society of Arts* and culminated under the auspices of Prince Albert into a series of national manufacture exhibitions in 1847, 1848 and 1849.[82] Spurred by the larger French national exhibitions, the British rivalry led to an exhibition of a vast magnitude. Paris had already hosted many large national trade fairs, but by 1849, the nation was worn out after as many revolutions. Britain had a relatively stable political situation after the defeat of Napoleon in 1815, and under the reign of Queen Victoria the empire became the richest and most powerful nation in the world. When a certain Henry Cole (1808-1882) approached Queen Victoria and Prince Albert with the idea of holding a similar fair as in France, it was Prince Albert who insisted that it should surpass those in size, that it should be of an international scope, and that it should include the fine arts. In a speech he gave in 1850 he proclaimed England as a peace monger and invited former friends and foes to participate in a unifying project:

> Nobody who has paid any attention to the particular features of our present era, will doubt for a moment that we are living in a period of the most wonderful transition, which tends rapidly to the accomplishment of that great end to which, indeed, all history points – the realization of the unity of mankind. (…) Gentlemen, - the Exhibition of 1851 is to give us a true test and living *picture* of the point of development at which the whole of mankind has arrived in this great task, and a new starting point from which all nations will be able to direct their further exertions.[83]

It is no coincidence that Prince Albert used the word *picture* in his speech, since photography was the fair's most important revelation. The Great Exhibition was the first international exhibition of photography.[84] The newly discovered art had by then become a serious industry that disclosed images of remote and exotic worlds and of products of industry and works of engineering. This was a spectacle of an entirely different level than the realistic paintings still on display in Robert Barkers *Panorama*, exceeding Daguerre's London *Diorama*, the *Cyclorama*, or even the *Colosseum*, a panorama that covered "more than 40.000 square feet, or nearly an acre of canvass, and may for its fidelity to the original, be styled a *daguerreotype* of the great metropolis."[85] *The Great*

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[81] Cole, Henry, *The Official Descriptive and Illustrated Catalogue, Reports by the Juries*, Spicer Brothers, Wholesale Stationers, W. Clowes and Sons, printers, London, 1852. http://books.google.com

[82] Findling, John E., *Historical Dictionary of World's Fairs and Expositions, 1851 – 1988*, Greenwood Press, Westport, 1990, pp. 3-9.

[83] Prince Albert quoted in Cole, Henry, *The Official Descriptive and Illustrated Catalogue, Volume 1-3*, Spicer Brothers, Wholesale Stationers, W. Clowes and Sons, printers, London, 1851. http://books.google.com

[84] Badger, Gerry, "The Most Remarkable Discovery of Modern Times: Three Photographic Exhibitions in 1850s London," *Photoshow: Landmark exhibitions that defined the history of photography*, edited by Alessandra Mauro, Thames & Hudson Ltd, London, 2014, pp. 37-50.

[85] Gaspy, William, *Tallis's Illustrated London; in commemoration of the Great Exhibition of all Nations in 1851, London*, Tallis and Co., 1851, pp. 253-254. In this remark can be read that painting was already then valued in regards to photography, while before, photography was valued regarding its resemblance to painting.

Globe by James Wyld, in which visitors could gaze at an inversed map of the world, had opened simultaneously with the Great Exhibition and serves as a fine metaphor to the photographic exhibits at the world's fair; Wyld's *Globe* was a purpose built panorama with four elevated viewing platforms in a full panoramic sphere of 26 meters in diameter. On its interior surface visitors could see an inversed surface of the earth, complete with three-dimensional mountain ranges and rivers in plaster.[86] The spectator was no longer looking upon a comprehensible globe, but found himself inside a panoramic orb, looking at the world as if it was as infinitely explorable as the universe. **(Fig. 3)** The Great Exhibition as a whole resembled Wyld's *Great Globe*, since it encapsulated the visitor in a global overview. It was the first time an exhibition of such an international nature was staged. 94 countries were invited to display their national industrial trade items, together with their highest achievements in culture. Within the building, the position of each country was determined by its own latitude.[87] Each country was offering maps, objects and photographic views from unreachable places. Archaeological findings and picturesque images of ruins contrasted with the newest achievements of industry and works of engineering. 14.000 exhibitors displayed more than 100.000 exhibits from around the world.[88] This was an encyclopaedic endeavour showing a wide range of displays, from Watt's steam engine or Samuel Colt's revolver to the great *Koh-i-Noor* diamond of Runjeet Singh.[89] In the American section, the photographer John Adams Whipple exhibited a work that combined both elements; the first image in history of the moon, an extraordinarily detailed daguerreotype that was taken through a *Great Refractor Telescope*, which he exhibited alongside. It represented the exterior gaze of the period's mindset.[90] The exhibition indeed attempted to give a panoramic overview of the world's history, of the current state of affairs, and possible futures. The scope of the Great Exhibition was to *picture* not just the world in all its completeness, but the whole universe. Sigfried Giedion wrote on the Great Exhibition:

> All regions and indeed, retrospectively, all times. From farming and mining, from industry and from the machines that were displayed in operation, to raw materials and processed materials, to art and the applied arts. In all these we see a peculiar demand for *premature synthesis*, of a kind that is characteristic of the nineteenth century in other areas as well: think of the total work of art. Apart from indubitably utilitarian motives, the century wanted to generate a vision of

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[86] "The Great Globe, (…) was erected there this year by Mr. Wyld, the great map seller. (…) This model bird's eye view of the world, the cost of whose erection amounted to nearly 5000 pounds, is painted upon the interior of an immense globe, the external masonry of which is not dissimilar to the Colosseum, Regent's park. This structure is round, and its diameter is 88 feet. The distinctive physical features of the earth, as portrayed by that great geographer Humboldt, are represented in this stupendous globe. The mountains are brought out in relief, the icy regions, with their fantastically shaped bergs, faithfully displayed, the courses of mighty rivers, the ocean, the volcanoes, and all the other terrestrial features are distinctly indicated as well as the geographical divisions. This globe is 170 feet in circumference, and 56 feet in diameter; (…) The scale is after the rate of 10 miles to an inch. This accurate epitome of the world is viewed from four galleries, one above the other, to which the ascent is by a winding staircase." Gaspy, William, *Tallis's Illustrated London*, 1851, pp. 253-254.

[87] Cole, Henry, *The Official Descriptive and Illustrated Catalogue, Volume 1-3*, 1851.

[88] Jackson, Anna, *Expo: International Expositions 1851 – 2010*, V&A Publishing, London, 2008, p. 10.

[89] "In London, in 1851, 'appeared . . . the first cast-steel cannon by Krupp. Soon thereafter, the Prussian minister of war placed an order for more than 200 exemplars of this model.' Julius Lessing, "Das halbe Jahrhundert der Weltausstellungen," Berlin, 1900, p. 11, quoted in Benjamin, Walter, *The Arcades Project*, Harvard University Press, Cambridge MA, 1999, p. 183.

[90] A month after the opening of the Great Exhibition, on the 28th of July 28 1851, a total solar eclipse was to be observed in England and most parts of Northern Europe, giving the epochal event of the Great Exhibition even more the allure of a prophecy. Eclipsing Whipple's first image of the moon, Julius Berkowski photographed the event for the first time in history, and its corona at the height of its totality. Whipple himself had photographed the event as well, but in North America, where there was only a partial solar eclipse visible.

the human cosmos, as launched in a new movement.[91]

There were over 700 calotypes and daguerreotypes on display at the Great Exhibition, sent in from 9 countries that had mastered the techniques. But there was no official photography section. The British displays were divided in four main categories: *Raw materials*, *Machinery and Mechanical inventions*, *Manufactures*, *Sculpture* and *Plastic Art*.[92] Photography was dispersed over these different categories. Only a few photographic images came under *Class XXX, Fine Art*. In *Class XXIV, Glass*, optics could be found to make lenses for cameras. The bulk of the English photography displays came under *Class X, Philosophical Instruments and Miscellaneous Contrivances, including processes depending upon their use, Musical, Horological, Acoustical and Surgical Instruments*, in *Section D: Application of mechanical and physical science to useful purposes, not included in any of the preceding or subsequent sections, Subsection 3: Light-instruments to assist vision, as smaller telescopes, opera glasses, spectacles, microscopes, lenses, mirrors, signals, visual telegraphs, lighthouses, optical illusions, gas and solar microscopes, cameras, photography, polarization of light, &c.*[93] **(Fig. 4)** In between these displays were the works of Jean François Antoine Claudet, who presented several photographs, accelerating substances, pictures of the solar spectrum and a 'multiplying camera obscura' that could take several images on a single support. Claudet was awarded with the highest award, a *Council Medal*, given by Jury member John Herschel for his innovating experiments.[94] The only other Council Medal awarded in *Class X* was given to a certain Robert Chance, who had exhibited an enormous rotating lighthouse lamp and a disc of flint glass for optical use, 73 centimetres in diameter. In between these mechanical devices stood the artistic work of Richard Beard, William Edward Killburn, Robert James Bingham, and John Jabez Edwin Mayall who presented a portrait of Daguerre.[95] All the English exhibits had to demonstrate a particular photographic process, a progress in the science of photography. William Henry Fox Talbot, for example, a founding father of photography and the inventor of the English calotype, was therefore already deemed outdated. His work was not even present at the Great Exhibition, his name barely mentioned – in contrast to the laudation of Daguerre.

This awkward grey zone made that the most exciting photographic exhibits were to be found in the international displays, which were not bound to the rigid British classification system. The French had an award winning team with, among others, Hippolyte Bayard, Gustave Le Gray, Henri Le Secq and Louis Désiré Blanquart-Evrard. They were mostly showing architectural views. The Council Medal winning Frédéric Martens contributed several large architectural proofs, one of which a daguerreotype view of Paris: a 150 degrees panoramic photograph taken from atop the Louvre with a revolving camera.[96] The American representation was surprisingly the largest group of photographers present: Mathew Brady, Marcus Aurelius Root, John Adams Whipple and Fontayne & Porter, to name a few. Charles Fontayne and his partner William Southgate Porter presented the largest photographic work on display. In 1848, they recorded a

[91] Giedion, Sigfried, "Bauen in Frankreich," p. 37, quoted in Benjamin, Walter, *The Arcades Project*, 1999.
[92] "There was also a fourth classification at the Great Exhibition, fine art, but this section proved disappointing. The visual arts had to demonstrate an element of technological or industrial advance to be admitted: there were no official displays of painting, and while there was much impressive sculpture on show, it was used primarily to create points of interest within the vast vista rather than treated as an individual category." Jackson, Anna, *Expo*, 2008, p. 68.
[93] Cole, Henry, *The Official Descriptive and Illustrated Catalogue, Volume 1-3*, 1851.
[94] Ibid.
[95] Ibid.
[96] Ibid.

huge panorama of the Fairmount riverfront in Cincinnati, composed of eight large daguerreotypes surmounting to a piece of nearly two and a half meters long.[97] Whipple's photograph seemed the only fitting image to reside in *Class X*, which in general had objects for astronomy, globes, small planetariums and maps. His picture of the moon took a lesser *Prize Medal*, which the Jury compensated with giving it a high recommendation:

> This is perhaps one of the most satisfactory attempts that has yet been made to realize by a photographic process, the telescopic appearance of a heavenly body, and must be regarded as indicating the commencement of a new era in astronomical representation.[98]

Prince Albert and Queen Victoria valued photography's unification of science, art and education. They were particularly fond of the newest invention of stereography, evoking an actual three-dimensional on-the-spot experience through the looking glass. They had several portraits taken, exchanged *carte-de-visites* with the attending kings and queens, and assigned photographers to record every such event. Photography played an important role "to promote a unified Euro-American hegemony, ostensibly by documenting the real world. (…) The medium could be both an equalizer and yet a promoter of cultural superiority."[99] It was an exchange of ideas made possible by a liberal economy with a grander mindset to promote peace and progress. Seen the time's limited exhibition spaces and accessible museums, it was a great attempt to learn from others, as well as to educate the British population. But this glass-encased world was mainly designed to present the possessions of the British Empire and its advanced technology, and to show to the rest of the world that they controlled most of it.

The Crystal Palace

The extravaganza of the exhibition was not to be found in the exhibition, but was undoubtedly the building itself. **(Fig. 5-7)** The building had been described by Henry Cole as "a bonded warehouse," but this huge curiosity cabinet, transformed the exhibition from a mere displays of things into a complete visual and physical experience. The construction by architect Joseph Paxton (1803-1865) was a superstructure made of cast iron and plate glass that most definitely eclipsed the marvels displayed inside. The giant greenhouse covered a rectangular strip of land of about 26 acres and several lofty elm trees in Hyde Park, situated between the *Queen's Drive* and *Rotten Row*. The edifice was 563 meters long and 139 meters wide, a long horizontal block that reached a height of 33 meters in the vaulted transept in its centre. The total area of useable space on the ground floor was 235.544 square meters and that of the elevated galleries 66.172 square meters.[100] The galleries extend nearly a mile in length. An endless complexity of columns carried the eye upward in one unbroken vertical line from the ground to the roof. They served to support 273.100 superficial meters of glass, covering the iron anatomy with a deceptive, airy lightness. In the words of an observer: "You might think

[97] Gernsheim, Helmut & Alison, *J.L.M. Daguerre*, 1968, p. 142.
[98] Cole, Henry, *The Official Descriptive and Illustrated Catalogue, Volume 1-3*, 1851.
[99] Futter, Catherine L., "Concentrating the Message: Photography at World's Fairs," *The Future of Yesterday*, edited by Ives Maes, Ludion, Antwerp, 2013, p. 14.
[100] Digby Wyatt quoted in Cole, Henry, *The Official Descriptive and Illustrated Catalogue, Volume 1-3*, 1851.

you were under the billows of some fabulous river, in the crystal palace of a fairy or naiad."[101]

The extensive use of glass immediately gave it the poetic nickname *The Crystal Palace*. Anna Jackson wrote that "this deceptively simple architectural plan produced an extraordinary visitor experience, the glass walls and iron ribs that framed the long vista creating a sense of sparkling infinity."[102] But its modular design was the real innovation of the building. "Standardized glass and iron parts were made in Birmingham and then sent to London, where teams of workmen bolted, welded and slotted the building together in just 17 weeks."[103] The Great Exhibition as a whole embodied a synthesis of new discoveries and industries, which were reflected in the Crystal Palace's highly innovative construction materials. These materials were the new products of the Industrial Revolution and clearly intended to prove the technological superiority of Britain:

> Had circumstances determined that the present industrial position of England should have been represented by the building alone, while other nations should have been allowed to indicate the scope of their resources by a display of choice specimens of all the varied branches of productions to which their efforts had of late years been directed, it is singular to remark how few elements, essential to her commercial success, would have been lost sight of. [104]

The inventor of the Crystal Palace, Joseph Paxton, was a landscape architect that started his career in the *Horticultural Society's Chiswick Gardens* in London. He quickly became the Head Gardener at *Chatsworth*, the estate of the 6th Duke of Devonshire, which was considered one of the finest landscaped gardens of the time. Paxton started experimenting with greenhouses in 1832, which cumulated in the construction of the *Great Conservatory* in 1837. The Conservatory was the largest glass building of its time, measuring about 70 meters long and 40 meters wide and was entirely constructed out of prefabricated cast-iron columns and large sheet glass. His inspiration for this building supposedly came from a lily that was brought back from the Amazon. The Duke of Devonshire presented Queen Victoria with one of the first of these flowers, and named it the *Victoria Regia Lily*. Paxton interpreted the veins of the huge leaves of the water lily, measuring over a meter in diameter, as natural features of engineering like transverse girders and supports and led him to devise the glasshouse design of the Conservatory, which would eventually inspire the Crystal Palace.[105] But the main influence obviously came from the innovative new industries of Paxton's time: cast-iron and plate glass.

Without these recent developments in the manufacturing of glass and iron, the construction of the Conservatory or the Crystal Palace would not have been possible. Both industries had in common that by the end of the 17th century, the woods of England were decimated, cut for construction or used as furnace fuel. The wood shortage was of such pressing matter that mineral fuel had to replace the burning of wood. This eventually resulted in experiments to melt iron, as well as glass, with coal, which

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[101] Demy, A., "Essai historique sur les expositions universelles de Paris," Paris, 1907, p. 40, quoted in Benjamin, Walter, *The Arcades Project*, 1999.
[102] Jackson, Anna, *Expo*, 2008, p. 43.
[103] Ibid.
[104] Digby Wyatt quoted in Cole, Henry, *The Official Descriptive and Illustrated Catalogue, Volume 1-3*, 1851.
[105] Giedion, Sigfried, *Space, Time & Architecture: the growth of a new tradition*, Harvard University Press, 2003.

resulted in a much stronger cohesion. This allowed for construction solutions that eventually brought glass and iron together as the main building features of the 19th century - aided by the high price of lumber and the fear of fire. Halfway the 18th century a certain Abraham Darby was able to produce cast-iron of such high quality that it gave birth to the mass-production of cast-iron columns and girders. The column in cast iron was essential to the history of architecture and engineering.[106] Darby built the first bridge of cast iron over the river Severn between 1775 and 1779, with a span of approximately 30 meters and an altitude of 12 meters. Bridges, railroads and train stations, mines, stores and factories grew excessively over the decades. By 1849 the *Brittania Tubular Bridge*, carrying rail traffic, crossed 461 meters at the height of 40 meters. The newly invented hydraulic press employed to raise the tubes of the bridge was exhibited in the Machinery hall of the Great Exhibition. In order to execute the Crystal Palace, 2300 cast iron girders, 358 wrought iron trusses and 30 miles of gutters were casted in the foundries of *Fox, Henderson, & Co.* in Staffordshire, Birmingham.[107] Cast iron had become the material that identified the Industrial Revolution. Walter Benjamin wrote:

> For the first time in the history of architecture, an artificial building material appears: iron. It undergoes an evolution whose tempo will accelerate in the course of the century. This development enters a decisive new phase when it becomes clear that the locomotive - on which experiments had been conducted since the end of the 1820s - is compatible only with iron tracks. The rail becomes the first prefabricated iron component, the precursor of the girder. Iron is avoided in home construction but used in arcades, exhibition halls, train stations - buildings that serve transitory purposes. At the same time, the range of architectural applications for glass expands, although the social prerequisites for its widened application as building material will come to the fore only a hundred years later.[108]

The production of glass had similarly benefitted from the use of mineral fuel. In 1832 the firm *Chance Brothers & Co.* of Smethwick, Birmingham, became the first manufacturer to adopt the 'cylinder method' to produce sheet glass as long as a meter. The Chance Brothers delivered the glass for Paxton's Great Conservatory, and upped their game for the Crystal Palace to produce sheet glass of 1,3 meters on 25,4 centimetres. The British glass industry boomed in 1845 when the government decided to repeal heavy taxes on the export of glass, and it became the loyal partner of cast-iron constructions. In combination, glass and iron provided and influx of light, fireproofing, and the possibility of rapid and inexpensive assembly. These glass plates became a construction tool used for extensive glass roofs and façades of "arcades, exhibition halls, train stations." Between 1848 until 1854, the Chance Brothers became known as the greatest glass manufacturer in Britain, and the company that delivered the glass necessary to construct the Crystal Palace. The Crystal Palace was the mesmerizing accomplishment of these new and unprecedented construction methods. The building used 300.000 sheets of glass and the prefabricated cast-iron framework was based on a module of 7,3 meters that was repeated 77 times to the length of 563 meters - or 1851 feet, symbolizing the

[106] Ibid.
[107] Digby Wyatt quoted in Cole, Henry, *The Official Descriptive and Illustrated Catalogue, Volume 1-3*, 1851.
[108] Benjamin, Walter, *The Arcades Project*, 1999, p. 4.

year of its making.[109] The Great Exhibition proved a grand stage for architectural advances as well as an important stimulus for engineering and the Crystal Palace was its champion.

The Official Descriptive and Illustrative Catalogue of the Great Exhibition

Its pure novelty made the Crystal Palace itself subject to photography. The location was chosen for "the opportunities for obtaining beautiful views of the building from every direction," and such was done extensively.[110] William Henry Fox Talbot photographed the grand hall, as well as Baron J-B Louis Gros, Benjamin Brecknell Turner, Charles Soulier, and Robert Bingham. **(Fig. 8)** "Claudet, Beard, Mayall and Williams, at once began taking stereoscopic views of the interior of the Crystal Palace and of its exhibits."[111] Photography of architecture had evolved into a common practice. The propaganda of photography made the architectural view into a rivalling game between the two empires, exploiting their national patrimony and showcasing their newest achievements in engineering. In France it had led to public commissions to record the most important national historic monuments, as well as the new bridges, train stations, and arcades, under construction. On the British side, it was seriously applied to record the most innovating building of a transient nature, and cumulated in the four volumes counting report of the Great Exhibition.

The first three volumes of the *Official Descriptive and Illustrative Catalogue of the Great Exhibition* described in 2000 pages the intentions of the exhibition committee explained by Henry Cole, a meticulous analysis down to the last bolt of the construction methods applied to erect the Crystal Palace, and listed all the objects present in the four British classes and the foreign nations. "1200 good and faithful" wood engravings and lithography's served to illustrate these descriptions.[112] The *Observer* wrote that "these volumes are designed to serve purposes at once more important and more enduring":

> They are designed to preserve and to *fix* in the public mind a lasting record of the results to which the industry, the ingenuity, and the invention of the world had reached in the year 1851, and to establish a starting point whence future ages proceed onward in the march of improvement.[113]

The article appeared in the afterwards published fourth volume, containing the *Reports of the Juries*. Here, the "truthful and documentary" nature of photography was used to *picture* and *fix* the architecture of the Crystal Palace and its exhibits with the most scrupulous exactitude. 155 original photographs were included in this volume, taken by Hugh Owen (1808-1897) and Claude Marie-Ferrier, (1811-1889), picturing the building

[109] Badger, Gerry, "The Most Remarkable Discovery of Modern Times" *Photoshow*, edited by Alessandra Mauro, 2014, pp. 37-50.
[110] "For the popularity of the spot, the ease with which it can be approached, the opportunities for obtaining beautiful views of the building from every direction, and the facility with which it has been drained, and supplied with gas and water, it is scarcely possible that a site could have been found more admirably adapted for such a purpose, than the one upon which the building now stands." Digby Wyatt quoted in Cole, Henry, *The Official Descriptive and Illustrated Catalogue, Volume 1-3*, 1851.
[111] Gernsheim, Helmut & Alison, *J.L.M. Daguerre*, 1968, pp. 143-170.
[112] Cole, Henry, *The Official Descriptive and Illustrated Catalogue, Reports by the Juries*, 1852.
[113] The Observer, 1851, published in Cole, Henry, *The Official Descriptive and Illustrated Catalogue, Reports by the Juries*, 1852.

and its exhibits.[114] **(Fig. 5-7)** These books, with an unprecedented amount of photographs, were supposedly printed 250.000 times, in a chain production process never seen before.[115] Nikolaas Henneman, Talbot's former assistant, reprinted Hugh Owen's and Claude Marie-Ferrier's photographs alongside.[116] This unbiased record was sent in 1852 to all dignitaries of the participating countries, to remember long after the rare and curious contents of the Crystal Palace had been scattered over the world and grass had once more grown over the site that Britain was indeed the leading nation of the Industrial Revolution. Or in the words of Sir David Brewster (1781-1868), member of the jury:

> That photography will (…) greatly enrich us with authentic records of works, that would otherwise pass away without a single detaining effort from the hand of the artist, owing to their being of too transient a nature to admit of the accuracy and detail necessary to give it value in future ages; - is attested by the various and excellent representations which we now possess of the exhibition building *itself*, *in all its stages*, by the faithful and well-executed photographic pictures of MM. Martens, Claudet, &c. Great is its usefulness as applied to *transitory* scenes of the above kind, and incalculable will be the advantage posterity is sure to reap from the ever increasing collection of such truly graphic representations; and great service, too, will the plain and truthful records of photography afford to the historian of future ages.[117]

Progress of the Crystal Palace at Sydenham

> The exhibition has lived its allotted time, and died; but this Catalogue is the sum of the thoughts and truths to which it has given birth – and which form the intellectual ground whereon the generations that we are not to see must build.[118]

The Great Exhibition closed on October 11th after five months and eleven days. The enterprise had attracted just over six million paying visitors and made a profit of 186.437 pounds.[119] The temporary architecture of the Crystal Palace was to be demolished, and returned in parts to its makers. The original estimate by Fox, Henderson & Co. to construct the building was 74.800 pounds if the material was surrendered to them after the exhibition, or 150.000 pounds if the building was to remain. Since the exhibition took place on Her Majesties Royal Grounds, an agreement had been made to remove the building within seven months after the close of the exhibition. The whole idea of temporariness was inherent to its marvel; to build

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[114] Hubertus von Ameluxen, "The Century's Memorial: Photography and the recording of history," *A New History of Photography*, edited by Michel Frizot, Könemann Verlagsgesellschaft mbH, Köln, 1998, p. 133.
[115] "The three volumes will contain, altogether about 1200 illustrations. 250.000 copies have been printed. English, French, German versions. English and French synopsis. Hunt's handbooks. Penny and two penny English and French plans and guides. Jury Reports. Alphabetical and classified index to the official catalogues." Cole, Henry, *The Official Descriptive and Illustrated Catalogue, Reports by the Juries*, 1852. Although the Illustrated Guide states this high number of editions, it is doubtful that there were so many printed. More contemporary sources speak of about 150 copies that were printed of the Reports of the Juries, instead of 250.000. What might be assumed is that the total amount of printed matter, in the above mentioned list, would surmount to 250.000, including an edition of a few hundred of the Reports of the Juries included. It would still demand for an unusually high amount of photographic prints.
[116] Frizot, Michel, *A New History of Photography*, Könemann Verlagsgesellschaft mbH, Köln, 1998, p. 65.
[117] Brewster, David quoted in Cole, Henry, *The Official Descriptive and Illustrated Catalogue, Reports by the Juries*, 1852.
[118] Cole, Henry, *The Official Descriptive and Illustrated Catalogue, Reports by the Juries*, 1852..
[119] Findling, John E., *Historical Dictionary of World's Fairs*, 1990, pp. 3-9.

something that exuberant, just for the duration of one exhibition, was to show real wealth and power. But the Crystal Palace proved so successful that on public request, the temporary pavilion was preserved. The British people had paid most of the expenses of the exhibition and eventually they were allowed to decide on its destiny. It was to be relocated to a plot of land in Sydenham, in the vicinity of London.[120] The triumph of Paxton's palace was its modular design, which made the migration of the building as plausible as its demolition.

Philip Henry Delamotte (1821-1889), a British photographer and artist, was commissioned in 1852 to record the disassembly of the Crystal Palace in Hyde Park and its re-erection on a permanent site in Sydenham, until its completion in 1854. **(Fig. 9-12)** On the 19th of June 1854, the reconstructed Crystal Palace was re-opened by Queen Victoria and Prince Albert, followed by a visit of Emperor Napoleon III in 1855. When *Progress of the Crystal Palace at Sydenham* was published in 1855, it became the first example of a photographic survey purely devoted to one single building. It was the first time that photography focused so extensively on it's own main features: documenting evidence and registering the progress of time for future examination. It was also the first time photography showed "its usefulness as applied to transitory scenes of the above kind" – documenting the wanderlust of the time's most famous building.

Photography's advocacy had, however, already served its purpose. That is why it was so important that "excellent representations" had to be made of the "transitory" nature of "the exhibition building itself, in all its stages." Then why was Delamotte assigned to photograph the building so extensively, *after* the event and after the photographic reports of several significant photographers *during* the event? The organizers were very well aware of the importance of that lasting image, that representation of truth, since they had created the most complete records of its existence. David Brewster, member of the Jury, astronomer, photographer and chairman of the *Edinburgh Calotype Club*, himself had attested of the "various and excellent representations" they already possessed "of the exhibition building itself, in all its stages" by "faithful and well-executed photographic pictures." The exhibition had lived its allotted time, so why to photograph the remaining wreck after the visible glories had gone?

Elena Filipovic offered a possible answer in regards to a photographic documentary of my own, made at the start of this research project:

> Given that nearly all the photography of the fairs sought to capture the image of something relatively short-lived, and thus create a reliable record of it, what would the significance be of a photography that creates a record *after* the event is over? Moreover, what does it mean to arrive in the wake of a spectacle that was explicitly supposed to already be the embodiment of 'the future'? Artist Ives Maes confronts precisely this complex temporal conundrum. His project between 2008 and 2013 was to create photographic images of these World's Fair sites, not taken

[120] "After the closing of the London Exhibition in 1851, people in England wondered what was to become of the Crystal Palace. Although a clause inserted in the deed of concession for the grounds required … the demolition … of the building, public opinion was unanimous in asking for the abrogation of this clause. … The newspapers were full of proposals of all kinds, many of which were distinctly eccentric. A doctor wanted to turn the place into a hospital; another suggested a bathing establishment. … One person had the idea of making it a gigantic library. An Englishman with a violent passion for flowers insisted on seeing the whole palace become a garden." A. S. de Doncourt, "Les Expositions Universelles," Lille and Paris 1889, p. 77 in Benjamin, Walter, *The Arcades Project*, 1999, p. 162.

> in the heady, dazzling moment of the fair, but instead often long after their moment had passed. Maes's photographs are perfect examples of what photo historian David Campany calls "'late' photography," which, as he describes, "turns up late, wanders through the places where things have happened, toting up the effects of the world's activity. This is a kind of photograph that (…) is quite different from the spontaneous snapshot and has a different relationship to memory and to history."[121]

This idea of 'photography-after-the-fact,' in which we can see "no people, but a lot of remnants of activity," in which "we can see that something has happened," and where "we are left to imagine or project it," could be applied to Delamotte's series.[122] But Campany applies this loud stillness only to "late 20th and 21st century photography," since 19th century photographs "weren't still because nearly all images of that time were still."[123] Taking his comparison, Delamotte's images give the "trace of an event," whereas my own photograph of the remnants of the Crystal Palace – showing its last column still standing upright today after fire ravaged the building in 1936 – would be "the *trace of the trace* of an event." However, Campany's 'aftermath photography' theory holds another, more threatening aspect that can certainly be applied to Delamotte's series:

> There is a sense in which the late photograph in all its silence, can easily flatter the ideological paralysis of those who gaze at it with a lack of social or political will to make sense of its circumstance. (…) If the banal matter-of-factness of the late photograph can fill us with a sense of the sublime, it is imperative that we think through why this might be. There is a fine line between the banal and the sublime, and it is political. If an experience of the contemporary sublime derives from our being caught in a geo-political circumstance beyond our comprehension, then it is a politically reified as much as an aesthetically rarefied one.[124]

Progress of the Crystal Palace at Sydenham was indeed made *after* the event of the Great Exhibition, not recording the event of the exhibition, but the ephemeral nature of the building in all its emptiness. But the photographic study made the migration of the Crystal Palace's legs and shoulders the *new* event. Then the conclusion is that it cannot be 'late' photography, but rather a registration of the gap of time in between. The elaborate documentary style of Delamotte's photography reveals that different focus: construction work, men on scaffolds, engineers inspecting. But it also registered the

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[121] Filipovic, Elena, "Afterimages," *The Future of Yesterday*, 2013, p. 7.

[122] Campany, David, "Safety in Numbness: Some remarks on the problems of 'Late Photography,'" *The Cinematic: Documents of Contemporary Art*, edited by David Campany, MIT Press, Cambridge MA, 2007, pp. 185-194. Campany's text was written in regards to Joel Meyerowitz's *Aftermath* series; photographs of Ground Zero in the days after the event of 9/11.

[123] "Late 20th and 21st century photography takes on something of the visual character of celebrated 19th century images of battlefields such as Roger Fenton's photography of the exhausted terrains of the Crimea from the 1850s, or Matthew Brady's images of the scarred earth and corpses of the American Civil War from the following decade. Yet this is a false comparison in key respects. The similarity masks the radical changes that have taken place in our image culture since then. Consider, for example, the question of stillness. Although it might be a scientific truism that photographs are still, this fact is always subject to cultural and historical interpretation. Those 19th century photographs were not still in the way in which we think of stillness today. I don't mean this in the sense that things moved during long exposures (which we all know they did). They weren't still because nearly all images of that time were still. That is to say, the immobility of the photograph would be almost too obvious to mention. Stillness in photographs only became apparent and definitive in the presence and context of the moving image." Campany, David, *The Cinematic: Documents of Contemporary Art*, 2007, pp. 185-194.

[124] Ibid.

precise architectural construction and the superb engineering, the infinite hall void of people, the vertiginous effects of the naked building, the crystalline veil removed from its iron skeleton, with an ideological message. Looking at Delamotte's extensive set of photographs and the edition and distribution of his book, this 'political' focus was clearly intended to propagandize the superiority of British engineering for future generations. **(Fig. 13-17)**

And this reveals yet another interest. In my opinion, Delamotte's assignment anticipated the infancy of the photographic medium and its contemporary flaws. They had already created the most complete records of its existence, but not anymore by the latest techniques available. Only a decade had passed since its invention and already even the newest techniques proved unreliable. Just before the *Great Exhibition* closed, the *Atheneaum* published an article expressing such doubts:

> A few weeks more, and the visible glories of the *Great Exhibition* but a visible wreck will remain. Memory, as we have said, may reproduce – and will - many a picturesque section and selected object; but *less uncertain records* are required to inform us of the value, industrial and scientific, of those contributions from every quarter of the world which we have seen assembled in Hyde Park.[125]

Some problems appeared - or better said: disappeared. Talbot's calotype technique was plagued by fading prints and the paper negatives were not suitable for extensive use, affecting all the images of Hugh Owen and most of the other photographers. Their bleached impressions would ultimately fail to convey any idea of their original beauty and richness. The albumen-on-glass negatives were difficult to use and were also unpredictable in preservation. Baron J-B Louis Gros's photographs were unique daguerreotypes, still today in mint condition, but they had the disadvantage to turn reproductions into 'unreliable' engravings when reproduced in books. The organizers of Delamotte's documentary were proven right, since few images of the Crystal Palace, taken in 1851, have been able to resist time, thereby failing their propagandistic purpose to represent the heritage of the Great Exhibition. The answer was found in another evolutionary step in photography, the *wet-collodion* technique by Frederic Scott Archer (1813-1857), published in *The Chemist* in March 1851, just a few months removed from the opening of the Great Exhibition.[126] With these new, superb negatives on glass plates, Delamotte was to photograph the Crystal Palace in all its technical details and specificities. The wet-collodion negative and albumen combo had many advantages in book printing techniques, proved sustainable for generations to come and could lay claim to the 'truth.' This album was obviously intended to overcome the initial flaws of the medium to deliver "plain and truthful records of photography" to the "historian of future ages." In that sense, Delamotte was assigned to re-photograph these fading images. The album by Delamotte proved an awareness that the architect and his commissioners knew in advance that their construction would be subjected to extensive photography and that these lasting images would outlive not just the short lifespan of the temporary building, but also its second life. It is only because of these records that we have learned about this temporary pavilion, and through its promotion, we now

[125] Cole, Henry, *The Official Descriptive and Illustrated Catalogue, Reports by the Juries*, 1852.
[126] Archer, Frederic Scott, "The use of Collodion in Photography," *Photography: Essays & Images*, edited by Beaumont Newhall, The Museum of Modern Art, New York, 1980, pp. 51-52.

regard it as one of the most important buildings in our history - despite the fact that it does not exist anymore.

The Constructors

Delamotte's 'late' album provides certain prove of the attention that was given to the relation between architecture and photography. The book that Delamotte made with the assistance of Henry Angelo Ludovico Negretti influenced the entire concept of future architecture. From this point onwards, it was well understood that the photographic image determined the perception of a building. David Campany wrote that "we might go so far as to say that the cultural value of buildings is what we call 'architecture' and that it is inseparable from photography."[127] Elvire Perego has fittingly named this new generation of photographers *The Constructors*.[128] These *Constructors* had a firm grip on the image of architecture. Since then, every large construction site was subjected to extensive photographic surveys, registering the progress of the event from beginning to end. The Bisson Brothers carried out major documentary assignments on the pavilions of the 1855 and 1867 *Expositions Universelles* in Paris. The studio of Delmaet and Durandelle featured architectural photography as their trademark and recorded between 1865 and 1872 the progress of the construction works of the new *Opéra de Paris* in all different stages. Architectural photography and cast-iron architecture culminated in the *Exposition Universelle* of 1889, when Gustave Eiffel instructed the photographers Louis-Emile Durandelle and Albert Chevojon to record the progressive erection of his temporary tower. Architects and their commissioners were very well aware of the power of photography, and seen the assignments they gave to photographers, it led to an enduring pact between photography and architecture. Filipovic remarked that the "precarious ephemerality of future world's fairs were endowed with the lasting permanence that they couldn't otherwise have".[129]

So why not assume that these *Constructors* had an enormous influence on the creation of new architecture? That photography played an important role in the demand for grand Victorian bridges and new opera houses? Would it be possible to assume that photography had influenced the design of the Crystal Palace, or even, that it was responsible for its entire existence? That the *Constructors* of the Crystal Palace were actually responsible for its creation? Looking at the importance that was given to record the Crystal Palace in all its stages, and taking in regard the impact photography had on future architecture, it seems more than plausible.

Henry Cole was clearly looking for a glass and iron construction. The architectural contest to design the Great Exhibition's exhibition complex was originally won by Hector

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[127] "It may not be possible to 'get hold of' a building, at least not in the way that it might be possible to get hold of a painting or a sculpture. But through photography one might be able to get hold of architecture. By this I mean, and perhaps the cultural critic Walter Benjamin meant, that while a physical building is owned and used, a photograph of it is able to isolate, define, interpret, exaggerate or even invent a cultural value for it. We might go so far as to say that the cultural value of buildings is what we call 'architecture' and that it is inseparable from photography." Campany, David, "Architecture as Photography: Document, Publicity, Commentary, Art," *Constructing Worlds: Photography and Architecture in the Modern Age*, edited by Alona Pardo, Prestel, 2014, p. 27.

[128] "If modernity, in the sense in which Baudelaire understood it, consisted of "drawing the eternal from the transitory," the result for a new generation of photographers who could be called the "constructors," was to open up poetry to the forms created by a technological civilization." Perego, Elvire, "The Urban Machine: Architecture and Industry," *A New History of Photography*, 1998, pp. 197-217.

[129] Filipovic, Elena, "Afterimages," *The Future of Yesterday*, 2013, p. 7.

Horeau, a French architect, who designed a light iron and glass construction similar to the Parisian *Arcades*.[130] Discontent with the overall design, the Jury decided to reject all 254 entries and submitted a plan of their own: "a structure of brick, the principal feature of which was a dome two hundred feet in diameter."[131] Cole, however, did not coincide with these plans and approached the landscape architect Joseph Paxton. Paxton had not participated in the contest, but had experience in constructing glasshouses as large as the Great Conservatory. The main reason for the choice of the Crystal Palace's materials was the possibility for a swift construction. The building had to be erected in less then a year's time. And cast iron identified Britain as the cradle of the Industrial Revolution. But besides greenhouses and arcades, glass and iron were at the time also used as the main ingredients for a photographer's studio.

From very early on, photography did have a direct influence on architecture. The immense popularity of photography gradually changed industrial architecture – take for example Talbot's *Reading Establishment* or Louis Désiré Blanquart-Evrard's purpose built photographic factory. But it also changed domestic architecture. Every photographer that took himself seriously owned his own laboratory. The 'view outside the window' that everyone eagerly tried to photograph after Niépce's and Daguerre's example, was more precisely the view directly outside of the laboratory. It was the easiest way to practice the use of the daguerreotype, since the view, the source of light, was as near as possible to the chemistry necessary to develop the latent image. For that reason, domestic houses were architecturally adjusted to fit small laboratories and darkened rooms – in the same manner as they were once fitted with camera obscuras. When designing new houses, architects often included a darkroom in their construction plans that could be recognized from the outside by the red-glazed windows. Oppositely, extremely bright spaces were sought and created to allow a necessary influx of light to record images inside. This influence of photography on architecture came along with portrait photography. Although Talbot had optimistically commented that "groups of figures take no longer time to obtain than single figures would require, since the camera depicts them all at once, however numerous they may be," the exposure times of the calotype, as well as the daguerreotype, were initially too long to make portraiture photography feasible.[132] Once portraiture photography was made commercially successful, it immediately resulted in the construction of specially built glasshouses in order to receive the best possible lighting situation. The belvederes of the highest buildings were very much wanted for professional photo studios, and specially constructed sheds with glass ceilings appeared on rooftops and in gardens.[133] **(Fig. 18 & 19)**

Although the daguerreotype, as well as Talbot's calotype, was patented and restrained in England, it was in London that the photographer's glasshouse originated. In June 1841, Jean François Antoine Claudet (1797-1867) began taking portraits in the "glass-house" he had erected on the roof of the *Royal Adelaide Gallery of Practical Science*. "Glazed with blue glass, the studio was only used in cold or rainy weather: on fine days the sitter was posed in the open air under a waning to screen the face from the glare of sunlight."[134]

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[130] Giedion, Sigfried, *Space, Time & Architecture*, 2003.
[131] Digby Wyatt quoted in Cole, Henry, *The Official Descriptive and Illustrated Catalogue, Volume 1-3*, 1851.
[132] Talbot, William Henry Fox, *The Pencil of Nature*, 1844.
[133] This manifested itself to such an extent that people even complained that they had to climb too many stairs to have their photograph taken, and joked that photography was indeed a "high art."
[134] Gernsheim, Helmut & Alison, *J.L.M. Daguerre*, 1968, pp. 143-170.

Until 1846, there were only four professional daguerreotype portrait studios in London. During 1846 and 1847 three new daguerreotypists, William Edward Killburn, Thomas Richard Williams and John Jabez Edwin Mayall, opened studios in London.[135] "In 1844 Claudet's flourishing business required him to extend his operations to the building next door, and three years later he set up a branch studio at the newly reopened *Colosseum*."[136] In 1847, Talbot opened his own portrait studio in Regent Street, which proved rather unsuccessful. Claudet on the other hand, became so successful in his daguerreotype enterprise that he again needed a much larger studio:

> In 1851 he set up his "Temple to Photography" at 107 Regent Street. Inside, paintings illustrated the history of photography and the various photographic processes, and medallion portraits of men who promoted the science of photography and stereography surrounded the visitors in the waiting rooms and studios. By general consent, it was the most elegant and luxurious establishment of its kind in Britain.[137]

Archer's new wet-collodion technique implied entirely different procedures, but did not change architectural strategies. The wet-collodion negative was more sensitive to light and absolutely required the need for a darkroom, both for preparation and development. But since it reduced exposure time even more, portraiture photography gained more success. Therefore, more glasshouses were constructed, and these 'light-rooms' were adjoined by darkrooms. The glass-based negatives had affirmed and accelerated the effects of its predecessors on architecture.[138] After a while the area was monopolized by a whole cluster of professional photography studios, whose glasshouses are still commemorated in the name *Glasshouse Street*.[139]

Glass had already played an essential role in photography, as in the production of the necessary lenses for the camera. It now also emphasized and promoted the architectural endeavours of the new era by picturing and publishing them through the new glass negatives. On the other hand, the recent invention of large sheet glass unexpectedly assumed such an important role in the heliographic studios and glasshouse constructions that it proved vital to the development of photography. Photography had created its own kind of architecture, necessary in order to complete the new photographic processes. It altered domestic houses and created new sorts of small factories and photographic printing plants. Architecture initially had an important influence on photography and now photography had an important influence on architecture.

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[135] Ibid.
[136] Altick, Richard D., *The Shows of London*, Harvard University Press, Cambridge, 1978.
[137] "Sir Charles Barry, architect of the new houses of parliament, reconstructed the existing building in Renaissance style, while the interior decoration was entrusted to Hervieu, a then well-known artist." Gernsheim, Helmut & Alison, *J.L.M. Daguerre*, 1968, pp. 143-170.
[138] There was another effect; since the wet-collodion negative needed to be prepared only instances away from the recording, and also required its immediate development, all actions need to be done on site. This resulted in portable darkrooms, constructed much in the sense of a camera obscura room for drawing, and horse drawn carriages turned into darkrooms.
[139] Gernsheim, Helmut & Alison, *J.L.M. Daguerre*, 1968, pp. 143-170.

A Temple of Glass

Photographer's glasshouses had become a commodity by the time Claudet had opened his *Temple to Photography* in 1851. "In the construction of his glasshouse he was aided by his good friend George Bontemps," the Gernsheims wrote.[140] Bontemps was a famous French glassmaker who had learned his skills from Joseph von Fraunhofer, a pioneer in the manufacturing of high-precision lenses for photographic equipment and observatory telescopes who then worked at Chance Brothers & Co. In 1848 he opened a new division of the Chance Company that solely focused on the manufacture of crown and flint glass for telescopes and cameras.[141] It was due to his expertise that the Chance Brothers achieved the requisite technology for the construction of large sheet glass. Together with Robert Chance he had worked with Paxton on the construction of the Great Conservatory and provided the glass for the Crystal Palace.

In the Great Exhibition, the Chance Brothers exhibited side by side with Claudet. In *Class X* they showed their flint glass disc, the rotating lighthouse and "plates adapted for the construction of object-glasses for Daguerreotype and Talbotype apparatuses and cameras."[142] Claudet and the Chance Brothers were the only ones awarded with Council Medals in *Class X*. It was not such a coincidence, since Claudet was originally a London importer and dealer in sheet and ornamental glass, a crossover profession he shared with Bontemps.[143] Bontemps' profession combined these two seemingly different practices: an excellence in glass manufacture, and serious knowledge of the photographic world. It made him the crucial person to work with Paxton on the glazing of the Crystal Palace. Never before there was a building made that was so photogenic, since it seemed to be conceived as a giant photographic studio. Photographs could easily be taken on a single plate in natural light, controlled by a canvas that extended over the entire area of the flat roof and the south side galleries. The Crystal Palace was not just a *Temple of Peace*, but a vast *Temple to Photography*.

The role that photography played in the planning of the Crystal Palace is much more opaque than the clear-cut photographers glasshouses. There is no mention in the official catalogue of the Great Exhibition that the builders prefigured its architecture in function of photography, except for Brewster's allusions. What the international jury of the 1851 exhibition did recognize was that photography was "the most remarkable discovery of modern times" and had mourned the death of Daguerre.[144] In regards to the relation of photography to the Crystal Palace, the official catalogue waged that:

> By improvements in the camera and the daily increasing practical knowledge of experimenters, we may expect to behold compositions, embodying a degree of reality otherwise beyond our power of attainment. The *truthful delineation of the various and just relations of the architectural edifice*; the groups of figures at its base; the middle distance blended into the horizon by gradations so fine and truthful as to defy the utmost efforts on our part to surpass or even equal.[145]

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[140] Ibid.
[141] Derry, Thomas Kingston, *A Short History of Technology: from the earliest times to A.D. 1900*, Courier Dover Publications, 1993, p. 20.
[142] Digby Wyatt quoted in Cole, Henry, *The Official Descriptive and Illustrated Catalogue, Volume 1-3*, 1851.
[143] Altick, Richard D., *The Shows of London*, 1978.
[144] Cole, Henry, *The Official Descriptive and Illustrated Catalogue, Reports by the Juries*, 1852.
[145] Ibid.

If the 155 photographs, allegedly reprinted 250.000 times, didn't yet suffice to prove the importance that was given to the photographic recording of the building, Delamotte's album certainly did. Evidence is as well to be found in the legacy of the Great Exhibition. The profits of the exhibition were used by Henry Cole to create the *South Kensington Museum* in 1852.[146] As its first director, Cole started the first photography collection in a museum. He assigned Charles Thurston Thompson to photograph the construction of the new iron building and to document the possessions of the new collection. **(Fig. 20)** Thompson had assisted Cole, chairman of the Society of Arts, with the arrangements for photography at the Great Exhibition in London and worked with the photographer Robert Bingham on the production of the photographic prints for the Reports by the Juries. By the end of 1852 the Society of Arts hosted the first exhibition anywhere, solely devoted to the art and science of photography. *Recent Specimens of Photography* displayed the work of 76 photographers, exhibiting some 800 images. It was organized by three of the Society's members, among which Philip Henry Delamotte – who was in the mean time already working on his new assignment to document the Crystal Palace.[147] Alessia Tagliaventi wrote that "since 1853, Cole himself had used photography as part of a program to document buildings and works of art and design."[148] And finally Cole and Thompson held in 1858 an international exhibition of photography in the South Kensington Museum, the first photography exhibition to be held at a museum. The British photographic displays at the Great Exhibition had perhaps harvested a certain disappointment, being exclusively exhibited as a scientific medium in between large clocks and other exhibits such as the *Copying Electric Telegraph*, but it was the impetus of a photographic art history to come. It seemed logical since it was precisely this mixture of "philosophical instruments" and "applications of mechanical and physical science" that formed the objective in the creation of the Crystal Palace.

In the Crystal Palace, photography, architecture and glass formed a unity. From the outside, it was a shimmering mirage that reflected the landscape. On the inside, the *coup d'oeil* afforded by the transept created a sense of sparkling infinity. **(Fig. 21)** The idea of being in open nature and still be protected against its elements, was the sum of the time's romantic ideals, a blend of instruction and delight. Glass drew the outer world into the interior space, as did photography. Another element of the conceptual framework of the Crystal Palace, besides the use of glass and cast iron for a swift construction and its propagandistic semiotics, was that its translucency made it ideal as a photographic studio. It can seriously be argued that the choice of construction materials was chosen in favour of photographing the building and its content, during and after the exhibition. Delamotte's extensive glass-plate photographic documentary proved that it was certainly embedded in Henry Cole's intentions. This extraordinarily group of men, Cole, Paxton, Brewster, Archer, Chance, Bontemps, Claudet, Marie-Ferrier, Owen, and Delamotte managed to create something unique and unprecedented, of which "it may be said without presumption, that an event like this Exhibition could not have taken place at any earlier period, and perhaps not among any other people than ourselves."[149] **(Fig. 22)**

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[146] The South Kensington Museum is now the Victoria & Albert Museum.
[147] Tagliaventi, Alessia, "The South Kensington Museum and Photography," *Photoshow*, edited by Alessandra Mauro, 2014, pp. 54-59.
[148] Ibid.
[149] Cole, Henry, *The Official Descriptive and Illustrated Catalogue, Reports by the Juries*, 1852.

The temporary nature of the Crystal Palace vitally needed photography to record it short life span. In ex-negativo, the ephemeral building was only constructed because there was the possibility of recording photographic evidence of its transitory existence. And the multifaceted crystal gem accommodated such goals with an ideal influx of light. There seems little less to conclude than that the Crystal Palace was built to be photographed.

7.

The Philadelphia Photographic Pavilions

Once photography had transformed from lucid rays into silver plates, these objects were displayed. World's fairs have been instructive in the display strategies of photography and have acted as loyal benefactors in the promotion of the new medium. As a product of the industrial revolution, the mechanical procedure and the verisimilitude of the photographic image had led many to condone photography as a scientific *fact* that had little or nothing in common with a fine arts *artefact*. The early international world's fairs have accommodated the medium's struggle for artistic recognition. By 1876, this was clearly visible at the *Centennial International Exhibition* in Philadelphia, where two pavilions were constructed for, and devoted to, the art of photography.

Photography's duality between science and art is inherent to the medium's birth. Nièpce, as a scientist, was looking for a means of *multiplication*, while Daguerre, as an artist, was making an attempt to create a new kind of *unique art*. Multiplication would cause photography to be associated with other reproductive techniques, such as engraving, which would tarnish the uniqueness of his daguerreotype. The daguerreotype proved practically impossible to reproduce.[150] Although he produced unique works of art, his invention was not recognized by the *Académie des Beaux-arts*, but by the *Académie des Sciences*. The unique photographic 'drawings' on paper by Hippolyte Bayard, contradictorily, were recognized by the *Academy of Arts* instead of the *Academy of Science*. His work emphasized the participation and influence of the artists' hand on the cold mechanics of the camera, as Stephen Pinson noted:

> The advantage of Bayard's process, according to the committee, was the fact that an artistic 'witness' was required to survey the formation of the image, subjectively intervening and imposing an individual will on the operation of nature. For example, a weak image could be reproduced, and then painted by an artist (as were traditional tracings from cameras), and then passed around, stored, and conserved like watercolours; Bayard's photographs were 'true drawings.' The implication was that daguerreotypes are not.[151]

When Daguerre revealed his principles of photography on the 7th of January, there were no daguerreotypes on display. What could have been the first exhibition of the new medium, turned into a public announcement of its invention, without showing images or revealing any details about their materiality.[152] Instigated by the news from across the

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[150] It has been implied many times that Daguerre stalled the initial development of photography, insisting it to be art, and thus holding back on a positive/negative process, which was to become the future of photography.

[151] Pinson, Stephen C., *Speculating Daguerre: Art & Enterprise in the Work of L.J.M. Daguerre*, The University of Chicago Press, Chicago, 2012, p. 137.

[152] "Although the basic principle had been announced, neither Daguerre nor Arago revealed the method by which the images were made. There was not a single detail about the support used, its photosensitivity, or the method required to produce the images. Even more strikingly, not a single picture had been displayed - not even to the members of the Académie des Sciences." Roubert, Paul-Louis, "First Visions: The Invention of Photography," *Photoshow: Landmark exhibitions that defined the history of photography*, edited by Alessandra Mauro,Thames & Hudson Ltd, London, 2014, pp. 18-35.

Channel, Talbot gave a strategic presentation of his photogenic drawings from 1835 at the Royal Institution on the 25th of January. This was in fact the first photographic exhibition ever, presented by Michael Faraday and witnessed by a secluded group of 300 men.[153] Talbot himself addressed the Royal Society with a technical explanation on the 31st of January. Both the Royal Institution and the Royal Society were at the time purely scientific organizations with a restricted membership, constituting the first exhibition of photography as a secluded scientific event - not open to public. It was Hippolyte Bayard who made the first public exhibition of photography in 1839. **(Fig. 1)** Bayard had heard Daguerre's announcement and had started experimenting himself. Not knowing Daguerre's procedure or the material of his ghostly silver polished plates, Bayard invented a direct positive print on paper, a unique image with a close resemblance to drawing. He found an opportunity to exhibit about thirty photographs in a luxurious auction house.[154] It was a charity auction devoted to the victims of a violent earthquake on the French colony Martinique, presented as a fine arts exhibition. In this public exhibition hall, paintings and drawings by Poussin, Géricault, Meissonier, and others were mingled with the photographs of Bayard. The exhibition was meant to open on the 24th of June, but was postponed until the 14th of July. Within the scope of these days, Daguerre the artist, received international acclaim for the scientific invention of photography. But it was Bayard, a clerk at the Ministry of Finance, who made the first public exhibition of photography with unique photographic drawings.

The French National Fair of 1839 was too soon to exhibit photography. But the new medium evolved so rapidly that by the next national exposition, the *Exposition des Produits de l'Industrie Française* of 1844, nearly 1000 photographs by Bayard, Daguerre, the Frères Bisson, Claudet and others were on display in the *grand carré de la fête publique* at the Champs Elysées.[155] This was the first important and extensive display of photography. With the advent of photography, of truthfully documenting architecture, the first elaborate temporary pavilions were also constructed for these short-term exhibitions. Where the earliest National Fair in Paris in 1798 took place in a temporary wooden classical pillared arcade around an open agora, the exhibitions of 1844 and 1849 took place in one large and purpose-built 'temple' pavilion, influenced by Greek and Roman architecture.[156] In 1849, the products of industry, which did not included art, displayed photography in one of the many scientific subdivisions.[157] In the earliest years of photography, there was a lot of confusion about where to categorize photography. Nonetheless, Daguerre and Bayard's names were prominently present in the catalogues for the expositions of 1844 and 1849, the *Great Exhibition* of 1851 in London, and the Paris *Exposition Universelle* of 1855.[158] **(Fig. 2)**

By 1851 the confusion about the scientific or artistic nature of photography was as great as the exhibition in the *Crystal Palace*. *The Great Exhibition of All Nations and Industries* did include art and hosted 94 countries. Photography was part of some individual

[153] Ibid.
[154] Ibid.
[155] Gernsheim, Helmut & Alison, *J.L.M. Daguerre: The History of the Diorama and the Daguerreotype*, Dover Publications Inc., New York, 1968, p. 122.
[156] Van Wesemael, Pieter, *Architecture of Instruction and Delight: A socio-historical analysis of World Exhibitions as a didactic phenomenon (1798-1851-1970)*, 010 Publishers, Rotterdam, 2001, pp. 102-103.
[157] Roubert, Paul-Louis, "Between Pride and Prejudice: Exhibiting Photography in the 19th Century," *Photoshow*, edited by Alessandra Mauro, 2014, pp. 61-77.
[158] Roubert, Paul-Louis, "First Visions: The Invention of Photography," *Photoshow*, edited by Alessandra Mauro, 2014, p. 33.

national displays, leaning more towards the artistic nature of photography in the case of France, while in the English section photography, as well as fine art, had to prove a progressive technical achievement and had been exhibited as such. There was a substantial amount of 700 photographs present constituting the Great Exhibition as the first *international* exhibition of photography.[159] And the pavilion itself had become the new medium's most important protagonist. The first world's fair in London in 1851 had such an enormous global impact that it immediately established itself as the first in a long and never-ending line of international expositions. As an architectural template, the Crystal Palace was so successful that it created an offspring of interpretative copies. The glass and cast-iron behemoth of Joseph Paxton inspired the Crystal Palace of Dublin in 1853 and the *Glaspalast* of Munich in 1854. By the time the New York World's Fair of 1853 opened in its very own Crystal Palace at Reservoir Square – now Bryant Park - the photographic industry in the United States had already surpassed that of the Old World. The advances of the American daguerreotypists had even outshone the very own inventors of photography at the Great Exhibition in 1851. Mathew B. Brady had won a prize medal for his portraits, John Adams Whipple surprised with a detailed scientific image of the moon, while William Southgate Porter presented an enormous panorama of Cincinnati. **(Fig. 3)** This piece, composed of eight daguerreotypes surmounting to a work of nearly two and a half meters long, was the first to really challenge the tableau size of painting. The Great Exhibition had raised public awareness of photography. In recognition of the medium's yet undiscovered *artistic* potency, the Society of Arts in London exhibited nearly 800 daguerreotypes and calotypes by 76 photographers in December 1852. Organized by Philip Henry Delamotte, Joseph Cundall and Roger Fenton, the primary aim of "Recent Specimens of Photography" was to situate the Future Prospects for the Art of Photography," posing one important question: "Is Photography an Art?"[160] Remaining an unresolved question to solve during the following annual exhibitions of the newly formed Photographic Society, the show did constitute itself as the first substantial international exhibition devoted to the *art* of photography.

Photography slowly found its way into more artistic discourses at the 1855 Paris *Exposition Universelle*, where it was exhibited in *Classe XXXVIII "Peinture, gravure, et lithographie."* Although most photographic displays were hesitantly hosted in the industry section, some photographic exhibits were hung besides paintings. The *Société Français de Photographie* even received a separate 'photographic gallery.'[161] This remarkable step forward was, however, still the result of an uncertainty where the medium should belong.

> The world exhibition of 1855 offers for the first time a special display called 'Photography.' In the same year, Wiertz publishes his great article on photography, in which he defines its task as the philosophical enlightenment of painting. This 'enlightenment' is understood, as his own paintings show, in a political sense. Wiertz can be characterized as the first to demand, if not actually foresee, the use of photographic montage for political agitation. With the increasing scope of communications and transport, the informational value of

[159] Badger, Gerry, "'The Most Remarkable Discovery of Modern Times': Three Photographic Exhibitions in 1850s London," *Photoshow*, edited by Alessandra Mauro, 2014, pp. 37-58.
[160] Badger, Gerry, "The Most Remarkable Discovery of Modern Times," *Photoshow*, edited by Alessandra Mauro, 2014, p. 45.
[161] Roubert, Paul-Louis, "Between Pride and Prejudice," *Photoshow*, edited by Alessandra Mauro, 2014, pp. 61-77.

> painting diminishes. In reaction to photography, painting begins to stress the elements of colour in the picture.[162]

Eugène Delacroix critized the 'cruel reality' of photography.[163] Although he was a member of the *Société Héliographique* from its founding in 1851, he did not fully support the new process' inflexible verisimilitude. But Delacroix apparently used photographs in preparation of some of his paintings, as did Gustave Courbet.[164] In the same way as painting first reacted to photography with Realism, in its struggle to be recognized as an equal to the fine arts photography copied painterly strategies. Subsequently, it led to imitative exhibition designs in the form of crowded salon-style hangings, as with academic paintings.[165]

Charles Thurston Thompson was appointed superintendent of the British photographic contributions to the 1855 Paris universal Exposition, assisted by Henry Cole, and installed a gallery in a traditionally skied manner. His own photographs of the 1851 Crystal Palace were displayed in the British section, and he in turn recorded an extensive set of wet-collodion negatives of the 1855 fair. In fact, the most popular subjects in photography both shown and sold at this fair were self-referential images of the architecture of the exposition.[166] **(Fig. 4)** In 1856, Thompson was appointed by Henry Cole as the official photographer of the *South Kensington Museum*. The museum was a direct legacy of the Great Exhibition and its key figures held photography very high.[167] The museum began to collect photography officially in 1856 and Thompson installed the earliest reproductive photographic museum service in the world, using an oversized camera with large glass negatives measuring 76 by 122 centimeters.[168] When the main galleries were completed in 1858, they organized the earliest international *museum* show entirely devoted to photography: the *Exhibition of the Photographic Society of London and the Société Française de Photographie*. **(Fig. 5)** Thompson

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[162] "By the time Impressionism yields to Cubism, painting has created for itself a broader domain into which, for the time being, photography cannot follow. (…) To increase turnover, it renewed its subject matter through modish variations in camera technique –innovations that will determine the subsequent history of photography." Benjamin, Walter, *The Arcades Project*, Harvard University Press, Cambridge MA, 1999, p. 6.

[163] Delacroix had received a retrospective at the 1855 exposition, as well as Ingres and Courbet. Courbet's monumental canvas "The Painter's Studio" was rejected from the 1855 Exposition Universelle. In response he declined the entire retrospective, which was offered to him. Courbet set up his own pavilion in a circus-like tent. In his 'Pavilion of Realism' he exhibited over forty works and sold an exhibition catalogue, which included his 'Realist Manifesto.'

[164] Hacking, Juliet, *Photography: The Whole Story*, Thames and Hudson Ltd; London, 2012, p. 82. In 1854, Delacroix worked with Eugène Durieu on a series of académie-like nude photographs on which he based sketches for the painting "Odalisque" (1857). Courbet worked with the photographs of Julien Valloud de Villeneuve. Some artist-photographers enlarged photographs onto canvas and then painted them. This process could even be purchased by amateur painters, who would send a negative of their work to a photographer, who then transferred it to canvas for a fee.

[165] Futter, Catherine L., "Concentrating the Message: Photography at World's Fairs," *The Future of Yesterday*, edited by Ives Maes, Ludion, Antwerp, 2013, pp. 13-22.

[166] Ibid.

[167] Henry Cole was the official organizer of the Great Exhibition. Charles Thurston Thompson had worked alongside Cole, had photographed the building and had assisted Robert J. Bingham on the production of the photographic prints for the Reports by the Juries of the Great Exhibition. The profits of the Great Exhibition were invested in the construction of a permanent museum, the South Kensington Museum. Now renamed as the Victoria & Albert Museum, it holds some of the most important documents and exhibits of the Great Exhibition as well as a world-renowned photography collection.

[168] Contact printing and enlargement of photographs was accomplished solely by sunlight, since oil lamps and gaslights did not provide a strong enough ray. These "solar" enlargers had been in modest use since the 1850ies, and were built onto a window into a darkroom and fitted with a magnifying lens. The amplified light then passed through the negative and out the projection lens onto a screen holding sensitized paper.

photographed the occasion, depicting the tightly packed arrangement of the room and some of the 1000 works by, among others, Benjamin Brecknell Turner, Lewis Caroll, Roger Fenton, Francis Frith, Gustave Le Gray, Charles Nègre, Nadar and Oscar Gustav Rejlander.[169] Rejlander could be described as the photographic pendant of the Romantic painter Delacroix. In the photograph he exhibited at the South Kensington Museum, *The Two Ways of Life*, he depicted a painterly allegory of two brothers walking opposite roads: one brother walks the righteous path of hard labour and religion, while the other takes the drunken road of gambling, prostitution and eventual self-destruction. **(Fig. 6)** It was a photograph of 40,6 by 76,2 centimetres, composed of 30 negatives of staged photographs, collaged together on a large photosensitive paper and finished by hand with ink. Rejlander, a painter who switched to photography in 1853, saw his work as art and declared that "the time will come when a work will be judged by its merits, and not by the method of its production."[170]

At the *Salon de Beaux Arts* of 1859, which took place in the former building of the 1855 exposition, the *Palace of Industry*, photography was fully included and recognized as an artistic expression. However, the painting and sculpture displays were strictly separated from the 148 exhibitors in the photography section of the *Société Français de Photographie* - even to such an extent that they were only accessible from different entrances.[171]

> The Museum Commissioners settled for a compromise: they placed the photography section right next to the exhibition of paintings and engravings, but made separate entrances for the two. In other words, they spelled out the distinction.[172]

The French poet Charles Baudelaire published a critical review on the photographs exhibited at the Salon in which he described "these new sun-worshippers" as "ill-endowed, lazy would-be painters" that have "become art's most mortal enemy." He compared the then highly regarded realism in painting with the essence of photography: "(…) since photography gives us every guarantee of exactitude that we could desire (they really believe that the mad fools!), then photography and Art are the same thing."[173] Baudelaire's concern was not so much with the medium itself, as with its commercialization. He feared that photography was to replace the fine arts, but he was proven wrong. Photography eventually liberated the fine arts from the dictates of reality, opening up the road for artistic experimentation. The Salon of 1863 proved such results, rejecting about 70 percent of the 'experimental' works submitted for exhibition. Napoleon III declared that the rejected works would be shown together at the other end of the *Palais de l'Industrie* - precisely the same separation as with the photography display at the Salon of 1859 - in what would be named the *Exposition des ouvrages non*

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169 Badger, Gerry, "The Most Remarkable Discovery of Modern Times," *Photoshow*, edited by Alessandra Mauro, 2014, p. 57.
170 Robinson, Henry Peach, "Oscar Gustav Rejlander," *Photography: Essays & Images*, edited by Beaumont Newhall, The Museum of Modern Art, New York, 1980, p. 106.
171 Frizot, Michel, *A New History of Photography*, Könemann Verlagsgesellschaft mbH, Köln, 1998, pp. 91-101.
172 Figuier L., "La Photographie au Salon de 1859," Paris, Hachette, 1860, p. 2; quoted in Frizot, Michel, *A New History of Photography*, 1998, pp. 91-101.
173 Baudelaire, Charles, "Photography," 1859, *Photography: Essays & Images*, edited by Beaumont Newhall, 1980, pp. 112-113.

admis. This famous *Salon des Refusés* with Cézanne, Renoir, Whistler and Edouard Manet's *Le Dejeuner sur l'Herbe*, would set the stage for the Impressionist movement.[174]

Photography had finally become a much-wanted guest at the *Exposition Universelle* of 1867. While Pierre Petit, the by then famous photographer who had continuously registered the construction of the Statue of Liberty from 1865 onwards, "was awarded the Imperial Commission of Napoleon III to become the official photographer of the 1867 exposition," the new painters experienced more difficulties in exhibiting their work.[175] **(Fig. 7)** Manet, again expelled from the Salon, displayed more than fifty works, including his notorious painting *Luncheon on the Grass*, in his own pavilion just outside the exposition grounds.[176] The location of his tent pavilion, between the site of the exposition and the Salon in *L'Avenue d'Alma*, can be seen in his painting *A View of the 1867 Exposition Universelle*. By the time the second Universal Exposition had opened in Paris, the enormous temporary cast-iron circular building was already surrounded by dozens of tents and smaller pavilions. **(Fig. 8)** The shifting economic situation changed aristocratic patronage to private bourgeoisie collectors and triggered self-organized presentations by artists and entrepreneurs of different alloy. It changed exhibition design from large-scale tableau paintings skied floor to ceiling, into smaller and smoother paintings for a domestic environment. The ever-growing size of photographic prints on the other hand allowed for a more serious competition with mid-sized paintings. **(Fig. 9)** The Frères Bisson displayed their superb Alpine views of Chamonix and the Mont-Blanc measuring up to 30 by 40 centimetres in size, and they extentisvely photographed the world's fair. **(Fig. 10)** Charles Thurston Thompson showed his enlarged photographs of Portugal in the Portuguese section. And the American Carleton E. Watkins exhibited panoramic views of the dramatic Californian landscape. **(Fig. 11 & 12)** Watkins' *mammoth* camera produced large wet-plate negatives of 45,7 by 55,9 centimetres in size, producing large contact prints of 39,4 by 53,4 centimetres. He often mounted his photographs on imprinted mattes of 56 by 71 centimetres, sometimes grouping several prints of the same panoramic landscape together in one large frame.[177] The painterly size of his prints had startled many European spectators. In order to achieve such sizes, ever-growing cameras and enlargers were built, especially in the New World.

In America, photographers were not so preoccupied by imitating the fine arts. Lacking the tradition, and thus the narrow confines, of the fine arts, photography as a medium was regarded as an end in itself. "The American photographer and historian Marcus Aurelius Root noted that in the 1860s some life-size photographs were created with enlargers."[178] The *Jupiter Solar Enlarger*, built in 1866 by the American Van Stavoren, was an architectural construction on the rooftop of his studio, which slowly followed the sun's path across the sky and produced even more expansive prints.[179] **(Fig. 13)** Szarkowski noted that the absence of an "amateur tradition that identified the role of

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[174] Altshuler, Bruce, *Salon to Biennial: Exhibitions That Made Art History. Volume I: 1863-1959*, Phaidon Press Limited, London, 2008, p. 23.
[175] Futter, Catherine L., "Concentrating the Message: Photography at World's Fairs," *The Future of Yesterday*, edited by Ives Maes, 2013, pp. 13-22.
[176] At the Fair, Courbet also installed his own private pavilion.
[177] Naef, Weston & Hult-Lewis, Christine, *Carelton Watkins: The Complete Mammoth Photographs*, J. Paul Getty Museum, Getty Publications, Los Angeles, 2011.
[178] Gernsheim, Helmut & Alison, *J.L.M. Daguerre*, 1968, pp. 129-142.
[179] To further confuse matters, these enlargements were often hand-coloured to enhance a lifelike appearance and simultaneously cover a lack of sharpness.

photography with the conventional ambitions of the fine arts" allowed "the rise of photographic *professionalism*."[180] The State patronized Salons had perhaps dominated the development of photography in France, but on an international level, the successive universal exhibitions were central to the institutional development of photography.[181] When the first world's fair in the United States opened in 1853, photography had already reached its most widespread popularity, not in Europe, but on the new continent.[182] When Albert Sands Southworth (1811-1894) spoke to the *National Photographic Association* meeting in Cleveland, Ohio, in 1870, he discussed the duality between art and science in historical perspective:

> Professor Gouraud soon lectured in Boston.[183] His illustrative experiment resulted in his producing a dimmed and foggy plate, instead of the architectural details of buildings and the definite lines and forms of street objects. It happened to be a misty day, attended with both snow and rain. The Professor appeared highly elated, and exhibited his picture with great apparent satisfaction that he had it in his power to copy the very mist and smoke of the atmosphere on a stormy day. (…) In the spring of 1846 we made Daguerreotypes of the sun in eclipse in its different stages, with the spots as they appeared through the telescope. (…) But the artist, even in photography, must go beyond discovery and the knowledge of facts. He must create and *invent truths*, and produce new developments of facts. (…) But it may be asked whether the standard for the qualifications of the artist in photography is to be considered equal to that for painting and sculpture? If the aim and the purpose be the highest point of human perfection in either art, then I repeat that, as great as may be estimated the necessary qualifications and intellectual discipline and natural talents and genius for the painter and sculptor, precisely as much would I require for the artist in photography. The mere manipulations – the handling of brush or chisel - are as mechanical and in no respect beyond adjusting the camera or retouching correctly. The mind must express the value, and mark and impress resemblances and differences; it must be instructed and directed by impressions at the time emanating from the subject itself.[184]

In the same address, Southworth also recounted the rapid evolution of the American photo industry:

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[180] Szarkowski, John, *Photography Until Now*, The Museum of Modern Art, New York, 1989, p. 109.
[181] London 1851, Dublin 1853, New York 1853-54, Paris 1855, London 1862, Dublin 1865, Paris 1867, London 1871, London 1874 and Vienna 1873.
[182] "The earliest detailed information about the daguerreotype to be published in America was contained in Samuel B. Morse's letter in the New York Observer of 20 April 1839." Gernsheim, Helmut & Alison, *J.L.M. Daguerre*, 1968, pp. 129-142. Morse had visited Daguerre in Paris and had been the first to report on the American continent about the invention of the Daguerreotype. The first successful daguerreotype that registered the New World was taken by D.W. Seager, late September 1839. The public viewing of his image of St. Paul's church and the surrounding cityscape at Dr James Chilton's drug-store, 263 Broadway, was subsequently the first display of photography in America.
[183] Ibid. The first quantitative exhibition of thirty daguerreotypes was set up at Hotel François, N° 57 Broadway, 4 December 1839. In the hotel, coincidentally bearing his name, François Gouraud, a pupil and delegate of Daguerre, disclosed photographs taken during the courses that Daguerre himself had given in Paris earlier the same year. Gouraud gave demonstrations and lectures on the daguerreotype and sold cameras and plates that he had imported. Later, Gouraud moved to Boston where he opened his exhibition and took on several local apprentices, two of which were Albert Sands Southworth and Joshia Johnson Hawes. As a duo, Southworth & Hawes opened a portrait studio the following year.
[184] Southworth, Albert Sands, "The Early History of Photography in the United States," *Photography: Essays & Images*, edited by Beaumont Newhall, 1980, pp. 37-43.

> Professor Morse, from the first, took great interest in Daguerre's discovery. (…) He entered at once upon the philosophical and practical experiments so nearly allied to his favourite art. This was precisely at the same time he had become absorbed in his experiments with the electric telegraph that he was erecting a glass room and arranging a studio for making Daguerreotype portraits. He encouraged the Messrs. Scovill thus early to enter upon the manufacture of silver plates, at great costs in the preparation: for, said he to them, "There will be such a demand for them soon, that they will be used like paper". (…) It may possibly be considered an extravagant estimate to place the number of persons employed, directly and indirectly, in photographing and manufacturing for the art at 50.000 in our country; but, in my own mind, it is within rather than beyond reasonable limits. Allow one in ten of this number to be in actual use of the camera *and pencils or brushes*, and we have 5.000 professional artists in picture-making and portraiture.[185]

The industry of photography and its allied trades was so vast that, for example, upstream the river Hudson a whole town had grown around a large factory making daguerreotype supplies, chemicals, plates and cases.[186] The plant was described in the *Daguerrian Journal* dated April 15, 1852 as "the largest manufacturer of daguerreotype apparatuses in the world." Here, an entire town had risen due to photography's invention, appropriately named *Daguerreville*.[187] While the daguerreotype disappeared at a rapid speed in Britain and France, it persisted, longer than anywhere else, in the United States until the late 1860s. Sensitized albumen paper and the wet-collodion glass negative overtook the continent in slow motion by mid 1860 and *Daguerreville* disappeared from the annals of time. The 'silver' cities changed into 'crystal' cities, producing insurmountable stocks of glass negatives. The photographic industry grew so powerful that they themselves started to commission photographers, especially during the American Civil War. The Civil War added funds to the massive production of photography in the torn United States. "In the four years of that destructive war over 8.000 photographs were taken," installing one of the first photographic press mechanisms.[188] After the war ended in 1865, the government started financing photographic endeavours, eager to publish positive press images that pictured the heroic reunion of the largest country in the world. Andrew Joseph Russell was assigned in 1867 to document the construction of the first transcontinental railroad line and symbolically photographed the connection of the *Union Pacific* and *Central Pacific* railroads at Promontory Point, Utah, on May 10 1869. By 1870, the unification of East and West by rails, and the States of North and South, resulted in an even grander photographic network, when planning started for the celebrations of the nation's centennial of independence and its second world's fair. By then, the photographic industry in the New World was almost at the threshold of its modern development that would sustain until the end of the 20th century.

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[185] Ibid.

[186] Gernsheim, Helmut & Alison, *J.L.M. Daguerre*, 1968, pp. 129-142.

[187] The modern town of Newburgh, NY.

[188] George N. Barnard (1819-1902) was commissioned by the firm of E. & H.T. Anthony to produce a series of stereoscopes of Cuba in 1860 and of Niagara Falls in 1862. Later that year he was sent to cover the defeat of the Confederate Army in Virginia by Mathew B. Brady (1823-1896). Brady had 35 separate operational centres and paid for about twenty photographers, such as Barnard, Alexander Gardner and Timothy O'Sullivan, to cover the battles from their mobile studios. Von Amelunxen, Hubertus, "The Century's Memorial," *A New History of Photography*, edited by Michel Frizot, 1998, p. 143.

Architecture *for* photography

By the time the Centennial International Exhibition opened in 1876, eleven universal exhibitions had already spread and supported the new developments in photography on a global level. In a reunified country, the US Congress acted in 1871 "to provide for celebrating the *One Hundredth Anniversary of American Independence*, by holding an *International Exhibition of Arts, Manufactures and Products of the Soil and Mine*" in Philadelphia in 1876.[189] The exhibition opened in Fairmount Park overlooking the Schuylkill River on May 10, 1876. The layout of the fairgrounds was entrusted to the architect and engineer Hermann J. Schwarzmann and was profoundly different than the Crystal Palaces of the 1850s. The Philadelphia exhibition had evolved in its architectural site planning from a singular building into a polychromatic city of 249 pavilions. The main categories of the Great Exhibition were now divided in five major buildings: The *Main Building* - a cast-iron structure with brick walls and a glass roof, hosted the manufactures of all participating nations - the *Machinery Hall*, the *Agricultural Hall*, the *Horticultural Hall* and *Memorial Hall*, which hosted the art gallery.[190] These five buildings were surrounded by hundreds of smaller pavilions, hosting, for example, the first *Women's Pavilion*, private enterprises, and one panorama pavilion that recreated the 1870 siege of Paris by the German army. Twenty-four of these smaller pavilions were *State Pavilions*, representing each state of the reunited United States. These small pavilions, built in regional style, were the heirs of the national trophies that had been brought to London in 1851. The so-called 'trophies' were temporary monuments that displayed the local specimens of a country, state or manufacturer. In subsequent Expo's the trophies grew to accessible installations. Pieter Van Wesemael noted that "the Canadian trophy at the 1855 world exhibition in Paris, built from various Canadian woods, furs and a canoe, had acquired the format of a watchtower with a spiral staircase inside which led to two viewing platforms."[191] **(Fig. 14)** These allegoric sculptural installations grew to the symbolic and instructive State Pavilions spread across the Philadelphia Fair. This 'trophy' can be regarded as a missing link between sculpture and architecture. Another example of sculptural architecture in Fairmount Park could perhaps prove such a claim: besides the lake near the Machinery Hall was a piece of Bartholdi's *Statue of Liberty*. **(Fig. 15)** Its arm, hand and torch were accessible and served as a superb viewpoint to overlook the exposition grounds. The symbolic meaning of this sculptural pavilion was as meaningful as those of the trophies: the Statue of Liberty was a joined effort of the French and the Americans in order to celebrate the American Revolutionary War that succeeded with the support of the French armies. Only, due to delays with the Franco-Prussian war of 1870 it wasn't completed in time for the centennial celebrations. These steadily expanding trophies had become small independent 'temple' pavilions by 1876. The Centennial International Exhibition covered a kilometre square tract of land dotted with one crystal conservatory, four major palaces and hundreds of small 'trophy' and 'temple' pavilions - much inspired by the spontaneous growth of the 1867 *Exposition Universelle* site. **(Fig. 16)**

It was here that the first pavilion for the new art of photography arose. Not just one, but two, exemplifying the expansive growth of American photography, as well as its duality.

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[189] Findling, John E., *Historical Dictionary of World's Fairs and Expositions, 1851 – 1988*, Greenwood Press, Westport, 1990, pp. 55-62.
[190] Ibid.
[191] Van Wesemael, Pieter, *Architecture of Instruction and Delight*, 2001, pp. 102-103.

The vast amount of exhibits on the Centennial Fair had led to an even more fragmentized encyclopaedic classification system, which in turn evoked the construction of separate pavilions for each class. Memorial Hall, the square domed art gallery, couldn't even accommodate "the thousand of paintings, statues, and photographs from some twenty participating countries" and an extra building had to be hastily constructed.[192] It was the first full-fledged international art exhibition in the republic and photography was clearly a part of it. But the organizers of the Centennial Exhibition cleverly circumvented the classification system by allowing photography to have its own house. The *Photographic Hall* was the equal result of a striving for acceptance as well as the result of indecisiveness about where the medium should be categorized. However, by not including it within the fine arts, photography had developed into its own separate category. The *Photographic Hall* was especially constructed to exhibit international photography and the *Photographic Association Studio* was a pavilion that hosted the *Centennial Photographic Company*. These two were, according to my research, the first edifices that were constructed exclusively for the display of the art and industry of photography and stood as trophies of the conquests of the new medium. **(Fig. 17 & 18)**

The *Photographic Association Studio* was a hall of 38 meters long on 27 meters wide, also designed by the architect H. J. Schwarzmann. **(Fig. 19)** Inside there were two galleries for exhibiting photography and several production rooms for the preparation, development and printing of pictures. The interior of the building was "lighted with skylights designed for photographic convenience." The Photographic Association Studio was home to the Centennial Photographic Company. The company was granted exclusive rights to photograph the Centennial Exhibition.[193] This was in itself a novelty. In comparison, Pierre Petit was awarded the Imperial Commission to become the official photographer of the 1867 exposition, but he did not gain *exclusive* rights. The Company held the privilege of selling and making photographic pictures within the exhibition. It was the result of an expansive growth of the American photographic industry.

> The Centennial Board of Finance ceded to the Centennial Photographic Company, before the Exhibition opened, the exclusive privilege of selling and making photographic pictures and articles tending to their production and use within the International Exhibition. For the purpose of taking and making the pictures the association erected a studio or hall on the east side of Belmont Avenue. The building attracts attention from the fact that it is without windows, showing walls and decorations which, by the softening of art, subtract from the appearance of what otherwise would be an uninteresting structure. A piazza, porch and balustrade on the exterior are prominent features, and the front is elevated and handsomely finished. The building is 86 feet 6 inches front by 125 feet in depth, and is but one story in height. It is constructed on the sides of a hollow square, the courtyard being decorated as a garden with flowers and shrubbery. The interior of the building is lighted with skylights designed for photographic convenience. The front portion of the studio is reached by a wide stairway communicating with the reception-room and two galleries for the exhibition of photographs. There are three operating-rooms for taking pictures, rooms for finishing them, waiting-rooms and public and private offices. The entire structure

[192] Findling, John E., *Historical Dictionary*, 1990, pp. 55-62.
[193] All photographs by the Centennial Photographic Company can be consulted on the digital Print and Picture Collection of the Free Library of Philadelphia: www.freelibrary.org.

> is perfectly arranged for the object intended, and its use has given great satisfaction. Architect, H. J. Schwarzmann; builder, John Duncan. Cost, $25,000.[194]

The Photographic Association Studio was the epitome of the vigorous American entrepreneurship. The Centennial Photographic Company was especially established for the occasion and went from zero to over 400 employees. The Companies photographers had taken nearly 3000 exclusive views from the exhibition's architecture, which were printed by an assembly line that produced as many as 6000 prints per day and were exhibited and sold in the exhibition galleries of the Studio. This was perhaps what Baudelaire had feared the most. But in a similar way as photography had liberated the fine arts from a didactic realism, the photographic industry had liberated the artist using photography from a scientific and mechanical overtone. The medium of photography was split, from its invention, between art and science, and had struggled for decades to receive recognition. This duality was still visible in the Centennial Exhibition. While the Photographic Association Studio represented the photographic industry, the Photographic Hall was a pavilion purely devoted to exhibiting artistic photographs. The words spoken by Southworth in 1870 were repeated in the motto of the Photographic Hall:

> Chemistry plays the principal part in this wonderful drama; but it is like every other drama, which, however finely written, loses the greater part of its impression if the parts are played by poor actors. Knowledge, study, practical experience, and, beyond all, good taste, are necessary to the photographer.[195]

The *Photographic Hall* was the first building constructed purely to exhibit the art of photography - a real *Temple of Photography*. It stood on an important and meaningful location, between the Memorial Hall art gallery and the Main Building, showing technical equipment from around the world. **(Fig. 20 & 21)** The architect was H.J. Schwarzmann, who had also designed the fairgrounds. He created a French Renaissance styled one-story structure of 78 meters long and 32 meters wide, made from cast-iron and bricks with a roof made of glass. **(Fig. 22-25)**

> This structure was specially prepared for the exhibition of photographs, for which there was no room in the Art Gallery. It stands east of Memorial Hall, and north of the Main Exhibition Building. It is 258 feet in length by 107 feet in width. The style is French Renaissance. The monotony of length is broken by bay-windows and porticoes. The height of the gallery is one story, but the interior is lofty. The space for exhibition is divided by 28 hanging screens, 4 of which, in the centre, are 19 feet long, and the others 24 feet long each. They stand 16 feet apart, and are T-shaped, admirably lighted and useful for display. The smaller screens each furnish a hanging-space of 190 square feet. The larger ones make forty-eight spaces, each of which has an area of 240 square feet. The walls of the building add 5,320 feet more to the object of the professional display. Altogether,

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[194] Shoemaker, W. L., *Centennial Photographic Company Sample Album*, 1877. This album of 344 half-stereographs was compiled by the Company for its sales representatives. The information quoted here was originally attached at the time to the backside of the photographs. It is in the collection of the Free Library of Philadelphia. Also in the Philadelphia City Archives, the following original books can be consulted: The US Centennial Commission, *International Exhibition 1876. Official Catalogue*, 1876; The US Centennial Commission, *International Exhibition 1876. Report of the Director General*, 1879.

[195] Ibid.

> the screens and walls furnish 19,080 feet of available hanging-space, no picture to hang lower than 2 ½ feet from the floor. The exhibition of actinic pictures is very fine, and when contrasted in memory with the first results of the discoveries of Daguerre and the productions of the Talbotype show immense progress in this branch of artistic science. Photography has by many been considered an automatic process in which chemical action prevails throughout, from the preparation of the plate and the direct interposition of the rays of the sun, the formation of the image, the securing of the fugitive impression upon the plate, the transfer to the sensitive paper, and the fixing of the impression and further processes until it is presented with finished effect. Chemistry plays the principal part in this wonderful drama; but it is like every other drama, which, however finely written, loses the greater part of its impression if the parts are played by poor actors. Knowledge, study, practical experience, and, beyond all, good taste, are necessary to the photographer; and how requisite these qualities are is shown by the varieties of pictures in this exhibition. They are all fine, but there are some which attract the attention of even uninstructed spectators. Germany, Austria, England, France and the United States furnish the collection, and many of the pieces are of the highest degree of interest. Members of the Photographic profession throughout the United States joined in the movement which led to the construction of this building, and it has been erected at their expense. Cost, $26,000. Materials, iron, brick, glass and bronze. The roof is composed entirely of glass, so that the light thrown upon the pictures is clear and soft, bringing out the most delicate details and effects.[196]

The Centennial Exhibition already signalled the next division to come: a shift from the schism between art and science to a schism between the photographer and the photographic industry. This widening gap was mirrored in these two pavilions. When the initial photographer-inventor processed his works from raw materials into a finished product, he was the author that dictated his apparatus. This turned around with the rise of that photographic industry, which started delivering prefigured uniform supplies to a growing photo industry. Whereas the Photographic Association Studio employed unknown press photographers, the Photographic Hall presented the photographs from famous international artists. This duality still stands today. But the main accomplishment of the Centennial Exhibition, and of the by then still short and novel history of *all* world's fairs, was that photography gained an independent life.

With a similar expansive growth as the trophies, the first photographic pavilions had evolved. The camera obscura pavilion had shrunk to the size of a wooden box and over time, this wooden camera had enlarged again in different forms. On the one hand it evolved rapidly into the processing darkrooms and on the other hand into ever growing camera sizes and enlargers. The residue of the photographic act itself, the physical photograph, had evolved into life-size formats, elaborate frames, and display strategies. By 1876 it had evolved into the architectures of the Photographic Association Studio and the Photographic Hall. The Photographic Association Studio represented the impressive importance that the photographic industry had reached by then: a unity of manufacturing, recording and selling photography. The Photographic Hall presented for the first time an independent unity of photography, interior design and architecture. These two trophies stood as victorious celebrations of photography as a form in itself.

[196] Ibid.

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The Architecture of Photo-sculptures

In the early days of photography every possible aspect and unprecedented ability of the new medium was being pursued. Capturing a real, three-dimensional world on a flat surface gave the sudden possibility to capture precise and accurate spatial dimensions depicted on a two-dimensional surface. The perceived depth in the image could than be transformed into an actual depth. This gained possibility rapidly evolved into a desire to protrude spatial forms out of flat images. The idea was pursued by the French sculptor and photographer François Willème. In the late 1850s, he aimed to reproduce sculpture with the help of photography. His process of *Photosculpture* suggested a synthesis of the two media. Etienne-Jules Marey, a French physiologist, expanded his idea in the 1880s, solidifying motion in sculpture. Their processes expanded the photographic apparatus into architecture.

When first used in France, the term *Photosculpture* simply described the practice of photographing sculptures. Photography of sculpture, like photography of architecture, was one of the earliest practices of the medium. Since exposure times were long, the success of the procedure was based on the inanimate nature of its subjects. Portraiture photography was not yet feasible and merely recorded blurred spectres, wandering in the streets.[197] The only certainty for the first camera technicians in this moment of dubious technical certitude was to substitute human presence by sculptural stillness.[198] The development of more light-sensitive materials took several years, long enough to set a standard practice of picturing sculpture. Daguerre's early photographs picture ensembles with sculptures, and in a later stage, he did important work reproducing ancient sculptures at the Louvre's new plaster cast studio.[199] **(Fig. 1)** Hippolyte Bayard photographed small plaster sculptures on the top of his roof. **(Fig. 2)** And also Talbot had communicated similar intentions in regards to his calotype process when he addressed the Royal Society in 1839:

> Another use which I propose to make of my invention is for the copying of statues and bas-reliefs. I place these in strong sunshine, and put before them at a proper distance, and in the requisite position, a small Camera Obscura containing the prepared paper. In this way I have obtained images of various statues, &c. I have not pursued this branch of the subject to any extent; but I expect interesting

[197] The medium of photography was interpreted here as a medium in all its possible meanings. Many believed that these ghouls were actual ghosts or ectoplasm from the beyond, made visible through photography.
[198] Janis, Eugenia Parry, *The Kiss of Apollo: Photography & Sculpture, 1845 to the Present*, Fraenkel Gallery, San Francisco, 1992, p. 9.
[199] Pinson, Stephen C., *Speculating Daguerre: Art & Enterprise in the Work of L.J.M. Daguerre*, The University of Chicago Press, Chicago, 2012, p. 201. Shortly before Daguerre's invention, the Louvre's plaster cast studio had started to reproduce ancient sculptures. Most of these sculptures were pillaged from Italy, and before their return after Napoleon's fall, they had to be duplicated. By 1837, the *Ecole de Beaux-Arts* opened a vast plaster cast collection. It is already at this point that the reproduction of sculptures assumed an important role in documenting and "disseminating the objects of the museum."

> results from it, and that it may be usefully employed under many circumstances.[200]

Eventually he did follow up on his thread of thoughts and between 1839 and 1843 he made at least 47 separate images from the same sculpture, a bust of Patroclus. **(Fig. 3)** It was the only subject to appear twice in *The Pencil of Nature*.[201] Next to these photographs Talbot commented that:

> These delineations are susceptible of an almost unlimited variety: since in the first place, a statue may be placed in any position with regard to the sun, either directly opposite to it, or at any angle: the directness or obliquity of the illumination causing of course an immense difference in the effect. And when a choice has been made of the direction in which the sun's rays shall fall, the statue may be then turned round on its pedestal, which produces a second set of variations no less considerable than the first. And when to this is added the change of size which is produced in the image by bringing the Camera Obscura nearer to the statue or removing it further off, it becomes evident how very great a number of different effects may be obtained from a single specimen of sculpture.[202]

Talbot added another comment on sculpture next to *Plate III – Articles of China*, an ensemble of china cups and vases, in which he stated that "the whole cabinet of a collector might be depicted (…) however numerous the objects - however complicated the arrangement - the camera depicts them all at once."[203] These still-life images of sculpture started as a convenient arrangement: photographers wanted live models and sculpture became their stand-ins. In general, the lengthy exposures registered very sharp "delineations of sculptures" and offered broad modulations of light and shadow. The advantages of photographing fixed human figures were also to be found in the milky luminescence of marble sculptures and plaster casts that lit up in bright sunshine when set against a dark background. To enhance the shadow play, the sculptural subject and the camera would be placed on a turntable, and rotated according to the sun's movement in order that the shadows would remain unchanged and un-contradictory. Photographing sculpture proved to be a challenge to the widespread architectural subjects in early photography, mainly because of its attractive human likeliness. The compact three-dimensional nature of sculpture was comprehensible to capture in one image and manageable to encircle with multiple takes, endowing photography with a scanning ability that was hardly achievable with photographing architecture.

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[200] Talbot, William Henry Fox, "Some account of the Art of Photogenic Drawing or, The Process by Which Natural Objects May Be Made to Delineate Themselves without the Aid of the Artist's Pencil," *Photography: Essays & Images*, edited by Beaumont Newhall, The Museum of Modern Art, New York, 1980, p. 28

[201] Batchen, Geoffrey, "An Almost unlimited Variety: Photography and Sculpture in the 19th Century," *The Original Copy: Photography of Sculpture, 1839 to Today*, edited by David Frankel, The Museum of Modern Art, New York, 2010, p. 23.

[202] Talbot, William Henry Fox, *The Pencil of Nature*, 1844, p. 24.

[203] "From the specimen here given it is sufficiently manifest, that the whole cabinet of a collector might be depicted on paper in little more time than it would take him to make a written inventory and would a thief afterwards purloin the treasure - if the mute testimony of the picture were to be produced against him in court - it would certainly be evidence of a novel kind. The articles represented on this plate are numerous: but, however numerous the objects - however complicated the arrangement - the camera depicts them all at once." Ibid.

Talbot had rightly predicted that more interesting results would come of it. The process of photographing sculpture inspired the French sculptor and photographer François Willème (1830–1905). He aimed to reproduce sculpture with the help of photography, in the late 1850s. Willème's technological experiment "consisted of a shadowing apparatus" that shed light on a sculpture placed on a turntable. The turntable indicated 24 numbers and lines, and in 24 takes a camera "successively recorded the shadows cast by the apparatus." **(Fig. 4)** The 24 photographs would then be projected on a screen, their individual profiles drawn on paper and cut out in wood, "spliced together as a sum of profiles" in a mould, and "finally modelled out in plaster."[204] This happened without any artistic pretence and as accurately as possible. Walter Benjamin described the process in his *Arcades* and quotes a source from 1864, reflecting on the artistic difference between sculptures and photo-sculptures:

> It was the pantograph, whose principle is equally at work in the physiognotrace, that undertook to transcribe automatically a linear scheme originally traced on paper to a plaster mass, as required by the process of *photosculpture*. Serving as model in this process were twenty-four simultaneous views taken from different sides. Gautier foresees no threat to sculpture from this process. What can prevent the sculptor from artistically enlivening the mechanically produced figure and its ground? "But there is more: for all its extravagance, the century remains economical. Pure art seems to it something expensive. With the cheekiness of a parvenu, it sometimes dares to haggle over masterworks. It is terrified of marble and bronze. … But *photosculpture* is not so daunting as statuary. … *Photosculpture* is used to modest proportions and is content with a set of shelves for pedestal, happy to have faithfully reproduced a beloved countenance. ... It does not disdain an overcoat, and is not embarrassed by crinolines; it accepts nature and the world as they are. Its sincerity accommodates everything, and though its plaster casts of stearin can be transposed into marble, into terracotta, into alabaster, or into bronze, ... it never asks, in return for its work, what its elder sister would demand in payment; it requests only the cost of materials."[205]

By 1864, when Willème patented and commercialized his practice, the content of the term *Photosculpture* had radically changed. Willème, undisturbed by artistic processes, quickly moved on to bigger challenges: the remodelling of portraiture photography into sculptures. By then, portraiture photography had been made possible by improved lenses and cameras, accelerating substances and glasshouse studios. While exposure times had been reduced to mere seconds, Willème's device had to go beyond a camera-cum-turntable for this experiment. In order to register a scan of the sitters profile correctly and without impatient moving, he needed to take 24 synchronized photographs in the round. For this reason alone, he constructed a glass-domed rotunda with a double wall in which he embedded 24 synchronized cameras. **(Fig. 5)** The entire figure of the posing sitter could be registered in a few seconds, after which his conversion procedure was applied to cast a likeness. With the aid of Achille Collas' so-called *Réduction Méchanique*, a *Pantograph*-like machine to copy sculptures in various

[204] Sobieszek, Robert A., "Sculpture as the Sum of Its Profiles: François Willème and Photosculpture in France, 1859-1868," *The Art Bulletin*, 1980, pp. 617-630.
[205] Benjamin, Walter, *The Arcades Project*, Harvard University Press, Cambridge MA, 1999, pp. 689-690. In his text, Benjamin quotes Gautier, Theophile, "Photosculpture: 42 Boulevard de 1'Etoile," Le Moniteur Universelle, Paris, January 4, 1864, pp. 10-11.

sizes, Willème had invented a "photographically based, mechanical method of producing low-cost sculptures in relatively large series."[206] **(Fig. 6)**

While Willème's photo-sculptures perhaps defied the sister-art of sculpture, his glass pavilion offered an inversed view of what its sibling, the panorama pavilion, offered; an inward scan instead of an outward gaze. With the volume centred in the middle, and cameras circling around it to register information on that specific volume, this elaborate device resembled the modern-day 3D-scanner. But this method "to collect accurate and precise information on volume," used "the manual intervention of the sculptor-practitioner" to reconstruct the photographs into sculptures.[207] In his book *Lens-based Sculptures*, Herbert Molderings wrote:

> However, Photosculpture, as an industrial undertaking, proved to be a failure after only a few years. The obvious material and dimensional differences between the two-dimensional photographic image and the solid, three-dimensional sculpture have never led to any historical contest between the two genres that might have jeopardized the *raison d'être* of sculpture, as was the case with painting.[208]

A simple body-cast of the poser would provide a faster, more accurate and much cheaper sculpture. Too far ahead of its time, this primitive 3D-scanner had to wait for the precision of the 3D-printer.[209] Besides, deriving sculptures from static subjects seemed to be quite senseless. The real challenge lied in photographing moving subjects and visualizing the physiology of a living organism in motion. A body cast of a figure in motion was, and still is impossible, and precisely there Willème's invention of the photographic scanner proved invaluable for the next generation of scientist-photographers.

In 1844 Daguerre, desperately loosing grasp on his invention, claimed that he had found a new and more sensitive substance, "which would enable him to photograph a galloping horse or birds in flight by making exposures in 1/1000th of a second."[210] However, there was no question of making such images until nearly forty years later. Until Etienne-Jules Marey, a professor at the *Collège de France* specialized in zoological movement, needed something that could perform such inhumane vision. As a scientist, he developed "machines for simulating and recording a visual syntax of movement" to register, for example, the precise movement of the wings of a bird in flight.[211] His geometry of

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[206] Molderings, Herbert, *Lens-based Sculptures: The Transformation of Sculpture through Photography*, Verlag der Buchhandlung Walter König, Cologne, 2014, p. 11.
[207] Frizot, Michael, "Sculpture, between Visual Perception and Photography," *Lens-based Sculptures: the Transformation of Sculpture through Photography*, edited by Herbert Molderings, 2014, pp. 56-71.
[208] Molderings, Herbert, *Lens-based Sculptures*, 2014, p. 11.
[209] In that sense, Achille Collas' *Réduction Méchanique* method proved much more applicable and successful. His company sent the device and some specimens to the *Great Exhibition* in 1851 and was rewarded with an honorary medal. Further success came in 1855, when Collas was awarded the *Grand Médaille d'Honneur* of the *Exposition Universelle* in Paris. The company existed until 1954.
[210] Gernsheim, Helmut & Alison, *J.L.M. Daguerre: The History of the Diorama and the Daguerreotype*, Dover Publications Inc., New York, 1968, p. 123.
[211] "Around 1870 Marey designed an apparatus to register the elliptical trajectory of a bird's wing onto a glass plate. Among the many images that were produced to record the experiment and its results were a number of graphic designs that can be described as velocity diagrams of the changing plane, direction and speed of each beat of the wing." Nead, Lynda, *The Haunted Gallery: Painting, Photography, Film c. 1900*, Yale University Press, New Haven, 2007, pp. 19-22.

motion was mainly applied towards purposeful uses where the study of bird flight was directed towards the prospect of aviation. Marey did not immediately succeed, but his research travelled widely. It inspired a certain Leland Stanford, a wealthy Californian owner of a horse stable, to pose the question if there was a particular moment at which the hooves of a trotting horse were all elevated from the ground at the same time. He commissioned Eadward Muybridge (1830-1904), an English photographer who had set up business in California, to photograph his running horses in order to prove such a bold statement. Photography had already proven its ability to record things beyond human vision, and according to Stanford, it was the only way to find adequate proof. In 1872, Muybridge began photographing the quick gaits of the trot and gallop on wet-collodion plates. Muybridge was not entirely successful because the horses kept outrunning the slowness of the emulsion, thus delivering unreliable prove. The light-sensitivity of the collodion emulsion was "too slow to capture a sharp image of the horse's hooves, moving with a velocity of more than a hundred lineal feet in a second of time, rendering mere silhouettes."[212] Only years later, with slightly faster emulsions, multiple cameras and the implementation of a shutter that Muybridge had invented himself, it became possible to capture such rapid movement. In 1878 Muybridge had installed an elaborate test site along the tracks of Stanford's *Palo Alto Stock Farm*.[213] In a purpose-built pavilion, he placed a battery of 12 large glass-plate cameras with shutters opposed to a wall covered in white reflective cloth. **(Fig. 7)** This array of cameras was triggered sequentially when threads strung across the track were hit as the horse passed. With this multiple camera system, Muybridge succeeded in his mission. His photographic series *The Horse in Motion* proved that indeed all the hooves of a horse were airborne during the running stride. Muybridge even proved that this was the case, not just during the trot, but he was able to register the elevation of the horse *Sallie Gardner* in full gallop. **(Fig. 8)** These precision images were the first accurate depictions of speed beyond human vision.

But it wasn't until a new evolution in photographic emulsions arose from the laboratory of the chemist, that the modulation of motion led to a new form of photo-sculptures. The parallel inventions of the shutter mechanism, the viewfinder, the light meter, new types of optical lenses, and light-sensitive materials cumulated in the 1880s to exposure speeds nearing Daguerre's foreseen range of 1/1000th of a second. In 1871 Richard Leach Maddox had announced a more light-sensitive photographic emulsion by pouring warm gelatine mixed with cadmium bromide and silver nitrate on a glass plate. Subsequent improvements by Charles Harper Bennet led in 1878 to dry-plates coated with gelatin-silver bromide emulsion that permitted instantaneous photographs of 1/25th of a second.[214] A young George Eastman had visited the *Philadelphia Centennial Exhibition* in 1876 and had learned about Maddox's method. Impressed by the corporate standardization of photography at the world's fair, he founded the *Eastman Dry Plate Company* in 1880 in Rochester, New York, and started commercially producing gelatine bromide plates. He swiftly replaced the heavy and fragile glass plates by the more practical paper negatives, coated with gelatine-bromide emulsion, and in 1884, he

[212] Muybridge, Eadward, *Descriptive Zoöpraxography or the Science of Animal Locomotion made popular by Eadward Muybridge*, University of Pennsylvania, The Lakeside Press, R. R. Donnelley & Sons Co., Chicago, 1893.
[213] Frizot, Michel, "A New History of Photography," Könemann Verlagsgesellschaft mbH, Köln, 1998, pp. 242-257.
[214] The gelatine-silver bromide emulsion allowed for the production of both negatives and printing papers, which were able to be exposed and processed even years after their manufacture. This method maintained as the dominant photographic process for nearly half a century.

invented a universal holder for a 24-exposure roll of sensitized paper.[215] These continuously improved new inventions led in 1884 to exposure speeds in the range of 1/1000th of a second. Muybridge had not yet used these new substances for his experiments when he had patented his specially designed shutter in 1879. But suddenly, with the coming of these new inventions, it was possible for him to register accurately, not just a racing horse, but animal and human locomotion of varying speeds, including the flight of birds, a cantering buffalo in the Philadelphia Zoo and strangely enough, naked, leapfrogging boys. Between 1884 and 1886, when he was working at the University of Pennsylvania, Muybridge made more than 100.000 photographs, managed through the use of precise shutter mechanisms, to register motion in every possible way.[216] His apparatus at the University consisted of a shed of 37 meters long with an open front, through which all kinds of zoology progressed, and a battery of 24 automatic electro-photographic cameras, arranged parallel with the line of progressive motion. The shed had a fixed background divided in numbered squares. In order to provide sufficient contrast, the background was sometimes covered with white cloth, when photographing 'darker' animals, or stretched with black cloth when photographing 'whiter' animals. In his publication on the process, the *Descriptive Zoöpraxography or the Science of Animal Locomotion made popular by Eadward Muybridge*, he described another progression of photographing subjects simultaneously from multiple angles. Two portable batteries of each 12 cameras with portable backgrounds of 3 by 4 meters were used to record the front and rear of the subject at angles averaging from 60 to 90 degrees from the lateral battery. With this elaborate facility, Muybridge had succeeded to record the sequential phases of a single action, consecutively from one point of view, and synchronously from two points of view.[217] **(Fig. 9)**

When Muybridge's photographs were published in France in 1878, it prompted an immediate correspondence between Marey and Muybridge. Marey's work had originally inspired Muybridge in the making of his photographs and vice versa had the latter inspired the first into using photography for his research. In 1881 Muybridge demonstrated his work in Paris, in the *Hall of the Hemicycle* at the *École des beaux-arts de Paris*, where the two met. "Inspired by Muybridge's serial photography of a horse in motion, Marey was tempted to explore the possibilities of photography."[218] *Chronophotography* was the name that Marey then gave to his practice, when he started using photography for his physiological experiments. As an inventor of machines to record motion, he invented in 1882 a series of adapted cameras with revolving sensitive plates, treated with gelatine-silver bromide emulsion, and rotary shutters.[219] At that time, the manufacture of gelatine-silver bromide plates had become quite general, and in France these were produced by Antoine Lumière. In 1883 Marey designed a new camera with a single, fixed gelatine-silver bromide plate on which he recorded multiple

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[215] Frizot, Michel, *A New History of Photography*, 1998, pp. 242-257.
[216] "A selection of these was printed in 1887 in the form of 781 plates: 'Animal Locomotion; an Electro-Photographic Investigation of Consecutive Phases of Animals Movements, 1872-1885.'" Ibid.
[217] Muybridge Eadward, *Descriptive Zoöpraxography*, 1893.
[218] Nead, Lynda, *The Haunted Gallery*, 2007, p. 20
[219] "It was astronomy that initially provided an occasion for testing chronophotography. On December 8, 1874, thanks to the passage of the planet Venus past the sun, the astronomer Pierre Janssen was able to try out his invention of a photographic revolver, which took a picture every seventy seconds. (…) But the process of chronophotography was soon to become much more rapid. ... It was … when Professor Marey entered the lists with his photographic rifle … that the result of twelve images per second was obtained. … All these experiments were, up to then, purely scientific in character. The researchers who conducted them … saw in chronophotography a simple 'means for analyzing the movements of humans and animals.'" Roland Villiers, "Le Cinema et ses merveilles," Paris, 1930, pp. 9-16, quoted in Benjamin, Walter, *The Arcades Project*, 1999, p. 686.

exposure sequential photographs. Michel Frizot described Marey's photographing facility as following:

> This photographic apparatus should be seen not simply a camera, but as the whole experimental area that Marey set up in the *Bois de Boulogne* – a dark shed to provide the black background, within which there was the area where the subjects moved, a mobile cabin on a rail facing the black background, electric cables transmitting synchronizing signals, and a rapidly-rotating clock placed in the field of vision. The apparatus itself, named the *chronophotographe*, was a camera, taking 13 x 18 cm plates, equipped with a special shutter system - a disc 1 meter in diameter, with several windows which effected the illumination of the plates at intervals regulated by the speed of rotation.[220]

Marey photographed 'white' subjects, for example people dressed in white or a white horse, moving in front of a black background. This secured the isolation "of the moving figure in white, since the dark background would not make any impression on the sensitive surface," allowing a series of superimposed images on one recording.[221] **(Fig. 10 & 11)** This provided the possibility to view the successive change in motion in one single image, and not, as in Muybridge's procedure, in a series of sequential images. The speed of photography had surpassed the speed of human vision and the speed of zoological movement. Beyond micro- and macro-photography, a new inhumane dimension opened in the visible spectrum. At this instance, Willème's *Photosculpture* practice became interesting again: to apply a three-dimensional volume to the form of motion.

Since photography is a physical imprint of reality, and the physiology of movement can be captured on such an imprint, Marey reasoned that it would consequentially be possible to distract, using Willème's technique, a physical and touchable object out of motion. Marey's next step was a revolution in a two-part harmony: solidifying motion in photo-sculptures and simulating motion in photography. Focusing on bird flight and the movement of wings, he set out in 1886 to register the flight of a seagull. Influenced by Muybridge, who had made synchronized photographs of the same subject from three different angles of view, Marey came up with the idea of taking synchronized photographs from the lateral, frontal and vertical view.[222] In order to retrieve such accurate information from a series of photographs, Marey built two darkened pavilions opposed by two chronophotographic cameras and installed a third camera high above the ground, facing down on a black patch of cloth rolled out on the ground. **(Fig. 12 & 13)** These three finely attuned cameras interfered with each other in their fields of vision and could capture simultaneously three different angles of the subject.[223] Much in the sense of the contemporary 3D-scanner, and reminiscent of Willème's technique, the chronophotographs made along the X, Y, Z axis collected all the information needed to subtract a three-dimensional object from a real bird in flight. **(Fig. 14 & 15)**

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[220] Frizot, Michel, *A New History of Photography*, 1998, pp. 242-257.
[221] Ibid.
[222] Frizot, Michel, "Sculpture, between Visual Perception and Photography", *Lens-based Sculptures*, edited by Herbert Molderings, 2014, pp. 56-71.
[223] Ibid.

> These images complement each other and allow us to determine the position of each part of the body and the wings at each instant in relation to the three dimensions of space. (…) We have been able, using these three images, to build a series of figures in relief showing the successive positions of the bird.[224]

After photographing 10 positions of a seagull in flight during the beat of a wing, he exported the images into sculptures. These separated sculptures were intended to be placed in a zoetrope to simulate the movement of a flying bird.[225] **(Fig. 16)** "His next project was to create the exact figure recorded by the three chronophotographic series, fully respecting the actual distances between the positions spaced at 1/50th of a second intervals, merging the bodies of 24 birds in a single sculpture."[226] **(Fig. 17 & 18)** Marey had created the hyperrealist sculptures as an improvement of his physiological examinations, but had succeeded in solidifying motion. The subtraction of sculptural forms from photography was a most remarkable discovery. The negative emulsion had become an imaginary mould and the positive photograph a sculpture. Marey had perfected Willème's *Photosculpture* process and had lifted it to a higher meaning by adding volume to motion. On the one hand he enabled the sculptural subtraction of movement out of a photograph, and on the other, by developing the techniques to perform such an action, he had laid the basic stepping-stones of cinema. In 1890 he elaborated on the *Chronophotographe* by using celluloid film, recently invented by Eastman, which allowed him to take separate but successive images on a moving strip of film - thus constituting one of the earliest cinema cameras.[227]

Only a few years later, the *Exposition Universelle de Paris* of 1900 was all about the moving image, while Marey's photo-sculptural experiments received modest attention in a small window display.[228] **(Fig. 19)** But this abstract venture to reconstruct tangible spatial information from a flat photograph, from an illusionistic image that originally existed in the touchable three-dimensional world, this attempt to reproduce objects and subjects by the impact of light pulsed a significant influence towards today, in the form of the 3D-scanner and -printer. In *Flatland*, a novel published in 1884, a *Square* was lured into the three-dimensional world by a luscious *Sphere*.[229] The *Square*, living in a two-dimensional world occupied by geometric figures, could not comprehend a third dimension until he saw *Spaceland* for himself. Overexcited, he tried to convince the *Sphere* of a fourth and fifth dimension but gets himself expelled from *Spaceland* for reasons of blasphemy. Once returned to *Flatland* he wrote his memoirs for the keep of future generations that hopefully could see and handle multiple dimensions. Willème and Marey had imagined such things, but their ideas had to wait another century for acceptance.

Now that these dreams have become possible today, imagine an increase in size by which the morphing of photography into sculpture could be enlarged to the size of an architecture like Bartholdi's Statue of Liberty - completed in 1886. Then, the photograph

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[224] Ibid.
[225] Ibid.
[226] Ibid.
[227] Frizot, Michel, *A New History of Photography*, 1998, pp. 242-257.
[228] "Having first been presented to the scientific world (…) chronophotographic images became available to the mass public during the first decade of the 20th century, and not least through their presence at the World's Fair in Paris in 1900, through publications occasioned by the Olympic Games, which took place in Paris at the same time, and through illustrated physical education and sports manuals." Molderings Herbert, *Lens-based Sculptures*, 2014, p. 29.
[229] Abbott, Edwin A., *Flatland: A Romance of Many Dimensions*, Seely & Co., London, 1884.

itself would become architecture. And that architecture would consequently be a photograph. Something similar actually happened with the experiments of Willème and Marey, almost unnoticed as collateral damage. When we turn away from the results they were aiming at, and look back at the amount of matter they applied to achieve their experiments, we can see this other side-effect: the radical expansion of the photographic apparatus. **(Fig. 20 & 21)** Willème had expanded his photographer's studio into a glass-domed rotunda. This purpose-built pavilion became an essential part of the technical equipment of his camera and can be regarded as part of the apparatus. With Muybridge, the photographic apparatus became a whole experimental area with a pavilion and a horse's racetrack. Marey expanded a similarly sized experimental area with building several pavilions. Contrastingly, George Eastman had by 1888 reduced the size of a camera to a little hand-held box. Since its invention, the photographic apparatus had been decreasing from the architecture of the camera obscura pavilion into the tiniest rooms. With these photo-sculptors, the camera morphed back into a large room, even into the size of one or more pavilions, again taking on the architectural allure of the camera obscura pavilion. They continued, however unintentionally, a still young template of photographic architectures, carrying the camera obscura pavilion, the panorama pavilion, or Daguerre's *Diorama* onwards to the next generation. These directions set standards for a future integration between the apparatus and the print in photographic installations.

9.

Raoul Grimion-Sanson' Cinematographic Panorama

> In 1846, only a few years after Daguerre's invention of photography, Friederich von Martens tried to assemble a photographic panorama, or half-panorama. He used the same procedure as the earlier panorama artists who had worked with a camera obscura, only von Martens used a light-sensitive plate instead of a sketch pad. This procedure was tried out repeatedly by later photographers, but because of the deficiencies in photographic technique the results remained inferior to painted panoramas for many years. Since the photographs could not be altered or retouched to adjust their perspective, there were jarring dissonances of perspective at the seams where they joined. Thomas Sutton attempted to solve this problem in1859 by using glass plates curved to form half a cylinder. (…) When George Eastman introduced celluloid film in 1888, its flexibility opened up new possibilities: A French colonel named Moessard constructed a cylindrograph by improving Sutton's original apparatus; a revolving lens allowed the light to fall on the curved surface of the film. Using four projectors and a circular room, Moessard assembled the photographs into a full panorama. (…) On August 24 and 27, 1894, Charles A. Chase amazed an audience in Chicago with the first demonstrations of his 'Stereopticon-Cyclorama,' which used eight projectors to project sixteen slides onto a circular screen. (…) About the time Charles Chase was thinking of replacing painted panoramas with less expensive and easily transportable slides, the same idea occurred to the brothers Auguste and Louis Lumière in France. (…) The fact that neither project was developed further is probably due in large measure to the French engineer Raoul Grimion-Sanson and his inventions. He had received a patent for his 'cosmorama' in 1897, a synchronized projection of several slides onto a round screen. He improved it for the 1900 World's Fair in Paris and called it the 'Cinéorama.' The cinéorama was the first motion-picture panorama, and it proved a huge attraction at the fair.[230]

On April 14, 1900, the City of Light's fifth world's fair opened. "The Exposition of 1900 will synthesize the 19th century and ascertain its philosophy." With this announcement, the French Third Republic claimed the symbolic closure of the century and the festive opening of the next one.[231] They mounted the largest world exhibition to date and celebrated, more by recapitulating the expiring century than by anticipating the nascent one, the industrial and artistic triumphs of the global civilization.[232] Since the *Centennial International Exhibition* of 1876 in Philadelphia, exposition sites had begun to occupy tracts of land to build a miscellany of pavilions. **(Fig. 1 & 2)** They formed temporary self-contained cities within the city and displayed the world to the world. At the dawn of a

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[230] Oettermann, Stephan, *The Panorama: History of a Mass Medium*, Zone Books, New York, 1997, pp. 83-90. Oettermann's research here serves as a better introduction than I could give. His book contains a wealth of information on the topic and is one of the very few sources available concerning the history of photographic panoramas and the Cinéorama.

[231] Findling, John E., *Historical Dictionary of World's Fairs and Expositions, 1851 – 1888*, Greenwood Press, Westport, 1990, pp. 155-164.

[232] Ibid.

new century, the microcosm of the *Exposition Universelle et Internationale de Paris 1900* sprawled from the *esplanade des Invalides* to the *Trocadéro* and over the Seine to the *Champ de Mars*, covering a territory of 279 acres in the heart of the city, and another 274 acres in the *Bois de Vincennes* where, as part of the Exposition, the 2nd Olympic Games were held.[233] Both sites were connected by the specially constructed Art Nouveau style *Métro* system, or reachable by automobile for the more fortunate ones. Over forty foreign nations participated displaying over 80.000 exhibits that reflected on the technical advances of the Industrial Revolution since 1800, added in a lesser extent by some future predictions. It mirrored the *fin-de-siècle* atmosphere in Europe, a sudden positivist fright that had grasped the imagination after such a rapid evolution in technology over the past century. As a consequence perhaps, didactic presentations of mechanical instruction had made way for more airy entertainment and consumerism. In *Paris, the Capital of the Nineteenth Century*, Walter Benjamin described "this bazaar of universal progress":

> World exhibitions are places of pilgrimage to the commodity fetish. "Europe is off to view the merchandise," says Taine in 1855. The world exhibitions are preceded by national exhibitions of industry, the first of which takes place on the Champ de Mars in 1798. It arises from the wish "to entertain the working classes, and it becomes for them a festival of emancipation." The worker occupies the foreground, as customer. (…) World exhibitions glorify the exchange value of the commodity. They create a framework in which its use value recedes into the background. They open a phantasmagoria which a person enters in order to be distracted. The entertainment industry makes this easier by elevating the person to the level of the commodity. He surrenders to its manipulations while enjoying his alienation from himself and others.[234]

Entering through the fairytale-like *Porte Monumentale*, the commoditized *flâneur* could now hop on the *troitoire roulant*, the *moving pavement*; a double conveyer belt with two alternate speeds to shoot past the invaluable amount of exhibition pavilions. Beyond the *Grand Palais*, which replaced the 1855 *Palais de l'Industrie*, and the *Petit Palais*, both exhibiting the Fine Arts, the eclectic *Rue de Nations* lined up 22 international participations from the *Pont Alexandre III* to the Eiffel tower. Here, foreign nations displayed their identity on the façade of their temporary pavilions, resulting in a flamboyant and entertaining arrangement of towers, pinnacles, domes and cupolas. In the gardens leading up to the Trocadéro, the idea of showing 'worlds in worlds' took a different turn in the colonial exhibits, which had, since the 1867 exposition, grown into massive 'human zoos' where native peoples from around the world were objectified as living exhibits and evolutionary stages of development. These stages of social Darwinism would progress towards the Eiffel tower, with the French Imperial pavilions of Egypt, Algeria and Tunis, then pass underneath its arches through a cluster of restaurants and unclassified attractions, and end in the reigning accomplishments of white men. At least this was maliciously insinuated by juxtaposing 'primitive tribes' with the *Palace of Electricity* and the majestic *Machinery Hall*.[235] The *Galérie des Machines*, the Eiffel Tower and the Trocadéro building were however pre-existing structures

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[233] Ibid.

[234] Benjamin, Walter, *The Arcades Project*, Harvard University Press, Cambridge MA, 1999, pp. 17-18.

[235] The use of the terms 'primitive' and 'tribe' have been rightfully questioned and criticized since WWII. The terms are here used as reflecting the mindset of the time, in which 'social Darwinism' was still considered to be scientific, and the inhabitants of the former colonies were horrifically objectified as living exhibits.

accomplished during former expositions.[236] The Trocadéro was built for the 1878 fair, while the Galérie des Machines and the Eiffel Tower were constructed for the 1889 edition. These austere structures of iron and glass were still more innovative than anything else built for the 1900 architectural extravaganza, including the fantasy Palace of Electricity that boasted a musical fountain with changing colours. But there, in the *Palais de l'Electricité et les Fontaines lumineuse au Champ de Mars,* one of the major accomplishments of Western society was set in motion: electricity. In 1889, Edison's light bulbs had adorned the Eiffel Tower but in 1900, powerful electric light beams fired from Eiffel's tower filled the sky. Crowned by a sculptural maiden that embodied the spirit of electricity, the Palace of Electricity empowered the exposition's machinery and wired the whole site with thousands of multicoloured lights into a nocturnal fantasy.[237]

During daytime, the major landmarks remembered previous exhibitions, while camera obscura pavilions, lantern slideshows, panorama attractions and photography exhibitions portrayed a history lived. Most of these pavilions were to be found into the 'unclassified section.' **(Fig. 3)** Some dioramas now had photographic backings, while the painted panoramas worked with extensions of the photographic technique and three-dimensional objects. In the Swedish pavilion, the scenic wildlife dioramas were packed with stuffed Nordic animals, and at the Russian pavilion, visitors were invited to take place "in a mock coach of the Trans-Siberian Railway while painted scenery rolled by the windows, creating the illusion of a journey from Moscow to Peking."[238] A similar voyage was evoked by Hugo d'Alési's *Mareorama*. **(Fig. 4)** This panoramic simulation was so elaborate and photorealistic that it still baffled the by then already suspicious spectators. Here, the platform of the panorama pavilion was replaced by an entire ship's deck that could hold 700 people, so constructed that it "pitched and rolled as if on the high seas" thanks to a ingenious system of "hydraulic cylinders and electric motors." "A gigantic canvas, 750 meters long and 15 meters high, unrolled from port to starboard, revealing some of the most exciting views to be found on a voyage from Marseille to Yokohama."[239] And in just a few hours, a genuine world tour could be completed, by far superseding the eighty days of travels of Jules Verne's *Phileas Fogg*.[240]

> On the world-travel panorama, which operated under the name "Le Tour du Monde" at the Paris world exhibition of 1900, and which animated a changing panoramic background with living figures in the foreground, each time costumed accordingly. "The 'World-Tour Panorama' is housed in a building that has already caused a general sensation because of its bizarre exterior. An Indian gallery crowns the walls of the edifice, while rising at the corners are the tower of a pagoda, a Chinese tower, and an old Portuguese tower."[241]

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[236] Benjamin noted on the Eiffel Tower in his Arcades Project: "Eiffel Tower. 'Greeted at first by a storm of protest, it has remained quite ugly, though it proved useful for research on wireless telegraphy. ... It has been said that this world exhibition marked the triumph of iron construction. It would be truer to say that it marked its bankruptcy.' Dubech and d'Espezel, Histoire de Paris, pp. 461-462." And further: "Protest against the Eiffel Tower: 'We come, as writers, painters, sculptors, architects, ... in the name of French art and French history, both of which are threatened, ... to protest against the construction, in the very heart of our capital, of the useless and monstrous Eiffel Tower. ... Its barbarous mass overwhelms Notre-Dame, the Sainte-Chapelle, the Tower of Saint- Jacques. All our monuments are debased, our architecture diminished.' Louis Cheronnet, 'Les Trois Grand-meres de Imposition,' Vendredi, April 30, 1937."

[237] Findling, John E., *Historical Dictionary*, 1990, pp. 155-164.

[238] Ibid.

[239] Jackson, Anna, *Expo: International Expositions 1851 – 2010*, V&A Publishing, London, 2008, p. 81.

[240] Herbert, James D., *Paris 1937: Worlds on Exhibition*, Cornell University, Ithaca, 1998, p. 14.

[241] Benjamin noted on Le Tour du Monde in his Arcades Project: "The similarity of this architecture to that in

Photography was omnipresent at the fair, in a multitude of international photography exhibitions and competitions. The fair itself was photographed more extensively as ever before, and new photomechanical techniques, such as halftone printing, reproduced the ephemeral vistas in international newspapers and magazines. Visitors had their portraits taken in the newly introduced *Photomaton*. The rapid progression of the medium was visualised in the thirteen camera obscura pavilions that stood side by side with their advanced siblings, such as the earliest cinema showings of the Brothers Lumière. Even then, the pre-cinema of the camera obscura kept boggling visitors, gazing at this natural occurrence. But cinema was the great invention the Exposition Universelle de Paris of 1900 had to offer. Electricity and artificial light had enabled the birth of cinema and it seemed only fitting that the Frères Lumière presented their *Cinématographe* in the festive hall of the Palace of Electricity. The Paris exposition wasn't just the first world's fair that was captured on film, but also premiered the first screening of a film in which the image was accompanied by sound. It also proposed a sort of 'smart phone' that could project a live film streaming, the *Cinéma-Phono-Télégraphique* "to be used by the year 2000," while the term television was coined to describe the communication of news items in the future.[242] Most films shown at the time were short factual happenings, which lasted only several seconds to minutes - such as the arrival of a train. Film screenings were subsequently held in a program of multiple films after one another, to hold grip on the attention of the viewer. Whereas the traditional panorama pavilions adopted the aspect of motion and kinetic entertainment in an attempt to neutralize competition from film, as in the Mareorama, early cinema copied the sensational and commercial entertainment of the panoramas. Great was the astonishment when a certain Raoul Grimion-Sanson (1860–1941) combined cinema and panorama inside a purpose-built pavilion with a panoramic feature film projection that simulated the ascension of a hot-air balloon. "Crowds streamed to the exhibit, leaving the competing panoramas, Mareorama, and Cyclorama half empty."[243] **(Fig. 5)**

The Cinéorama was a fusion of the camera obscura and panorama pavilion with the new cinema technology. It combined the high culture of the arts and the popular culture of the amusement ride. Underneath the Eiffel tower, between the 'unclassified attractions' stood a polygonal pavilion of 1.200 square meters adorned with large decorative terraces that surrounded the building and harboured the restaurant *Maison Kammertzell*. **(Fig. 6)** Upon entering the pavilion, the visitors experienced a similar effect as in the panorama pavilion, rising from a darkened tunnel over a spiral staircase onto a circular platform. The platform was sculpted as a large balloon basket that could hold up to 150 spectators and was roped to the lower part of a hot-air balloon, giving the impression that the visitors stepped inside an actual balloon, moments away from ascension. **(Fig. 7)** Instead of looking onto a painted panorama, they initially only saw ten blank canvasses of 9 by 9 meters in the round. Underneath the platform was a projection booth that held 10 synchronized 70mm movie projectors arranged in a circle, so that the projected films all joined together on the circular screen and created a 360 degrees panoramic cinema. On projecting the film, the participants suddenly saw themselves ascend as the balloon rose hundreds of meters above the neighbouring

zoological gardens is worth noting." Benjamin here quotes Malkowsky, Georg, "Le Tour du Monde, Die Pariser Weltausstellung in Wort und Bild," Berlin, 1900, p. 59.

[242] Jackson, Anna, *Expo*, 2008, pp. 98-102.

[243] Oettermann, Stephan, *The Panorama*, 1997, pp. 83-90.

Tuileries Gardens. An advertisement in the Exposition's newspaper showed an etching of a balloon flight and provided the following text:

> Realize the dream long wished for and that we only partially realized. A voyage in a balloon, to experience without danger, tiredness, expenditure (only 1 francs). Know all the emotions of this walk into the unknown, depart, ascend, visit far away countries and see the most picturesque places, pass with intervals of several minutes from the grandiose spectacle of the tempest sea to the vast horizon of the desert and Arabian fantasies, the elegance of the carnival of Nice, the gothic architecture of the old Flemish cities, or the run of the bulls in Spain. Thanks to the apparatus that makes circular panoramic projections, you can experience at the heart of the Exposition, the most marvellous synthesis of the grand spectacles of the nature of life. **(Fig. 8)**

An English guidebook to the Parisian Fair described the effect of the Cinéorama as "a magical passage which annihilates distance, wherein one could glean a series of lively impressions such as are only obtained by an *ordinary* traveller crossing the old continents for several months, regardless of time or money." This was a Jules Verne inspired adventure, catered for *armchair* travellers. The aerial film images were all shot on location, ascending above Paris, flying over Brussels, Barcelona, Southampton and the Sahara, and descending again, in the gardens of the Tuileries.[244] Oettermann quotes the following passage, which described how Grimion-Sanson used:

> … a scaffolding 9 feet in height carrying the cinematographic cameras, each covering an angle of just over 36 degrees to ensure that the projected pictures overlap slightly. The cameras operated simultaneously by turning a crank which is connected to each by a system of gears. Having recorded a number of interesting panoramas on *terra firma* in various countries with this device, the operator did not hesitate to place it in the pannier of a balloon despite its weight which exceeded 1.000 pounds. Early in May 1890, the balloon rose into a slightly overcast sky from the Tuileries in Paris. Immediately upon the cry "let her go," the entire machine was put into operation and continued until the balloon had reached an altitude of 1.500 feet… A polygonal-shaped hall with a diameter of 100 feet has been built for the projection of film strips… A round bowl of reinforced concrete stands in the centre and on top of this, there is a platform on which the spectators stand. Above their heads, a huge sail is fixed to the ceiling of the hall by means of nets: this is the "balloon" which is supposed to carry the visitor aloft… The strips of film containing the various cinematographic exposures have been glued together to form a single ribbon over 1,300 feet in length, thus permitting continuous projection for more than six minutes.[245] **(Fig. 9)**

The film experience of the Cinéorama is often disregarded as merely a popular form of entertainment, because of the association with the amusement ride and the narrative structure of a trip around the world. But in fact it was one of the most experimental and

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[244] Van Wesemael, Pieter, *Architecture of Instruction and Delight: A socio-historical analysis of World Exhibitions as a didactic phenomenon (1798-1851-1970)*, 010 Publishers, Rotterdam, 2001, p. 414.
[245] De Vries, Leonard, "Victorian Inventions," American Heritage Press, New York, 1971, pp. 126-127, quoted in Oettermann, Stephan, *The Panorama*, 1997, pp. 83-90.

daring undertakings in the history of cinema. Only a few years after the invention of the moving image, here was the first panoramic all-round synchronized projection of 81 meters in diameter, constructed in a purpose-built pavilion, and realized by clutching together ten synchronized film cameras underneath a hot air balloon. Preceding the technological refinement to achieve and maintain such an accomplishment, the Cinéorama had to close doors after just a few days. The extreme heat from the projectors had moved the fair authorities to close the event in fear of fire. Because of the financial failure of the *Cinéorama Company*, Grimion-Sanson quickly lost his title as a pioneer of early cinema. But he had succeeded, briefly but bravely, in creating what Robert Barker, the inventor of the *Panorama*, and L.J.M. Daguerre, the inventor of the *Diorama* and photography, had actually aimed for.

Before-images in Sunless Places

Grimion-Sanson began experimenting with film cameras and projectors in 1895, strongly influenced by his friend Etienne-Jules Marey. Marey and Eadward Muybridge were the inventors of *chronophotography* and Marey's first film, a hand that opens and closes, was published in 1889.[246] Being the first of its kind, it was an adaptation of the chronophotography technique that spun around a series of still frames within a second. We owe the basic principle of the animated image to Joseph Plateau, a Belgian physicist who was the first to use rotating disks with sequential drawings to create the illusion of motion, based on the fusion of afterimages. His device, the *Phenakistoscope*, was seminal to the invention of film, and for creative photographers like Muybridge and Marey, it was not a big leap from their chronophotographs to continuously moving images. Muybridge had invented his own projector, the *Zoöpraxiscope*, as early as 1879. It was a combination of Plateau's disc and a magic lantern, where drawings, tracings from the original photogravures, on a glass disc were rapidly rotated before a lantern. Projected on the wall, these life-size images of running horses gave the impression of motion. Although probably nobody could yet anticipate the invention of actual cinema, "many attempts by a number of pioneers in Europe and America were made at the end of the 19th century to adapt the camera for projecting moving images."[247] Marey, Muybridge, the Brothers Lumière and Edison were all "drawing on their own and other's experience to produce different versions of a movie camera."[248] Thomas Alva Edison (1847 – 1931) had visited the *Exposition Universelle de Paris* of 1889 together with Marey, who showed him his chronophotographs made on moving film. Late 1889, Edison filed a patent for his *Kinetoscope* on which he proposed the use of perforated sensitized film of the Eastman type to film and to be projected in a large box, like a peepshow machine, to be viewed by one person.[249] Edison's Kinetoscope, primarily inspired by Muybridge's Zoöpraxiscope and Marey's primitive motion picture sequences, became a reality in 1894. Muybridge had already produced a second series of discs in 1892 where the images were reproduced photographically onto the glass, and then coloured by hand.[250] This might be regarded as the very first prototype photographic movie projector. Marey had his own idea for a projector in 1892 that worked with a similar disc with multiple photographs and had "demonstrated this apparatus in his laboratory to the Lumière

[246] Frizot, Michel, *A New History of Photography*, Könemann Verlagsgesellschaft mbH, Köln, 1998, pp. 243-257.
[247] Nead Lynda, *The Haunted Gallery*, 2007, p. 22.
[248] Ibid.
[249] Frizot, Michel, *A New History of Photography*, 1998, pp. 243-257.
[250] Muybridge Eadward, *Descriptive Zoöpraxography or the Science of Animal Locomotion made popular by Eadward Muybridge*, University of Pennsylvania / The Lakeside Press / R. R. Donnelley & Sons Co., Chicago, 1893.

brothers in 1894."[251] The Lumière's quickly perfected their own version of a film camera, "and on December 28 1895, the first film projection for a paying audience took place at the *Grand Café*, 14 *Boulevard des Capucines*."[252] The Lumières showed a program of ten films in the *Salon Indien*, a small dark hall located in the basement of the Grand Café in Paris -*La Ville Lumière.* The program started with *Sortie de l'usine Lumière de Lyon*, the first film of August Marie Louis Nicolas Lumière (1862 – 1954) and Louis Jean Lumière (1864 – 1948). Shot in 1894, it showed workers from the Lumière factory leaving the facility after a days work. **(Fig. 10)** Marey was not so much interested in inventing machines for entertainment, rather than for scientific means, but his experiments enabled the invention of the motion picture. He did not pursue a commercial following to his *Phonoscope* projector, which he had developed with his assistant George Demeny. As a consequence, Marey's experiments were reduced to a small window display at the 1900 exposition, while Demeny had great success with his first sound film and the Brothers Lumière shed light on an enormous screen in the *Salle des Fêtes* in the Palace of Electricity.

Film projection had separated form from matter, but required a dark chamber to complete its illusion. From its inception, it became clear that the ephemeral nature of projection - its dematerialization - presupposed a serious amount of matter in the form of production facilities and projection spaces. The architecture of cinema consisted of creating sunless places that could embody an artificially produced beam of light. It was obviously no coincidence that the Lumières made their first film about their own production facility, and projected that architecture inside another necessary building: the cinematographic space. With the birth of cinema, the necessity for recording and projection space was not really anticipated, but grew rapidly. The Lumière's had a recording studio in their factory, where they also produced photographic equipment. Edison had built a very peculiar studio, nicknamed *The Black Maria*, which was adapted to the requirements of the camera objective. **(Fig. 11)** Like the Lumières, Edison showed his Kinetoscope in public parlours. The first purpose-built projection space was Eadward Muybridge's *Zoöpraxographical Hall* on the *World's Columbian Exposition* in Chicago in 1893. Muybridge had become renowned with his worldwide lectures and demonstrations with his Zoöpraxiscope projector.[253] In 1892 he was "engaged to deliver 300 lectures at the World's Fair under the auspices of the National Board of Education" and "a commodious theatre" by the architect Thomas Wing was "erected for this special purpose on the grounds of the Exposition, to which the name of Zoöpraxographical Hall had been given."[254] In a booklet Muybridge published for the occasion, he explained that:

> In the presentation of a Lecture on Zoöpraxography the course usually adopted is to project, much larger than the size of life upon a screen, a series of the most important phases of some act of animal motion - the stride of a horse, while galloping for example - which are analytically described. These successive phases are then combined in the Zoöpraxiscope, which is set in motion, and a reproduction of the original movements of life is distinctly visible to the audience.[255]

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[251] Frizot, Michel, *A New History of Photography*, 1998, pp. 243-257.
[252] Ibid.
[253] It could be argued that Muybridge's hall was not a cinematographic space either, since his moving photographs lasted only a few seconds before they repeated themselves.
[254] Muybridge Eadward, *Descriptive Zoöpraxography*, 1893.
[255] Ibid.

While "cloven-footed animals like horses, elks, buffalo's and camels," and "soft-footed animals like lions, elephants and humans" walked by the gaze of amazement, the building in which the "Quadrupedal Walk by animals and as interpreted by the Prehistoric Man" was projected, was quite unspectacular.[256] The world's first purpose-built moving image theatre was an indistinct square 'temple' building ornamented with a few Greek columns at the entrance. **(Fig. 12)** Large windows shed light on the corridors that surrounded the darkened projection space and hosted an exhibition of illuminated copies of paintings and sculptures that demonstrated a larger history of movement. The location of the pavilion, however, was significant. It was implanted on the *Midway Plaisance*, the fun-fair section adjacent to the more serious part of Chicago's *White City*.[257] It was the first world's fair that hosted such a large amusement area. On the Midway, life-size reproductions of Christopher Columbus' three ships were built, intended to celebrate the 400 hundredth anniversary of the discovery of the Americas, while Native American tribes were horrifically 'exhibited' in recreated dwellings. The mile-long strip filled with ghost rides, freak shows and circus attractions, topped by George Ferris' first *Giant Wheel*, set the tone for the future fate of movie theatres. At the time, the Zoöpraxographical Hall was already referred to as "Muybridge's Circus" as it had similar features: it was a temporarily erected space that showed exotic animals and trickery.

This was the context of the first films. Early film was too short to entertain the crowds for longer periods of time and stayed part of variety shows in pre-existing auditoria such as salons and parlours, theatres and music halls. This was followed by temporarily erected projection spaces. In Paris, Marie-Georges-Jean Méliès (1861 – 1938) was one of the first to have films projected in specially adapted spaces. He had bought an existing theatre from the renowned magician Robert-Houdin and started to develop his own stage illusions and comical sketches. Méliès had begun making films in 1896. Sometimes referred to as the *Cinemagician*, he used multiple exposures and time-lapse photography in his films. With his *Star Film Company* he built a large studio in Montreuil, where he created elaborate sets and recorded theatrical plays, which became part of the conjuring repertoire at the Théatre Robert-Houdin. The glass building was adapted to the size of the stage of his *Théâtre Robert-Houdin* and Méliès described the studio as the "union of the photography workshop and the theatre stage." **(Fig. 13 & 14)** But even more than in the variety theatres, the roots of cinema display within architecture lay in the fairground shows. Like the *Tableaux vivants*, the theatrical re-enactments of paintings or photographs, the moving pictures naturally became part of the fairground show business. The itinerant cinema appeared in 1896 and travelled between festivals and fairs, from city to city and even into the rural towns.[258] Initially, these were circus showmen that converted their booths by installing a screen and projector. This was such a successful undertaking that each season, new and larger buildings were constructed. Travelling caravans and decorated booths with integrated projectors and screens became known as *bioscopes*, fronted by large organs and dancing girls that entertained the audience between the changing of the film reels.[259] But in general, there was no

[256] Ibid.
[257] Chicago's World's Fair was nicknamed the White City due to its prevalence of classical architecture made with white stucco and the effects of extensive electrical street lighting along the boulevards.
[258] Ligensa, Annemone & Kreimeier, Klaus, *Film 1900: Technology, Perception, Culture*, John Libbiney Publishing Ltd., New Barnet, 2009, pp. 2-53.
[259] Ibid.

profitable reason to construct a more elaborate building for cinema as long as there was no option to show feature films. This is something that Raoul Grimion-Sanson did not yet understand. He offered the viewer a too short program in a spectacular and much too expensive surrounding. Grimion-Sanson might not have been the grand inventor of cinema he had wished to be, but he did innovate the display of cinema and constructed one of the first purpose-built architectures for film.

Afterimages in Reversed Perspective

Over a hundred years after the first manned balloon flights had lifted from the *Jardins des Tuileries* in Paris, Grimion-Sanson filmed this experience from the same elevated perspective and presented it as an actual lift-off.[260] The first balloon flights were tethered flights, and the experience was mainly about the physical sensation of levitation and viewing the perspective. From his own hot-air balloon, Félix Nadar had taken the first aerial photographs ever in 1858. Nadar wrote that in viewing the Earth's surface from above, it "reduces all things to their relative proportions – to the truth." Jules Verne had published the short story *Voyage en Ballon* in 1851, which became the script for his first novel *Five Weeks in a Balloon* in 1863. This story recounts the travels of two men across the mysterious African continent in a combination of adventurous narrative, detailed geographical research and technical information on the flight of hydrogen balloons. It popularized balloon flight to such an extent that at the 1900 exposition balloon flights lifted daily from the Champs de Mars and the Bois de Vincennes.[261] For more weary adventurers and armchair travellers, the topic of the Cinéorama would have offered the perfect go-between - if only it had lasted more then a day or two. But the Cinéorama was the first to succeed in lifting earthbound perspective in cinema.

Photography and film had altered the visible world. Besides opening invisible spectra as ultraviolet and infrared or invisible radiation with x-rays or similar devices, photography and film had altered the perception of *time*. Photography had frozen time, while film had the ability to see quicker than the human eye. "The time of vision is human time, the time of photography is the time of physics," Michel Frizot wrote.[262] David Campany wrote that "Cinema (…) was not just the invention of the moving image, it was also the invention of the stillness of photography."[263] These anachronisms abruptly became part of a chronological time that had had the same pace for thousands of years. "The stationary image of photography" had become a chronological inconsistency and the speed of film had made "the idea of a still image a conceptual

[260] The earliest balloon flights were by the hot-air balloon of the Montgolfier Brothers in October 1783 and the hydrogen balloon of the Robert Brothers just a few days later.
[261] At the same time, Count Zeppelin piloted his first airship and the Wright Brothers were experimenting with the first gliders.
[262] Frizot, Michel, "Sculpture, between Visual Perception and Photography", *Lens-based Sculptures: the Transformation of Sculpture through Photography*, edited by Herbert Molderings, 2014, pp. 56-71.
[263] "Stillness in photographs only became apparent and definitive in the presence and context of the moving image. The whole drive toward precision, the stopping of time and freezing of action takes place in the era of cinema. Cinema, we could say, was not just the invention of the moving image, it was also the invention of the stillness of photography. In the era of cinema, the frozenness of the snapshot – professionalized in photojournalism, democratized in amateurism – came to be understood as the essence of the photographic. It found its exemplary form in the middle of the twentieth century with the notion of the 'decisive moment' where the speedy modernity of the now cinematized world would be arrested by the speedy modernity of the handheld, high speed compact still camera used in conjunction with the photographer's quick reactions." Campany, David, "Safety in Numbness: Some remarks on the problems of 'Late Photography,'" *Where is the Photograph?*, edited by David Green, Photoworks/Photoforum, 2003.

impossibility."[264] Although film was only a succession of still images fused as afterimages. The velocity of the image was tested again when filmmakers started to record motions that were generally faster than the average person could experience. The panic that supposed to have overcome the public when watching Lumière's *L'Arrivée d'un train en gare de La Ciotat* was evoked by the speed from the onrushing train upon the screen.[265] Besides changing time and giving form to velocity, photography had also radically changed the perception of perspective. And film had turned this play of perspectives into an experience. Film was spectacular and illusionary, but not entirely credible. The spectator was most certainly aware that he had entered a separate space where he saw silent, black and white images. It was the camera angle in *Arrival of a Train* that created an extraordinarily perspective. The conflated reports about this frightening experience immediately inspired a new kind of actuality, "the phantom ride, in which the film was shot from a speeding locomotive by a camera mounted on the front of the engine."[266] The important development here was that rather than a still camera filming a moving object, the camera and the viewpoint of the observer were now themselves in motion. "With this shift," Nead reasoned, "film had made a significant breakthrough in its manipulation of the audience's point of view and its experience of the velocity of the image."[267]

The experience of speed, vertiginous effects and reversed perspectives were still very new at the turn of the century. At the 1900 exposition the magnificent panorama of the fair grounds could be overseen from a captive balloon ride, from the Eiffel Tower or the giant *Ferris Wheel* behind the Palace of Electricity. In the *Grand Globe Céleste*, visitors could even grasp an entire globe. **(Fig. 15)** An enormous sphere of 46 meters in diameter supported by four giant arches, showed a map of the celestial sky on its skin of bluish, transparent varnished linen.[268] At night, electric light would shine through from inside and illuminate the miniature cosmos, decorated with mythological figures, on the outside, while during the day the sun would shine through and turn the stellar constellation visible from the inside. This grand celestial globe originated from the Géoramas, which had presented the world inside out. In this case, the cosmos was viewed from a human perspective on the inside, from a rotating platform shaped as a miniature Earth, and from a divine, god-like perspective on the galaxy on the outside - especially if one stood atop the neighbouring Eiffel Tower. These interchanging perspective pavilions were all grouped together in the 'unclassified section' on the banks of the Seine, underneath the Eiffel Tower. Here, the *Globe Céleste* stood next to the *Cinéorama,* the *Mareorama*, the *Phonorama*, the *Panorama Transatlantique* and the *Palais de l'Optique.* This *Palace of Optics* probably provided the biggest shock in human perspective. Inside, visitors could gaze through the world's largest refractor telescope that brought the surface of the moon within a distance of a few miles.[269] *La Grande Lunette* magnified the moon by 10.000 times and projected images of the moon and stars from the telescope onto a giant screen, like a humongous camera obscura. **(Fig. 16)**

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[264] Nead Lynda, *The Haunted Gallery*, 2007, pp. 9-30.
[265] Ligensa, Annemone & Kreimeier, Klaus, *Film 1900*, 2009, pp. 2-53.
[266] Nead Lynda, *The Haunted Gallery*, 2007, pp. 9-30.
[267] Ibid.
[268] Benjamin noted on Le Tour du Monde in his Arcades Project: "Cineoramas. The Grand Globe Celeste: a gigantic sphere forty-six meters in diameter, where you can hear the music of Saint-Saens. Jules Claretie, 'La Vie a Paris 1900,' Paris, 1901, p. 61."
[269] Jackson, Anna, *Expo*, 2008, pp. 99-103.

In Georges Méliès's film *La lune à un mètre*, translated as *The Astronomer's Dream*, from 1898, an astronomer, played by Méliès himself, dozes off in his observatory and is visited by the moon. The astronomer finds her floating at just a meter's distance. Here Méliès worked with a quirky, but still earthbound perspective. **(Fig. 17)** This radically changed in his following astronomical attraction from 1902, *Voyage dans la Lune*, where the protagonist is travelling to the moon and obtains a lunar perspective on Earth. Loosely based on Jules Verne's *From the Earth to the Moon*, a space ship is launched from a large canon that bears a remarkable resemblance to the telescope of the Palace of Optics, and hits the moon in the eye. After some lunar adventures, the space travellers fall back from the moon on the Earth. This lunar point of view was prefigured by James Nasmyth and James Carpenter, and described by Lynda Nead:

> In a marvellous hybrid form of illustration, they made plasters of Paris models of the moon's surface from drawings by Nasmyth, which were carefully lit to simulate lunar conditions and then photographed for reproduction. These images of plaster lunar sets construct a viewpoint on the moon's surface. These viewers – one would perhaps need to refer to them at this point as spectators – are set down among the craters and volcanic mountains, looking across the landscape, rather than down on it.[270]

In Nasmyth and Carpenter's chromolithographic series *The Moon: Considered as a planet, a World and a Satellite*, first published in 1874, we can see "an eclipse of the Sun by the Earth as it would appear as seen from the moon."[271] **(Fig. 18)** These fantasized images of a lunar perspective were a prolongation of the balloon flight and fitted the aspirations of the time: to keep flying onwards. A bird's eye view was unattainable before the invention of the balloon, but had already been imagined. Soon after, reality followed in the guise of aerial photographs and films. The outer-worldly perspectives of *La lune à un mètre* and *Voyage dans la Lune* were materialized in an amusement ride at the Pan-American Exposition in Buffalo in 1901. At this world's fair, in between the two Méliès films, a cyclorama ride was created under the same title: *A Trip to the Moon*. It was a simulation of a trip to the moon passing several connected panoramas, lantern slides, film projections and lightning effects. Visitors stepped aboard a "ship" while touring stars and planets followed each other until the ride arrived on the moon and passed through the cavernous "Palace of the Man on the Moon" where "Moon Maidens" sang and danced.[272] The wish of actually travelling to the moon would eventually fulfil itself, predated by an abundance of imagery and to be followed by real footage. Until that moment would be reached, another novel cinematographic space would fulfil dreams of space travel and train aspirant astronauts in celestial navigation. The planetarium transgressed from the ancient orrery into its modern form by projecting images of the galaxy with electric light bulbs on the ceiling of a purpose-built dome-shaped structure, while planets travelled along overhead rails. It was in fact the reversed structure of the Cinéorama, which was shaped like a bowl and had the opposite perspective as the planetarium. While the planetarium was gazing into deep space, the Cinéorama intended to look back at Earth. The film experience made the outside world comprehensible and the inside a fantastic voyage into our collective memory, contained in darkened dream

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[270] Nead Lynda, *The Haunted Gallery*, 2007, pp. 219-220.
[271] Ibid.
[272] "Built by Frederick Thompson and Elmer Dundy. They went on to build the famous Luna Park on Coney Island, named after the moon." Rabinovitz, Lauren, *Electric Dreamland: Amusement Parks, Movies, and American Modernity*, Columbia University Press, New York, 2012, p. 73.

box. In the Cinéorama visitors were flying over on old Flemish towns or the Sahara, an experience that was recorded in past time. They were peeping over the edge of the balloon basket back into time, into its collective memory from a newly acquired point of view.

While photography and film presented visual histories of a century past, theories came about that even imagined the night sky as a cosmic time machine, which projected films across the universe.

> Unfettered by conventional concepts of time or space, planets and stars were imagined as gigantic projecting devices, throwing beams into outer space that bore entire histories of worlds and civilizations. If modern astronomical photography could capture images of stars that had died thousands of light years before, then it might be possible, from certain points in the galaxy, to see earth's past, borne on a continuous ray of light, projected into space.[273]

The time elapsed between when the light was originally emitted by its source and its detection was referred to as *look-back time*. This powerful sorcery of perspectives was then equally attributed to the projector and the projected image. Photography did indeed visualize uncountable events from the past century, while film was transmitting a pictorial history of the past years. The new medium of film had the ambition to record and visualize the world's history and allowed for the first time ever a moment of actually looking back on a reality lived.

Before cinema became integrated in permanent and adapted buildings, it had a short history of experimental spaces of all sorts, roughly between 1896 and 1906. The simulation of spectacular perspectives through projection had the consequence that special containers had to be built to reconstitute the projected light on an adapted surface. It rapidly formed a synthesis of projection and architecture, simply because they were interdependent. The recording as well as the projection presumed a special darkened space and the perspective of the recording prefigured the projection space. The fairground bioscopes grew quickly into excessive architectural attractions. The Cinéorama had adapted that space to the precise form of the perspective. But the speed of cinema had surpassed that of human perception. According to Oettermann, its demise was obvious:

> The human eye is incapable of taking in a 360 degrees range of images at one time, and unlike the still pictures of a painted or photographic panorama, a film does not give the spectator time to walk around and absorb the whole. At least 180 degrees of the projection are thus wasted and not worth the expense of the complicated technology.[274]

The cinematographic panorama was replaced by single lens projections. Experimental cinematographic buildings gradually died out as permanent cinemas with single rectangular screens took away their audiences. These cinemas grew parallel to the first feature films. In these black boxes, film was plainly beamed straight ahead onto an opaque surface. They were variants of the theatre or opera building where cinema

[273] Nead Lynda, *The Haunted Gallery*, 2007, p. 203.
[274] Oettermann, Stephan, *The Panorama*, 1997, pp. 83-90.

connected to the longer narrative of story plots and where the visitor adopted similar behavioural patterns of sitting silently in designated seating areas. The permanent urban cinema appeared in significant numbers around 1906 and gradually pushed itinerant and experimental cinemas out of the market. In just ten years, early film entrepreneurs had introduced remarkable innovations in cinema architecture, to eventually conform in the modern cinema complex.

Just five years after the invention of film, Grimion-Sanson had recorded reality, presented it as a factual happening and enhanced this spatial-temporal dimension of look-back time by creating a realistic panoramic environment. Like the camera obscura and lantern slide shows had prefigured projected film and cinematographic spaces, the panoramas and dioramas had formulated purpose-built cinematographic spaces. At the turn of the century, on the *Exposition Universelle et Internationale de Paris 1900,* film and architecture had reached an equilibrium that marked a significant turn in media history: an immersive multimedia experience in perfect synthesis.

10.

Framing Pictorialism

The concept *architecture of photography* holds a multitude of meanings. It can refer to photographing architecture, to the influence photography has on an architectural design, to the interference of spatial structures with the camera obscura principle, to purpose built photographer's studios, or to cinematographic spaces. At the dawn of the 20th century, it can be mainly interpreted as the influence of exhibition design on the photographic object. Quintessential was the conceptual change in perception of the photographic image as a two-dimensional virtual window into the photographic object with a physical consistency, a three-dimensional *object d'art*.

The discussion if photography is art is as old as the medium's invention. And it became more complex as it progressed in time. A few decades after Daguerre and Bayard were producing unique artistic images, photography had democratized into an ubiquitous medium of mass multiplication. By the end of the 19th century, photography was so far removed from artistic connotations that a natural desire surfaced to reconnect the medium to the fine arts. The solution was sought in the unique print, made original by chemical manipulation, a precise selection of papers, and especially, the addition of colour and painterly handwork with brushes and pigments. The attention in the photographic process shifted from recording to printing images. The recording of a straightforward negative was regarded as an unavoidable first phase, the creation of a multipliable impalpable image, while the printing and treatment of the negative was regarded as the creation of a unique, palpable work of art. This aesthetic approach to photography was used to mirror the analogous developments in the fine arts, and expressed that it was a medium fully capable of artistic expression.

In the 1890s, the photographic world underwent radical change. In different cities across Europe, groups of photographers broke away from established photographic societies to form new *secessions*. Generally naming their movement *Pictorialism*, after a pioneering essay by Peter Henry Emerson, these groups devoted themselves to making photography an art.[275] "I would say," wrote Emerson, "the modern school of painting and photography are at one." Mostly relating to painting, the secessionists, such as the international *Brotherhood of the Linked Ring*, sought inspiration in the Pre-Raphaelite Brotherhood, Impressionist painters such as Degas, Claude Monet, James McNeill Whistler, and Symbolist painters such as Puvis de Chavannes, Arnold Böcklin and Franz von Stuck. "All these groups were looking to free photography from its documentary and technical stranglehold and to use it as a more impressionistic and flexible tool to realize a valid form of artistic expression."[276]

[275] "In closing, I would say, the modern school of painting and photography are at one; their aims are similar, their principles are rational, and they link one into the other; and will in time, I feel confident, walk hand in hand, the two survivals of the fittest." Emerson, Peter Henry, "Photography: A Pictorial Art," *Photography: Essays & Images*, edited by Beaumont Newhall, The Museum of Modern Art, New York, 1980, p. 162.
[276] Roberts, Pam, "Alfred Stieglitz, 291 Gallery and Camera Work," *Alfred Stieglitz - Camera Work: The Complete Photographs 1903-1917*, edited by Simone Philippi and Ute Kieseyer, Tashen GmbH, Cologne, 2013, p. 10.

Besides creative strategies, the new artistic photographers were strongly influenced by the emergence of avant-garde display strategies. In the second half of the 19th century fine art exhibitions had become more differentiated and independent. The world's fairs had given space to contemporary artists and led to the creation of independent international art exhibitions throughout Europe.[277] The traditional salon-style presentation had shifted simultaneously with the economic conditions; from skied large-scale tableaux's for the aristocracy's castles to smaller individually hung paintings for the smaller houses of the *nouveaux riches*. In Great Britain, the skying of paintings had been banned at the Royal Academy exhibitions, and in France artists started challenging the aesthetic authority of the *Académie des Beaux Arts* after the famed *Salon des Réfusés* of 1863.[278] For the first time artist-organized exhibitions were held in alternative, private spaces, which provided a much freer environment for artists to experiment with the mise-en-scène of their work. A major change was made in the *First Impressionist Exhibition* in 1874, which was mounted in the former studio of the photographer Nadar.[279] The "strong red walls of the Salon" were replaced by "subtly coloured backgrounds," and Edgar Degas, "as a member of the hanging committee," arranged "the paintings in just two horizontal rows."[280] The Impressionists and the Neo-Impressionists gradually harmonized the exhibition space with their work by spaciously spreading paintings in a single horizontal row and syncing the colour of the walls to the colour of the paintings' frames.

> As a consequence of the revaluation of the medium as an art form, its manner of display was transformed. Although at the beginning, prints were intermingled with no regard for their format, subject or creator, photographs were increasingly treated as unique images.[281]

Installation views of these exhibitions are rare, but two installation views of the *Grafton Galleries* in London offer a good visual explanation of the evolution of exhibition display between the last decade of the 19th century and the first decade of the 20th. The first image was taken in 1893 when the galleries opened, and the second was from 1905 when the first major exhibition of Impressionist painting in Britain was held. Comparing the two, they clearly indicate the change in display strategies. **(Fig. 1 & 2)**

International exhibitions of 'artistic' photography had taken place before, but when the second *International Exhibition of Artist Photography* opened in the Viennese Imperial Royal Austrian Museum of Art and Industry in 1891, it was the very first time that a museum accepted photographs "solely on the basis of their aesthetic virtues."[282] That meant that it was no longer necessary to exhibit the entire spectrum of tools and applicable uses of the medium, and that it had become time to single out artistic photography. The exhibition design was however still based on the traditional tiered salon-style presentation. "Arranged in grid-like assemblages, according to country and

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[277] Altshuler, Bruce, *Salon to Biennial: Exhibitions That Made Art History. Volume I: 1863-1959*, Phaidon Press Limited, London, 2008, pp. 16-17.
[278] Ibid.
[279] Ibid.
[280] Ibid., p. 35.
[281] Pohlmann, Ulrich, "Les premières expositions de la photographie," *Photoshow: Landmark exhibitions that defined the history of photography*, edited by Alessandra Mauro, Thames & Hudson Ltd, London, 2014, p. 126.
[282] Spencer, David, "The 1891 Vienna International Exhibition of Artistic Photography: The Birth of Picture-Making and an End to Prejudice and Misunderstanding," *Photoshow*, edited by Alessandra Mauro, 2014, p. 86.

photographer, the works - both framed and unframed - were individually mounted on cardboard and displayed on walls and dividing partitions."[283] In an open call for participation, the organizing *Club of Amateur Photographers,* communicated that "Every picture, not smaller than twelve centimetres by nine centimetres, must be mounted on a separate cardboard, with or without a frame. Suitable frames will be supplied by the Club free of charge."[284] It was the first institutional exhibition that treated photography as a purely artistic medium, and despite the lack of mimetic behaviour when it came to exhibition design, photography and the fine arts increasingly approached one another.

Framing Sculptural Motion

The invention of photography had indirectly liberated the fine arts from depicting reality, and had paved the way for Impressionism. But the medium burdened itself with the role of reporting reality. It wasn't until the moving image partially replaced that duty, that photography could aspire a purely artistic role. As a consequence, cinematography had in some ways paved the way for Pictorialism. Where photography, before cinematography, was associated with the notion of speed, it was from then onwards a medium of stillness, associated with a point of absolute rest that leaned more towards the stationary nature of the fine arts.[285] The ephemeral window of cinema, projecting a bodiless, illusionistic reality, emphasized the material presence of the photographic object. Suddenly, the photograph had become a captured, frozen moment, solidified in matter.

The invention of cinema had another consequence, besides turning photography into a more artistic medium. It introduced a narrative chronological storyline. The sequential plot of cause and effect was introduced in the press world and inspired photographic stories in the arts. As a concept, this was entirely different from the anachronistic, simultaneous collective reception of the salon style hanging. The kaleidoscopic, myriad viewing of the tiered symmetrical salon style was gradually replaced by the single, linear row, caused in part, by the invention of cinema. The sequential technique of 'a story unfolding' quickly transpired in the photographic world and has been used ever since.

One of the earliest and clearest examples of this evolution is the work *The Seven Words* by Fred Holland Day (1864 - 1933). Day was a North-American photographer and publisher from Boston. From 1895 to 1898 he worked on the first photographic visualization of the *Life of Christ*, from the *Annunciation* to the *Ascension*. This classic narrative cycle became an extensive series of about 250 negatives and countless prints, in which he himself posed as a starved, bearded model with a staged cross in his backyard. As a part of his re-enacted *Crucifixion* cycle, he made a series of close-up self-portraits that represented the words of Jesus spoken from the cross.[286] In this work, he skilfully balanced between several media and captured the confused artistic zeitgeist that shifted across the spectrum of visual media: he created photographs that resembled

[283] Ibid.
[284] Wilson, Edward, L., "The World's Photography Focused", Wilson's Photographic Magazine vol. XXVII, 4 October 1890, pp. 604-605, quoted in Mauro, Alessandra, *Photoshow*, 2014, pp. 85-86.
[285] Nead, Lynda, *The Haunted Gallery: Painting, Photography, Film c. 1900*, Yale University Press, New Haven, 2007, p. 11.
[286] The seven last sentences spoken by Jesus were assumed to be: "FATHER FORGIVE THEM; THEY KNOW NOT WHAT THEY DO. TODAY THOU SHALT BE WITH ME IN PARADISE. WOMAN, BEHOLD THY SON; SON, THY MOTHER. MY GOD, MY GOD, WHY HAST THOU FORSAKEN ME? I THIRST. INTO THY HANDS I COMMEND MY SPIRIT. IT IS FINISHED."

drawings, sequenced them in a cinematographic sequential storyboard, added written text and framed them as stationary paintings. The frame became an essential part of his work, a meta-structure through which he could combine these different media. The gilded frame referred to Renaissance painting and the canonical Greek architectural orders. Freestanding Corinthian columns flanked both sides of the frame and slimmer Ionic columns functioned as intervals to chronologically sequence the seven photographs. The frieze was used to unravel the Saviour's last words in carved inscriptions. This might have been the first moment in history where photography, architecture and the fine arts aligned to create, in all modesty, a hybrid form of these arts. Combined with the sacred subject, the work of art became a piece of devotional architecture, a temple of photography. **(Fig. 3 & 4)**

The Greek or Romanesque temple structure Day applied to his work was strongly influenced by framing methods used in the Renaissance and was known as the *architectural frame*. The architectural frame was reintroduced by the Pre-Raphaelites, halfway the 19th century. The influence of the Pre-Raphaelite Brotherhood on Day was very visible and it was not surprising that he copied their framing methods. The set-up of *The Seven Words* strongly resembles the work *Pygmalion and the Image* by Sir Edward Burne-Jones. **(Fig. 5 & 6)** Like The Seven Words, this masterpiece was based on a pre-existing story, the tale of Pygmalion from Ovid's Metamorphoses, which is explained in several sequences. In a series of four oil paintings, completed between 1875 and 1878, Burne-Jones unravels the story of a sculptor who creates the statue of a perfect woman, which at the end, comes to life. Lynda Nead wrote about these works that they addressed the idea of motion in the plot of the story and emphasized this by using several sequences, provided with text. At the same time, Burne-Jones emphasized the stillness of the paintings with highly ornamented architectural frames. In closely imitating the fine arts, Day sought inspiration among his contemporaries, not only in working methods and subject matter, but especially in framing and exhibiting his pieces. Day himself wrote that "mounting and framing his prints was 'more than half the battle,' and that 'my pictures mounted by others would no longer be mine.'"[287] He emphasized that he "devote[d] just as much attention to framing and hanging as he does to the composition of the pictures themselves."[288] In his work, it was clear that the photographic art gradually underwent the same developments in display strategies – framing and hanging - as painting, only with a slower pace.

The synergy between photography and the fine arts was initially steered from a Pictorialist's aspiration, since the belief that painting and photography were antithetical was still widely held by the painters and critics of the time. Although emulsified canvas was secretly used by many painters, only a handful of artists like Degas, openly used and praised the medium. It were especially the avant-garde sculptors who had a very different and embracing approach to photography. With new developments in photomechanical printing techniques, the demand for photographic reproductions grew extensively. In contrast to painting, the reproduction of a sculpture was not merely a cut-out of the image, but an installation view. The depiction of the physical object

[287] F. Holland Day to Alfred Stieglitz, 1898, quoted in Carl Sandburg, *Steichen: The Photographer*, Harcourt Brace, New York, 1929, p. 23; Lugon, Olivier, "Edward Steichen as Exhibition Designer," *Edward Steichen: Lives in Photography*, edited by T. Brandow and William A. Ewing, Thames & Hudson, London, 2007, p. 267.
[288] "Exhibition of F. H. Day's Work," in Camera Notes I, no.4, April 1898, quoted in Brandow, T. & Ewing, William A., *Edward Steichen: Lives in Photography*, 2007, p. 273.

became increasingly important and emphasized the *mise-en-scène* as a dynamic, sculptural and photographical tool.

For his partaking in the *Exposition Universelle et Internationale de Paris* in 1900, Auguste Rodin (1840-1917) had designed and constructed his very own pavilion on the Place de l'Alma, where he exhibited his sculptures in correspondence with drawings and a series of photographs. **(Fig. 7)** The 71 photographs on display, taken by Eugène Druet, were installation views and fragmentary details of his sculptures.[289] The photographs were displayed in simple wooden frames without any ornamentation and hung side by side, from corner to corner, in three rows above one another. Rodin, who had once said that "it is the artist who is truthful and photography that lies, because in reality time does not stop," had fully embraced the medium and was the first artist to exhibit photography on such a grand scale.[290] The display in his private pavilion was a bold statement to make to an international audience and proved how close the fine arts had approached photography.

The initial use for recording installation views gradually expanded to an incorporated study-practice to visualize sculptural motion. After the revelations of François Willème and Etienne-Jules Marey's *photosculpture* experiments, artists such as Rodin and Medardo Rosso (1858 - 1928) synchronized photography with sculpture through a process of formal simplification in order to insert motion in their sculptures. Where the *photosculpture* process was a sort of reversed Pygmalion story, converting motion into solid matter instead of bringing life to inanimate sculptures, the ideas of Rodin and Rosso progressed beyond the deconstruction of movement in search of transcending these material boundaries. Photography became an instrument in their working methods to reflect on new ways of transforming the work. Rosso had used photography "to correct ideas in wax drafts before moving on to the final stages of bronze sculptures, altering their perspectives and proportions."[291] Using artificial light, soft focus, post-production in the printing process, and shifting camera positions, his sculptures came alive. Rosso and Rodin started using photography as an inherent part of the creation process. They also started using the medium to publish installation views and became the first artists who exhibited their photographs as a part of their practice. Rosso received special attention in the *Salon d'Automne* from 1904, where he displayed his photographs in close relation to his sculptures. Stacked in rows above one other, the photographs of Rosso were topped by Rodin's photographs.[292] **(Fig. 8)** As such, they

[289] "Until Auguste Rodin's installation incorporating photography into an exhibition of sculptural works in conjunction with the 1900 Paris Exposition Universelle, the display of photography at the fairs did not change dramatically. In his first solo exhibition in France, Rodin erected a specially constructed pavilion on the *Place de l'Alma*, in a groundbreaking installation that covered his entire career and integrated sculpture, drawings and photography. Over 140 works of sculpture were displayed, many in plaster, others unfinished and fragmentary. Also included was a wall of 71 images by Eugène Druet, an amateur photographer and organizer, with Rodin, of the installation. The images, which show cropped details or pieces of the sculptures, and, in conjunction with the plaster models, clearly indicated Rodin's creative process." Futter, Catherine L., "Concentrating the Message: Photography at World's Fairs," *The Future of Yesterday*, edited by Ives Maes, Ludion, Antwerp, 2013, pp. 16-17.

[290] "It is the artist who is truthful and it is photography which lies, for in reality time does not stop, and if the artist succeeds in producing the impression of a movement which takes several moments for accomplishment, his work is certainly much less conventional than the scientific image, where time is abruptly suspended." Rodin, Auguste & Gsell, Paul, *Rodin on Art and Artists: Conversations with Paul Gsell*, Courier Dover Publications, New York, 1983.

[291] Giusti, Lorenzo, "Recent examples of encounters between sculpture and photography," The Camera's Blind Spot: Sculpture – Photography, recent examples, edited by Simone Menegoi, MAN Museo d'Arte Provincia di Nuoro, 2013, pp. 11-13.

[292] Schallenberg, Nina, "Mise-en-scène als sculpturaal middel," *Brancusi, Rosso, Man Ray: Framing sculpture*, edited by Peter Van der Coelen and Francesco Stocchi, Museum Boijmans van Beuningen, Rotterdam, 2014, pp. 19-33.

were highly influential in the development of display strategies within the photographic medium.

Framing Exhibition Display

The influence of Rodin on the young Edward Steichen (1879 – 1973) was great. In July 1900, Steichen travelled to Paris and visited Rodin's pavilion on the grounds of the Exposition Universelle. Steichen's work was included in *The New School of American Photography*, an extensive Pictorialist exhibition organized by Fred Holland Day for the Royal Photographic Society in London in 1900. The exhibition travelled in 1901 to the *Photo-Club de Paris*, the French secession established in 1894, where he became acquainted with Rodin and Eugène Druet.[293] He entered an enduring relation with the famous sculptor, photographing the artist as much as his work. These images became symbolic of the dialogue between photography and sculpture. **(Fig. 9)**

Before his departure to London and Paris in 1900, Steichen had also met the photographer Alfred Stieglitz (1864 – 1946) in New York. In 1902 he reconnected to Stieglitz and together they founded the *Photo-Secession* in New York. It was to become the North-American counterpart of the radical photo-clubs in Europe and shared similar principles. Stieglitz, who was an artist, photographer and publisher of the photographic periodical *Camera Work*, had the even greater ambition "to create an association for organizing exhibitions in museums and at international fairs" that would showcase Pictorial "photography in dialogue with the other arts" - just like Rodin had done before.[294] In 1904 it led to the first exhibition of Pictorialist photography in a museum, when *Photo-Secession: a collection of American Pictorial Photographs* opened at the Corcoran Gallery of Art in Washington.[295] In November 1905 they opened their own exhibition space, in the same building in which Steichen had his studio, under the name *Little Galleries of the Photo-Secession,* commonly known as *291* in reference to their address on 5th Avenue. In 1906, the opening of the gallery was announced in *Camera Work number 14*:

> Heretofore, with but two or three exceptions, photographs have not been shown to their best advantage; the crowding of exhibits, the garish, or, still worse, insufficient light, the incongruous colour-scheme have certainly not helped in affording the public an opportunity of satisfactorily studying pictorial photographs. With these facts in mind, the Secession Galleries were arranged so

[293] "In April leaves Milwaukee and travels to New York en route to Paris. May 17: presents himself to the Camera Club in New York. Meets Stieglitz. In July sets sail to Paris, where he steeps himself in exhibitions of painting and visits Auguste Rodin's pavilion. In September travels to London. October 10 – November 8: 21 of his photographs are included in the "New School of American Photography" organized by Fred Holland Day and hosted by the Royal Photographic Society in London. Steichen had shown his portfolio to Day while assisting him with the installation of the show, at which point Day decided to include Steichen's work in the exhibition. 1901: February 22 - March 10: the exhibition originally held at the Royal Photographic Society in London opens in a new version at the Photo-club de Paris, including 35 photographs by Steichen. Is elected to join the Linked Ring and becomes its youngest member. In the fall, is introduced to Rodin by Fritz Thaulow. The sculptor is impressed by Steichen's portfolio and invites him to attend the regular banquets. Rodin buys several prints." Herschdorfer, Nathalie, "Chronology," *Edward Steichen: Lives in Photography*, edited by T. Brandow and William A. Ewing, 2007, pp. 293-307.

[294] Mauro, Alessandra, "Alfred Stieglitz and 291," *Photoshow*, edited by Alessandra Mauro, 2014, p. 104.

[295] "1904: 'photo-secession: a collection of American pictorial photographs' exhibition at the Corcoran Gallery of Art in Washington." Herschdorfer, Nathalie, "Chronology," *Edward Steichen: Lives in Photography*, edited by T. Brandow and William A. Ewing, 2007, pp. 293-307.

> as to permit each individual photograph to be shown to the very best advantage. The lighting is so arranged that the visitor is in a soft, diffused light while the pictures receive the direct illumination from a skylight; the artificial lights are used as decorative spots as well as for their usefulness. One room is kept in dull olive tones, the burlap wall-covering being a warm olive gray; the woodwork and mouldings similar in general colour, but considerably darker. The hangings are of an olive-sepia sateen, and the ceiling and canopy are of a very deep creamy gray. The small room is designed especially to show prints on very light mounts or in white frames. The walls of this room are covered with a bleached natural burlap; the woodwork and moulding are pure white; the hangings a dull ecru. The third room is decorated in gray-blue, dull salmon and olive-gray. In all the rooms, the lampshades match the wall-coverings.[296]

The same Camera Work issue shared four installation shots by Stieglitz, which visualized the decorative arrangement of the *Little Galleries*, "in part designed by Steichen and showing his work on the walls."[297] **(Fig. 10)** In these images, it is visible how intense the influence of the European avant-garde exhibitions had been on Steichen and Stieglitz. The gallery walls were all in a tint of grey to almost white. The frames were "thin, squared off, sometimes painted black or white, or decorated by the artists themselves." And the exhibited works were usually presented "in a single horizontal line."[298] This strategy of rarity and sparseness suggested a strict qualitative selection and presented the photographs as autonomous, unique works of art. By deploying these new display strategies used by the Impressionists and Neo-Impressionists, photography was placed on the same level as the other arts. Through its placement, its *décor* and exhibition design, photography managed to break out of the narrow confines of photographic practice.[299]

Emerson had written in his 1886 essay that until photography "can reproduce the colours of nature, we can never equal painting." Colour and abstraction were the only vestiges painting still had over photography. With the introduction of adequate colour processes, through the invention of the *Autochrome* by the Lumière brothers in 1907, Pictorial photography came very close to painting.[300] By 1908, Matisse wrote in *Camera Work* that "done by a man of taste, a photograph appears like a work of art."[301] This belief was strengthened by frequently introducing exhibitions of avant-garde art in the Photo-Secession. In January 1908 the first overseas exhibition of Rodin opened in the Little Galleries, with 58 original drawings and watercolours.[302] The work of photographers interacted with artists such as Cézanne and Picasso. *Autochrome* colour

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[296] The editors from Camera Work, "The Photo-Secession Galleries," in Camera Work no. 14, New York, 1906, p. 48, quoted in Philippi, Simone & Kieseyer, Ute, *Alfred Stieglitz - Camera Work*, 2013, pp. 24-25.
[297] Roberts, Pam, "Alfred Stieglitz, 291 Gallery and Camera Work," *Alfred Stieglitz - Camera Work*, edited by Simone Philippi and Ute Kieseyer, 2013, p. 23.
[298] Mauro, Alessandra, "Alfred Stieglitz and 291," *Photoshow*, edited by Alessandra Mauro, 2014, pp. 108-109.
[299] Lugon, Olivier, "Edward Steichen as Exhibition Designer," *Edward Steichen: Lives in Photography*, edited by T. Brandow and William A. Ewing, 2007, pp. 267-273.
[300] "1907: at the Photo-Club de Paris, Steichen and Stieglitz attend the Lumière Brothers presentation of the Autochrome process." Herschdorfer, Nathalie, "Chronology," *Edward Steichen: Lives in Photography*, edited by T. Brandow and William A. Ewing, 2007, pp. 293-307. Steichen became one of the first practitioners of the *Autochrome Lumière* process, the first workable colour transparency process first marketed in 1907, and premiered colour photography in the United States.
[301] Stieglitz, Alfred, *Camera Work n° 24*, October 1908, pp. 13-23.
[302] Roberts, Pam, "Alfred Stieglitz, 291 Gallery and Camera Work," *Alfred Stieglitz - Camera Work*, edited by Simone Philippi and Ute Kieseyer, 2013, p. 20.

prints by Steichen were shown right before an exhibition of drawings by Matisse, and just after an exhibition of lithographs by Henri Toulouse Lautrec, suggesting that photography was now recognized as an additional medium of artistic expression. In doing so, Steichen and "Stieglitz had succeeded in placing photography at the very centre of the evolving discourse on modernism."[303]

This success cumulated in the achievement of Stieglitz' wish to place exhibitions of photography in dialogue with the fine arts "in museums and at international fairs." In 1906 the *Exhibition of Photographs arranged by the Photo-Secession* was held at the Pennsylvania Academy of the Fine Arts in Philadelphia and in 1910 Stieglitz was asked by the Albright Art Gallery in Buffalo to arrange a large exhibition of Pictorial photography.[304] The Albright Art Gallery was built as the *Fine Arts Pavilion* for the *Pan-American Exposition*, Buffalo's World's Fair of 1901, and remained as a permanent structure. It was the newest Museum of Art in the United States and as such, was highly influential at the time. While the location backed photography's claim to art, the exhibition design confirmed how much photography had approached the fine arts. "Stieglitz was given complete control of the selection and organization of the exhibition, with eight rooms at his disposal."[305] 600 photographs by 65 artists were exhibited, spaciously hung in single horizontal lines on a soft background, suggesting aesthetic autonomy. The neutral white or grey frames were on track with the upcoming preference for simple wooden frames without any ornamentation. Perhaps there could be doubts about the avant-garde intentions of hanging work in a single row at the Little Galleries, since the low ceiling and the high wooden panelling didn't leave much open space, but there is absolutely no doubt of Stieglitz intentions at the Albright Art Gallery: photography had synchronized with the avant-garde exhibition methods that were well on the way towards the modernist white cube. **(Fig. 11)**

It was an even more victorious moment when the museum bought twelve Pictorialist photographs from the exhibition to add to their collection. It signalled that photography had been officially recognized and institutionalized by an important museum. Stieglitz wrote:

> The exhibition was without doubt the most important that has been held up to now. Only the most select, the best things that exist, and only *originals* except for about 20 gravures, which were originals in their way. The Albright Art Gallery is the most beautiful gallery in America. The exhibition made such a deep artistic impression that the institute bought 12 pictures at a good price and has put aside a gallery for them. This gallery will be maintained permanently. So at last the dream that I had in Berlin in 1885 has become a reality – the complete acknowledgment of photography by an important institution."[306]

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[303] Greenough, Sarah, "Rebellious Midwife to a Thousand Ideas," *Modern Art and America: Alfred Stieglitz and his New York Galleries*, National Gallery of Art, Washington D.C., 2001, p. 41.
[304] "1910: November 3 – December 1: Steichen shows 31 photographs in Buffalo. 600 prints by 65 artists." Herschdorfer, Nathalie, "Chronology," *Edward Steichen: Lives in Photography*, edited by T. Brandow and William A. Ewing, 2007, pp. 293-307.
[305] Greenough, Sarah, "Alfred Stieglitz and 'The Idea Photography,'" *Alfred Stieglitz: Photographs and Writings*, National Gallery of Art, Washington D.C., 1983, p. 16.
[306] Stieglitz, Alfred, autograph letter in German to Ernst Juhl, January 6, 1911, quoted in Newhall, Beaumont, *Photography: Essays & Images*, 1980, p. 189.

Pictorialism framed

It was however to become only a brief moment of victory. Stieglitz himself signalled a new change, shortly after the Buffalo exhibition, when he called out for *true* photography: pure, straight and sharp. In imitating the arts, he reasoned in retrospect, photography had failed to explore that it was essentially different from the other arts. Stieglitz directed his attention away from Pictorialism and onto exhibiting the newest art from Europe. He started to show more art than photography in the Little Galleries, and clearly distinguished the new *straight* photography as a separate medium from the other visual media. After photography and its modes of display had finally caught up with the avant-garde in the arts, new tendencies had already arisen in Europe, with one common denominator that strived for the exact opposite of straight reality: pure abstraction. When the new experimental styles from Europe - Fauvism, Cubism and Futurism - were on display at the *International Exhibition of Modern Art* in 1913, better known as the *Armory Show*, photography was entirely excluded from participation.

Like Stieglitz' focus had shifted towards art, the avant-garde's interest in photography had also radically shifted. During the Armory Show, Stieglitz had his own new work on display in the Little Galleries, but it was Marcel Duchamp (1887 - 1968) who shocked the audience of the Armory show with his painting *Nu descendant un escalier*.[307] *Nude Descending a Staircase* was a radical work of art that expressed sequenced motion with successive, superimposed images in one perfectly stationary painting. It openly indicated that photography was at the heart of its creation. Cubism and Futurism had fully embraced the photographic medium. Engaging in what was referred to as *Photodynamism*, the transcendental recording of motion became primordial to achieve abstraction. Strongly influenced by cinematography and the experiments of Etienne-Jules Marey, artists like the brothers Duchamp and Umberto Boccioni and Constantin Brancusi had fully incorporated (chrono-)photography into their practice.[308] In an attempt to harmonize the essentially different objectives of straight photography and abstract art, Stieglitz exhibited Brancusi, the straight photographer Paul Strand and the Futurist painter Gino Severini in the Little Galleries. In 1917, the same year he closed his gallery, Stieglitz exhibited Duchamp's *Fountain*, after it was rejected by the selection committee of the *Exhibition of the Society of Independent Artists* in New York. He photographed the ready-made object on Duchamp's request, being the only remaining record of the original urinal. It was reproduced in the avant-garde magazine *The Blind Man* with the caption *Fountain by R. Mutt, Photograph by Alfred Stieglitz, The exhibit refused by the Independents* and the following comment:

> Whether Mr. Mutt made the fountain with his own hands or not has no importance. He *chose* it. He took an article of life, placed it so that its useful significance disappeared under the new title and point of view – created a new thought for that object.[309]

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[307] *Nude Descending a Staircase No. 2* was painted in 1912 and first displayed in the *Salon des Indépendants* in Paris in the same year. When it was shown in the *Cubist Room* of the Armory Show, queues were lining up in front of the work, thirsty for sensation after a series of negative press reviews naming it the most scandalous work in the "Chamber of Horrors." Altshuler, Bruce, *Salon to Biennial*, 2008, p. 153.

[308] Duchamp recognized the influence of the *chronophotography* experiments of Etienne-Jules Marey and Eadward Muybridge. The first Futurist Manifesto of 1909 also clearly references Marey's work.

[309] Published in *The Blind Man*. The Blind Man was a journal published briefly by the New York Dadaists in 1917.

Here, "photography became not only an instrument for legitimizing the work of art, but an unavoidable element assigning it value."[310] The Dadaist *anti-art* experimentation of Duchamp superseded any lasting distinctions between the visual media. His interdisciplinary practice resonated loudly within the artistic processes of the time. It proved that the *fine* arts had expanded into *visual* arts. Visual art had not only assimilated photography into its practice, it had become essentially photographic. **(Fig. 12)**

This radical assimilation provoked a schism between the photographic medium and the photography-based practice in the visual arts. Although Pictorialist photography had succeeded in placing photography at the very core of the visual arts, by using exclusive printing, new framing methods, adjusted display techniques and a deliberate strategy to exhibit photography within the artistic hierarchy, it had excluded itself as an essentially different medium. After nearly twenty years, the conceptual efforts of the Pictorialists resulted into a complete incorporation within the visual arts.

Oppositely, the desire of photography to become part of the arts had evaporated in the light of a new social era into a necessity precisely for a distinctly photographical and multipliable medium. The poetic Pictorialist contraction *Camera Work* would attain an entirely different meaning during the Great War, where it shifted from a *work* of art into a propagandistic verb. The harsh, obliterating realities of the catastrophic war demanded serious press coverage and propelled the photographic medium into straight photography, documentary reportage, mass propaganda and an entirely different array of display strategies.

The installation views of the Grafton Galleries again offer good insight on the evolution of display strategies. After organizing crucial modernist exhibitions such as *Manet and the Post-Impressionists* in 1910 and the *Second Post-Impressionist Exhibition* in 1912, the gallery hosted the first exhibition of photography in 1917. Following the breakout of World War I, several overcrowded exhibitions of official war photography were held, showing monumental, artificially coloured photomontages of battle scenes as if it were historic panorama paintings.[311] These shows exchanged the size of photographically inspired architectures for the architectural size of the print and conceptually connected the large tableau format and the tiered salon-style hanging of photography to propagandistic display strategies. **(Fig. 13 & 14)**

[310] Giusti, Lorenzo, "Recent examples of encounters between sculpture and photography," *The Camera's Blind Spot*, edited by Simone Menegoi, 2013, pp. 11-13.
[311] Henneman, Inge, *Shooting Range: Photography and The Great War*, AsaMER, Ghent, 2014, pp. 56-63.

11.

El Lissitzky's Photographic Environment

The first synthesis between photography and architecture, a fusion that went beyond the practical needs of interdependency between the two media in order to create an entirely new hybrid, was El Lissitzky's design for the *Soviet Section* at the *International Press Exhibition* in Cologne.

The *Internationale Presse-Ausstellung*, or *Pressa* in short, was an extensive showcase of modern press, publishing, and advertising, held between May and October 1928. Pressa was a smaller, *specialized* world's fair with communal exhibition halls and a specific topic. Post-war Germany was indebted in war reparations with hyperinflation as a result and could hardly afford a world exhibition of a *universal* nature. Moreover, the German state still held tensed relationships with its victors, and the prospect of having few international participants was real. After being barred in 1925 from the *International Exhibition of Modern Decorative and Industrial Arts* in Paris, the Pressa exhibition indicated the slow rehabilitation of Germany, under the democratic *Weimar Republic*. Along the banks of the Rhine a site was "adapted from a combination of barracks, the remaining buildings from the 1914 *Deutscher Werkbund Exhibition* and newly built pavilions."[312] **(Fig. 1 & 2)** These prefabricated halls and temporary pavilions hosted the national and international exhibitors, 24 countries in total, who had accepted the German invitation to inform an audience of more than five million visitors on the state of affairs of journalistic culture in their respective countries.

The foundations for the mass media had been laid during the First World War. The atrocities of war had demanded press coverage and photojournalism. Due to the perfection of photogravure, half tone and offset printing, the printed press had evolved rapidly into photographically illustrated news stories. The photographic image held communicative powers that reinforced, even transcended, the written word. By using these new printing techniques, photographs could be fully assimilated into the linguistic outlines of newspapers and weekly magazines.[313] By the 1920s, newly founded press agencies and rapid distribution processes made the photographic image the keystone of modern press.[314] The accessibility and truthfulness of photography made the illustrated press, and alongside commercial advertising and photographic books, more powerful than the written word, scarce radio broadcasts and cinematic newsreels.

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[312] Aynsley, Jeremy, "Pressa, Cologne, 1928. Exhibitions and Publication Design in the Weimar period," *Public Photographic Spaces: Exhibitions of Propaganda, from Pressa to The Family of Man, 1928-55*, edited by Jorge Ribalta, MACBA, Barcelona, 2009, p. 84. The *Deutscher Werkbund* was founded in 1907 as a state sponsored association of architects, artists, craftsmen and designers that established partnerships between the artist-creator and the industrial producer. The *Werkbund* organized large-scale exhibitions, such as the 1914 exhibition in Cologne, the famous *Weissenhof* architecture exhibition of 1927, and *Film und Foto* in 1929. The *Werkbund* was closed by the Fascist regime in 1934 and reopened in 1950.

[313] Albert, Pierre & Feyel, Gilles, "Photography and the Media: Changes in the Illustrated Press," *A New History of Photography*, edited by Michel Frizot, Könemann Verlagsgesellschaft mbH, Köln, 1998, pp. 358-369.

[314] Prior to the 1920s, the time lapsed between the occurrence of the event and the arrival of the photographic proof was too long to be relevant for daily newspapers. For weekly and monthly magazines this was less of a challenge.

This power was especially embraced in the new states of Weimar Germany and Soviet Russia, where a new vision on society was being composed and communicated trough photographic imagery. The socialist movements in both states regarded photography as a more truthful report of reality, more comprehensible and dispersible to the masses - thus more social, as opposed to the elitist uniqueness of the visual arts. At Pressa, this difference was particularly visible between the established newspapers of the 'old world' that still favoured engraved illustrations and the amount of reproduced photographs in the revolutionary Soviet newspaper *Pravda* and the German *Arbeiter Illustrierte Zeitung.* While newspapers and press agencies in general employed professional photographers, the German *Der Arbeiter Fotograf* radically changed who was behind the camera by engaging amateur socialist workers' photography movements.[315] The USSR equipped a "vast army of worker photographers," described by Vitaly Zhemchuzhny "as thousands upon thousands" of such workers' photographers that reported "across the entire territory of the Soviet Union, from the Arctic Ocean to the sweltering steppes of Turkmenistan."[316] In his 1929 essay "Russia and Photography," Zhemchuzhny described the new spirit of photography:

> Tumultuous reality could not be captured in the frames of the familiar 'painterly' compositions. The change of subject matter also required a change in the formal and technical methods of photography, liberation from dependence on painting, and a search for special methods that sprang from the nature of the photographic material. New and unexpected foreshortenings, unfamiliar perspectives and bold combinations of light and shadow made their appearance, in order to render the excerpts of social reality as sharply and clearly as possible.[317]

Activist artists, be it *Dadaists* in Germany or *Constructivists* in the USSR, transformed photography into a political weapon. They rejected the artistic Pictorial photography and altered the meaning of *Camera Work* into a socialist verb, exchanging the artistic gaze for a political viewpoint. El Lissitzky (1890-1941) wrote that "the innovation of the easel painting made great works of art possible" but that it had lost all power, proclaiming that cinema and the illustrated weekly magazines had overtaken that power and had destroyed the legacies of painting within photography by a novelty of unusual dynamic viewpoints and filmic shots. Pictorial representation was replaced by composite photographic images; photomontages made by cut and paste work, transparency techniques and double exposures.[318] The deconstructed image of the photomontage, combined with typography, became a visual ideological language with unifying principles. It symbolized the search for a new society, composed from fragments of a ruined world. However, for German artists like John Heartfield or Raoul Hausmann it became a medium for protest and polemic satire, while for their eastern

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[315] "Changing the everyday as a revolutionary experience meant more than the use of strange perspectives and unusual angles, it also meant a radical change in who was behind the camera." Roberts, John, *The Art of Interruption: Realism, Photography, and the Everyday*, Manchester University Press, 1998, p. 48.

[316] Zhemchuzhny, Vitaly, "Russia and Photography," originally published in the catalogue of the *Film und Foto* Exhibition of the *Deutscher Werkbund*, Stuttgart, 1929, pp. 14-15; quoted in Ribalta, Jorge, *Public Photographic Spaces*, 2009, p. 114.

[317] Ibid.

[318] The photo-collage technique was already well known. It's rediscovery stems from 1917-18 when artists started to use the technique to create political pamphlets. Raoul Hausmann, who made one of the earliest claims to the 'new-found' technique described it as following: "A new unity which can create out of the chaos of war and revolution the reflection of a vision that is optically and conceptually new." Lissitzky did not produce any photo-collages before 1922.

colleagues photography came in the service of the Soviet Party. While freedom of press was highly regarded in Germany, as witnessed in the Pressa exhibit, the Soviets censored, suppressed, and liquidated opposing independent newspapers by law upon assuming power in 1917. Nonetheless, both states shared common ground in envisioning and profoundly transforming their everyday society and photography served as their mightiest form of propaganda.

Socialist salon-style

> The first small building that gave clear evidence of the reconstruction of our architecture was the Soviet Pavilion at the Paris World's Fair of 1925, designed by Mel'nikov. The close proximity of the Soviet Pavilion to other creations of international architecture revealed in the most glaring way the fundamentally different attitudes and concepts embodied in Soviet architecture. (…) In the plan, the axis of symmetry is established on the diagonal, and all other elements are rotated by 180°. Hence, the whole has been transposed from ordinary symmetry at rest into symmetry in motion.[319]

Konstantin Mel'nikov's *Soviet Pavilion* at the *International Exhibition of Modern Decorative and Industrial Arts* of 1925 had been of great inspiration to El Lissitzky's *Soviet Section* at Pressa in 1928. **(Fig. 3-5)** In Paris, the exhibition grounds provided ample space for the Soviets to build an independent pavilion, but on the smaller sized Pressa exposition, the participating nations were only offered space in a communal pavilion. In the *House of Nations*, 24 countries exhibited their goods in between the United States and the Soviet Union, both occupying the far ends of the pavilion.[320] **(Fig. 6)** Although Lissitzky did not get the chance to design a building, Mel'nikov's influence was visible in his interior design. But Lissitzky also took the visual communication of photography to another level when he fully integrated the medium into the exhibition's interior design. He upgraded the architecture of fair stand design to an entirely new discipline, to an active element on the foreground of the exhibition, rather than a marginal, pragmatic structure. 227 exhibits of photography, typography, cartography, statistics, books and objects were all usurped into a dynamic space design that could synthesize these multiple media in one conveying message.[321] This message was eloquently described by A. B. Khalatov in the exhibition's catalogue:

> The USSR and its press have endeavoured to enlighten public opinion in Germany and other countries by providing as comprehensive an overview as possible of the present state and work of Soviet writing. (…) The core task in designing the Soviet Pavilion was to lend a sculptural form to the printed word, to turn a material form to a material perceived through the sense of hearing into one that can be perceived through the senses of sight and touch. (…) Rather than simply juxtapose them, the exhibition has sought to take isolated objects and combine

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[319] Lissitzky, El, "The Reconstruction of Architecture in the Soviet Union," *Russia: An Architecture for World Revolution*, MIT Press, Cambridge, 1970, pp. 35-36.

[320] "The third of the main exhibition buildings was the House of Nations (Staatenhaus) with its modern exterior, which contained displays from 24 countries, including Britain, China, Japan, Norway and Turkey; flanked at either end by contributions from the Soviet Union and the United States." Aynsley, Jeremy, "Pressa, Cologne, 1928," *Public Photographic Spaces*, edited by Jorge Ribalta, 2009, p. 91.

[321] Staniszewski, Mary Ann, *The Power of Display: a history of exhibition installations at the Museum of Modern Art*, The MIT Press, Cambridge MA, 1998, pp. 45-50.

> them into a whole in which each part has an organic effect on the whole and is in turn affected by it like the gears of a great machine, like the individual moments in the process of our social, economic and cultural reconstruction, at whose endpoint there stands the realization of socialism.[322]

The Soviet section was the result of a collaboration of a group of 38 artists, stage designers and graphic designers, headed by Lissitzky. The pavilion, an existing hall provided by the fair organizers, was divided into twenty sections with different themes. **(Fig. 7)** Lissitzky designed the overall appearance of the first and largest room, which was determined by two central exhibition stands. **(Fig. 8)** Upon entering, the visitor first came across *The Newspaper Transmissions* exhibit, symbolized by six mechanical rotary presses that carried photographically illustrated Soviet newspapers and posters.[323] The centrepiece of the pavilion was *The Constitution of the Soviets,* a gigantic star-shaped sculptural installation in black and bright red colours, and illuminated lettering. Above the installation hovered a black disc that propagated the words "Workers of all Countries, Unite!" According to Lissitzky it was "a vast eclipse" that symbolized the increscent impact of the United Workers Movement over the world.[324] At the heart of the installation were the hammer and sickle, around which six orbiting globes were to represent the six Soviet Republics. In the next display, the vast territory of the Republics was charted in a giant map of the Soviet Union. In the section entitled *Federal Republics*, Lissitzky installed a photographic mural of 3,8 meters high and 23,5 meters long.[325] The photomural was situated at the far end of the pavilion, above alternative exit doors, as if it was an antique frieze. **(Fig. 9 & 10)** Entitled *The Task of the Press Is the Education of the Masses,* the photomontage, or *photofresco* as Lissitzky named it, depicted the history and role of the Soviet publishing industry after the revolution of 1917.[326] In illustrating the developments in agriculture, armament, industry and sport, Lissitzky, who created the photo-fresco together with Sergei Senkin and Gustav Klutsis, made use of enlarged, appropriated press photographs. After the section *Lenin as Journalist,* the visitor could take a seat in a small cinema, upon which followed a viewpoint from an elevated staircase. Along the path, a reading room and the sections *Worker and Farmer Correspondents, The Red Army* and *The State Publishing House* provided extended information on the *Censure and Freedom of the Press*.[327] Throughout the exhibition, photographs were integrated in display windows, rotating models and sculptural exhibition stands, and picture panels were placed in unusual vantage points guiding the visitors towards the exit along a dynamic, narrative plotline of visual signifiers. **(Fig. 11-14)**

According to Mary Ann Staniszewski, "the installation design itself was a realization of its subject: the power of mass media, new materials, new technologies that were moving

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[322] Khalatov, A. B., "Introduction text of the catalogue of the International Press Exhibition," *Public Photographic Spaces*, edited by Jorge Ribalta, p. 73.
[323] Staniszewski, Mary Ann, *The Power of Display*, 1998, pp. 45-50.
[324] Puts, Henk, "El Lissitzky 1890-1941, his life and work," *El Lissitzky 1890-1941: architect, painter, photographer, typographer*, edited by Jan Debbaut, Municipal Van Abbemuseum, Eindhoven, 1990, p. 24.
[325] Pohlmann, Ulrich, "El Lissitzky's Exhibition Designs: The influence of his work in Germany, Italy, and the United States, 1923-43," *Public Photographic Spaces*, edited by Jorge Ribalta, 2009, pp. 173-180.
[326] There are differing translations of the title of Lissitzky's photofresco. Henk Puts uses a longer and probably more correct version: "The duty of the press in the transition period from capitalism to communism is to educate the masses."
[327] Staniszewski, Mary Ann, *The Power of Display*, 1998, pp. 45-50.

the Soviet Union into a revolutionary new era."[328] These new materials and techniques, such as cellophane, acrylic *plexiglass*, nickel, lacquer, illuminated lettering, and new typeface designs, served as a systematic phenomenological grammar.[329] This grammar was even extended to the socialist notion of a collaborative design, to a collective of creators in which each part indeed had "an organic effect on the whole" and was "in turn affected by it like the gears of a great machine." The consequent application of this material language within the architectural framework established an unprecedented mode of simultaneous collective reception.[330] Even the detachment of the architectural design from the original walls of the pavilion made a causal disassociation to established, elitist modes of exhibition instalments. The separation of the exhibited items from the architecture of the rooms induced a shift from the object, the works on display, to an interactive environment that involved the subject, the spectator.[331] Lissitizky, who described himself as a "pioneer of artistic constructions" with "new political responsibilities," wrote the following in his text *Exhibition Rooms*, subsection *Place and Purpose*:

> The great international picture-reviews resemble a zoo, where visitors are roared at by a thousand different beasts at the same time. In my room the objects should not all suddenly attack the viewer. If on previous occasions in his march-past in front of the picture-walls, he was lulled by the painting into a certain *passivity*, now our design should make the man *active*. This should be the purpose of the room.[332]

By including dynamic, moveable exhibits, strong red and black colour differences, elevated viewpoints and the incorporation of film and photography, many of the visitors' senses were activated. The exhibition scenario involved a great deal of photography to enhance this total atmosphere of influence. The use of appropriated photographs emphasized the absence of a single artistic author and the strength of the workers' photography movements. Visitors identified themselves with photographic full figure portraits on a one-to-one scale, alternated by photographs of masses of people to trigger a sense of collectivism. **(Fig. 15)** The printed word was given a sculptural form and the material form of the exhibition's architecture was "perceived through the senses of hearing, sight and touch." This syntax of synthesis assimilated the visitor, who became another active part of the whole on the stage of the pavilion.

However, how modern it may have seemed at the time, it still held remnants of times past – or "previous occasions" as Lissitzky called it. The synthesis Lissitzky created through exhibition design contradictorily presented itself as a unique entity. This unified *gesamtkunstwerk,* the entity of the exhibition as a single, total work of art, was only really disclosed to the masses by the exhibition's catalogue, which circulated on a high edition. The concept of the photo-fresco was repeated as a foldout from the catalogue, illustrated with installation views from the pavilion and of the photo-fresco itself. Most photomontage processes of the time contradictorily remained on the level of a unique,

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[328] Ibid.
[329] Buchloh, Benjamin H. D., "From 'Faktura' to Factography," *Public Photographic Spaces*, edited by Jorge Ribalta, pp. 29-61.
[330] Ibid.
[331] Staniszewski, Mary Ann, *The Power of Display*, 1998, pp. 45-50.
[332] Lissitzky, El, "Exhibition Rooms," 1926, quoted in Lissitzky-Küppers, Sophie, *El Lissitzky: Life, Letters, Texts*, Thames & Hudson, New York, 1992, pp. 366-367.

autocratic work of art. This was circumvented by re-photographing photomontages and reproducing them in multiple copies. The photo-fresco, disclosed and disseminated by its reproduction, was in the end an enormous unique work of art that made reference to the aristocratic *tableaux* of history painting. Large-scale photomontages had already appeared shortly after photography's invention, and long before Lissitzky's photo-fresco. The application of excessive blow-ups for political goals was also successfully proven in the early years of the 20th century. Following the breakout of World War I, several overcrowded exhibitions of official war photography were held, showing monumental, artificially coloured photomontages of battle scenes as if it were historic panorama paintings.[333] These war exhibitions conceptually connected the large tableau format and the salon-style hanging of photography to militant propagandistic display strategies. Lissitzky clearly outshone any former experiments with the humongous size of his photo-fresco, but this, in my opinion, only emphasized the comparison with history paintings. Another parallel could be drawn between Lissitzky's photographic environment and the panorama painting, or even closer, the 360-degrees film experiment of the *Cineorama*. These were all exhibited in purpose-built pavilions of which the interior design was geared towards enhancing the optical force of the pictorial message.

The essential difference with the spatial illusionism of the panorama painting was found in a synthesizing montage that juxtaposed different perspectives. This was a very different vision. It was architectonic, even filmic, as if the photographic frieze was a series of frieze frames from multiple cinematographic projections. The difference from the anachronistic, collective reception of the salon-style hanging was its sequential chronology, as if it was a spatial newsreel. And the major difference in the construction of the Soviet Section was the detachment of the exhibition's architecture from the wall. Lissitzky designed the architectural space as a two-dimensional photomontage from which he in turn subtracted a third, spatial dimension that formed the exhibition design. In doing so, the entire space became an accessible photographic panorama, to be witnessed from not one central, but multiple, dispersed points of view. This dynamic sequencing of three-dimensional photographic installations became part of a theatrical *mise-en-scène* that related most to the experience of cinema. Or in Lissitzky's words: "Here you see in a typographic *kinoshow* the passage of the contents of the Soviet pavilion."[334] But it went beyond a filmic experience, since its installation design drew the virtual space of cinema into an actual space. This was not anymore an expanded salon-style hanging of smoothly fused photographs, but a hybrid of ragged photographic cuts that integrated as architectural design elements. Lissitkzy's "ideological superstructure" unfolded itself like a three-dimensional, accessible photomontage. And that was truly a revolutionary new way of constructing a photographic environment.

A new field of vision

In 1941, Lissitzky wrote in his autobiographical chronology that his "most important work as an artist" had begun in 1926, with "the creation of exhibitions," in reference to

[333] In 1918, for example, the Grafton Galleries revealed "the largest photograph in the world," a composite image measuring 7 x 5 meters, in the exhibition "British Official War Photographs in Colour."
[334] Lissitzky, El, "Katalog des Sowjet Pavillons auf der Internationale Presse-Ausstellung," *Public Photographic Spaces*, edited by Jorge Ribalta, p. 46.

his *Room for Constructivist Art* he created for the *International Exhibition of Art* in Dresden that year.[335] In regards to Pressa, he wrote in retrospect:

> 1928: Through a state decision I was appointed chief artist for the Soviet pavilion at the International Press exhibition in Cologne. The foreign press praised the creation as a big success of the Soviet culture. For this pavilion I had designed a photomontage frieze, which was 24 meters long and 3,5 meters wide. It became the model for all those gigantic montages, which became the symbol for future exhibitions. For this work I received much appreciation from the state.[336]

In the year 1928, however, he wrote in a letter a much more nuanced experience:

> It was a great success for us, but artistically it remains an unsatisfying achievement, as the haste and lack of time violate the plans and necessary completion of the form, and then it actually ends up being stage scenery.[337]

Following his autobiographical chronology and his subsequent achievements, he did get a chance to improve his first and tremendously successful experiment:

> 1929: Construction of the Soviet stand at the *Film und Foto* exhibition in Stuttgart.
>
> 1930: I was appointed chief artist for the Soviet pavilion by the Ministry of Health at the *Internationale Hygiene-Ausstellung* in Dresden. At the same time I set up the Soviet section at the *Internationale Pelz-Fachausstellung IPA* in Leipzig on request of Narkom-Meschtorg [Ministry of fur-trade]. Thus I became pioneer of the artistic construction of our exhibitions abroad with their new political responsibility. In the following years I was asked continually to participate in our important exhibitions.[338]

After Pressa, the German State hosted a number of important international exhibitions in which Lissitzky indeed played an important role. The Soviet participations in the *International Film and Photography Exhibition* of 1929, the *International Hygiene-Exhibition* and the *International Fur-trade Exhibition* of 1930 were all coordinated by Lissitzky. In these three shows, he expanded his ideas of a visual language with spatial, photographical elements. For *Film und Foto*, an exhibition organized by the *Deutscher Werkbund* in the 14 galleries of the Municipal Exposition Building in Stuttgart, he selected the Russian participants, displayed his own photographic work, and created the exhibition design of the Soviet section.[339] **(Fig. 16)** He installed an architectural structure of wooden beams and photographic panels with images of himself, Rodchenko, Senkin, Klutsis, Stepanova, anonymous press photographers, posters and enlarged film

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[335] The *Raum für konstruktive Kunst* (Room for Constructivist Art) was first installed at the 1926 *International Art Exhibition* in Dresden. It was a viewer-interactive environment with strong colour contrasts, shifting light and movable panels. He included a big enlargement of his celebrated photomontage *Self-portrait (Constructor)* among his paintings. In 1927 he installed a new version of this room at the Hanover Landesmuseum and entitled it *Abstraktes Kabinett* (Abstract Cabinet). This was the predecessor to Lissitzky's installation design at the Pressa exhibition.
[336] Lissitzky, El, "Autobiography," *El Lissitzky 1890-1941*, edited by Jan Debbaut, 1990, p. 8.
[337] "Letter to Oud," dated 26 December 1928, quoted in Debbaut, Jan, *El Lissitzky 1890-1941*, 1990, p. 24.
[338] Lissitzky, El, "Autobiography," *El Lissitzky 1890-1941*, edited by Jan Debbaut, 1990, p. 8.
[339] Other participants to *Film und Foto*, or *FiFo*, organized by the Deutscher Werkbund from 18 May to 7 July 1929, were Herbert Bayer, Max Burchartz, Sigfried Giedion, John Heartfield, Hannah Höch, Laszlo Moholy-Nagy, Man Ray, Kurt Schwitters, Edward Steichen, Jan Tschichold, Edward Weston and Piet Zwart, among many others.

stills. Dispersed between the vibrant network of colored scaffoldings, avant-garde films of Sergei Eisenstein, Dziga Vertov and others were played in black-boxed daylight film projectors.[340] For the *Internationale Hygiene-Ausstellung* in Dresden he progressed to an all-round panoramic environment by covering the ceiling with photographs and posters. **(Fig. 17)** It was the culmination of his three-dimensional room-sized photomontages, which became so symbolic "for future exhibitions."

When Pressa closed its doors, a precedent was indeed created. Lissitzky's installation had become a "model for all those gigantic montages" in future exhibitions. The need to organize international exhibitions focusing on the growth of a new, future society was specifically valid in Germany, but it were the Soviet invitees that had excelled in envisioning this through their experimentation with photography. During these four exhibitions on the mass-communication industries of modern press, photo and film, trade and health care, Lissitzky's technique had been witnessed and copied by a sceptic Western world, which standardized his practice in the following decades.

From 1932 onwards, Stalin had censored these types of photographic montage environments, in favour of *Social Realism*. Lissitzky, a profound communist, stopped producing his photographic landscapes and focused on the design and photographic editing of the propaganda magazine *USSR Under Construction*.[341] It closed a brief moment of openness, exchange and radical experiment between the Soviet Union and the Weimar Republic. This window of opportunities had first opened in the early 1920s after the blockade of the Soviet Union by the Western powers had been lifted, and closed a decade later. Lissitzky's influence on the artists and architects of the Weimar Republic was invaluable. But the country was about to elect a new chancellor who saw other values in the hypnotizing effect of film and the empowering force of massive photographic blow-ups. In the future, Lissitzky's *mode d'emploi* would be mainly adapted for propagandistic targets by totalitarian states.

[340] Pohlmann, Ulrich, "El Lissitzky's Exhibition Designs," *Public Photographic Spaces*, edited by Jorge Ribalta, 2009, pp. 173-180.

[341] Lissitzky's autobiographical notes continue to give an overview of his work until 1941, the year of his death: "1934: I was appointed chief artist for the Agricultural Exhibition of the Soviet Union. I fought against the mistakes of my predecessors and redesigned. (…) 1940: Design for the restaurant at the Soviet exhibition in New York. (…) 1941: The last piece of exhibition work for Vnesh-torga (Foreign Trade): The Soviet pavilion at Beograd. Although ready to be shipped the exhibition had to be left in Moscow: war. The Germans were in Beograd (…) As from 1932: I was permanent collaborator as book-artist for the journal *USSR im Bau*. (…) Presently, while I am ignoring my serious illness, I still hope to be able to create something for the 25th Anniversary of the October Revolution." Lissitzky, El, "Autobiography," *El Lissitzky 1890-1941*, edited by Jan Debbaut, 1990, p. 8.

12.

Charlotte Perriand's Photographic Pavilion

The propagandistic nature of the photographic environment was widely explored in the 1930s. The widespread of the technique moved from Soviet Russia to Germany and Fascist Italy. It swept from East to West, across the revolutionary countries. When it reached France, the world had gathered in Paris for the *International Exposition of Art and Technology in Modern Life* of 1937. The persuasive power of the photographic environment was applied throughout the exposition, by national pavilions and artists of divergent ideologies. Here, Charlotte Perriand expanded the photographic environment from an interior design to a photographic pavilion constructed with interior and exterior photomurals. The outspoken socialist *Pavillon de l'Agriculture* was a synthesis of architecture, sculpture, photography and painting.

The *Entrée d'honneur* of the *Exposition Internationale des Arts et Techniques dans la Vie Moderne* offered an exceptional sight. The frivolous, exotic Trocadéro palace, built for the 1878 exposition, had been dismantled and replaced by the austere, neo-classicist Palais de Chaillot, opening up an unseen panoramic view on the Eiffel tower and the vast territory of the exposition grounds. In one glance, it was clear that this great vista was in fact a playground of political tension. Down from the esplanade of the new Palais de Chaillot, the Eiffel tower was caught between the nationalistic pavilions of Soviet Russia and Fascist Germany. **(Fig. 1)** Directly across from each other, these pavilions faced off into an ideological competition with imposing towers crowned by gigantic sculptures; a dynamic couple of labourers thrusting forward the hammer and sickle aggressively confronted a passive German eagle resting on a giant swastika.[342] On the other side of the *Seine* stood the pavilion of Italy, celebrating the Fascist regime of *Il Duce* Benito Mussolini. The Spanish pavilion, which flanked the German pavilion in the gardens of the Trocadéro, in turn presented their battle against Fascism. Inside, Picasso's *Guernica* drew attention to the recent, devastating bombing of the Basque town by German planes on behalf of Franco's nationalist forces. The modernist pavilion was quite different from the neo-classicist architecture of intimidation surrounding it. As such, the exceptional sight became a political vantage point, overlooking the troubling changes in the European landscape of the past decade. Ironically, the *Monument for Peace* was located just outside of the exposition's territory, in front of the honorary entrance gate.[343]

Nearly a hundred years after Daguerre's invention, more than 70.000 photographs were exhibited on the fairgrounds in the *City of Lights*.[344] The photographic environment was

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[342] "According to his own account, Albert Speer, Hitler's architect in chief and designer of the German building, accidentally stumbled into a room containing a sketch of the Soviet pavilion. This ostensibly innocent accident enabled Germany to dominate its rival on the Esplanade. Facing the heroically posed Russian workingman and peasant woman brandishing hammer and sickle, the German eagle, its talons clutching a wreath encircling a huge swastika, disdainfully turned its head and fanned out its wings. At the ground level, a massively naked Teutonic couple stared at the Russian monument with grim determination." Chandler, Arthur, "Paris, 1937: Exposition Internationale des Arts et Techniques dans la Vie Moderne," *Historical Dictionary of World's Fairs and Expositions, 1851 – 1888*, edited by John E. Findling, Greenwood Press, Westport, 1990, p. 288.

[343] Herbert, James D., *Paris 1937: Worlds on Exhibition*, Cornell University, Ithaca, 1998, p. 31.

[344] "According to rough estimates, more than 70.000 photographs were exhibited at the world's fair in 1937." Pohlmann, Ulrich, "Not Autonomous Art but a Political Weapon: Photography Exhibitions as a means for

used to react on the precarious political realities and to control the naïve spectators' thoughts. The Soviet pavilion extensively used photographic murals. While the German pavilion had abolished photography to replace it with painting, tapestries and mosaics, the Italian pavilion celebrated Fascism with the photographic exhibition technique of Erberto Carboni. The most exquisite example was the Spanish Republican pavilion, in which the technique reached a peak moment in history. The photomurals, designed by Josep Renau, were displayed in the halls, corridors and staircases, constituting the greatest visual mass of the pavilion. The photographs displayed the regional diversity of the country and formed a visual and conceptual guide on the civil war in Spain, while leading past the iconic art of Picasso, Miro and Alexander Calder.[345] But the true revelation in venturing photographic architecture was the *Ministry of Agriculture Pavilion* by Charlotte Perriand (1903 -1999). Instead of limiting the photographic environment to an interior design, she used it to construct the basic elements of a pavilion, displaying photography on the inside as well as the outside. By including the exterior, the pavilion gave a whole new notion to the concept of an all-round photographic panorama.

Fresques photographiques

Charlotte Perriand's visual language came to age in the timeframe between the victorious optimism of the *Exposition internationale des arts décoratifs et industriels modernes* of 1925 and the anxious zeitgeist that dominated the International Exposition of Art and Technology in Modern Life of 1937.[346] In 1925 she participated in the International Exhibition of Modern Decorative and Industrial Arts with student work. She extensively visited the fair but paid little attention to the two most avant-garde pavilions: Konstantin Mel'nikov's Soviet pavilion and Le Corbusier's groundbreaking *Pavillon de l'Esprit Nouveau*. "They had surprised me but not affected me", she wrote in her autobiography.[347] Nonetheless, the work of Le Corbusier (born as Charles-Edouard Jeanneret, 1887 – 1965) would prove to be vital to her career. The Pavillon de l'Esprit Nouveau was a prototype duplex apartment for Le Corbusier's *Ville Contemporaine,* a future city of high-rise apartment buildings and parks. In a circular annex to the

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Aestheticizing Politics and Economy in National Socialism," *Public Photographic Spaces: Exhibitions of Propaganda, from Pressa to The Family of Man, 1928-55*," edited by Jorge Ribalta, MACBA, Barcelona, 2009, p. 293.

[345] Mendelson, Jordana, "Josep Renau and the 1937 Spanish Pavilion in Paris," *Public Photographic Spaces: Exhibitions of Propaganda, from Pressa to The Family of Man, 1928-55*," edited by Jorge Ribalta, 2009, p. 319. The pavilion of the Spanish Republic was built by Josep Lluis Sert, a Basque architect and former assistant of Le Corbusier.

[346] Paris, the *Queen City of Expositions* with eight expositions of diverse size, had another world's fair in between the Expo of 1925 and the Expo of 1937: the *Exposition coloniale et internationale* of 1931. The *Exposition Internationale des Arts et Techniques dans la Vie Moderne* of 1937 was the second world's fair to be recognized by the *International Bureau of Expositions*. The *Bureau International des Expositions* came into being in 1928 after 31 countries signed the *Convention Relating to International Exhibitions,* regulating the frequency, duration and size, as well as the rights and obligations of participants and organizers of world exhibitions. The BIE recognized three types of exhibitions: *universal, international* and *specialized*. Universal exhibitions are the largest and the longest in time, and participating countries construct their own pavilions. International exhibitions are smaller in scale and duration. Specialized exhibitions have a specific topic and provide prefabricated structures. The first world exhibition to be officially recognized as a Universal Exposition was the *Exposition Universelle et Internationale de Bruxelles* of 1935. The 1937 Expo was recognized in the International category. Today, the BIE is still in function, but with altered rules.

[347] Perriand, Charlotte, "A Life of Creation: An Autobiography," Monacelli, New York, 2003, quoted in Barsac, Jacques, *Charlotte Perriand - Complete Works, Volume 1: 1903-1940*, Verlag Scheidegger & Spiess AG, Zurich, 2014, p. 40. The work of Charlotte Perriand has been overshadowed by her mentor Le Corbusier, and has overtime disappeared in the margins of history. The first major monograph appeared in 2003 by McLeod, Mary, *Charlotte Perriand: An Art of Living*, Harry N. Abrams, New York, 2003. The core of my essay is based on Barsac's research. His "Complete Works," of which the first volume appeared in 2014, is the first extensive scholarly publication and has revealed an abundance of information.

pavilion, a huge panoramic painting envisioned the application of the principles of his contemporary city to the context of Paris.[348] **(Fig. 2 & 3)** The model apartment was a rectangular white box with an enclosed terrace and large glass windows. Through the use of large sheet glass, the interior and the exterior were experienced as a whole, as an interchangeable view formed by the shifting movement of the spectator. This, in turn, emphasized the importance of the interior and furniture design, visible from the outside. The subconscious influence of Le Corbusier's technique visibly affected Perriand's design for the interior decoration of her own rooftop apartment. She lived in a former photographer's studio and made extensive use of the large roof windows, which she reflected in mirrors, glass covered tables and chrome-plated copper furniture. At the *Salon des artistes décorateurs* of 1928, she recreated the space of her rooftop photographer's studio, merely to exhibit the furniture of the dining room. **(Fig. 4)** It was a remarkable choice, acknowledging that the architecture of the space was inherently part of the interior and furniture design. It would prove to be a life-changing installation; after witnessing her work at *Salon of the Society of Applied Arts*, Le Corbusier invited her to create a steel furniture line for his studio.[349] She would work alongside him and his cousin Pierre Jeanneret until 1937.

Another event proved very influential for the design of the Agriculture Pavilion; Le Corbusier's studio decided to retreat from the Salon of the Society of Applied Arts of 1930, to participate in the more innovative *Salon d'automne*. In an attempt to fill the void the French moderns had left, the Society of Applied Arts opened their doors - for the first time - to a foreign section with inviting the *Deutscher Werkbund*. The German section was created by Walter Gropius, Marcel Breuer, Laszlo Moholy-Nagy and Herbert Bayer - the latter showing a groundbreaking dynamic installation of photographic panels filling the peripheral vision of the viewer. After meeting Gropius in Paris, she was introduced to other members of the German avant-garde at the *Internationale Raumausstellung* in Cologne in 1931, where she exhibited with Le Corbusier. Perriand's first photographs date back to 1927, but only after her contact with the German avant-garde they became spatial, architectural objects.[350] Her acquaintance with the German avant-garde, themselves strongly influenced by the Russian avant-garde, spurred her to travel to Moscow in 1931. There she met with El Lissitzky and other members of the avant-garde, after which her photographic work became outspoken political. Both meetings were obviously of great influence to her work, but it also opened her eyes "to what was simmering beneath the world's surface; the shadow of Hitlerism on one hand and the aftermath of the Communist revolution on the other."[351]

All these influences engaged Perriand into making more political work, beyond photography. The subdued political engagement in her architectural projects was strengthened by the incorporation of photography into architecture. Influenced by Bayer and Lissitzky, she started integrating photographic murals in the architectural projects of Le Corbusier's studio, constituting the earliest permanent photographic

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[348] Blake, Peter, *Le Corbusier*, Het Spectrum, Utrecht/Antwerpen, 1966, p. 55. Le Corbusier's modernity was met with a hostile reception by the organization of the exposition, which tried to sabotage his work by giving him a hidden plot of land behind the Grand Palais. They went so far as to construct a palisade in front of the pavilion of about 6 meters high, which was only removed after an intervention by the government.
[349] Védrenne, Elisabeth, *Charlotte Perriand*, Assouline Publishing, New York, 2005, pp. 8-9.
[350] Barsac, Jacques, *Charlotte Perriand - Complete Works*, 2014, p. 19.
[351] Perriand, Charlotte, "A Life of Creation: An Autobiography," 2003, quoted in Barsac, Jacques, *Charlotte Perriand - Complete Works*, 2014, p. 19.

installations in domestic contexts.[352] These photographic experiments were kept, under the authority of Le Corbusier, quite apolitical. She created her first outspoken political photographic installation for the French participation at the World's Fair of Brussels in 1935. On a floor to ceiling turnstile, she mounted two large panels with photomontages on the evolution of modern society.[353] Her executive role positioned her to fully develop a visual political language with a strong socialist point of view. At the *Salon des arts ménagers* of 1936, she addressed poverty issues in Paris with a room-sized photo-fresco covering two adjoining walls. The main section of *La Grande Misère de Paris*, measuring 3 meters high and 16 meters long, portrayed the appalling hygienic living conditions in the capital of France, while suggesting, in images as well as texts, political and architectural solutions.[354] **(Fig. 5)** The photomontage on the intersecting wall projected a glimpse of a possible future in which healthy sportsmen worked together to achieve a better world. This ideal world became almost tangible when the right-wing government surprisingly lost the elections of 1936 to the left-wing *Popular Front*. Her political engagement attracted the interest of the new *Front Populaire* Minister of Agriculture, who gave her an assignment to install a photomural in his public office. She turned the waiting room of his ministry into a propaganda space, using, besides her own images, the work of "François Kollar, Nora Dumas and a host of agency photographs," to which she added "diagrams, statistics, graphs, and maps" subscribing the positive prognosis of his agricultural reform program.[355] **(Fig. 6)**

> You can communicate through photography, by cutting out an image, cutting it up, or twisting and fiddling with it. It is accessible, realistic, comprehensible, an effective means of expression. I covered three walls of the space I had been given with photographs, right up to the picture rail, even sticking them over the old-fashioned brocade that covered the ministry's waiting room, with its stuffy 18th century trimmings. Mine was a two-fold provocation: the first, through the actual program, the second, through its iconoclastic portrayal.[356]

Perriand's activism, however, breached the understanding between her and her politically neutral mentor. Their collaboration fell during the preparations for the 1937 Expo. Le Corbusier, the visionary architect, had stumbled on the board of the organization, which dismissed almost all of his projects.[357] His radical architectural ideas

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[352] In 1933 she made her first photographic installation for the headquarters of the Salvation Army in Paris. In this new building constructed by Le Corbusier's studio she designed a photographic frieze of approximately eight meters long and one meter high composed of five large-format prints of animals and children's portraits. In the same year she created several photographic installations at the *Pavillon suisse* at the *Cité universitaire*, together with Pierre Jeanneret. Jacques Barsac wrote: "In the reading room and canteen, they created an immense photomural, an ode to the profusion of forms in nature composed of 44 photographs, each approx one square meter, representing desert and mountain landscapes of stone and sand shaped by the wind, details of the metal structure of the *Pavilion suisse*, and reproductions of living organisms or vegetation photographed under a microscope." Ibid., pp. 194-218.

[353] Ibid., pp. 342-345. Perriand was invited to design a particular section; *La maison du jeune homme*, an apartment for a young, single man. It was the first time she received such a big assignment outside of the Corbusier studio, but she did invite the studio to cooperate, together with her new friend Fernand Léger.

[354] Ibid., pp. 346-357.

[355] Ibid., pp. 358-373.

[356] Perriand, Charlotte, *A Life of Creation*, 2003, pp. 83-84.

[357] "But Le Corbusier himself was too uncompromisingly visionary for the exposition planning commissioners. Undaunted, and following the tradition of refusé painters from earlier expositions (Gustave Courbet in 1855, Edouard Manet in 1867, Henri Matisse in 1889), Le Corbusier and his followers erected a huge tent outside the exposition grounds, just beyond porte Maillot." Chandler, Arthur, "Paris, 1937," *Historical Dictionary*, edited by John E. Findling, 1990, p. 286. Their collaboration fell during the preparations of the *Pavillon des temps nouveaux,* the only project in which Le Corbusier was partially involved. The *Pavillon des temps nouveaux* was to host the CIAM, the *Congrès internationaux d'architecture moderne*. The International Congress of Modern Architecture was an organization

had fallen into a political void, while Perriand's socialist engagement was eagerly appropriated by the Popular Front. After years of experimentation, her political photomontages would come to fruition in several projects on the *Exposition Internationale des Arts et Techniques dans la Vie Moderne.* **(Fig. 7)**

Socialist Synthesis

Perriand's largest assignment for the exposition of 1937 was the *Pavillon de l'Agriculture.* The pavilion could be visited on a distant satellite site, at the *Porte Maillot*, three kilometres removed from the honorary entrance gate. The site was a small part of the French national section. Although it stood on a location far removed from the political struggle of the international section, it was certainly not without political ambitions. Following the success of her photomontages for the Ministry of Agriculture, she was asked again to communicate the socialist party's agricultural reform program - only this time to a large international audience.

The pavilion was structured as two pentagons intersecting in reverse directions. These two five-sided polygons created a ten-pointed star of which one point was used as the entrance. **(Fig. 8)** This star-shaped pavilion was about 8 meters high and measured 40 meters in diameter. It was composed of 18 single or double panels of 4,6 meters high by 6,20 meters long. "The whole was the equivalent of over 110 linear meters."[358] It was a wooden open-air structure reinforced by tubular steel, surrounding a couple of trees in the middle - questioning the notion of interior and exterior. The architecture of the pavilion, however, was not created by Perriand, but "designed beforehand by the architects Henri Pacon and Masson-Detourbet."[359] The Ministry of Agriculture had specifically asked her to create photomontages that would embody and overtake the entirety of the pavilion. She in turn invited François Kollar and Nora Dumas to cooperate on the imagery. Perriand used only a few of her own images, to which she added newly recorded photographs by Kollar and Dumas. These were all fused in the photomontage process with pre-existing agency photographs, in order to form entirely new images.[360] The photomontages were printed on the enormous size of the constructive panels, and were placed on the inside as well as on the outside. **(Fig. 9)**

> After some thought, I realized that my black-and-white photomontages would not provide the visual effect I was seeking. I was dealing with an open-air structure; to get the message across, I decided my approach would have to be influenced by poster art – it would have to be swift, dramatic, striking, and in colour, to catch the eye and capture the mind. I spoke about the project with Fernand Léger, hoping, in fact, to have the pleasure of working with him again.[361]

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founded in 1928 by the most prominent modern architects of the time. Le Corbusier and Perriand played prominent roles in bringing the CIAM to Paris in 1937, but had very opposing ideas on the content of the pavilion, which prompted her to leave the studio. After Le Corbusier's other projects were excluded by the fair's board, he was left only with the construction of the *Pavillon des temps nouveaux*, which for economic reasons was again reduced to a large tent instead of a building.

[358] Barsac, Jacques, *Charlotte Perriand, Complete Works*, 2014, pp. 390-395.

[359] Ibid.

[360] "She drew on photographs from agencies, Keystone or that of the New York Times, as well as on archives of the Studio Ylla, Ergy Landau, Jean Roubier, Hein Gorny, Satigny, and others, who made their photographs available without worrying about seeing them truncated, transformed, blended, combined, twisted." Ibid., p. 390.

[361] Perriand, Charlotte, *A Life of Creation*, 2003, p. 84.

Perriand had worked with Fernand Léger for her participation to the Brussels Expo of 1935, where he exhibited a large painting in her installation.[362] This time, she invited him for a collaborative work, to colour parts of the black and white photographs with paint.
The painted photographs were waterproofed with a plastic coating and assembled on the wooden lattice structure of the pavilion.[363] These huge blow-ups of about five square meters gained a spectacular effect with the addition of colour. **(Fig. 10 & 11)** Léger wrote that the "enormous enlargement of an object or a fragment gives it a personality it never had before and in this way it can become a vehicle of entirely new lyric and plastic power."[364] Such effects were indeed very visible. The entrance was guarded by two panels on either side, showing the duality of France's future: on the left, the background of a black and white photograph of a rooster's head and a shepherd minding a flock of sheep was coloured in deep yellow, and on the right, an image showed factory chimneys behind the hands of a working man, coloured in socialist red. The sheer size of the panels, with images larger than life, made the message overwhelmingly clear: Socialism would make agriculture and industry cooperate to make France great again. In her autobiography, Perriand described the propagandistic intentions and effects of their newly created photographs:

> Fernand Léger handled the photos as if they were objects, putting the straightforward texts and graphics into abstract forms. His wonderful trademark use of colour and small clouds did the rest. A group of symbolic objects signalled the entrance to the Agriculture Pavilion, which was flanked by two panels: agricultural France on the left with its Gallic rooster, and Industrial France on the right with two strong hands wielding a worker's tool against a background of factory chimneys. *No Economic Recovery Without Agricultural Prosperity*. A slogan spread over three panels could also be seen at the back of the structure: *City and Country Workers Alike Have the right to Social Welfare*. Bright flames carrying inscriptions seemed to float in midair, each one bringing hope: *Collective Bargaining*, *Fixed Working Hours*, *Retirement for Older Workers*, *Family Benefits*, and *Paid Vacation*. The law on paid vacation freed up time for leisure and intellectual pursuits – a blissful spin-off that I expressed with two panels showing hands stretched out in elation, clasping glorious wild roses. We evoked the fight against illiteracy by depicting a mobile library highlighting the essential, pleasurable pursuit of reading: young people lay on the grass, books wide open. There were beautiful Breton Girls in regional costumes (a hint of tradition), a saxophonist, fishermen, hunters, football players, and to top it off, the Eiffel Tower flirting with a wispy cloud as a song of modern-age communication."[365]

Referring to the persuasive, cerebral functioning of the photographic environment, "to catch the eye and capture the mind," Perriand succeeded in getting the message across by creating a monumental pavilion that addressed the visitor as a multi-layered

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[362] Charlotte Perriand and Fernand Léger had met the first time in 1930, at the exhibition of the Society of Applied Arts, and they had become dear friends and neighbours in the same building. Léger was a habitué of the circle around Le Corbusier, with whom he had already worked on the l'Esprit Nouveau pavilion. With Perriand, he had already worked on *La maison du jeune homme* for the Brussels Expo of 1935.
[363] Perriand, Charlotte, *A Life of Creation*, 2003, p. 86.
[364] Léger, Fernand, "A New Realism – The Object: Its Plastic and Cinematic Value," *Photography: Essays & Images*, Edited by Beaumont Newhall, The Museum of Modern Art, New York, 1980, p. 231.
[365] Perriand, Charlotte, *A Life of Creation*, 2003, p. 85.

signifier. By working with a group of authors, she reflected the collective idea of Socialism. Perriand was not the author of the architectural plan, not the author of the photographs or the paintings, but she was the director that fused everything together in one total-work-of-art that expressed a coherent political position. With diffusing the borders between a written imperative language and the visual language of photography, she created a synthesis of the visual and the mental in order to influence the mind of the spectator. With diffusing the borders between painting and photography, she synthesized old metaphysical and new profane techniques in a hybrid form, reminiscent in style as well as scale of the 19th century panorama pavilions. With diffusing the borders between architecture and sculpture, she created a transparent and honest openness with a swift circulation, in which the interior and the exterior became a unified whole. The pavilion was not only a full hybrid of the arts, it also represented and offered a complete synthetic vision of modern life reinvented by art and technology. **(Fig. 12)**

The Ministry of Agriculture Pavilion eventually received little attention, even disappeared in the annals of history. Certainly in comparison to the ideological pavilions of Soviet Russia and Fascist Germany. With regrettable enthusiasm the French handed out the highest prizes to these ideological pavilions, both awarded with gold medals for their architectural designs. Regrettable, since just three years later, after the temporary pavilions of the last Parisian exposition had vanished, Adolf Hitler himself would, for the first and only time, be witnessing the splendid view from the honorary entrance, looking out on the City of Light he had just invaded.

13.

Herbert Bayer's Expanded Field of Vision

The visual narrative of El Lissitzky's photographic installations from the late 1920s had a great impact in Germany, where they were first shown. His designs were followed by a number of *Werkbund* and *Bauhaus* disciples in the 1930s. Herbert Bayer was one of the most radical adepts of this photographic exhibition technique. He formulated the notion of an 'expanded field of vision,' filling the peripheral vision of the viewer, and applied it to the photographic environment. Through his groundbreaking architectural design, the exhibition *Road to Victory*, curated by Edward Steichen in 1942, became a photographic environment of an unchallenged size. It was also the first photographic propaganda show that was deployed within the context of an art museum: the Museum of Modern Art in New York. *Road to Victory* exemplified how the versatile technique of the photographic environment exchanged ideals as it migrated across countries and continents.

Looking back in 1961, Herbert Bayer (1900 – 1985) acknowledged the crucial influence of Lissitzky's exhibition design to his own practice:

> A revolutionary turning point came when El Lissitzky applied new-constructivist ideas to a concrete project of communication at the *Pressa* exhibition in Cologne in 1928. The innovation is in the use of a dynamic space design instead of unyielding symmetry, in the unconventional use of various materials (introduction of new materials such as cellophane for curved transparency), and in the application of a new scale, as in the use of giant photographs.[366]

Bayer reminisced his own involvement in the *Pressa* exhibition, for which he had created a "small and, according to him, little-discussed conventional book display."[367] But even more than witnessing Lissitzky's installation at *Pressa*, he had already been formed by earlier encounters. Large-scale photography and photomontage had been simultaneously pioneered in Germany before the work of the Soviets was known in Europe. At the *Erste Internationale Dada-Messe*, the *First International Dada Fair* at the Burchard Gallery in Berlin, the deconstructed image of the photomontage, combined with typography, took shape in the posters of John Heartfield – dating back to 1920. **(Fig. 1)** Raoul Hausmann, co-curator of the exhibition, made one of the earliest claims to the 'new-found' technique, in 1918, describing it as "a new unity that can create out of the chaos of war and revolution the reflection of a vision that is optically and conceptually new." Lissitzky, by comparison, did not produce any photo-collages before

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366 Bayer, Herbert, "Aspects of Design of Museums," *Curator 4 no. 3*, 1961, p 267, quoted in Cohen, Arthur A., *Herbert Bayer. The Complete Work*, The MIT Press, Cambridge MA, 1984, p. 365; in Staniszewski, Mary Ann, *The Power of Display: a history of exhibition installations at the Museum of Modern Art*, The MIT Press, Cambridge MA, 1998, pp.47-48; in Ribalta, Jorge, *Public Photographic Spaces: Exhibitions of Propaganda, from Pressa to The Family of Man, 1928-55*, MACBA, Barcelona, 2009, p. 19.

367 Rocco, Vanessa, *Activist Photo Spaces: 'Situation Awareness' and the Exhibition of the Building Workers Unions*, Journal of Curatorial Studies 3:1, 2014, p. 39.

1922, and it wasn't until that same year that Soviet art was shown in Germany.[368] The Dadaist's signature innovation of photomontage, printed matter, signs and posters, in combination with a dense, aggressive exhibition installation shocked the German art world and was a precedent of lasting influence. His most important encounters were made in the following years, during his studies. Bayer was an Austrian architect who had studied in Germany, at the *Darmstadter Kunstler Kolonie* and the *Staatliche Bauhaus Weimar*. He was strongly influenced by Walter Gropius's 1919 manifesto that outlined the newly founded Bauhaus school's interest in "new research into the nature of the exhibitions, to solve the problem of displaying visual work and sculpture within the framework of architecture." Bayer went there in 1921 to study mural painting in Wassily Kandinsky's workshop, combining the art of painting with an architectural component. His artistic practice expanded to exhibition design, graphic design and advertising, after being taught by Kandinsky, Gropius, and Josef Albers, and eventually to photography when László Moholy-Nagy introduced him to the principles of the *New Vision*: "experimentation in new perspectives and techniques, and the integration of photography within exhibition design."[369] As a student he had applied these ideas on several architectural proposals, such as a cigarette stand, a newspaper kiosk and a small cinema complex. These designs for clean-lined pavilions were visibly influenced by Theo Van Doesburg and the Dutch *De Stijl* movement.[370] But they differed by the inclusion of photography, moving images and sound. In a *kino* complex the inclusion spoke for it self, but Bayer introduced these new media in all his pavilions. The most remarkable was a pavilion designed for the toothpaste brand *Regina* for the Parisian *International Exhibition of Modern Decorative and Industrial Arts* of 1925. **(Fig. 2)** The pavilion was imagined as a comprehensive multimedia experience for the visitor. It proposed not just an interior filled with new media, but also an interactive exterior. The visitor was lured from the outside with sounds coming from an oversized loudspeaker and a humongous photograph of a young woman's smile, unveiling her crispy white teeth.[371] Although his student work was not intended to be executed, it remains as a highly progressive concept of its time. After the school had moved its location to Dessau in 1925, some former students took over the direction of the workshops. Bayer was just graduated and granted a position as junior master of the newly arranged workshop for printing and advertising. Another former student and future ally was Marcel Breuer, who headed the carpentry workshop. Bayer's work was strongly shaped by his studies at Bauhaus and by his colleagues Breuer, Gropius and Moholy-Nagy. When Gropius resigned in 1928, the others followed, the four of them moving in separate ways onwards to new adventures.

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[368] "Even though a placard in the 1920 Berlin Dada Fair applauded 'the machine art of Tatlin,' and Raoul Hausmann put his collage entitled 'Tatlin Lives at Home, 1920,' in the show, the Germans knew very little about what Vladimir Tatlin was doing or about recent work by other Russian artists. With an international boycott in place since 1917, the only source of information about the radical art being made there was a single account by a young Russian journalist. This was to change in 1922, when Germany finally recognized the Soviet government, and the Commissariat for the People's Enlightenment and Art sent 'The First Russian Art Exhibition' to Berlin." Altshuler, Bruce, *Salon to Biennial: Exhibitions That Made Art History. Volume I: 1863-1959*, Phaidon Press Limited, London, 2008, p. 205.

[369] Staniszewski, Mary Ann, *The Power of Display: a history of exhibition installations at the Museum of Modern Art*, The MIT Press, Cambridge MA, 1998, p. 44. Photography was not officially taught at the Bauhaus until 1929, but was commonly practiced in all departments.

[370] "While Gropius accepted many of the precepts of contemporary art movements he did not feel that Doesburg should become a Bauhaus master. Doesburg then installed himself near to the Bauhaus buildings." Baumhoff, Anja, "The Will to Advertise: An Early Design by Herbert Bayer," *Bauhaus: A Conceptual Model*, edited by Annemarie Jaeggi, Hatje Cantz, Ostfildern, 2009.

[371] In his sketches it is unclear whether this was an enlarged photograph or intended as a film projection. Bayer had made several identical drawings of the pavilion, but altered the faces, suggesting movement. This could also just have been a matter of practical collage techniques.

Witnessing Lissitizky's photographic environment at Pressa in 1928 was another turning point for Bayer. The dynamic architectural component and the scale of Lissitzky's photomontages were uniquely new. It was a final encounter that spawned and assembled all his previous influences and ideas. And Lissitzky would continue to be influential, as they kept moving in the same circles. Already before Pressa, Lissitzky had a tremendous impact in Germany when he exhibited his *Raum für konstruktive Kunst* at the *Internationale Kunstausstellung* in Dresden in 1926. The *Room for Constructivist Art* was a viewer-interactive cabinet with strong colour contrasts, shifting light and movable panels. A special feature were black and white coloured laths that were perpendicularly attached on the walls, generating "optical dynamics created by the changing human standpoint."[372] In 1927, he installed a new and permanent version of this room at the *Hannover Landesmuseum,* entitled *Abstraktes Kabinett*.[373] This abstract cabinet was to be an emulation of modernism, filled with the newest works of art from the innovative museum collection. Bayer had also witnessed Lissitzky's installation design for the Soviet section at *Film und Foto*, the *International Film and Photography Exhibition* of 1929 in Stuttgart, in which he himself participated by exhibiting some photographs. *Film und Foto* was the most ambitious exhibition of *New Vision* photography at the time, and it's spokesman, Moholy-Nagy, was granted the creation of the first and largest exhibition room. **(Fig. 3)** Moholy-Nagy dismissed the artistic nostalgia of the Pictorialists in favour of an inclusive show of different photographic genres, densely displayed on black panels, and framed only with white mats. The concept somehow regressed to the 19th century inclusive photography exhibition, but the images and the installation design were overtly modern. Upon entering, the visitor was faced with the ultimate question: "Wohin geht die fotografische entwicklung?" Where is the development of photography going? Innovative as it perhaps was, when the visitor reached *Room 4*, it was obvious that Moholy-Nagy's gallery was still far more conservative than the Russian section, designed and curated by Lissiztky. When the four famous Bauhaus artists regrouped in 1930, it was to become clear to what extend Lissitzky had influenced all of them and how they intended to progress beyond his ventures in photography.

At the French *Salon des artistes décorateurs* of 1930, Gropius represented the Werkbund as director of the German section.[374] Gropius, the artistic director, in turn invited his Bauhaus allies Moholy-Nagy, Breuer and Bayer to participate. Within the German section, they were each given a gallery space of the *Grand Palais* in Paris, to be designed individually, but with a communal consensus. The exhibition was conceived as sections from a high-rise apartment building with a bar, theatre, gymnasium, swimming pool and living quarters.[375] Bayer's task was to display a survey of German furniture and architecture. He showed handcrafted chairs of the *Vereinigte Werkstätten für Kunst im Handwerk München* as well as mass-produced *Wassily* chairs, hung in numbers above one another to emphasize its multiplicity. Bayer's space made mention of other

[372] Lissitzky, El, "Neue Russische Kunst," *El Lissitzky 1890-1941: architect, painter, photographer, typographer*, edited by Jan Debbaut, Municipal Van Abbemuseum, Eindhoven, 1990, p. 47.
[373] "1926: My most important work as an artist begins: the creation of exhibitions. In this year I was asked by the committee of the *Internationale Kunstausstellung* in Dresden to create the room of non-objective art." Lissitzky's autobiographical chronology quoted in Debbaut, Jan, *El Lissitzky 1890-1941*, 1990, p. 8.
[374] The introduction text of the catalogue of the Society of Applied Arts Exhibition mentions that: "The Exhibition of the Society of Applied Arts opened its doors to an autonomous foreign section for the first time in 1930, with inviting the Deutscher Werkbund." This was an indirect consequence of the departure of Le Corbusier's studio to the more innovative Salon d'automne.
[375] Staniszewski, Mary Ann, *The Power of Display*, 1998, p. 25.

utilitarian objects, such as lighting fixtures, and building materials such as linoleum.[376] **(Fig. 4)** But *Room 5* became famous because of its photographic survey of the newest German architecture, such as the latest buildings by Gropius and views from the *Weissenhof Estate* in Stuttgart. Twenty enlarged photographs, taken by various photographers, were applied according to Moholy-Nagy's theory on photographic experimentation with new perspectives and techniques. They were not only photographed in dynamic perspectives; they were also exhibited as such. Photographic panels were suspended with wires at varying heights and at different tilted angles, from floor to ceiling. A three-dimensional architectural model of the Bauhaus complex in Dessau protruded from the 180 degrees photographic panorama into the foreground. "Filling the peripheral vision of the observer" with photographs, Bayer manifested his theory of a dynamic, non-linear expanded field of vision for the first time.[377] **(Fig. 5)** In the catalogue of the German section, which Bayer had also designed, he outlined his theory with a preliminary sketch: the *Diagram of Field of Vision*, with the all-seeing eye of the spectator as the centre point.[378] **(Fig. 6)**

In 1931, Bayer, Breuer, Gropius and Moholy-Nagy had another chance to cooperate during the *German Building Exhibition* in Berlin. Together they designed one large hall of 900 square meters in the *Radio Tower Trade Fair Grounds* in Berlin, designated to an exhibition on the free trade unions of construction workers in Germany. The *Ausstellungsstand der Baugewerkschaften*, the *Exhibition of the Building Workers Unions*, was an attempt to raise support for the unions in their struggle against the high unemployment rates and the opposing ideas of the National Socialists.[379] Heightening his concept of an expanded field of vision, Bayer collaborated with Moholy-Nagy on a 360 degrees photographic panorama, creating a dynamic exhibition that covered the entire perceptual field. **(Fig. 7)** Gropius designed an architectural framework with an open upper floor, multiplying the possible vantage points. Circular photographic cutouts were attached to this steel ramp and were only visible from above. The dynamic engagement of the viewer was also sought in moving photographs: strips of large-format photographs were mounted on "louvers that would turn automatically," operated by electric motors, and "thereby presenting alternating images."[380] **(Fig. 8)** Cut-out figures and real banners were installed in front and onto large photomurals. The visitor was guided through an extensive amount of statistical information by their active involvement in operational objects such as the moving photographs, by looking into peepholes with images, or by pressing buttons to view transparencies in light boxes.[381]

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[376] In the installation views, this can be read from the caption on the wall in Room 5.
[377] Staniszewski, Mary Ann, *The Power of Display*, 1998, p. 25.
[378] "This diagram became the foundation for Bayer's approach to installation design. Of particular significance are the diagram's inclusion of a viewer within the exhibition space and the arrangement of panels and objects in relation to the observer's field of vision. Rather than mount images flat against the wall, Bayer tilted the panels above and below eye level." Ibid.
[379] Rocco, Vanessa, *Activist Photo Spaces*, 2014, pp. 27-29.
[380] Staniszewski, Mary Ann, *The Power of Display*, 1998, p. 25. This technique is now generally seen in everyday situations in the form of large alternating advertising signs.
[381] "The designers applied animation, movement, peepholes, walls opening up and closing, transparencies, etc., and encouraged the visitor to move things himself by pressing buttons to light up the display material, etc. Giant photographs and montages were used extensively, as well as all available materials like glass, metal, chromium, etc. From the bridge, display material was laid out so that it could be looked at by leaning over the rail." Dorner, Alexander, *The Way Beyond 'Art' - Problems in Contemporary Art: The Work of Herbert Bayer*, Wittenborn, Shultz Inc., New York, 1947; republished by Literary Licensing, United States, 2012.

The main difference in this exhibition was the message conveyed: where the Paris installation "sought to promote a group of artists" and an architectural vision, the Berlin show propagated an ideological message, inciting "collective awareness at a time of immense political stakes."[382] Seen in this light, the Exhibition of the Building Workers Unions reproached Lissitzky's photographic demonstrations. Lissitzky had used a vantage point from an open staircase in *Pressa*, the novelty of the moving photographs was a progression from the coloured laths he had used in his *Abstract Cabinet*, and the overall design of the space was quite similar to Lissitky's *International Hygiene-Exhibition* in Dresden in 1930. In this way, it was a step backwards from the purely artistic goals set forward at the *Salon des artistes décorateurs.*

One step forward, one to the Left, one step back, and quite a few to the Right

A grave step backwards followed in 1933 with the election of Adolf Hitler as the new German chancellor. Upon assuming power, Hitler closed the Bauhaus school and the Werkbund was placed under National Socialist control.[383] When *Die Kamera* opened, originally planned by the Werkbund as a the next *Film und Foto* exhibition, it was immediately clear to what extent the National Socialists would abuse culture for their own ideological message. The new *Ministry of Public Enlightenment and Propaganda*, under the auspices of Joseph Goebbels, had turned the intended modernistic exhibition into a demagogic choreography, fetishizing the martyrs of the Fascist movement. The entrance hall of *The Camera: Exhibition of Photography, Printing and Reproduction* was dominated by "sixteen huge photographic enlargements of mass gatherings and marches."[384] The photographs, "taken by Hitler's personal photographer Heinrich Hoffman," encircled the space like an illusionistic panorama painting.[385] **(Fig. 9)** The principles of photomontage were forsaken in favour of single, monumental images with a central perspective. The largest, vertically hung panel was a bird's eye view over the vast territory of the *Luitpoldarena* where the NSDAP party's Nuremberg Rally was annually held. The hovering vantage point was the hallmark of this totalitarian propaganda: Bayer's all-seeing eye changed perspective into the "omnipresent eye of governance and control."[386]

Die Kamera was held at the same location as the Exhibition of the Building Workers Unions, the *Ausstellungshallen am Funkturm*. Beyond the buildings of the *Radio Tower Trade Fair Grounds*, everything else had changed. Bayer's field of vision was adopted and transformed by the new Fascist organizers. But also Bayer had shed skin when he

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[382] "Taken together, the techniques constituted one of the boldest inter-war attempts to stimulate viewers through multi-sensory empowerment, and incite collective awareness at a time of immense political stakes. (…) The organized labour movement would become, especially in 1932 and early 1933, the final political bulwark against the vicious assaults of the National Socialists." Rocco, Vanessa, *Activist Photo Spaces*, 2014, pp. 27-29.

[383] The intent of this essay is to draw a timeline in which Herbert Bayer developed and applied his 'field of vision' theory. It is in this respect that the closing of the Bauhaus school is highlighted. The cruelty of Hitler's regime goes beyond the scope of this essay. But it is necessary to recognize the role of cultural suppression, propaganda and the soft violence of intimidation leading up to the instalment of Hitler's totalitarian regime and its full deployment with the genocide of approximately 6 millions Jewish citizens, 2,7 million Polish citizens and 4 million others who were deemed 'degenerate' such as the Romani, German homosexuals and the physically and mentally disabled. A total number of 60 million people are estimated to have died during World War II.

[384] Pohlmann, Ulrich, "Not Autonomous Art but a Political Weapon: Photography Exhibitions as a means for aestheticizing Politics and Economy in National Socialism," *Public Photographic Spaces*, edited by Jorge Ribalta, 2009, pp. 279-284.

[385] Ibid.

[386] Ibid.

designed the catalogue of *Die Kamera*. The photography historian Ulrich Pohlmann points out that "Bayer understood exhibition design primarily as an ideology-free form of communication," but nuances that "what began as a harmless product advertising for industry and the crafts was to assume a clear political meaning and, as of 1933, function in the service of the National Socialist regime."[387] Bayer remained in Germany far longer than most of his colleagues. He worked on several occasions on *Third Empire* propaganda shows. In 1934 Bayer and Gropius worked on the architectural design of the exhibition *Deutsches Volk, Deutsche Arbeit (German People, German Work)*, which promoted the Fascist doctrines on *Social Darwinism*.[388] For *Wunder des Lebens (The Miracle of Life)* in 1935, Bayer designed the catalogue, and for *Deutschland (Germany)*, a photomontage brochure. The *Germany* exhibit was staged during the 1936 Olympic Games and the brochure explained in four languages to an international public Hitler's aggressive expansion policy: they were "a race with not enough *Lebensraum*" - living space. The brochure Bayer designed did not leave any doubt over his own collaboration and compromised his alleged artistic neutrality. It celebrated the authority of Hitler's dictatorial regime with a number of swastika's and warmongering slogans: "The Führer speaks! Millions hear him.The working population, the farming community, the military in their regained freedom, are the pillars of National Socialist Germany." Superimposed over the masses, there is the stern head of a German soldier, facing the 'racially degenerate' foreigners. **(Fig. 10)** Photography played one last important role in 1937 with the exhibition *Gebt mir vier jahre zeit! (Give me four years' time!)* in which a twenty meters high portrait of the despotic *Führer* was the climax of idolatry.[389] But this exhibition was done without Bayer's cooperation. He had finally set sail to the United States of America.

When compared to the international acclaim for the design of Albert Speer's German pavilion at the *International Exposition of Art and Technology in Modern Life* of 1937, it is hard to determine from today's perspective, the precise amount of collaboration of Bayer with the Fascist regime. It is absolutely clear that Bayer contributed to the new vision of the Fascist society, but it remains unclear how much of it was belief and how much was neutral opportunity. To the international community it was clear that Hitler was able to pass laws in 1933 that banned all other political parties and gave him dictatorial powers, which he violently abused in the following years. The racist, anti-Semitic Nuremberg Laws, which declared that only those of German blood ancestry were eligible to be *Third Empire* citizens, were introduced in 1935 and applied - out of foreign policy concerns - after the 1936 Olympic Games. By then, artists could not produce work anymore, unless they were licensed members of the government run artist chambers, which were supportive of the party. At the Hannover *Landesmuseum* all

[387] "Although official Third Reich publications defamed the experiments of the New Vision school as 'cultural bolshevism,' 'degenerate' or 'Jew-ridden,' experimental design elements such as large-format photographs and photomontages were repeatedly used in exhibitions to advance ideological rhetoric." Pohlmann, Ulrich, "El Lissitzky's Exhibition Designs: The influence of his work in Germany, Italy, and the United States, 1923-43," *Public Photographic Spaces*, edited by Jorge Ribalta, 2009, p. 183.

[388] "Mies [Ludwig Mies van der Rohe] was initially supposed to oversee the architectural organization of *German People/German Work*, but Hitler ordered that he be removed from the position. In the end, Mies and Reich - along with Walter Gropius, Herbert Bayer, and Joost Schmidt- contributed to the exhibition but were not publicly acknowledged." Staniszewski, Mary Ann, *The Power of Display*, 1998, p. 39.

[389] "Other large-scale montages on the main body of the exhibition focused on the cultic mystification of the Fürher. Thus there was a Hitler portrait by Hoffman that was twenty meters high and enlarged by a factor of thousand ('The Fürher Calls the Entire Nation'); its overall dimensions were 40 x 18 metres. In it, Hitler was surrounded by farmers sowing and reaping, industrial workers and smoking factory chimneys." Pohlmann, Ulrich, "Not Autonomous Art but a Political Weapon," *Public Photographic Spaces*, edited by Jorge Ribalta, 2009, p. 295.

of Alexander Dorner's innovations were erased, including Lissitzky's *Abstract Cabinet* and Moholy-Nagy's *Room of Our Time.*[390] In 1937 the State museums were 'purged' of *degenerate* art. Thousands of modern artworks, including some of Bayer himself, were confiscated and prepped for the *Entartete Kunst* exhibition in Munich the following year.[391] And that changed the game. He had lost hope that his work would continue to be tolerated by the authorities, upon which he left Germany. Bayer's work was exhibited amongst many of his friends and peers at the *Degenerate Art* exhibition in 1937. The exhibition's densely hung display strategy ridiculed Bayer's optically dynamic field of vision and use of typography. Although the *Drittes Reich* had initially assimilated the avant-garde practices in their own propaganda, this was a regressive reaction that now denounced the progressive evolution of modern art and exhibition design. On the other side of the street, the *Great German Art Exhibition* was installed in the white cube of the megalomaniac *Haus der Kunst* where paintings were sparsely hung in a singular row. The aura of a pristine white space filled with heroic realism stood in shrewd contrast to the apparently disorganized Degenerate Art exhibition.[392] Photography itself was now deemed degenerate and was replaced by the 'pure' and traditional arts of painting and sculpture. Mural painting, mosaics and tapestries were to replace the persuasive power of the photographic enlargement. This was particularly manifested in the German pavilion at Expo 1937 - where it was seen by the international community, well aware of the recent events in Germany – to make a "deliberate contrast to the interior of the Soviet exhibition structure, which used photographic murals."[393] Nonetheless, in Paris the Fascist pavilion received a golden medal from the international jury. Speer was even awarded a *Grand Prix*, the highest *Grand Prize* of the Jury, for his model of the Nuremberg rally grounds. On the last day of the year 1937, the Third Empire swastika was even raised for the first time on American soil. The waving flag stood in New York's *Flushing Meadows–Corona Park*, after the German government had negotiated a space for a national pavilion on the fairgrounds of the upcoming *World of Tomorrow*: the New York World's Fair of 1939. In the United States there was as much support for as contestation against the upcoming Nazi contribution to the international exposition. A few months later, Germany officially withdrew its participation. We now know that the Fascist state would in fact have an excruciating impact on tomorrow's world.

From today's perspective, it remains opaque why there seemed to be an international sense of condoning doubt, sometimes even a certain amount of admiration for the brown-shirted fanatic. This hypnotizing spell lasted until the German invasion of Eastern Europe in September 1939, just before the closure of the New York World's Fair. It lasted until the persecution and confinement of Jewish and other 'racial' minority

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[390] Moholy-Nagy started working on his *Raum der Gegenwart* in 1930. Like Lissitzky's Abstract Cabinet, it was meant as a permanent gallery at the Landesmuseum, but it was destroyed even before it was fully operational. Staniszewski wrote that The Room of Our Time presented "the most recent developments in visual culture: it incorporated photography, film, and reproductions of architecture, theater technique, and design. In the center was Moholy's Light Machine, which projected patterns of abstract light when a button was pressed. The Room of Our Time was distinguished by the complete absence, with the exception of Moholy's Light Machine, of any original works of art. Everything was a reproduction, a model, or documentation". Staniszewski, Mary Ann, *The Power of Display*, 1998, p. 21.

[391] Altshuler, Bruce, *Salon to Biennial*, 2008, p. 257; and Altshuler, Bruce, *The Avant-Garde in Exhibition: New Art in the 20th Century*, University of California Press, Berkeley CA, 1994, pp. 136-148.

[392] "There is no denying the coincidence: when the aestheticization of politics reached terrifying proportions, the white cube was called in." Filipovic, Elena, *The Biennial Reader: An anthology of large-scale Perennial Exhibitions of Contemporary Art*, Hatje Cantz, Ostfildern, 2010, p. 324.

[393] Pohlmann, Ulrich, "Not Autonomous Art but a Political Weapon," *Public Photographic Spaces*, edited by Jorge Ribalta, 2009, pp. 293-294.

groups opened eyes over the concentration camps. The *Dawn of a New Day*, the slogan of the New York World's Fair, brought a dawning awareness that the World of Tomorrow was to be a World at War.[394]

The wrong waltz

The more important question to me is how much of the Fascist ideas and ideals had by then transgressed in the global society, or to stay with our subject, had transgressed in the exhibition format of the photographic environment. Already in 1935 Walter Benjamin indicated a reversal of political – and tonal - values in *The Work of Art in the Age of Mechanical Reproduction*:

> To an ever greater degree the work of art reproduced becomes the work of art designed for reproducibility. From a photographic negative, for example, one can make any number of prints; to ask for the "authentic" print makes no sense. But the instant the criterion of authenticity ceases to be applicable to artistic production, the total function of art is reversed. Instead of being based on ritual, it begins to be based on another practice - politics.[395]

He concluded his essay with a pre-emptive warning:

> "Fiat ars - pereat mundus," says Fascism, and, as Marinetti admits, expects war to supply the artistic gratification of a sense perception that has been changed by technology. This is evidently the consummation of "l'art pour l'art." Mankind, which in Homer's time was an object of contemplation for the Olympian gods, now is one for itself. Its self-alienation has reached such a degree that it can experience its own destruction as an aesthetic pleasure of the first order. Fascism is rendering aesthetic. Communism responds by politicizing art.[396]

In retrospect, Ulrich Pohlmann described in 1999 the 20th century genealogy of the photographic environment technique and its political versatility:

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[394] This essay was written between the election and the inauguration of President Donald Trump. This footnote was added on the 21st of January 2017, the day after Trump's inauguration speech. Seen the amount of musicians, actors and fashion designers that openly refused to perform on his inauguration day, it is questionable that the German artists that cooperated with the National Socialists after 1933 did not know what was slowly being executed. Perhaps it was angst or a violent form of suppression, but it might as well have been a blind belief in a new and better society. This belief was real and shared by many artists across the borders, such as Le Corbusier who kept on working for the National Socialists until the end of the war. After the Night of Broken Glass, the *Kristallnacht* pogrom of 1938, there was no excuse left. The comparison to Trump might be strong language, but the comparison is born precisely out of his own use of rhetoric language, reminiscent of Hitler and Mussolini's demagogy. Perhaps this sounds far-fetched, but what stood out in his speech was the proclamation "America First!" and his intentions for an isolationist politics. This refers directly to the *America First Committee* from the 1930s, which strongly opposed the involvement of the United States in World War II – against Fascism. The non-interventionist group proposed neutrality but was compromised by segregationist and anti-Semitic speeches, endorsing Hitler's reign. It still remains to be seen what will happen under Trump's reign, and how artists will react. The world of today has been strongly pulled to the Right in the past four years, and our world of tomorrow looks bleak at this moment. There is no excuse this time, we all know now. Adding another comment, a year after Trump's inauguration – during my review of this text – I could add a long list of proof supporting my earlier statements. I will just name one: Trump's refusal to condemn the alt-right and white supremacist rally in Charlottesville, Virginia, on August 12, 2017, which ended in severe racial violence.

[395] Benjamin, Walter, "The Work of Art in the Age of Mechanical Reproduction," *Illuminations*, Random House Inc., New York, 1968, p. 224.

[396] Ibid., p. 242. To this last paragraph, Benjamin noted: "'Let art flourish - and the world pass away.' This is a play on the motto of the sixteenth-century Holy Roman emperor Ferdinand I: 'Fiat iustitia et pereat mundus' (Let justice be done and the world pass away)."

> What had initially seemed paradoxical, even inconceivable, for ideological reasons, had become a political reality: the type of design idiom Lissitzky had created for Soviet exhibitions had eventually been adopted by leading designers in the National Socialist and Fascist states of Germany and Italy, respectively. Finally, under the influence of Bayer, Lissitzky's revolutionary mode of designing exhibitions became acceptable to the Capitalist West and the American public.[397]

Benjamin Buchloh similarly concluded his 1984 essay *From Faktura to Factography* with the following:

> In this case it was Herbert Bayer who provided American industry and ideology with what *he* thought Lissitzky's ideas and practice had attempted to achieve. Bayer was well suited for this task, having already prepared an elaborate photomontage brochure for the *Germany (Deutschland)* National Socialist' exhibition of 1936, staged to coincide with the Berlin Olympics. When asked by Christopher Phillips about his contribution to this project for the Nazi's, Bayer's only comment was "This is an interesting booklet insofar as it was done exclusively with photography and photomontage, and was printed in a duotone technique." Thus, at the cross-section of politically emancipatory productivist aesthetics and the transformation of modernist montage aesthetics into an instrument of mass education and enlightenment, we find not only its imminent transformation into totalitarian propaganda, but also its successful adaptation for the needs of the ideological apparatus of the culture industry of Western capitalism.[398]

It might as well be argued that the influence of the photographic environment moved in an opposite direction. A certain American admiration for Fascist Germany was reciprocated in abundance. Beyond Hitler's appreciation for Walt Disney and vice versa, German praise for American practices was already found in Hitler's *Mein Kampf*.[399] It has been conveniently forgotten that when the leading Nazi's met at Nuremberg in 1934 to instate their racial laws, they sought inspiration in the legislative model of the United States. The German Fascists utilized American State laws enforcing racial segregation in the southern, former Confederate States as an example. These laws, dating back to 1890 and known as the *Jim Crow Laws*, criminalized racially mixed marriages and mandated the segregated use of public schools and public transportation, restrooms, restaurants, and the military for 'whites' and 'blacks.'[400] The anti-Semitic *Nuremberg Laws*, when introduced in Germany in 1935, were adopted from these American segregation laws. And so we find the principles of racial segregation deeply embedded in the United States and migrating to Europe in the Interwar period. Would this than also be the case for, again to stay with our subject, the exhibition format of the photographic environment? In his essay outlining the migration of the technique from Germany to the United States, Pohlmann footnoted that:

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[397] Pohlmann, Ulrich, "El Lissitzky's Exhibition Designs," *Public Photographic Spaces*, edited by Jorge Ribalta, 2009, p. 183.
[398] Buchloh, Benjamin H. D., "From 'Faktura' to Factography," *Public Photographic Spaces*, edited by Jorge Ribalta, 2009, p. 61.
[399] Whitman, James Q., *Hitler's American Model: The United States and the Making of Nazi Race Law*, Princeton University Press, Princeton, 2017.
[400] These laws continued in force until 1965. They were also the inspirational model for Apartheid.

> There is little doubt that the use of large-format photographs was also inspired by the American 'photomurals' exhibited at the Museum of Modern Art in 1932 and commonly used during the New Deal. (…) These photomurals were also discussed in the German press.[401]

The American 'photomurals' exhibition could indeed have been influential across the ocean. In May 1932, the MoMA staged the exhibition *Murals by American painters and photographers*, where blow-ups of works by Bernice Abbott, Charles Sheeler and Edward Steichen were shown on a size of 2 by 3,5 meters.[402] **(Fig. 11)** The catalogue makes mention of another, entirely different atmosphere of influence than a European: "Stimulated in part by Mexican achievement, American interest in mural decoration has increased astonishingly during the past year."[403] The source of the photographic enlargements had apparently originated down South, from the Mexican *Muralists*. It was the second exhibition at MoMA where photography played an important role. In February 1932, Philip Johnson had opened the exhibition *Modern Architecture: International Exhibition* at the MoMA, showcasing the latest developments in American and European architecture. This was the first exhibition at MoMA that featured photography in such a primary role. **(Fig. 12)** The exhibition showed architectural models and enlarged photographs, "hung in the same manner as paintings" in a single line against neutral-coloured monk's cloth. Johnson remarked that he made "the photographs as big as I could for the rooms" and that he "had the photographs especially [re-]photographed and especially turned back over the outside, folding over to the back of the photograph, so as not to have frames."[404] This was according to him "the first time that had been done."

In an earlier essay from 1988, Pohlmann, wrote:

> National Socialist propaganda strategists were almost certainly also familiar with the use of large-scale photographs as 'photomurals' in public buildings in American cities in the context of the measures of the New Deal. Edward Steichen's interior design for a smoking room at New York's Rockefeller Centre in 1933 was held up as the embodiment of a 'brand new fanciful approach' to interior design: "The mirror-smooth band of highly realistic photographs, some of them life-size, removes the limiting character of the walls and makes them almost transcendent; one doesn't look out from inside the room at walls, but rather through them, into another world. In this way, the room loses its rigid, closed quality and takes on a spacious and animated flavour." The author concludes with the call for something similar to be undertaken in Germany.[405]

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401 Pohlmann, Ulrich, "El Lissitzky's Exhibition Designs," *Public Photographic Spaces*, edited by Jorge Ribalta, 2009, p. 184, note 39.
402 Kirstein Lincoln, *Murals by American painters and photographers*, Kaplan & Lapan, New York, 1932, p. 7.
403 Ibid.
404 Staniszewski, Mary Ann, *The Power of Display*, 1998, p. 196. Mary Ann Staniszewski interviewed Philip Johnson in 1994.
405 Pohlmann, Ulrich, "Not Autonomous Art but a Political Weapon," *Public Photographic Spaces*, edited by Jorge Ribalta, 2009, p. 286 note 35. Pohlman quotes Trieb, E., "Monumentalphotos als Wandschmuck," Der Photograph n° 43, 1933, pp. 142-143.

In 1933, the by then renowned commercial photographer Edward Steichen created a vast, panoramic photomural – comparable in size to Lissitzky's photo-fresco at Pressa - on the theme of aviation, which was incorporated in the interior design for a men's cigar room at the Rockefeller Centre. **(Fig. 13)** Pohlmann's other reference to the *New Deal* photographs reflects on the *New Deal* program instated by President Roosevelt between 1933 and 1938 as a response to the Great Depression. One of the measurements was the erection of the *Farm Security Administration*, which fought against American rural poverty. In doing so, the *FSA* hired eleven photographers, among who Walker Evans and Dorothea Lange, to document the cringing American country. These photographs were shown as large-format blow-ups at the *International Photographic Exhibition* at Grand Central Station in 1938. Perhaps this was too late to have been a possible influence to Fascist propaganda techniques. But the idea to create a photographic essay 'introducing America to Americans' with large blow-ups was a major influence to Edward Steichen, which he clearly expressed in an article he wrote on the exhibition: **"**If you are the kind of rugged individualist who likes to say, 'Am I my brother's keeper?' Don't look at these pictures – they may change your mind."[406] Already in 1931, the former Pictorialist had outlined, to quote Buchloh again, an "American variation on the theme of an anti-modernist backlash in favour of his version of a 'productivist' integration of art and commerce":

> The modern European photographer has not liberated himself as definitely. He still imitates his friend, the painter, with the so-called photomontage. He has merely chosen the *modern* painter as his prototype. We have gone well past the painful period of combining and tricking the banal commercial photograph. … It is logical therefore that we find many modern photographers lined up with architects and designers instead of with painters or photographic art salons.[407]

The direction of the atmosphere of influence was not a straight marching line from East to West, but more a nauseating box step of compass points. The exhibition format of the photographic environment had been assimilated before Bayer made his entry into the Museum of Modern Art in 1938. But Bayer did excel in the execution, appropriation and implementation of the technique for various exhibitions at the American museum. The first time he deployed his technique was when he was attracted by Alfred Barr Jr. to co-curate, together with Gropius, an exhibition on the short history of the Bauhaus. It seemed only logical to organize such a show, since the MoMA was established in 1929 on ideas and visuals taken from the Bauhaus and some German museums of the democratic Weimar Republic. Alfred Barr Jr., the founding director of the MoMA, had extensively travelled Europe in the late 1920s and early '30s, often together with his colleague Philip Johnson. They visited renowned architects such as Ludwig Mies van der Rohe, Walter Gropius and Le Corbusier, and witnessed the pale walls of the *Folkwang Museum* in Essen and Alexander Dorner's innovations at the *Landesmuseum*. But it was more complicated than was proposed. Both Bayer and Gropius had in some ways collaborated in the early stages of the Fascist regime, as did Ludwig Mies van der Rohe. Even Philip Johnson, the founder of the *Department of Architecture and Design* at the MoMA, openly admired and sympathized with Hitler's regime at the time.[408] The

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[406] Mauro, Alessandra, *Photoshow: Landmark exhibitions that defined the history of photography*, Thames & Hudson Ltd, London, 2014, p. 175.
[407] Steichen, Edward, "Commercial Photography," *Public Photographic Spaces*, edited by Jorge Ribalta, p. 60.
[408] Johnson, Philip, "Architecture in the Third Reich," *Hound and Horn*, October-December, 1933. Johnson openly admired the 'architectural accomplishments' of the 'new civilization.' In his article "Architecture in the Third Reich" he

democratic avant-garde ideas of the Bauhaus were antithetical to those of the National Socialist regime, but it seemed that Fascist ideas and ideals, more than Lissitzky's display strategies, had parasitically transgressed into the American museum.

For the Bauhaus exhibition, Bayer had turned some of his new theories on photographic exhibitions into action. In 1935 he had drawn a new diagram: the *Diagram of 360 Degrees Field of Vision*. **(Fig. 14)** Expanding on the concept he performed in 1931, Bayer now placed the spectator in the middle, surrounded by visual signals above and below the eye line, including the floor and ceiling. The drawing also stipulated a ramp, based on Gropius' freestanding ramp, which guided the visitor through the exhibition. In his essay *Fundamentals of Exhibition Design* of 1937, he described how "by means of movement of the eye, of the head, or of the body, the field of vision is extended":

> Relationships in succession must always be arranged in the direction of the movement of the individual, whether this be horizontal or vertical (by means of the elevator). (…) The form and effect of the room and of the design may be definitely influenced by the material and are dependent on it. (…) The sense of sight and the experiences of the sense of touch or smell are elements of the psychology of the effect. (…) Material has just as much psychological and physiological function as colour.[409]

In contrast to Lissitzky's open plan of free movement, Bayer insisted "to lead the individual in the correct order past all that which should be viewed, and *without conscious compulsion*." Consequentially, in the Bauhaus exhibition he included depictions of arrows, elliptical guidelines and footsteps on the floor, which directed the visitor in an imperative way throughout the exhibition. **(Fig. 15)** The implementation of a "multi-sensorial didactic system" became somehow persuasive by Bayer's "obsession to control the viewers' experience."[410]

> The theme should not retain its distance from the spectator, it should be brought close to him, penetrate and leave an impression on him, should explain, demonstrate and even *persuade* and lead him to a planned and direct reaction. Therefore we may say that exhibition design runs parallel with the psychology of advertising. (…) When the exhibition material is already grouped in a reasonable succession, then the direction of visitors will follow in a free and unaffected manner: by means of the *forceful* and effective swinging motion of direction arrows.[411]

He further described the "senseless symmetry" of the 1936 Fascist exhibition design in Berlin, without much critique, while arguing that "the visitor might also be conducted

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observed that some "young men in the party" were "ready to fight for modern art." For a few years, he worked outside of the MoMA as an international journalist, reporting on events in Germany, such as the Nuremberg rallies. His eyes were accordingly opened when he corresponded as a journalist over the invasion of Poland in 1939. He later said: "I have no excuse for such unbelievable stupidity... I don't know how you expiate guilt."

[409] Bayer, Herbert, "Fundamentals of Exhibition Design," *PM Magazine*, vol. 6, no2, December 1939-January 1940, pp. 23-24. Bayer wrote this text in 1937.

[410] Rocco, Vanessa, *Activist Photo Spaces*, 2014, pp. 27-29. According to several sources Bayer used these footsteps and arrows for the first time in the Exhibition of the Building Workers Unions, but the installation photographs do not confirm this information. On the contrary, there is no visual trace in these images of footsteps or arrows. It seems more likely that this was first used in the years between 1933 and 1936 as Bayer's own writings suggest.

[411] Bayer, Herbert, "Fundamentals of Exhibition Design," 1939, pp. 18-20.

through the exhibition by a mechanical device such as a moving carpet, and thus *perforce submit* to direction." He had also exchanged Lissitzky's photomontage technique of multiplicity, in favour of single, monumental imagery with only one point of view. Combined with his new preference for photographic imagery with a persuasive unified perspective, the submission of the spectator signalled a transgression of powerful totalitarian propaganda techniques into the heart of the American art institute, symbolized by these footsteps.

War dance

The 'designed future' Bayer had imagined, arrived already in 1939 at the New York World's Fair. The integration of photography, corporate advertising and visitor experience reached new heights, demonstrating "that supercivilization that is based on the swift work of machines."[412] Visitors were 'perforce' transported horizontally by a moving carpet and vertically by electric staircases into the *Perisphere*, a hollow globe of 55 meters in diameter. **(Fig. 16)** From assigned seats on a revolving observation platform they looked up to 'movie murals' and down onto *Democracity*, a diorama presenting the city of the future. But that city of ideals would not be. The Exposition remained open until October 1940, far into the Second World War. Although the fairground reflected the international situation, with the retreat of many national pavilions, the American citizens still enjoyed their leisure time in the many multimedia attractions. While opposing American parties were negotiating to join the war against Fascism, *Superman* made an appearance on the fairgrounds in July 1940, playfully provoking the Nazi's by proclaiming that he would singlehandedly end the war by "bending the barrels of Krupp guns like spaghetti."[413] But the optimistic faith of the Americans in a progressive future was severely tarnished with the attack on Pearl Harbor in December 1941, causing the United States to fully engage in World War II.

The American government immediately started a propaganda campaign to rally for public endorsement of their entry into the Second World War. In June 1941 the Central Press News Service issued that "the latest and strangest recruit in *Uncle Sam's* defence line-up is – the museum!" During the war the MoMA hosted 29 exhibitions "conceived with the intention of persuading, encouraging and stimulating patriotism."[414] Three of these exhibitions made extensive use of the photographic environment technique: *Road to Victory* in 1942, *Airways to Peace* in 1943 and *Power to the Pacific* in 1945 - respectively dedicated to the army, the air force, and the navy. The press release of the first and foremost Road to Victory left no room for misinterpretation in its intention to "enable every American to see himself as a vital and indispensable element of victory." The introductory text to the exhibition catalogue described the set-up of the show:

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412 Findling, John E., *Historical Dictionary of World's Fairs and Expositions, 1851 – 1888*, Greenwood Press, Westport, 1990, p. 294.

413 The playful provocation quickly turned the German admiration for the *Übermensch* Superman into a bitter reaction: "Jerry Siegel, an intellectually and physically circumcised chap who has his headquarters in New York, is the inventor of a colourful figure with an impressive appearance, a powerful body, and a red swim suit who enjoys the ability to fly through the ether. The inventive Israelite named this pleasant guy with an overdeveloped body and underdeveloped mind 'Superman.' He advertised widely Superman's sense of justice, well suited for imitation by the American youth. As you can see, there is nothing the Sadducees won't do for money! *Das schwarze Korps*, 25 April 1940, p. 8.

414 Tagliaventi, Alessia, "MoMA's Department of Photography," *Photoshow*, edited by Alessandra Mauro, 2014, p. 164.

> Although *Road to Victory* was planned in October 1941, America's entrance into the war immediately charged it with new significance. Lieutenant Commander Edward Steichen, USNR, was especially assigned by the Navy to assemble the exhibition. During six months of research and preparation, Commander Steichen examined tens of thousands of photographs generously submitted by those whose names are listed on page 2. Nearly ninety per cent of the pictures have been supplied by departments and agencies of the United States Government, the largest number coming from the Farm Security Administration, the Army Signal Corps and the Navy Bureau of Aeronautics. The 150 photographs finally selected have all been enlarged to mural sizes varying from three by four feet to ten by forty feet.[415] **(Fig. 17)**

The militaristic aim was as simple as the linear, chronological storyline: introducing the 'Americans to America' by featuring a cross-section of the great land, it's mountains, rivers and valleys, as well as its hard working, proud inhabitants enjoying the freedom of that vast territory. Then posing the acute threat of war, and after, engaging the viewers into heroic scenes of war preparations, evoking the urge to endorse America's involvement in the war - even to enlist in the army to defend that freedom.

The exhibition read like a three-dimensional photographic documentary, appealing to the spectators' feelings of pride, followed by patriotism. Steichen had selected the images carefully. The choice of photographic imagery was obviously important, but its narrative dramaturgy depended on the exhibition's display strategy. The architectural installation had been assigned to Bayer. In the whitewashed galleries of the MoMA, even the floor was painted neutrally white. "Bayer convinced Steichen to project a planned mural into three-dimensional space, allowing spectators to 'walk within the composition.'"[416] The designer, who stated that "the great possibilities of exhibition design rest on the universal application of all known means of design: diagram, lettering, the word, photography, architecture, painting, sculpture, tone, light, film," deployed all of his hybrid effects in full force. "The force of the exhibition," the introduction text affirmed, "lies above all in the *sequence* of the pictures. Each room is a chapter, each photograph a sentence." Visitors were first led past a separate room in which a wooden statue of the American Eagle was installed against the backdrop of an abstracted United States flag. **(Fig. 18)** They were then led, through the main entrance, past monumental blow-ups and photographic panels at varying heights and at different angles, filling the peripheral vision. The first thing they saw was a huge panorama of Bryce Canyon, Utah, measuring 4 by 5 meters.[417] **(Fig. 19)** Every image had its own particular panel or wall. The black and white photomurals were made of enlarged sections of a single photograph and their seams were airbrushed. Finally the whole mural was coated with a matte varnish.[418] While the images on these monumental photomurals were mainly vast

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[415] Wheeler, Monroe, "A Note on the Exhibition," *The Bulletin of the Museum of Modern Art, 5-6, Volume IX*, June 1942, p. 18-19.

[416] "The ideal of prolonged attention, sustained interest, was replaced by a steady flow of fleeting impressions." Lugon, Olivier, "Edward Steichen as Exhibition Designer," *Edward Steichen: Lives in Photography*, edited by T. Brandow & Wiliam A. Ewing, Thames & Hudson, London, 2007, pp. 269-272.

[417] Tagliaventi, Alessia, "MoMA's Department of Photography," *Photoshow*, edited by Alessandra Mauro, 2014, p. 169.

[418] "To make the large murals, the negatives were enlarged in sections upon strips of photographic paper forty inches wide. The museum wall was first sized, then covered with a layer of wallpaper, next with one of cloth, and then the photographs were pasted in the cloth by paperhangers. The seams were lightly airbrushed, imperfections were retouched by hand and finally the whole mural was painted with dull varnish to eliminate the glaring reflections rendered by the surface of photographic paper." Wheeler, Monroe, "A Note on the Exhibition," 1942, p. 19.

landscapes with a persuasive unified perspective, the images of people were printed on a realistic scale and shown closely together – to feel integrated and to identify with the one-to-one scale of the depicted. **(Fig. 20 & 21)** The relationships between the photographs were perfectly arranged in the direction of the movement of the individual. After the introduction of the land and its inhabitants, a large photograph of an *America First* meeting caused the first sign of unrest. **(Fig. 22)** The *America First Committee* was an isolationist group that strongly opposed the involvement of the United States in World War II. The non-interventionist group proposed neutrality but was compromised by segregationist and anti-Semitic speeches, endorsing Hitler's reign and encouraging Fascism to become the political model of the United States. The text on the photograph read: "It can't happen to us," "We've got two oceans protecting us" and "The United States is not in the slightest danger of invasion." At this point, the walkway was raised by a ramp, and while passing the isolationist photograph, visitors had the stars and stripes of the American flag in their eye-sight, painted on the backside of the opposing photographic panels. Just past the America First photograph, the visitor found himself at the maximum height of the ramp while taking a U-turn. **(Fig. 23)** The "most dramatic point in the exhibition," according to the introductory text, cumulated at this 180 degrees turn in the Japanese assault on the United States, in "the destroyer *Shaw*, exploding at Pearl Harbor":

> Below this is an enlarged photograph of the Japanese Ambassador Nomura and the Japanese peace envoy, Kurusu, both laughing heartily. To the left is a Texas farmer whose eyes are fixed upon the Pearl Harbor explosion as he says: "War – they asked for it – now, by the living God, they'll get it."[419]

The juxtaposition of these images was the purest form of propaganda, as these three images were totally unrelated. In her book, *The Power of Display*, Mary Anne Staniszewski unravelled the pedigree of the images and discovered, for example, that the farmer was originally photographed by Dorothea Lange during her assignment for the FSA, and was in fact a poor, unemployed Texan "who had been forced to become a migratory worker because of the mechanization of farming."[420] The caption was changed by Steichen, and enforced by the imperative text written by Carl Sandburg. The meaning of its visual content was entirely altered. The image was cropped, appropriated and resituated in the 90 degrees angle. The positioning and sequence of the photographs created a new meaning. The relation between the America First meeting and the attack on Pearl Harbor is strongly linked, since after the attack the United States entered the war and the America First Committee was dissolved instantly. But the sequential juxtaposition connected all four images together in a climax of indignation. The wall text continued:

> Certain Americans are still unwilling to arouse or inspire hate, even of a mortal enemy, but the emotion that this alcove evokes is not so much hate as a sense of terrible necessity and noble strength. Then follow American troops…[421]

After this climatic turning point, the uplifted viewers could look down onto aerial photographs of departing battle ships and up to flying fighter planes and bombers. **(Fig.**

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[419] Wheeler, Monroe, "A Note on the Exhibition," *The Bulletin of the Museum of Modern Art,* 1942, p. 20.
[420] Staniszewski, Mary Ann, *The Power of Display*, 1998, p. 215.
[421] Wheeler, Monroe, "A Note on the Exhibition," *The Bulletin of the Museum of Modern Art,* 1942, p. 20.

24) A large cut-out of an assaulting soldier reached out to the public. The only hint to the horrors of the actual war was the underlying inscription that distantly alluded to death: "Silence, yes, let them have silence. Call the roll of their names and let it go at that…" The visitors were then bombarded with heroic images of the "extraordinary mechanisms of peace and war" that heralded the "cavalcade of men flying and sailing and motoring and marching to the defence of that continent."[422] By the end of the show, a curved mural of 4 meters high and 12 meters long glorified the march of hundreds of soldiers. **(Fig. 25)** The enormous size of the blow-up, with recognizable life-sized soldiers, enhanced a personal identification and made an appeal to enlist in the army. The large panoramic curve gave a sense of inclusion, of being a part of that particular battalion. Superimposed on top of the photomural were smaller photographs, which visualized the families that needed to be defended. The text clarified:

> America, thy seeds of fate have borne a fruit of many breeds, many pages of hard work, sorrow and suffering – tough strugglers of oaken men – women of rich torsos – they live on – the fathers and mothers of soldiers, sailors, fliers, farmers, builders, workers – their sons and daughters take over – tomorrow belongs to the children.

Alexander Dorner reported on Road to Victory that "the arrangement of the photographs was an active co-operation with the *physiological* and *psychological* activities of the visitor."[423] The catalogue described the route as a "photographic procession." "'The show is a moving picture,' Steichen explained in an interview, 'where you do the moving and the pictures stand still.'"[424] The viewers were submissively led past a prescribed route, a narrow path of merely two meters wide. Staniszewski described aptly that "all ambiguity was abolished and the viewer's movements were controlled with absolute and unswerving clarity: there was only one way to go through this exhibition – and it was down the road to victory."[425] The one-way itinerary of the road was a self-referential one. The ambiguity of photomontage had been completely forsaken in favour of single images with an astonishing eagle's eye perspective. The finale with the curved photomural bore uncanny resemblances to the brochure Bayer had designed for the *Germany (Deutschland)* exhibit five years before. Apart from the swastika, its composition, function and message was identical: soldiers defending traditional white families against wrongdoers.

Seen from today's perspective, the impact of a photo-show at a museum might seem refutable, certainly in comparison to the multi-media experience of *Democracity* at the New York World's Fair. In *Futurama*, a different attraction at the corporate pavilion of General Motors, approximately 27.500 visitors each day sat in one of 552 'moving chairs' and looked around as Norman Bel Geddes' model of the imagined world of 1960

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[422] Ibid.

[423] "The pictures and the ideas and activities they represented interpenetrated in the minds of the visitors, interacting and creating associations and spontaneous reactions. The visitor was led from one such reaction to another and finally to the climatic reaction, to intense sympathy with the life of the USA and an ardent wish to help it and share its aims. The photographs avoided all idealistic symbolism, with its static, freezing effect. … The arrangement of the photographs was an active co-operation with the physiological and psychological activities of the visitor." Dorner, Alexander, *The Way Beyond 'Art' - Problems in Contemporary Art*, 2012, pp. 209-210.

[424] Edward Steichen, quoted in "Photo Exhibit Shows Drama of U.S. at War," *Illinois News*, Chicago, March 31, 1943, The Edward Steichen Archive, The Museum of Modern Art, New York; quoted in Lugon, Olivier, "Edward Steichen as Exhibition Designer," *Edward Steichen: Lives in Photography*, edited by T. Brandow & Wiliam A. Ewing, 2007, p. 269.

[425] Staniszewski, Mary Ann, *The Power of Display*, 1998, pp. 219-220.

gradually passed by.[426] When *Road to Victory* closed doors at MoMA, it had attracted 800 visitors a day, 80.000 in total.[427] The exhibition travelled widely in five different versions throughout the museums of the United States, even – and very significantly - to Honolulu. It travelled through South America and Australia, and one version ended up in London.[428] Even with touring around, *Road to Victory* could not attract *that* many visitors, as counted on the New York World's Fair. But its exerted strength was its format as a photographic essay. The translation into a magazine-catalogue was evident, since the concept of the sequential photo-reportage with explanatory captions was precisely taken from press magazines. As a magazine, the propaganda of Road to Victory reached an uncountable amount of viewers, far beyond the typically white upper class museumgoer. Rid of its physical dimensions, however, it left only a psychological impact. This was oddly countered by including more installation views in the magazine than reproductions of the photographic content of the exhibition. The *Bulletin of the Museum of Modern Art* even communicated a detailed photograph of the preparation model, along with a picture of Sandburg and Steichen proudly posing in front of it. The majority of installation views clearly adhered importance to the experience of the exhibition and the power of the installation design. On the last pages of the catalogue, some press comments were reprinted, of which the first one pointed out the magnitude of the exhibition:

> Every one with two eyes and a heart should go at once to the Museum of Modern Art to see Road to Victory. Your eyes will meet something bigger and better and 25 years more advanced than the World's Fair; your heart will be warmed by a full-scale picture of the great country and its people.[429]

Looking back in 1963, Edward Steichen acknowledged in his memoirs the crucial influence of Bayer's technique and summed up its strengths:

> The genesis of the 'theme' exhibitions produced at the Museum of Modern Art – Road to Victory, Power in the Pacific, The Family of Man and The Bitter Years – lay in the desire to have a series of photographs collectively communicate a significant human experience. This is something that an unrelated collection of even the finest photographs obviously cannot accomplish. Photography, including the cinema and television as well as the printed page, is a great and forceful *medium of mass communication*. To this medium the exhibition gallery adds still another dimension.
> In the cinema and television, the image is revealed at a pace set by the director. In the exhibition gallery, the visitor sets his own pace. He *can* go forward and then retreat, or hurry along, according to his own impulse and mood as these are stimulated by the exhibition. In the creation of such an exhibition, resources are brought into play that are not available elsewhere. The contrast in scale of images, the shifting of focal points, the intriguing perspective of long- and short-range visibility with the images to come being glimpsed beyond the images at hand - all these permit the spectator an *active* participation that no other form of visual communication can give.

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[426] Findling, John E., *Historical Dictionary*, 1990, p. 297.
[427] From the official MoMA press release on the closure of the exhibition.
[428] Herschdorfer, Nathalie, "Chronology," *Edward Steichen: Lives in Photography*, edited by T. Brandow & Wiliam A. Ewing, 2007, pp. 293-307.
[429] PM Magazine, May 31, 1942, quoted in *The Bulletin of the Museum of Modern Art*, 1942, p. 21.

> The creation of this kind of exhibition is more like the production of a play or novel, even a philosophical essay, than it is like planning an exhibition of pictures of individual works of art. Therefore, it must have an intrinsic aim that gives it an element of the universal and an over-all unity. It should also have an existence of its own, as does any other work of art. An exhibition of this nature is not necessarily limited to photography, but the technical and practical aspects of photography make it eminently suitable. The ease with which any given image can be made small or large, the flexibility of *placement* and juxtaposition, the great range of material available in photographs – all these factors make photography the obvious medium for such projects. No amount of technical bravura, however, can make up for the lack of a *fundamental* idea from which the exhibition must grow. There must first be a desire to convey a feeling or thought about a moment or a condition, to build upon the elements furnished by nature and the experiences amassed in the art of living, and to orchestrate these into a *unified force*.[430]

Exhibition design was according to Bayer the "apex of all collective effects, of all powers of design."[431] This exhibition was the epitome of his techniques. It also signalled a transgression of powerful totalitarian propaganda techniques into the heart of the Museum of Modern Art. This is especially visible in the curved mural depicting portraits hovering above marching soldiers, and its similarity to Bayer's Fascist pamphlet. With Road to Victory the exhibition format had reached its unsettling perfection. Such an amount of completion and attention could only be achieved when the technique had reached its peak moment. And this was the moment when the photographic environment was accepted as a museum art. This kind of social understanding also signalled that the concept was about to be surpassed. The world of tomorrow would soon bring a new dominant form of persuasion in every household. The power of television would however leave the photographic environment open for future mediation. The political versatility of the totalitarian propaganda technique had tainted the format, but with its introduction in the highest art circles, it was left open to new possibilities.

[430] Steichen, Edward, *A Life in Photography*, Doubleday & Company, 1963, p. 227.
[431] "In exhibition design, we have a new and complex means of communication of the idea, in which elements, such as painting, photography, etc., fill only part of the field. The great possibilities of exhibition design rest on the universal application of all known means of design: diagram, lettering, the word, photography, architecture, painting, sculpture, tone, light, film. It is the apex of all collective effects, of all powers of design. All the elements suited to the purpose of communicating the idea are included in it, such as enlightenment, advertising, education, etc." Bayer, Herbert, "Fundamentals of Exhibition Design," 1939, p. 17.

14.

Richard Hamilton's Photographic Palimpsest

Richard Hamilton radically altered the photographic environment by erasing any notion of scripted propaganda. What once started as a political strategy deployed by illustrious artists such as El Lissitzky and Herbert Bayer, was assimilated and reinterpreted by Hamilton as an unscripted photographic installation. During the course of three seminal exhibitions, *Growth and Form* in 1951, *Man, Machine and Motion* in 1955, and *An Exhibit* in 1957, he repeatedly mediated the politically tainted photographic space for his own purposes. Gradually ridding his installations of multiple layers of excess information, he ended in abstraction, with a blank slate showing evidence of that particular change.

Richard Hamilton (1922 - 2011) was seventeen when Great Britain engaged in the war. While the Second World War was ravishing the globe, eclipsing World War I as the deadliest and most widespread conflict in human history, Hamilton remained in London - too young to enrol. He worked as a draftsman, making models for an engineering design office. By the end of the war, the road to victory was successfully walked by the Allied Forces.[432] The 'restart' that the Axis powers had wished for, this desired 'clean slate' finally resulted in a disastrous tabula rasa; an erasure of entire cities and millions of people by (atomic) bombardments and (the Holocaust) genocide. After the war, while much of his native city of London lay in ruins, Hamilton consigned to 18 months of military service in an engineers department and a model-making course on camouflaging armed forces. In 1948 he enrolled at the *Slade School of Art* where he studied with his contemporaries Nigel Henderson and Eduardo Paolozzi, met Fernand Léger and was introduced to the writings of D'Arcy Wentworth Thompson and the work of Marcel Duchamp. To earn an income, he worked "a lot of time as a model-maker, creating both models of exhibitions and models within exhibitions":

> Installation has always been very much on my mind as part of the process of art creativity. And I have often been involved with the installation of other people's work as well as my own. I worked in commercial exhibitions, not designing the structures or anything of that sort, but making models. I spent a lot of time in places like the annual British Industries Fair. This was after the war when I was in my early twenties. I used to make models partly to get money to help my studies.[433]

He started installing exhibitions at the *Institute of Contemporary Arts* and quickly moved on to creating his own exhibitions at the *ICA*.[434] *Growth and Form*, his first exhibition at the ICA in 1951, took place in the larger framework of the *Festival of Britain*, the centennial celebration of the *Great Exhibition of All Nations and Industries*. Officially

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[432] The exhibition *Road to Victory* of Edward Steichen and Herbert Bayer had also been shown in London.
[433] Richard Hamilton interviewed by Hans Ulrich Obrist in Obrist, Hans U., *Lives of the Artists, Lives of the Architects*, Allen Lane / Penguin Random House, London, 2015, p. 436.
[434] The Institute of Contemporary Arts (ICA) was founded in 1946 by Peter Gregory, Geoffrey Grigson, E.L.T. Mesens, Roland Penrose, Herbert Read and Peter Watson. Its aim was to establish an alternative space to the traditional Royal Academy and the Tate Gallery. From the beginning it promoted radical art and culture and until today it examines recent impulses in artistic production while stimulating debate surrounding the arts.

opened by Le Corbusier, the Festival of Britain was, however, more than a commemoration of the event of 1851 and it's Crystal Palace. Originally intended as an International Exposition, plans changed into "one united act of national reassessment, and one corporate reaffirmation of faith in the nation's future"[435] It was staged as a National Exposition with events throughout the United Kingdom, dedicated to redevelopment, recovery from the war and the rebuilding of British war torn cities. The main venue was London's *South Bank Exhibition* which featured the *Dome of Discovery*, displaying British advances in science, technology and industrial design, and the *Skylon*, the festival's symbol in the shape of a steel needle of 90 meters high.[436] **(Fig. 1)** Visible throughout this exposition were the exhibition design strategies and the photographic environments initiated by the Constructivists and the Bauhaus adepts, which by then had become commonplace. **(Fig. 2)** The propaganda techniques of Lissitzky and Bayer had been analyzed, assessed and deployed throughout post-war Europe and the United States, as well as described in widely available books such as György Kepes' *Language of Vision* (1944), Lazlo Moholy-Nagy's *Vision in Motion* (1947) and Sigfried Giedion's *Mechanization Takes Command* (1948). Misha Black, one of the leading architects of the Festival of Britain's South Bank Exhibition, wrote on exhibition design that:

> The lesson is clear however; if a pavilion is to convey its propagandistic story in addition to impressing the public by its size or modesty, it must be designed from the inside out, with the exhibits, rather than their physical support and enclosures, being of paramount importance.[437]

Hamilton's intent was slightly different. It was not anymore based on the communication of propaganda, but on the juxtaposition and diffusion of content and information. He focused much more on the physical supports and enclosures, rather than its exhibits. Hamilton's *Growth and Form*, the ICA's contribution to the Festival of Britain, was a new development in the history of photographic environments in the sense that it mediated the politically tainted technique and introduced it into the kaleidoscopically paradox of the art world.[438] **(Fig. 3)** Like Herbert Bayer's *Road to Victory*, the first photographic environment displayed in a museum, Hamilton specifically chose the space of an art institute to embellish his presentation. But unlike Bayer, he deleted the propagandistic unified message in favour of multiplicity.

> I would like to think that what I am doing is questioning reality. Photography is just one way, the most direct we know, by which physical existence can modulate a two-dimensional surface. Painting has long been concerned with the paradox of informing about a multi-dimensional world on the limited dimensionality of a canvas. Assimilating photography into the domain of paradox, incorporating it

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[435] Cox, Ian, "The South Bank Exhibition: A guide to the story it tells," H.M.S.O. (His/Her Majesty's Stationery Office), 1951.

[436] Most of the exhibition pavilions were removed after the exposition, but the site of the Festival of Britain has been developed into the South Bank Centre, including the original Royal Festival Hall.

[437] Black, Mischa, *Exhibition Design*, Architectural Press University of Michigan, Ann Arbor, 1950, p. 33. Misha Black (1910-1977) was a British designer. During the Second World War he held the post of 'principal exhibition architect' at the Ministry of Information. In 1951 he produced the 'Festival of Britain,' commemorating the centennial of the 1851 'Great Exhibition of All Nations and Industries.'

[438] The Festival of Britain engaged museums and art spaces throughout the City of London, arranging exhibitions alluding to the festival's theme. The Victoria & Albert Museum held an exhibition about the 1851 Crystal Palace and displayed relics from the Great Exhibition. The Tate Gallery held an exhibition of Henry Moore and the Royal Society of the Arts held a show entitled *An Exhibition of Exhibitions*.

> into the philosophical contradictions of art is as much my concern as embracing its alluring potential as media. It's necessary, at the moment, to pry out a whole new set of relationships. After all, photography (perhaps we should establish a broader base and think of what I am talking about as lens-formulated images whatever the chemistry or electronics involved) is still fairly new compared with the long tradition of painting and there are many adjustments in thinking yet to be made.[439]

His emphasis was on the visual experience, multiple interpretations, free association, and free movement of the spectator, instead of a didactic and directed display of Bayer. The exhibition *Growth and form* stepped into the older tradition of the inclusive, encyclopaedic photography exhibition, showing the multiple uses and the wider visible spectrum of the medium in radiography and micro- and macro-photography. Hamilton was inspired by the book *On Growth and form,* a study on morphology in nature, published by the mathematical biologist D'Arcy Wentworth Thompson's in 1917 -with a revised edition in 1942.[440] The eye catcher upon entering was a large photomural representing an X-ray of a seal flipper. Visual patterns in scientific images were once displayed as photographs, otherwise interpreted as sculptures. He included self-made, enlarged models of cellular structures, two projected films and a range of original organic and scientific materials. The main element in the exhibition was a shelf structure, a framework filled with photographically enlarged drawings from Thompson's book alongside smaller sculptures and models exemplifying morphological growth.[441] **(Fig. 4 & 5)** The geometric grid-based structures of organic life forms were repeated in the sculptures, the shelf, as well as in the overall design. As a whole, the exhibition had the allure of a typical photographical environment, with the exemption that its theme was uncommitted to any specific message other than visualizing Hamilton's own amazement in nature's processes: "it opened my eyes to the idea that the world is as it is because it must follow certain mathematical principles."[442] This was a different take on the propagandistic use of the technique. It was open-ended, without a conveying conclusion.

Harking back to the Festival's origins, Hamilton himself referred to the historical importance of the Great Exhibition of 1851 as an inspiration of exhibition design.[443] He shared his friend and colleague Lawrence Alloway's interpretation of Universal Expositions as panoramic showcases of "a continuum of arts, crafts and innovative technology from multiple countries and multiple epochs," rather than a disparate hierarchy.[444] The heterogeneous juxtapositions created by these transient exhibitions were quite often political and diplomatic battlegrounds, but in Alloway's vision they also had the ability to transform "difference into dialogue" and equality. In their eyes, the invention of photography inherited that ability in the form of reproductions and

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[439] Hamilton, Richard, "Photography and painting," *Studio International, vol. 177 no. 909*, Cory Adams & Mackay Limited, London, 1969, pp. 120-125.
[440] Richard Hamilton interviewed by Hans Ulrich Obrist in Obrist, Hans U., *Lives of the Artists, Lives of the Architects*, 2015, pp. 431-445.
[441] Walsh, Victoria, "Seahorses, Grids and Calypso: Richard Hamilton's Exhibition-making in the 1950s," *Richard Hamilton*, edited by Paul Schimmel, Tate Publishing, London, 2014, pp. 62-68.
[442] Richard Hamilton interviewed by Hans Ulrich Obrist in Obrist, Hans U., *Lives of the Artists, Lives of the Architects*, p. 441.
[443] 'FoB+10,' Design, no. 149 May, 1961, p. 42.
[444] Rice, Shelley, *Lawrence Alloway's Spatial Utopia: Contemporary Photography as 'Horizontal Description,'* Tate Papers no. 16, 2011.

publications, which could confront and inform - not just control - an audience with a plurality of points of view and anachronisms.

Based on these reflections, Hamilton and Alloway founded the *Independent Group* in 1952, together with a few painters, philosophers, sculptors, architects and photographers. The group gathered regularly at the ICA until 1955 and was founded on the principles of an inclusive mass culture and artistic collaborations. In 1953, the ICA staged an exhibition organized by several members of the Independent Group entitled *Parallel of Life and Art*. **(Fig. 6)** Inspired by Hamilton's *Growth and Form*, the photographer Nigel Henderson, the sculptor Eduardo Paolozzi, architects Peter and Alison Smithson and Ronald Jenkins, a civil engineer, created a photographic environment with 122 panels displayed at different heights and angles as a three-dimensional photo-collage. It fused micro- and macro-photographs of organic life forms with photographs of landscapes and architecture, aerial photographs and reproductions of scientific inventions as well as archaeological, classical and contemporary works of art. The visual rhetoric demonstrated their pluralist view without a consecutive statement, establishing "an intricate series of cross-relationships that exist between different fields of art and techniques":

> These have been ranged in categories suggested by the material that underline a common visual denominator independent of the field from which the image is taken. There is no single simple aim in this procedure. No watertight scientific or philosophical system is demonstrated. In short it forms a poetic-lyrical order where images create a series of cross-relationships.[445]

The parallels and juxtapositions drawn between sets of anachronisms in art and industry had no other intent than evoking a wider field of vision and provoking an uncanny matrix. The loss of any particular intent automatically unravelled a divine coherence in the imagery and was only to reveal a deeper understanding, a comprehension beyond proof. The indecisive, unintentional attitude became intentional pluralism without comforting answers or determinations.

Parallels, juxtapositions, grids and voids

In comparison, in 1951 a similar exhibition to *Growth and Form* opened simultaneously at the Massachusetts Institute of Technology in Boston. *The New Landscape in Art and Science* created by György Kepes was hardly discernable from the analogous display of *Growth and Form*, or for that matter, *Parallel of Life and Art*.[446] **(Fig. 7)** But this show had a clear intent of propagating the idea that nature, science and art shared similar constructive patterns and suggested an interdisciplinary cooperation between the contradictory fields of art and technology. In its set-up it had an entirely different intent, merely because of the fact that it *had* one. What *The New Landscape in Art and Science* and *Growth and Form* shared, however, was its display method. The seemingly disparate photographs of constructive nature were in both exhibitions structured and upheld by a large modular bearing system. In Hamilton's *Growth and Form* the grid structure was

[445] Press release, "Parallel of Life and Art: Indications of a New Visual Order," Institute of Contemporary Arts, London, 31 August 1953.
[446] The Hungarian György Kepes was heavily influenced by Lazlo Moholy-Nagy. He worked in Moholy-Nagy's design studio in Berlin and followed him to work at the New Bauhaus in Chicago in 1937. After the exhibition *The New Landscape in Art and Science* he published a book with the same name and theme in 1956.

limited to the installation of a large shelf. Kepes installed a scaffold-like tube structure of 3,5 meters high throughout the exhibitions space from which he suspended photographs. The grid pattern was in both cases a reflection of geometric forms in nature, as much as an application of organic forms in architecture. Zooming in on the history of grid structures, there are many antecedents to be found before *Growth and Form* and *The New Landscape in Art and Science*. In 1953 the American designer George Nelson collected a history of modular bearing systems in his book *Display*, pointing out the influence of standardized industrial systems on exhibition making, and the influence of each previous design on the next.[447] Nelson had witnessed the political versatility of the photographic environment first hand, by visiting the *Mostra Della Rivoluzione Fascista* in Rome in 1932.[448] He wrote:

> The Exhibition of the Fascist Revolution was an elaborate ruse created to celebrate the tenth anniversary of Benito Mussolini's 'March on Rome,' and the completion of the Fascist revolution in Italy.[449]

The exhibition made extensive use of architectonic photography, cumulating in Guiseppe Terragni's *Room O*. During his long stay in Italy, he also witnessed the wooden grid structure for another Fascist show of Edoardo Persico and Marco Nizzoli in Milan in 1934. **(Fig. 8)** Among the first grid structures known were Frederick Kiesler's installation for the Viennese *International Exhibition of New Theatre Techniques* in 1924, his architectural model *City in Space* for the Austrian section of the *Exposition internationale des arts décoratifs et industriels modernes* of 1925, and Lissitzky's coloured wooden framework for the Soviet section at *FiFo* in 1929. **(Fig. 9)** Walter Gropius replaced the heavy wooden beams by slim steel tubes for his *Nonferrous Metals* display at the National-Socialist exhibition *Deutsches Volk, Deutsche Arbeit (German People, German Work)* in 1934. **(Fig. 10)** This technique quickly spread across Europe and the United States and was used for a wide range of artists (Le Corbusier, Charlotte Perriand, Max Bill, Erberto Carboni, etc.) and very divergent political purposes. Exhibiting photography was just one of its possibilities. In 1951 Francesco Gnecchi Ruscone designed another tubular steel framework for the Milan Triennial. **(Fig. 11)** His *Studi sulle proporzioni* was an exhibition on perspective, proportion and relative size in organic life forms and architecture, depicted through mathematical books, enlarged drawings and photographs.[450] Its modular design was very similar to the simultaneous shows *Growth and Form* and *The New Landscape in Art and Science*. What all these exhibitions had in common, was that their display system, the grid structure, gradually became an integral part of the work.

This versatile grid structure also seemed compatible to the philosophical ideas underlying the work of Hamilton and the Independent Group. It allowed the visitor to move freely through the exhibition and to make different associations at every turn. The complex latticework of steel tubes was somehow comparable to the labyrinth of the

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[447] Nelson, George, *Display (Interiors Library 3)*, Whitney Publications Inc., New York, 1953.
[448] Eisenbrand, Jochen, *George Nelson: Ein Designer im Kalten Krieg*, Park Books, Zürich, 2014, pp. 33-39.
[449] "Terragni effectively masked the totalitarian aims here behind the notion of technological progress, a favorite trope of Italian Fascism inherited from Italian Futurism." Rocco, Vanessa, "'Acting on the Visitor's Mind': Architectonic Photography at the Exhibition of the Fascist Revolution, Rome, 1932," *Public Photographic Spaces*, edited by Jorge Ribalta, 2009, pp. 245-255.
[450] Crouwel, Wim, "Some Starting Points," *Museum in Motion*, edited by Carel Blotkamp, Municipal Vanabbemuseum, 1979, pp. 225-235.

brain, like walking through the mind of the artist. It eventually led to a format where the grid structure itself became the exhibition. For his next exhibition, *Man, Machine and Motion* in 1955, Hamilton fully incorporated this grid structure into his work.[451] **(Fig. 12 & 13)** He designed his own modular structure of steel frames coated in black lacquer. Each frame measured 1,2 by 2,4 meters and could be attached to one another by clamps. Sheets of melamine plastic could be mounted with forked panel pegs into the steel armature.[452] Each plastic sheet was mounted with an enlarged photographic print. His system allowed displaying photographs in horizontal and vertical directions so that the spectators were also confronted with images above their heads. All of the photographs were confined to the structure itself, none were hung on the walls of the exhibition space. The labyrinthine installation displayed around 200 photographs of technological inventions, "images of extensions of the human body that man has made over many generations to adapt himself to other environments."[453] In contrast to *Growth and Form*, this was a show on scientific evolution and progress in aquatic, terrestrial, aerial and interplanetary movement, reminiscent of the concept of universal expositions. But Hamilton wasn't so much interested in the topic of the exhibition but more in the display frame as an artistic installation:

> I was interested in the form of exhibition as such – not that I felt particularly that Man and Motion needed to be presented to the public, but simply that I thought it would make an exhibition that would have a visual interest and it would enable me to exploit my skills as a designer of structures to present information.[454]

An Uncanny Matrix

A new strategy to present information was assessed in the exhibition *This is Tomorrow* in 1956. *This is Tomorrow* was an exhibition at the *Whitechapel Art Gallery* that featured 12 collaborative teams of architects, sculptors, painters and photographers, among them a large number of members of the Independent Group. Each team designed a body of work and an architectural structure that embellished all into one total-work-of-art, together achieving a "simultaneous mastery of several channels of communication." Lawrence Alloway wrote in the introduction text of the catalogue:

> But yesterday's tomorrow is not today – and the ideal of symbiotic art-architecture has not been achieved. (…) The exhibits in *This is Tomorrow* can be viewed as display stands of ideas and the principles they symbolize are varied not unified. (…) The traditional opponent of the purity of art is the Gesamtkunstwerk, the totalwork – such as a Wagnerian opera. However, in this exhibition, there is the desire to experiment in various channels without submitting to the idea of synthesis in which the separate contributions are sympathetically bound together. On the contrary, here different channels are allowed to compete as well as to complement each other, just as, it was suggested, the members of antagonistic cooperative groups compete.[455]

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[451] *Man, Machine and Motion* opened at the Hatton Gallery in Newcastle in May and at the ICA in July, 1955.
[452] Walsh, Victoria, "Seahorses, Grids and Calypso," *Richard Hamilton*, edited by Paul Schimmel, 2014, pp. 69-70.
[453] Richard Hamilton interviewed by Hans Ulrich Obrist in Obrist, Hans U., *Lives of the Artists, Lives of the Architects*, 2015, pp. 431-445.
[454] Ibid.
[455] Alloway, Lawrence, "Design as a human activity," *This is Tomorrow*, Whitechapel Gallery Ventures Limited, London, 1956. Republished in 2011.

Alloway presented in *Group 12* a grid structure that displayed photographs, magazine pages and found footage, "a tack board being a convenient method of organizing the modern visual continuum according to each individual's decision." *Group 8* created sculptures out of enlarged photographs of soap bubbles. In *Group 6* Peter and Allison Smithson created a pavilion with patio out of wood, aluminium and corrugated roofing, containing, among other things, a large photo-collage by Nigel Henderson.[456] In *Group 2*, Hamilton, John McHale and John Voelcker were experimenting with the accumulation of information in a hybrid photographic pavilion:

> This extraordinary construction that John Voelcker devised was low and wide at the front and very high and narrow at the back. It was like a wedge, but a wedge that worked both vertically and horizontally. It was placed so that it made a narrow corridor alongside a sidewall, an area of visual illusion. The whole space around the pavilion used introverted spatial clues. The idea was that there are certain things that were new in our visual environment, such as cinema, the jukebox, Marilyn Monroe and *Forbidden Planet*, etc. All these popular-cultural images were related or contrasted with each other so the way that we saw things could be informed by straightforward visual illusions. A few of the visual illusions were taken from books, but many were made in the treatment of space.[457]

They amassed information, exaggerated the amount of meaning by superimposing and juxtaposing countless images of mass-culture in an immersive architectural set-up. At the entrance of the pavilion, the visitor was met with a magnified photograph of a man's head with text-balloons and arrows pointing to the sensory experiences of seeing, hearing and smelling, opposed to what appeared to be a photomural in colour of spaghetti and meatballs. **(Fig. 14 & 15)** Inside, Duchampian optical illusions were spinning while a foam floor released strawberry-scented air freshener.[458] A jukebox lured the unbalanced spectator to the second part where a giant painting of Robby the Robot from the film *Forbidden Planet* was combined with an enlarged photograph of Marilyn Monroe and a poster of Vincent Van Gogh's *Sunflowers*. In the presentation of Group 2, the versatility of the photographic environment was tested by an excessive accumulation of varied and antagonistic images. Hamilton and his consorts accumulated so much information that in the process they seemingly accidently produced a hybrid photographic pavilion. As a perfect summary for this presentation, flattening the three-dimensional installation, he designed the groundbreaking collage *Just what is it that makes today's homes so different, so appealing?* Hamilton's work for *This is Tomorrow* is what he is best known for today: his pivotal role in the invention of *Pop Art*.

> In the '50s we became more aware of the possibility of seeing the whole world, at once, through the great visual matrix that surrounds us; a synthetic 'instant' view. Cinema, television, magazines, newspapers flooded the artist with a total landscape and this new visual ambience was photographic.[459]

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[456] In the same year, Peter and Alison Smithson designed the *House of the Future*, a roofless full-scale model of a futuristic living unit, for the *Daily Mail Ideal Home Exhibition*.
[457] Richard Hamilton interviewed by Hans Ulrich Obrist in Obrist, Hans U., *Lives of the Artists, Lives of the Architects*, 2015, pp. 431-445.
[458] Altshuler, Bruce, *Salon to Biennial: Exhibitions That Made Art History. Volume I: 1863-1959*, Phaidon Press Limited, London, 2008, p. 358.
[459] Hamilton, Richard, "Photography and painting," 1969, pp. 120-125.

Hamilton's generation was confronted with the fact that television had become the primary medium for influencing public opinion. Television had been invented in the 1920s but only worked its way into every household during the 1950s. It radically changed the necessity to show lens-base imagery to an audience and gradually replaced the propaganda technique of the photographic environment as the new dominant form of persuasion. As a reaction to the overwhelming force of television and mass advertisement, photography partially shifted into a graphic art, embedded in the visual arts. This reaction had occurred the first time around the end of the 19th century, when Pictorialism turned towards the fine arts in reaction to the widespread use of the photographic medium and the invention of cinematic film. But while photography in its early days was aspiring a bigger scale to compete with painting, painters were now provoked to work on a larger scale "as a result of spending too much time in the cinema."[460] The graphic art of photography had a tremendous impact on Abstract Expressionism, the Pop Art of Raushenberg and Warhol, and the new Conceptual Art. And the power of television would leave the photographic environment open for future mediation and artistic analysis.

Hamilton's tomorrow would bring a ceaseless stream of imagery, one that could not be turned off anymore. The overload of photographic images of cinema, television, magazines and newspapers in the 1950s might seem somehow diluted to us, but should in perspective be compared to what was experienced around the turn of the 20th century with the widespread of Internet. But back then, cinemas could be avoided, newspapers could be put aside, and TV's would eventually stop broadcasting by the end of day. In his next experiment, the grandfather of Pop Art anticipated on another future desire: white noise.

Erasability

In the spirit of synthesis, Hamilton had achieved the "simultaneous mastery of several channels of communication" in a "symbiotic art-architecture." His cooperation with other artists in exhibitions had led him from photomurals, photographic environments, diagrammatic representations in grids and bearing systems to a hybrid photographic pavilion. This interior pavilion balanced between a sculpture, an installation and an architectural design, while its content displayed ideas that were indeed "varied not unified." The heterogeneous nature undermined the concept of a unified propaganda.

Nonetheless, the creation of propagandistic hybrid photographic pavilions was, in contrast to the interior photographic environment, well on the rise in the 1950s. Television might have replaced the necessity for photographic propaganda shows, but not in places where television was not yet available. In order to reach these far away places, mobile pavilions were created to facilitate internationally travelling propaganda shows. These were especially produced in the United States by illustrious architects, designers and photographers such as Buckminster Fuller, George Nelson and Edward Steichen. Recalling Misha Black's writings, propagandistic photographic exhibitions started growing from the inside to the outside, eventually incorporating the exterior as a part of the exhibition. Hamilton had attended several lectures of the radical architect

[460] Richard Hamilton interviewed by Hans Ulrich Obrist in Obrist, Hans U., *Lives of the Artists, Lives of the Architects*, 2015, p. 434.

and theorist Buckminster Fuller and, although completely antithetical to his liberating, heterogeneous use of the photographic environment, it is unsettling that the words listed in Hamilton's Pop Art manifest of 1957 are very much applicable to the propagandistic photographic pavilion:

> Popular (designed for a mass audience)
> Transient (short-term solution)
> Expendable (easily forgotten)
> Low cost,
> Mass produced,
> Young,
> Witty,
> Sexy,
> Gimmicky,
> Glamorous,
> Big business.

However, in a diagram in the catalogue of *This is Tomorrow*, Lawrence Alloway juxtaposed the words 'versatility' and 'erasability.' 'Versatility' could here be applied to a project of George Nelson: in 1947 he designed a tubular exhibition stand, named *Struc-Tube*. **(Fig. 16)** It was a "new demountable framework for exhibitions and partitions" created precisely to facilitate any kind of exhibition. He presented his invention with the exhibition *The Artist in Social Communication* in which suspended coloured panels explained the art of transmitting visual information. The brochure of the exhibition of *Struc-Tubes* made very clear that the modular grid system had rapidly evolved from a pragmatic (and politicized) exhibition design into an independent decorative system. The entrance panels to the exhibition *The Artist in Social Communication* stated: "An Exhibition." **(Fig. 17)** Evoking the idea that the versatile system could facilitate any kind of exhibition, it was obviously open to hosting propaganda shows.

An Exhibit, the exhibition that Hamilton created in 1957 together with Lawrence Alloway and Victor Pasmore went a little step further in stating that the exhibition design was in fact the exhibition itself. **(Fig. 18)** Instead of offering a shape-shifting platform, he started to scrape of excess information, layer after layer. The installation was conceived as "a game, a maze, a ceremony completed by the participation of the visitor":

> The reason that we did *An Exhibit* at all was that Victor Pasmore had come to me and said, "I liked your *Man, Machine and Motion* show very much, but I didn't like the photographs." His interest was in the formal relationship of planes but he couldn't bear the idea of information being presented on these planes. I found this opinion interesting and thought, "What if you took all of the photographs away? If it was just a question of placing planes in a relationship?" I went back to him and made a proposal that I could design a system that we could use to distribute these planes in any location we wished.[461]

Hamilton devised a suspension system with nylon threads and steel clamps that could hold acrylic panels. **(Fig. 19)** These were hung without a premeditated plan, developing

[461] Ibid, p. 440.

organically and progressively "in the space itself, moving from one element to another." The acrylic panels came in a variety of grey, black, white and red, as well as some transparent sheets.

> I devised a system where we could hang Plexiglas sheets of standard size anywhere within a 3D grid of one foot, eight inches high. So, the possibility of hanging the sheets vertically horizontally or at right angles to each other was almost infinite. The exhibition had no subject. It was self-referential.[462]

The exhibition had no theme other than itself; it had become the artwork itself. Today referred to as *installation art*, this message was a purely aesthetic scenario of form, colour and spatiality. This independent decorative system was an expressive form of exhibition design. It was adaptable, but in contrast to George Nelson's piece, not changeable; expressive and final instead of constructive and facilitating. 'Erasability' - even if not a correct word - best circumscribes Hamilton's practice in relation to the 'versatility' of the propagandistic photographic environment. His expressive form of exhibition design was the result of a slow erasure, gradually ridding the installation of multiple layers of excess information. *An Exhibit* was a palimpsest of scraping informative content from the photographic environment, leaving behind an abstract, unscripted and expressive installation. **(Fig. 20)**

Erasing the scripted meaning of the compromised photographic environment was a necessity in order to open up the exhibition format for further exploration. Once it had been mediated and cleansed through the white space of the exhibition gallery, new uses could be imagined. The modular bearing system of *Man, Machine and Motion* was applied to suspend the coloured panels. Hamilton ended up creating a three-dimensional constructivist painting and as such, opened up a new path directly from its distant origins in Lissitzky's *Proun* paintings, towards the art of the photographic installation. In 1959 Hamilton and Pasmore made another version of *An Exhibit* at the Hatton Gallery, named *Exhibit 2*. **(Fig. 21)** But after this turning point, Hamilton never made such an installation again. He had reached a blank slate and restarted from there onwards. He realized it was now okay to engage in a purely pictorial quest to start painting again.

> The only thing that's important is that what is produced is a document which relates to an idea. I ended up by saying that a painting is evidence that an artist has proposed a work of art. And I don't see why a painting isn't just as good evidence that a work of art has been produced as, well, any other kind of activity that artists can engage in. Is that enough?[463]

[462] Ibid., p. 439.
[463] Richard Hamilton in a talk at the *Palais des Beaux-Arts*, Brussels, 1971. Jef Cornelis, a Belgian documentary filmmaker, recorded the lecture and a transcription was published in Schimmel, Paul, *Richard Hamilton*, Tate Publishing, London, 2014, pp. 201-207.

15.

Jack Masey's Photographic Propaganda Pavilions

In the 1950s, the interior design of photographic environments expanded into photographic pavilions. The persuasive power of television had replaced a necessity for photographic environments, leaving it open for mediation in artistic circles. But in order to influence distant, foreign audiences outside the domestic broadcasting radius, mobile pavilions were created to facilitate internationally travelling propaganda shows. These photographic pavilions expanded from the inside to the outside. Departing from the exhibition's theme, they grew into the interior design and eventually incorporated the exterior that embellished the presentation as a part of the whole. These particular pavilions were mainly produced in the United States as part of its intensified propaganda strategy in the Cold War. Between 1950 and 1970, mobile photographic pavilions were deployed worldwide. Jack Masey, a former Officer of the United States Information Agency, served as Director of Design for the United States participations in international trade fairs and universal expositions. He commissioned, among others, Diane Arbus, Charles & Ray Eames, and Buckminster Fuller to develop the photographic exhibits, the interior design, and the architecture, for these pavilions. I interviewed Masey in his office in New York in the summer of 2014, where he was still at work at the age of 90.

Jack Masey (1924-2016) passed away in the spring of 2016, after leading a most extraordinary life.[464] After growing up in a poor neighbourhood in Brooklyn, his talent granted him an affordable access to the *High School of Music & Art*, a public school from which he graduated in 1942. Drafted at age 18, he did not have the luxury to escape the horrors of the Second World War. His talent, again, classified him into the *American Army's Camouflage Engineers*, formed early 1944. The *603rd* recruited many artists such as Masey, Ellsworth Kelly and Bill Blass from New York art schools and advertisement agencies to specialize in tactical visual deception. When the 603rd became part of the *Allied 23rd Headquarters Special Troops*, better known as the *Ghost Army*, it staged an invasion of a fake army that landed shortly after D-Day in Normandy and marched on to the Rhine River Valley, operating very closely to the front lines between 1944 and 1945. **(Fig. 1)** They created inflatable tanks, cannons and trucks, made role-play radio transmissions and installed deliberately ill-camouflaged dummy airfields to be spotted by enemy reconnaissance flights.[465] Masey recalled that:

> We were to fool the Germans into thinking that we were a real army, while we were in fact a rubber army. So we were inflating these fake tanks in half an hour each. It was a travelling road show of which the key was that it could only be successful if we could make the enemy believe that they were real. So you have to

[464] This interview took place on July 18, 2014, in the office of Jack Masey's firm *MetaForm Design*, New York, in the presence of his wife and partner Beverly Payeff and his assistant Arianne Kouri. I would like to dedicate this modest case study to his generosity and extreme openness. His honesty revealed secretive information and a deep criticism towards the foreign policy of the USA, then and now. He shared his own research and provided me with an invaluable amount of information, ranging from declassified covert papers to rare photographs. At the time, his eyes were still sparkling and I have never seen a man of that age so vigorously alive.

[465] The *Ghost Army* was kept a military secret until its declassification in 1996.

> make what you show credible. And than the intended viewer will change their attitude or behaviour. This of course stayed with me when I had to do these exhibits for the US government.

After the war Masey exerted his rights on funded education as an ex-serviceman to study architecture and graphic design at the *Yale School of Art and Architecture*. From there, he was quickly recruited by the newly formed *United States Information Agency*. The *USIA* was a State Department agency that operated from 1953 to 1999 and was established by the newly elected President Dwight D. Eisenhower to, as was written in its mission statement, "understand, inform and influence foreign publics in promotion of the US national interest, and to broaden the dialogue between Americans and US institutions and their counterparts abroad."[466]

Its intent was oriented on the Marshall Plan's cultural activities in war-torn Europe. The Marshall Plan was an economic operation of the USA to fund the redevelopment of Europe. It was reasoned that an impoverished Europe would succumb to communist influence. But it also developed a cultural branch that was aimed at convincing people that economic progress and democracy went hand in hand with capitalism. Between 1948 and 1951 trains, trucks and boats travelled across the European continent equipped with mobile exhibitions. The *Europe Builds* exhibition drove around European countries in foldout trucks, the *Europa Zug* promoted the benefits of economic cooperation between Europe and the US from a train and *The Caravan of Peace* conveyed the peacekeeping of the newly formed NATO in a caravan of carnival tents.[467] **(Fig. 2)** The exhibitions were informative in statistics, but mostly evocative in photographic documentaries that attempted to uplift the spirit and win as many hearts as possible for the capitalist ideology.

The USIA was responsible for a countless number of cultural initiatives, internationally travelling exhibitions and participations in world's fairs. It's main objective was to counter Soviet influence across the world, favouring American capitalism over communism. While the *Central Intelligence Agency*, founded in 1947 by President Truman, had similar intentions, it was entirely different from Eisenhower's USIA. Both were restricted to operate outside the borders of the USA, but while the CIA was cloaked in secrecy, engaged in espionage and collecting information, the USIA was an overt organization that was only sending information out to the public. "Audiences," as Eisenhower stated, "would be more receptive to the American message if they were kept from *identifying* it as propaganda." It was reasoned that seemingly independent voices would present more persuasive arguments. Propaganda, largely associated at the time with oppressive Soviet communication, was disguised in contemporary art exhibitions, radio and television broadcastings and photography books. The newest euphemism for propaganda was 'cultural diplomacy.' In the spirit of freedom and individualism, the USIA engaged in travelling exhibitions with roaring titles such as *Agriculture in the Free World*, *People's Capitalism – Man's Newest Way of Life*, and *The Great Society*. These mostly travelled to countries in the influential zone of Soviet propaganda such as Afghanistan, Turkey, India, and Thailand, across the South American continent and over a ruined and divided Europe. Yugoslavia was of particular interest, and as much as

[466] Masey Jack, & Conway Lloyd M., *Cold War Confrontations: US Exhibitions and their role in the Cultural Cold War*, Lars Müller Publishers, Baden, 2008, p. 34.
[467] Ibid., pp. 8- 35

possible was organized behind the *Iron Curtain*.

Jack Masey created travelling exhibitions such as *Plastics in America* and *Medicine USA*, which toured the Soviet cities of Moscow, Leningrad, Wolgograd, Kiev, Minsk, Tbilisi and Bucharest. And he worked on US pavilions at the *Indian Industries Fair* in New Delhi, the *Jeshyn International Fair* in Kabul, the *American National Exhibit* in Moscow, *Expo '67* in Montreal and *Expo '70* in Osaka. Many of these featured photographic exhibitions in purpose built pavilions. In our interview, we discussed a number of these most remarkable hybrid photographic pavilions.

New York in Kabul

The Cold War had intensified rapidly in the 1950s. While the demarcation lines drawn in Europe at the end of World War II were more or less respected, the United States and the USSR were engaged in expansionist geopolitics across the globe in an attempt to enlarge their spheres of influence. India and Pakistan gained independence in 1947, Czechoslovakia came under Soviet rule in 1948 and Mao's *People's Republic* had taken over China in 1949. Capitalism had to halt communism. Although the superpowers never engaged in direct hostilities, they were both funding conflicts in Latin America and Africa, and engaged in proxy wars in Korea and Vietnam. Both states plunged into a Nuclear Arms Race. In 1949 the USSR managed to produce its first atomic bomb, the USA tested the first hydrogen bomb in 1952, tailed by the USSR in 1955. Total nuclear annihilation was considered as a real possibility.

Stalin had died in 1953, when Eisenhower came to power. In the same year there was also a political change in the distant independent state of Afghanistan, where the new King sought closer relationships to the Soviet Union. Afghanistan was however at the heartland of the Cold War, as it could give the USSR an opportunity to reach through to the Indian Ocean. Buckminster Fuller wrote that the Russians "made the Afghans a present of macadam-surfaced, first-class roads" that they extended "all the way into the USSR" and "provided the means for the USSR to roll their armed forces into Afghanistan."[468] As such, it was caught between the two power-blocs. When plans for an international exhibition were being developed in 1956, a major presence of official pavilions of communist states - the USSR, the People's Republic of China, Czechoslovakia, Romania, and East-Germany - alarmed the USA to partake at the very last minute.[469] Masey, who had been stationed as an Exhibition Officer in the US embassy of New Delhi, received a nearly impossible assignment to construct a US pavilion in a matter of weeks.[470] He had gained considerable experience in developing a photographic

[468] Fuller, Buckminster, *Critical Path*, St. Martin's Griffin, New York, 1982, p. 195
[469] Masey Jack, & Conway Lloyd M., *Cold War Confrontations*, 2008, pp. 36-57.
[470] The interview was too long to include it in full length into this essay. While some circumstantial remarks are omitted, most of the noteworthy comments are footnoted. Jack Masey: "When I was working in India, in New Delhi, before I got the assignment to go to Kabul, I was very happy in the *Foreign Service*. The British had left in 1947. I got there in 1951. The Brits were going out, the Americans were coming in. It was like a revolving door. I was there for about 5 years. Those were good days. I could meet almost anybody I wanted to. I was a good friend of Ravi Shankar. Le Corbusier stayed in my apartment once, but I never met him. This is when I first arrived in India, in 1951. He was doing Chandigarh at the time. He was a mad man. I met a couple of very intriguing young Indian architects and one of them called me one day to say that Le Corbusier was in town. But there were no hotels available. It so happened that I was going to see the Taj Mahal and told him that Le Corbusier could use my apartment. And we had an oasis of beautiful apartments. So he stayed there for a week and he left me this fantastic, very touching note, tacked on my wall. It was a drawing of a bull's head and he wrote in French 'to the great young American who lent me his apartment: I arrived here and was tired. I drunk your whisky, I ate your food, you have saved me, thank you so much.'"

exhibition on the peaceful use of nuclear energy for the US pavilion at the Indian Industries Fair in 1955, in which he toured the new Soviet leaders Nikolai Bulganin and Nikita Khrushchev. For the 1956 Jeshyn International Fair in Kabul, Masey had to deliver an entire pavilion, as well as its full content. He immediately contacted the architect Buckminster Fuller.

> It was a major deadline. I thought of Bucky and that he would be the only one who could do such a thing. I flew back to New York and asked him if he could design and build a dome with a diameter of 100 feet in six weeks time. And he said yes. I was excited!

Richard Buckminster Fuller (1895-1983) practiced architecture without being one.[471] He did not wish to build as much as he aspired to radically restructure the *nature* of building on a global scale. Already in the 1920s he thought of buildings as temporal constructions and introduced the concept of time-based architecture, in the sense of modular structures. By the 1950s he had achieved such goals in the form of geodesic domes that were industrially prefabricated, mountable constructions that could be delivered by air. These geometric constructions were based on natural exoskeletons that Fuller had discovered in reproductions from Ernst Haeckel's *Kunstformen der Natur* and D'Arcy Wentworth Thompson's book *On Growth and Form*, a study on morphology in nature and its effects on architecture, published in 1917.[472] His first large construction was a 28 meters geodesic dome that covered the roof of the Ford Motor Company building in Dearborn, Michigan, once built for the 1933 *Century of Progress* International Exposition of Chicago.[473] His inventions quickly attracted the attention of the US military and Fuller, in turn, was attracted by the unlimited military funds for technological research. He started working on the possibility of dropping geodesic domes into war zones by helicopters, providing, for example, emergency shelters or air force hangars. **(Fig. 3)** While these ideas were not extensively pursued, the army implemented the use of his geodesic domes to create radar facilities in the *Distant Early Warning Line* along the Arctic in Alaska and Northern Canada, created to trace possible air-attacks from the USSR. These radar domes, *Radomes* as Fuller named them, protected the delicate radar systems from extreme weather conditions. "The geodesic dome became both an offensive weapon as well as a defensive weapon."[474] Far removed from Fuller's domestic housing revolution, it also proved to be a valuable asset in the cultural diplomacy of US propaganda when it was deployed at the Jeshyn International Fair in Kabul. **(Fig. 4 & 5)** Masey said:

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[471] At the age of 79 he received a license to practice architecture as a symbolic gesture for radically changing the concept of the medium.

[472] "Fuller truly believed that he was investigating nature's own coordinate system." Gorman, Michael J., *Buckminster Fuller: Designing for Mobility*, Skira, Milan, 2005, p. 115. Fuller was not entirely proven wrong: after his death, a team of researchers won the Nobel Prize for the discovery of a new carbon molecule with a mathematical structure similar to that of the geodesic dome. The scientists dedicated the discovery to Fuller by naming the molecule *Buckminsterfullerene*. The precise mathematical construction of the geodesic dome goes far beyond the scope of this essay, but I would like to refer to Fuller's own writings in which he perfectly describes the complexity of his designs, in particular the books "Ideas and Integrities" and "Critical Path."

[473] Fuller's geodesic dome was however preceded by the construction of Walter Bauersfeld's *Zeiss* planetarium in Jena, Germany, in 1922. Michael Gorman commented that in regards to precedents, "Fuller recalled creating an octet-truss in kindergarten using toothpicks and semi-dried peas in 1899, an unusual priority claim that he backed up with a testimony from his kindergarten teacher written fifty years after the event." Gorman, Michael J., *Buckminster Fuller*, 2005, p. 124.

[474] Ibid., 2005, p. 126.

> The dome was made in a month's time and a DC-4 airplane flew it over to Afghanistan. Bucky's engineer came along to put the thing together. We didn't have a crew, so we asked local Afghan workers to help. That was the success of the pavilion. While the Russians were building for weeks with 200 of their own workers, we had locals helping to build ours in just two days.

Buckminster Fuller wrote about the event in his book *Critical Path*:

> I received an emergency call from Jack Masey of the US State Department's US Information Agency. He asked me how long it would take me to produce a 10.000-square-foot-floor-area geodesic dome so light and compactly shippable that it could be sent by one DC-4 airplane to Kabul. My Raleigh, North Carolina, shop had it produced in twenty-five days, complete with a high-tension, all-weather skin outwardly tensed to its geodesic, tubular aluminium frame. All the struts and hubs of the dome were colour-coded. The 114-feet-in-diameter dome was test-assembled at the Raleigh airport and accepted by the USA. It was flown to Kabul with my one engineering representative to supervise its erection by the Afghans. It was assembled in one day just in time for the Geshin Fair opening. The USA show inside consisted of the Borden's *laughing cow*, bouncing ball bearings, and *Lionel trains*. No one showed interest in the show inside, but all the Afghans, the Russians and East-Germans, the Chinese and Czechs, were fascinated with the geodesic dome itself. The Russians asked permission to bring in their moving picture equipment to make a documentary of the dome construction. The then king of Afghanistan fell in love with the dome – it was a great modern-materials Afghan yurt - the Afghans' own architecture. The king asked the USA to give him the dome, but the USA refused and sent the dome off as an around-the-world travelling show.[475]

The 34 meters in diameter geodesic dome created for Kabul was an extraordinarily successful trade-fair pavilion. The architectural statement had already achieved its main goal: to turn Afghanistan towards the influence of the United States. The lightweight pavilion itself became a powerful propaganda tool, inherently part of the message. Due to a lack of time, it indeed proved more challenging to assemble a convincing exhibition than to construct a pavilion. The exhibition was scrambled together according to the availability of existing trade fair pieces. Amongst them were the *Talking Chicken* and the *Talking Cow*, a model train set and an operative television studio. Outside were displays of solar batteries, water heaters and portable coolers, and agricultural equipment such as tractors and ploughs.[476] Its most attractive feature was a giant open-air cinema with a 24 meters wide screen. At night, the pavilion became an attraction of glowing light. Besides the cinema screen, the translucent plastic-coated nylon skin of the pavilion lit up from the inside. **(Fig. 6)**

Photography was used wherever possible, since it was the most convenient way of communicating with the Afghans. An enormous photomural was created that protruded the geodesic dome from within. It welcomed the visitors from far outside the entrance with a photograph of the New York skyline, as seen from Brooklyn. The exhibition as a

[475] Fuller, Buckminster, *Critical Path*, 1982, p. 195.
[476] Masey Jack, & Conway Lloyd M., *Cold War Confrontations*, 2008, pp. 58-87.

whole might have had an eclectic appearance, but the architecture of the pavilion and the photomural were perfectly synchronized. **(Fig. 7)** Masey:

> I was very much taken by the photomurals I saw in the Eastern bloc pavilions at the India Industries Fair. The pavilion of Czechoslovakia was great and the East Berlin pavilion were terrific. And then this New York skyline mural happened in Kabul. We just had to get something like that in. The Manhattan skyline in no man's land! I knew that that skyline would be totally incomprehensible for the Afghans. I knew that, but I thought "So what? It is good for them to see. This is America." I consider America to be in New York of course. (laughs) There was nothing like it in all of Afghanistan, certainly not back in 1956. And they thought it were castles in the sky. It was getting the fundamental idea of the USA across to people who could barely read or write. 90 percent of the people who came to our pavilion, I have to admit, didn't know they were in the US pavilion. We had to use local guides to explain the crowds that they were in the US pavilion. Not that it made much difference. They didn't even know where America was. But they got very excited about it!

Georgia in Brussels

The photomural of Manhattan proved to be so effective that it became a permanent feature of subsequent expositions. For the *Interbau* architecture exhibition of 1957 in West-Berlin the USIA organized the photo-show *America Builds* in the George C. Marshall House, where they installed a 360 degrees panoramic photograph of the Manhattan skyline in a circular room. **(Fig. 8)** It was a view taken at night, from atop a skyscraper within the city. The US pavilion on Expo '58 in Brussels repeated and elaborated on the theme. On the upper floor of the pavilion, several rotundas were constructed to display Manhattan cityscapes. These giant blow-ups were taken from different perspectives and the rotundas were adjusted to the fit these vistas. Besides horizontal panorama pavilions, visitors could walk through vertical panoramas where they could witness Manhattan skyscrapers above their heads, as if they where actually walking on Fifth Avenue and looking up. **(Fig. 9)** From a balcony, they could lean over and witness a giant, curved areal photograph of the Manhattan peninsula. **(Fig. 10 & 11)**

> Peter Harnden did that. He made these enormous façades. You actually see that image evolving in a few years time. He was the son of American Foreign Service Officers, a modernist who lived in Paris. I loved to go out for lunch with him. He was also a good friend of Peter Blake, who was associated with MoMA and with who he made the *America Builds* exhibition. It was a design mafia. We all knew each other and liked each other. Bucky and George Nelson were part of our mafia, like Charles and Ray Eames. You had this mutual respect and mutual envy going on. Which was a healthy mix, you know. Peter worked for the army during the war, than did the Marshall Caravan show, the touring exhibits. He also did the interior design for the American pavilion, the Ed Stone building, and the architectural drawings for the *Unfinished Business* pavilion.[477]

[477] Jack Masey briefly worked at the *Time-Life Group* owned magazine *Architectural Forum*, as well as George Nelson and Peter Blake. Most of the people referred to in this essay all passed through *Architectural Forum*, as writers, editors or subjects.

At the Brussels *Universal and International Exhibition* of 1958 the mightiest nations gathered in peace, striving "for a more Humane World," as its subtitle claimed. This international event was a major opportunity for the Cold War superpowers to confront each other directly in a peaceful dialogue. It was the first large exposition that was staged since war had engulfed the world. The theme of the exposition was "Building the World on a Human Scale," although the dominating structure was the gigantic *Atomium*, a magnified molecule of 102 meters high. The Soviets were planning to build the largest and most expensive pavilion at the fair to convince the public that they were about to outstrip the United States.[478] The pavilions of the United States and the Soviet Union stood face to face on the *Square of Nations*, winged by the divine pavilion of Vatican City. Between consumerism and communism, there was however little religion left. While the Americans were ahead in the *Arms Race*, they were clearly losing the *Space Race*. The Soviet pavilion traded in a *hard sell* of machinery and space equipment –showing the Sputnik I and Sputnik II, which had launched Laika the dog into orbit in 1957- forcing the US to gamble on a *soft sell* of consumer goods, modern art and fashion shows.[479] A soft approach with the 'American way of life' was the only manner by which the USA could demonstrate their superiority over the Soviet achievements in science - without displaying actual weapons. 'Seduction by understatement' seemed the only option for the Americans, and innovative design was at the core of that message.

Wedged in between these mastodons presenting opposite utopias, stood a tiny pavilion as part of the American contribution. Dwarfed by the humongous US pavilion, it proved to be "the real bombshell of the US exhibit" because of its photographic displays.[480] The pavilion opened on May 8th 1958 and was closed on May 9th 1958. Only a handful of people had seen the original exhibition before it closed after a single day, one of which was Jack Masey. Although he had no direct engagement in the design of the Brussels fair, as it was organized by the State Department itself instead of the USIA, he went to support his colleagues, the architect Edward Durell Stone and the exhibition designers Bernard Rudofsky and Peter Harnden.

> I happened to be in Moscow negotiating the 1959 American National Exhibit. Coming home from Moscow, I stopped at the Brussels Expo that had just opened. It was just crazy. The Russians believed that the platform in the American pavilion, which was used for fashion shows and concerts, was in fact a launching pad for rockets! And that this was the reason why the roof of the pavilion had an enormous circular hole in it: to launch a rocket through the hole from the water basin. (laughs) And they thought we failed to do it, that we weren't able to put a rocket on top of the platform, so they thought we covered it up with fashion models walking and posing on the platform. That was the atmosphere. Anyway, I

[478] The organizers of Expo '58 wrote that due to "…the rapid extension of the means of communications; the applications of atomic energy and cybernetics; the use of new means of expression such as cinema, radio, television; developments in science and technique have deeply disturbed the structure of economic and social relations, filling mankind with uneasiness…" quoted in Crowley, David & Pavitt, Jane, *Cold War Modern: Design 1945-1970*, V&A Publishing, London, 2008, p. 19.

[479] Kint, Johanna, *Expo 58 als belichaming van het humanistisch modernisme*, Uitgeverij 010, Rotterdam, 2001, p. 273.

[480] Months away from the opening of Expo '58, the *Saturday Evening Post*, an American weekly magazine, wrote on January 25, 1958: "The bombshell will be hidden in the leafy grounds where a small building will enshrine bits of Unfinished Business. … This, obviously, is the sector of the show most likely to blow up in our planners' faces, as visiting Americans themselves may not see eye-to-eye on all the answers. But, the designers ask, is there a better way of making friends, than taking all the skeletons out of their closets and airing them for international inspection?" "We'll Go on Trial at the Fair," *Saturday Evening Post*, 25 January 1958, quoted in Masey Jack, & Conway Lloyd M., *Cold War Confrontations*, 2008, p. 138.

> did not work on the Brussels program, but since I was in Europe, I wanted to see the work of my colleagues. I was lucky to visit the Soviet pavilion. I always visited those, since they were the enemy. I had to see what they were up to. So I met up with all the big American players that constructed the US pavilion. At that moment, they were at war with each other. Great turmoil! All because of a little pavilion next to the Ed Stone building called *Unfinished Business*. I was intrigued by it and I spend a lot of time inside.

The planning group that assembled the content of the US pavilion was already confronted with "great turmoil" from the start. Following the brutal repression of the Hungarian uprising in October 1956, the US officially addressed this injustice at the United Nations Assembly.[481] But the USSR unexpectedly retaliated with addressing racial segregation in the Southern States of the USA, exemplified by a series of racist brutalities such as the *Emmett Till Case*, *Rosa Parks' Montgomery Bus Boycott* and the *Little Rock Crisis*.[482] The Eisenhower administration had only to gain from publically addressing these racial tensions. The planning group began with the objective in mind that Expo '58 was "a way to face – openly and directly - anticipated negative Soviet propaganda about domestic problems within the US."[483] Walter W. Rostow, an MIT economics professor and chairman of the planning group, warned that "the desegregation problem cannot be evaded. It will be underlined rather than evaded by omission." In particular, he noted that "not dealing with the Negro problem would backfire badly."[484] The problems were to be addressed directly, but it's explosive content had to be secluded from the main pavilion. It became a separate exhibition in a small pavilion hidden in the leafy ground behind the enormous modern amphitheatre. Inside, a photographic exhibition would focus on three major issues the USA was facing: desegregation, slums and urban renewal, and the depletion of natural resources. Introspection and openness, instead of stubborn denial, was a "bold and striking new approach to international propaganda."[485]

The pavilion was structured in three separate cubicles on stilts that were connected by overpasses. It was remotely reminiscent of train cars, and reflected the peace train that once rode across Europe. Each cubicle was about 6 meters long, 4 meters high and 4

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[481] The Hungarian Revolution of 1956 was a nationwide revolt against the communist Hungarian People's Republic that was violently repressed by the USSR.

[482] Emmett Till was a 14-year old Afro-American boy who was brutally murdered in Mississippi in 1955 for whistling at a white woman. Horrible photographs of his unrecognizable, battered face flooded newspapers, putting the case on the map both nationally and internationally. Three months later, Rosa Parks, an Afro-American woman, was arrested on the bus in Alabama for refusing to surrender her seat to a white person, which subsequently led to the Montgomery Bus Boycott and the birth of the Civil Rights Movement in 1956. It was followed in 1957 by the school desegregation crisis when a group of nine Afro-American students tried to enroll in the racially segregated school of Little Rock Central High in Arkansas. After several failed attempts, Governor Orval Faubus deployed the Arkansas National Guard to support the segregationists in blocking the students from entering the school. President Eisenhower had to send Federal Troops to protect the students against the Arkansas National Guard and enforce their integration in the school. The Supreme Court subsequently declared all national laws establishing segregated school to be unconstitutional.

[483] Masey Jack, & Conway Lloyd M., *Cold War Confrontations*, 2008, p. 129.

[484] Interview with Walter Rostow, January 10, 1957, quoted in Krenn, Michael L., "Unfinished Business: Segregation and U.S. Diplomacy at the 1958 World's Fair," *Diplomatic History Vol. 20*, Blackwell Publishers, Cambridge MA, 1996, pp. 591–612. The planning group consisted mostly of liberal MIT faculty members. A frightening fact was that none of the Afro-American leaders were consulted in the planning and preparation of the exhibition, while segregation was to be the centerpiece of attention.

[485] Krenn, Michael L., *Unfinished Business*, 1996, pp. 591–612.

meters wide. At the entrance ramp stood a sign stating in English, French and Dutch: *The Unfinished Work, Le travail inachevé, Het onbeëindigde werk.* **(Fig. 12)**

> Leo Lionni had designed that. He was the Art Director of *Fortune* Magazine.[486] It was a staggering design! It had three structures, three parts. Newspaper headlines were in one, showing the race riots in America, implying that America was falling apart. And then you would go to the next one, a bit like a little railway boxcar, were there was an attempt made to show things were getting better, that there was improvement. So they had photographs of new cities going up, new towns, in short, the American advert to make things better. That was stage two. And then the final stage, the provocative one, was the last car, where there was one photo, as big as the whole wall, of a ring-around-the-rosy gang of little children, little girls playing, a mixed race thing.

The content of the pavilion was entirely photographic. As *The Unfinished Work* was a cooperation between the State Department and Fortune magazine, it could easily appropriate photographs from the enormous image archive of Fortune's *Time-Life Group*.[487] Since the photographs were the property of the Time-Life Group, no mention was made of the provenances of the images or the photographers. As a whole, *The Unfinished Business pavilion* was a rare example in history where photography, interior design and architecture blended together as a unity. Photographic installations, photomurals and large blow-ups became structural components of the interior and exterior design.

The theme of the first cubicle was "America is a Society in Motion." **(Fig. 13)** The visitor walked into an abstract cave-like room with a triangular pattern. Enlarged US newspaper clippings were glued from top to bottom on the jagged walls. The newspaper headlines addressed the racial incidents of the past years, as well as the two other themes that were chosen by the planning group; the contemporary problems of the city and the unreliable behaviour of nature. Words that could be clearly read, in the flow of the walking direction, were: "Hate Killing," "No Negroes" and "Segregation." City problems and housing shortages were admitted in headliners such as "Disease Fears Rise in Suburb with no Water" and "Washington Slum to be Replaced." In reference to the exhaustion of raw materials and natural hazards, "Death Toll 72 in East's Worst Floods" and "Wind Waft Smog over Hudson" served its purpose. Press photographs showed smoking chimneys, slums, an Afro-American man held violently by police forces and the face of a living Emmett Till. A placard stated that: "One American citizen in ten is descended from African slaves. These 17 million Negroes have yet to win all of the equal rights promised them by American democratic society."[488]

While the first cubicle was to represent a dark, loaded past, the second cubicle showed the present day program of improvements. It was entitled "The People Take Action." **(Fig. 14)** Here, less chaotic architecture displayed photographic blow-ups, statistics and captions, evidencing that the US was making serious efforts to improve the situation. On display were images of Afro-Americans in acceptable domestic surroundings, working

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[486] Leo Lionni had also worked with Edward Steichen on The Family of Man book in 1955.
[487] Since the photographs were the property of the Time-Life Group, no mention was made of the photographers or the provenances of the images.
[488] Krenn, Michael L., *Unfinished Business*, 1996, pp. 591–612.

side by side with "Caucasian Americans" as surgeons in a hospital, and "Negroes and Whites" chatting and dancing together at a school prom. Statistics were to prove that "Negro incomes are going up" and a caption read that: "Not since the Civil War, which freed him and made him a citizen, has the Negro made such strides toward full equality as he is making now. As a result, the doom of the American caste system is in sight."[489] By the end, a photograph of President Eisenhower shared the same wall of fame as the portrait of Martin Luther King.

The third structure was intended as a sea of tranquillity to come, bearing the title "Hope for the Future." The architecture was plain, straight and pristine. Three photomurals represented the three topics. The nature theme was represented by an aerial view of a farmers' meadow worked by huge mowing machines. A photograph of a modernist housing block represented the city's theme. And the racial problems in the future were foreseen as children of multiracial backgrounds, dancing in a field. The caption for that image read: "American communities, like American individuals, like to emulate and surpass one another. By this process, democracy's unfinished business, already partially mastered, will get done on a national scale. To be followed, no doubt, in other (and perhaps nobler) challenges. The goal that draws us is not utopia, but larger freedom with more justice. Democracy is our method. Slowly but surely, it works."[490] **(Fig. 15)**

> The architecture seamlessly repeated the character of the interior. The pictures were the key. I have never seen anything quite like it. The first car was very crushed and crumbled on the outside. On the inside there was the exhibit of photo headlines. Newspaper headlines from around the US about the race riots: turmoil there, contempt there. And as you said, they were repeated in the character of the surface. In the second car were these simple photos on the inside of beautiful cities going up in the sky. It was an attempt to cope with the eradication of all these terrible areas, such as the slums, where awful things were going on. And again the outer surface, the architectural surface, reflected what was happening inside. It was really fabulous, this outside-inside joining. And then the final one was the purest of them all, which reflected this one photo, which practically shut down the pavilion. Well it did shut it down. One photo shut down the entire Unfinished Business pavilion! Anyway, the term I use to describe the pavilion is the 'Chaotic Crystal.' It starts with chaos and then it turns really simple. It is quite extraordinary. It was even Lionni's intent that the colour on the outside would reflect the mood of the interior. The chaotic part is darker and it clears up by the end, by the third car. From a dark mood to brighter colours. And at the end it is just blue. Blue and white. Peaceful colours. The colours are completely intentional. As you pointed out, I had never seen such a clear marriage between the inside and the outside so tight together, seamless. It was brilliant in using architecture in a very narrative way. It is not easy to do, but when it works it is remarkable. **(Fig. 16)**

"One of the most successful examples of architectural propaganda ever undertaken by the United States abroad," Masey wrote in his book *Cold War Confrontations*. "The overall message was that business might be unfinished, but progress was being

[489] Ibid.
[490] Ibid.

made."[491] "Because of its frankness, the exhibit is expected to be one of the most effective ones at the fair," The New York Times wrote.[492] The Belgian newspaper *Le Peuple* wrote on the evening of the opening: "Let's face it, only strong democracies are in a position to talk as well of their qualities as their faults."[493] But powerful as it may have been, the critical responses from within the USA were terrifying. The photograph of the dancing girls of multiracial backgrounds was the main evildoer.

> That evidently caused a tremendous uproar with the Southern Senators of the United States! They attacked the management of the US pavilion. "How dare you air our bad laundry! How dare you show the world that we have racial problems! Shut that down!" And they did shut it down. It was like some of them wanted to say that we liked segregation. Like, "How dare you say that all of us are against segregation?" It was unbelievable. That was life in 1958. It was Senator Talmadge who said that you have to show that segregation is in the best interest of all, so you must make the case *in favour of* segregation. This was a very political show. On the same evening as the opening, May 8, 1958, the exhibit was closed to visitors. First they said to shut it down when the press isn't looking, and say it is closed because of poor craftsmanship. At that period they had Leo Lionni go back and cover up some of the more crude newspaper headlines. A sign was mounted directly on the pending photo explaining that the group of mixed race children dancing in a group did not represent the policy of the United States of America but rather the individual freedom of choice available in the US.[494]

After three weeks of refurbishing the pavilion reopened. By mid-august 1958, it was shut down completely. The pavilion was turned into a public health exhibit. But the short-lived life of the photographic pavilion had proven its strength. It was an exquisite example of the struggling American mindset in the 1950s, as well as a shrewd attempt of inversed propaganda.[495] The unusually strong combination of subversive introspection and extended artistic liberties pulsated a message so strong that it had to be silenced immediately. *The Unfinished Work* was one of the most advanced hybrid photographic pavilions of its time, where the interior photographic exhibition was mirrored in the exterior architecture that superbly embellished the presentation in full synthesis.

Washington in Moscow

The US pavilion at Expo '58 had two other satellite pavilions. One hosted the *Circarama* theatre that screened 'movies-in-the-round' on a 360 degrees screen, in which Walt

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[491] Masey Jack, & Conway Lloyd M., *Cold War Confrontations*, 2008, pp. 128-129.
[492] Waggoner, Walter H., "US to be candid at Brussels Fair," quoted in Kint, Johanna, *Expo 58*, 2001, pp. 285-288.
[493] Masey Jack, & Conway Lloyd M., *Cold War Confrontations*, 2008, p. 138.
[494] On March 11, 1958 Senator Herman Talmadge of Georgia wrote to the Secretary of State John Foster Dulles: "It is obvious from the New York Times presentation that the Fortune exhibits will present only one side of this issue and will seek to show in the worst possible light those states and regions of our country in which segregated society has proved to be in the best interests of all races concerned." Ibid., pp. 142-145.
[495] The ideal 1950s picture of a desegregated 'American way of life' projected into the future by the *Unfinished Business* pavilion would not correspond with the actual future to come. Although the ring-around-the-rosy of multiracial children has become a common scene in the US, an unofficial and unspoken racial segregation has carried on into the 21st century. This interview with Jack Masey took place the day after the police-induced death of Eric Garner in Staten Island, New York City, on July 17, 2014. A month later, the fatal police shooting of the 18 years old Michael Brown on August 9, 2014, in Ferguson, Missouri was followed by violent protests. Subsequent police killings of unarmed Afro-Americans sparked a series of civil protests and riots throughout the US, evidencing that there is still a lot of unfinished business in the United States of America.

Disney presented the eighteen-minute circular film *America the Beautiful*, a scenic flight over the American landscape. It was a spectacle in the likes of the *Cinéorama* of 1900. Film projections were omnipresent at the Universal Exposition in Brussels, but mostly not in dialogue with the cinematographic space. But there was another pavilion present that did feature a primary example of synthesis. The corporate pavilion of *Philips*, an electronics company based in the Netherlands, displayed a multimedia spectacle with cinematic projections, projections of coloured still images, changing light patterns and an experimental soundtrack. The innovative architecture by Le Corbusier and Iannis Xenakis reached a perfect equilibrium between architecture and film.[496] This immersive multimedia experience set new standards for the Americans when they accepted an open invitation of the USSR for a cultural exchange exhibition.

Before Expo '58 closed, both parties agreed to engage in a reciprocal exhibition of scientific, technological and cultural achievements. The Soviets would exhibit in New York and the Americans in Moscow. Following the 1958 *US-USSR agreement*, Jack Masey was assigned as *Chief of Design and Construction* for the American National Exhibit in 1959. While the Soviets had received the grandiose New York City *Coliseum*, the Americans were dissatisfied with the allotted buildings and opted for an open plot of land in *Sokolniki* park to construct their own building.

> We were getting desperate. There was very little budget. Three million! The Brussels pavilion had 14 million! Here we are going into the Soviet Union for the first time in history and we had a three million dollar budget. There was no Congressional approval, so the money was donated from President Eisenhower's special fund. There was just no budget, no time. We had the worst conditions. Seven months to go, eight acres of frozen land, no money, it was a nightmare. Sokolniki park was a forest. And we had to put up six buildings in three months. So we were going crazy. The thing was gigantic! We had exhibits in all kinds of buildings.

Masey immediately turned to Buckminster Fuller for the construction of a large geodesic dome. A gold-anodized aluminium dome of 60 meters in diameter was created by the firm *Kaiser Aluminum*, without much direct involvement from Fuller.[497] **(Fig. 17)** It was also essentially different from the steel framework covered with a soft membrane, since the frame and skin became one structural hard shell aluminium element. The dome was placed at the centre point of the exhibition, directly in front of the main entrance. Inside the dome, the Russian audience was flabbergasted by an enormous film projection by Charles and Ray Eames. Charles (1907-1978) and Ray (1912-1988) were designers, architects and filmmakers that had already become famous with their *Eames Lounge* and *Ottoman* chair, their *Case Study House #8* and films such as *A Communications Primer*. For Moscow, they had been commissioned to make a film that introduced the Russian

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[496] Since this research focuses on the relationship between architecture and photography, and the written legacy on this legendary architectural multimedia sculpture is so extensive, I will refrain from writing more about it. For further reading I would suggest Peter Wever's *Inside Le Corbusier's Philips Pavilion*, 2015.

[497] "1959: 200-foot-diameter RBF-Kaiser gold-anodized aluminium geodesic dome is USA's International Exhibit Moscow, Russia – acclaimed by Khrushchev and after fair purchased (at full cost) by Russia from USA (dome now permanent structure in Moscow's Sokolniki Park). Fuller, Buckminster, *Critical Path*, 1982, p. 390. Fuller was however only partially involved. *Kaiser Aluminum*, who produced the dome, had purchased a license from Fuller to use the geodesic principle. They did not only produce the dome, they also designed it. Fuller merely approved the construction and was credited for making the dome.

audience to 'a day in the life of the United States.' The thirteen-minute *Glimpses of the USA* projected seven different films simultaneously on seven screens of 6 by 9 meters. **(Fig. 18)** The films were made from still photographs, except for a few excerpts of moving images. Each film had the same content, the same topic and appearance, but was a different film recorded at different locations across the USA. Each scene on the multi-screen thus simultaneously showed the same topic with alternative imagery. On seven screens, the daily American routine was outlined, stating that it was not so different from their Russian rivals. After a short introduction on the American landscape it shifted into a family having breakfast in the morning, men driving to work over superb highways, enjoying the office in the skyscrapers of New York and six other cities, and coming home to their housewives that cooked a meal in a modern and affordable house. The effects of multiple storylines that were essentially the same was to show that every individual in the USA could live the 'American dream' of prosperity, success and family life through hard work in a cosmopolite society with few barriers – but each in their own free way. It was a dynamic introduction to the American National Exhibition, and corresponded in full synthesis with the architecture of the dome.

> The Eames thing, however, was a little though for the Soviets. There were seven screens, playing simultaneous, and they didn't understand it for a 100%. Not the images, but by the multi-screen thing. They got rather confused I thought. They were flying over the US, seeing seven farmlands, seven milk bottles being picked up, seven school busses, seven cities. There was some very touching stuff going on. Marylin Monroe on seven screens. They didn't know where to look! But it worked perfectly on another level. In the Eames film we had these super highways filled with modern cars. We had an automobile show on with about 30 cars. Many of the cars were red. There were cars from Ford, Chrysler and General Motors. You couldn't see that at all in the Soviet Union. And at one point they said we made those cars especially for the film and for the Moscow exhibit. They didn't believe that we made those cars for everybody. But when the Eames film showed on seven screens millions of cars, and especially the red cars, they believed it. It worked together that way and it was very effective.

Charles and Ray Eames had been invited by George Nelson (1908–1986), who had in turn been invited by Masey as the main designer of the American National Exhibition. They installed the dome as a central "information machine" that hosted, besides the film, a television demonstration set, an Explorer VI satellite from NASA, and an "IBM *RAMAC* computer that could answer 4000 questions about the USA with pre-programmed responses in Russian."[498] Nelson was also responsible for the interior design of a second building behind the dome, a pavilion of glass and steel. About the building, Nelson wrote:

> It is an odd thing, but true, that when one begins to trace the developments in architecture, structure, interior design and related areas, the old expositions turn out to be remarkably accurate guides to doing things. Paxton's Crystal Palace was a prefabricated structure done in metal and glass, and its implications are not fully exhausted a century later.[499]

[498] Masey Jack, & Conway Lloyd M., *Cold War Confrontations*, 2008, p. 179.
[499] Ibid., p. 111.

The *Glass Pavilion* had the intent of introducing the overseas viewers to a wide variety of national achievements in the scientific and artistic fields, as well as consumer goods. In order to host such a variety of objects Nelson's office developed an accessible multi-level grid system, nicknamed the *Jungle Gym*. In *Cold War Confrontations*, Masey wrote that George Nelson was influenced by "two large strands of exhibition design: Herbert Bayer's and Misha Black's." Misha Black declared "that the essential function of a propaganda exhibition is to implant, or sustain, a general idea in the mind of the visitor," with a "strong emphasis on the use of actual physical objects and demonstrations."[500] This stood in stark contrast to Bayer's approach, which "was architectonic in the organization of space, showing familiar material in unexpected ways."[501] "George Nelson combined both," Masey wrote, "experimenting with multiple dimensions and mixed media", while "adding a third dimension plus physical motion."[502] The *Jungle Gym* was a practical conversion of his theories; it was a modular bearing system that combined modern art with Eames chairs and the newest colour television. Mock-ups of American living rooms were inserted into the grid system, next to state of the art kitchens with gleaming refrigerators and newest dishwashing machines. A fourth dimension was added in the form of bilingual guides and interactive workshops, like in the *Whirlpool Miracle Kitchen Demonstration Area*.[503] Every product was explained either by guides or by large photographic backdrops behind the consumer products. These were the supreme symbols of a liberated society where "modern science and technology were placed at the service of peaceful domestic life," instead of an "arms and space race."[504]

Besides kitchens and colour TV's, *Abstract Expressionism* served as a potent Cold War propaganda weapon. The modern art show on the second level of the *Jungle Gym* grid displayed works by Arshille Gorky, Willem de Kooning, Mark Rothko, Robert Motherwell and Jackson Pollock. As we know now, the CIA covertly funded the propagation of Abstract Expressionism, in close collaboration with the MoMA.[505] The CIA and the USIA staged a massive amount of exhibitions worldwide, with the precise intent to prove and communicate the freedom of creative expression, in contrast to the *Socialist Realism* of

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[500] Ibid., p. 165.
[501] Ibid.
[502] Ibid.
[503] Jack Masey: "The Russians had this secret show, a soviet exhibition that ran simultaneous to the American national exhibit, and they showed, for every object we showed, a similar one of theirs. It was a show in direct competition to the American show, 300 yards away. They wanted to compete with us. To show that they were better. It was the same time, the same site, it had the exact same content, it was essentially the same exhibition, but the display systems were completely different. But the soviet show was destroyed after three days. A huge windstorm destroyed everything. This little amount of footage is the only thing left. They themselves made fake stuff for their exhibits. So how do you get the Soviets to believe that our real stuff is actually real? Much of what was going on in Moscow was about that question. How to prove that what is real is actually real? Because if you can do that, you can change attitudes. The Eames film was a very crucial part of that. The fact that you could touch the exhibits and pick them up, so you could feel that it is the real thing, as opposed to what the Soviets did. This issue of credibility started with the fake tanks. We showed everything open and accessible to touch. They had everything behind glass casings. (…) Guides played a major role there too. American guides that all spoke Russian. So we stationed the guides wherever we could at major exhibits. Soviets had never met an American. We couldn't get into each other's country back then. I noticed something amazing that each guide was surrounded by a couple of hundred Russians and they couldn't wait to say something. The first question they asked was "what does your father do?" (laughs) "What about unemployment in the US?" The most common question was: "Why are you surrounding us with military bases?" (laughs) But they were of course surrounding us too. The guides said: "But what have we done to you? We were allies in World War II. What has happened?" The impact of the guides was phenomenal. And I think that every Soviet that talked to an American guide has ever forgotten it. I learned a lot from that."
[504] Reid, Susan E., "Our kitchen is just as good: Soviet responses to the American National Exhibition in Moscow, 1959," *Cold War Modern*, edited by David Crowley & Jane Pavitt, 2008, p. 154.
[505] One of the earliest public reports, and an often cited article in regards to the topic is: Kenworthy, E.W., "Whitney Trust Got Aid," The New York Times, February 25, 1967.

the Soviets. These exhibitions only travelled outside of the USA, like the CIA and the USIA only operated outside of the US borders. Within the USA of the McCarthy era, there was a strong opposition against Abstract Expressionism, in favour of figurative painting.[506] It was even suspected to be communist in orientation. *The New American Painting*, for example, cleverly travelled throughout Europe, with a noteworthy stop in the Palais des Beaux-Arts in Brussels in 1958, collecting the necessary foreign press approvals before it was displayed in the MoMA in 1959.[507] When still on display in New York, it proved to be difficult to propose Abstract Expressionism as a vehicle of American values, when dealing with the Soviets. It aroused more controversy in the USA than in Moscow, so much that besides the chosen 67 abstract works, 26 figurative paintings - such as the work of Edward Hopper - were added to the selection of works displayed in the American National Exhibit.

The Glass Pavilion was perhaps an unspectacular structure, in terms of cultural diplomacy it was a worthy successor to the Crystal Palace. When Nikita Khrushchev, by then the First Secretary of the USSR, and US Vice President Richard Nixon passed through on a tour, Nixon halted in the kitchen of a suburban model house, an exterior pavilion that presented an affordable prefabricated house, to ask Khrushchev: "Would it not be better to compete in the relative merits of washing machines than in the strength of rockets?"[508]

The American National Exhibit was a small microcosm, with the Glass pavilion in orbit of the dome, and a cluster of smaller pavilions that sprawled in a wider circle behind the Glass pavilion. **(Fig. 19)** There was the notorious *Kitchen Debate* model house, a *Pepsi-cola* refreshment kiosk, a children's playground, a section with farming equipment, a beauty parlour, an open-air fashion show and a smaller geodesic *Fuller* dome that featured the 360 degrees *Circarama* film by Disney. There was no persuasive prescribed route to be followed through this political playground, as to give the visitors a choice of free movement. The most popular pavilions, attracting the largest queues, were two photographic exhibitions: Peter Blake's *US Architecture* and Edward Steichen's *The Family of Man*.

The crowds waiting for Peter Blake's (1920-2006) *US Architecture* exhibition were entertained with a stereoscopic wall in which they could see photographs and short films of modern American buildings under construction.[509] **(Fig. 20)** Upon entering, visitors found themselves in a darkened rotunda, a circular area with a 360 degrees photograph of the Manhattan skyline by night. **(Fig. 21)** Blake had worked for the USIA before, together with Peter Harnden, to assemble and install the works for the *Interbau* exhibition *America Builds* in 1957, and drew from that experience. It was another

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[506] "This was a period, in the 1950s and 1960s, when the great majority of Americans disliked or even despised modern art - President Truman summed up the popular view when he said: "If that's art, then I'm a Hottentot." Saunders, Frances S., "Modern art was CIA weapon: how the spy agency used unwitting artists such as Pollock and de Kooning in a cultural Cold War," *The Independent*, October 21, 1995.

[507] Altshuler, Bruce, *Salon to Biennial: Exhibitions That Made Art History. Volume I: 1863-1959*, Phaidon Press Limited, London, 2008, p. 375.

[508] Crowley, David & Pavitt, Jane, *Cold War Modern*, 2008, p. 12. Too much has been written on the notorious *Kitchen Debate* between Nikita Khrushchev, by then the First Secretary of the USSR, and US Vice President Richard Nixon. It is one of the most iconic encounters of the Cold War. The recorded conversation can be easily consulted online.

[509] Peter Blake (1920-2006) was an architect, former editor in chief of *Architectural Forum*, and briefly Curator of Architecture and Design at the Museum of Modern Art. He had worked for the USIA to assemble the works for the exhibition *America Builds* in 1957.

progression on the skyline theme, since the photograph was lit by a soft, pulsating light, as if actually on the spot. A continuous sound track broadcasted the traffic noises of Times Square and a recorded voice speaking in Russian stated: "You are now on top of a 34-story skyscraper in the centre of Manhattan. It is 9 pm on a summer evening. Eight million people are living and working in your field of vision." In a declassified treatment of the USIA department, Blake and Julian Neski proposed the creation of optical illusions through the use of perspective:

> The basic concept of this exhibition is to get the visitors to experience American architecture, rather than look at pictures and models of American buildings displayed in the ordinary way. The difference is this: in our proposed exhibition visitors will actually walk through full-size sections of US cities, through full-size streets. They will see distant views of buildings on the skyline or in rural settings. Wherever they look, their eyes will meet pictures, mock-ups, colour transparencies, models, etc. showing major American buildings in their settings. In every case, the pictures and models will be so scaled and so related to the onlooker's eye-level that he receives the illusion of actually walking past a real building, or seeing a real building in the distance. The devices we propose to use are those of illusionist painting and architecture in the past: i.e. the creation of optical illusions through the use of deep-field perspectives (in this case photographs) which give the impression of dramatically extending the exhibition space.[510]

As visitors emerged from the circular panorama, they found themselves in a series of open-air spaces, divided in two enclosed sections. Walls of 3,6 meters high were fully covered by huge photographic murals, both, according to Blake, in colour and black and white. The perspective of each photograph related to the average eye-level and the three-dimensional illusion was enhanced by trees, full-size street furniture and pavement - indeed creating an uncanny air of reality. **(Fig. 22)** The first area showed an overview of the most important buildings in American cities and the second area covered the suburbs and the countryside. **(Fig. 23)** In the first section, dealing with cityscapes, straight walls were used in a rectangular pattern. The most remarkable feature of the exhibition was in the second section, where the walls were informally dispersed and 'curved.' **(Fig. 24)** Masey recalled:

> On the outside of the show, you couldn't see in, you had this wall where you could see these architectural images. The stereoscopic area. You could see images in 3D through little viewers. Inside the exhibit you would see these life-size buildings, which were taken with a lens in a *single point perspective* so it would feel like you were actually there. Newly weds would actually pose in front of the life-size photographs as if they were in front of an American building. Some were straight, some were *curved*. They sort of slightly surrounded you. You were minimally surrounded, so you felt involved as best as you can with the building itself. In Peter's drawings you could see that they were very specifically designed. Not one was the same. He made a huge study on it and every one of them has exactly the right curve. **(Fig. 25)**

[510] Blake, Peter & Neski, Julian, "Proposed Design Treatment and Outline for an Exhibition on American Architecture. American National Exhibition in Moscow. Prepared by Peter Blake and Julian Neski, Architects," 1959.

The architectonics of the support of the photograph emphasized the image and the meaning of it. And as such, it became inherently part of the image as a photographic installation. But there was more. The *US Architecture* pavilion was an open-air experience, enclosed by walls and structured by photomurals. While the second part indeed had an outdoorsy feeling, with curved photomurals that corresponded with actual trees and an open sky, the first section, designated to the city theme, had a specially designed roof created by George Nelson. **(Fig. 26)** The roof was an extraordinary achievement of a new technology that had only recently been developed by the US army: fibreglass resin. Throughout the American National Exhibit, the material was repeatedly articulated as a new American invention in displays of mass-produced chairs, boats and playground slides and finally culminated in Nelson's roof. Nelson designed a modular system of slim, naturally coloured fibreglass columns, towering 6 meters high to support a hexagonal platform of 1,2 meters deep and 5 meters in diameter.[511] "They looked like inverted umbrellas", Masey said, "and Nelson named it the *Plastic Umbrellas*." These umbrellas could not stand by themselves, but when assembled together, the units formed an interlocked steadfast roof that was lightweight, water-resistant, spacious and translucent. Nelson and Blake knew each other well, and the fibreglass roof was perfectly attuned to correspond with the open-air pavilion and its exhibits. **(Fig. 27)** The *Plastic Umbrellas* were used to cover two other open-air pavilions. The entire culture section was hosted in these three open-air pavilions, covered by 90 umbrella screens in clusters of 20, 23 and 47.[512] Upon entering the exhibition grounds, on the left side of the dome, was a pavilion dedicated to fashion. On the right side of the dome was *The Family of Man* exhibit, and behind the Glass Pavilion was the *US Architecture* pavilion. **(Fig. 28)** Of all three, only the architecture pavilion really managed to achieve a balanced cohesion between the exhibition, its design and its architectural wrapping. It was also the only one that was specifically designed and intended as a total-work-of-art.

The Family of Man was an existing photography exhibition by Edward Steichen and Paul Rudolph, created for the MoMA in 1955. After a groundbreaking attendance record, the exhibition toured the United States. When it made its European debut in West-Berlin, late 1955, the exhibition became part of the cultural diplomacy objectives of the USIA. The agency spread the show in multiple versions across Europe and finally toured it around to the political hot spots of the world. Until 1962, it travelled the six continents and was witnessed by more than 9 million people.[513] As such it was one of the most

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[511] "'As far as we know,' Mr. Nelson said, 'this is the first time that a reinforced plastic has been used without the assist of other materials to make a piece of architecture. It suggests an entire family of outdoor shelters such as bus stop sheds and kiosks. Moreover, experimentation with unusual forms is possible without large production runs because of the intrinsic qualities of plastic; its full potentialities will develop when it is treated as a unique rather than a substitute material.'" From the "Official USIA Guide Training Book" for the American National Exhibit, 1959. Nelson designed the *Plastic Umbrellas* together with the building engineer Albert G.H. Dietz, who had designed the *Monsanto House of the Future* for Disneyland in 1957.

[512] Eisenbrand, Jochen, *George Nelson: Ein Designer im Kalten Krieg*, Park Books, Zürich, 2014, pp. 326-330.

[513] Edward Steichen wrote that in his autobiography *A Life in Photography*: "The Family of Man exhibition was opened to the public in January 1955. It broke all the Museum's records for attendance at its exhibitions of contemporary arts. The museum circulated the original edition of the show and a smaller-scale version throughout the US. The United States Information Agency took it over for showing abroad and eventually circulated six separate editions. (…) Japan independently made up four editions." According to Steichen the show travelled to 63 countries worldwide, but different sources give different numbers, also in regards to the amount of travelling versions. In *Edward Steichen: Lives in Photography*, 2007, Olivier Lugon noted that: "Sources vary in identifying nine or ten touring versions of the show. However, Steichen, in *A Life in Photography* speaks of six travelling editions, adding that Japan independently made up four editions. His assistant Wayne Miller arrives at five complete versions, two smaller editions, and three Japanese." In the same book, Nathalie Herschdorfer listed that the show travelled to 38 countries, among which India

potent cultural Cold War propaganda weapons. Mary Anne Staniszewski noted on the topic that:

> Although modern art was generally denied federal support in the late 1940s and 1950s, making it necessary for the cultural weapons of the Cold War to be supported secretly by the CIA, The Family of Man was an exception. More representative of the situation was the fate of the US painting exhibition sent to Moscow along with The Family of Man. The painting exhibition barely passed the congressional censors; only when President Eisenhower declined to recall the painting show did it survive. The Family of Man encountered no such opposition and its inclusion in the *National Exhibition* was applauded by the American press.[514]

So much has been written on this iconic exhibition that I will limit myself to a short description of the theme, necessary for the sake of argument.[515] In its architectural set-up, it was hardly any different from the *Road to Victory* exhibition that Steichen had made together with Herbert Bayer, but in its essence it was its antithesis; instead of a propaganda show to incite the American citizens to engage in World War II, this was a universal story on the equality of humankind in favour of world peace. In 503 enlarged photographs and photomurals from 273 artists, Steichen and Rudolph had created a photographic exhibition as a total work of art. Steichen selected the images and Paul Rudolph designed the architecture, copying the *Road to Victory* set-up. In 37 thematic sections, the visitors were strictly guided past all aspects of human life. After an introduction of planet Earth and its nature, it focused solely on the endeavours of mankind. Themes of love and marriage were followed by the themes of birth and family life. Family photographs of around the world were structured in a photographic installation that clearly suggested that families from Africa or Asia were equal to families in the United States. **(Fig. 29)** Steichen even included a few images of Russian faces. As Staniszewski pointed out, "many of Rudolph's design solutions mirrored the photographs' subject matter."[516] As in *Road to Victory*, "The Family of Man shifted the locus of photographic meaning from the *production* of images to the *arrangement* of those images."[517] In the section devoted to the global preoccupations of mankind, such as music, cooking, education, friendship and so on, the idea of playfulness triggered an interesting exhibition design: photographs from children of multiracial backgrounds dancing a ring-around-the-rosy were mounted on a steel circular framework. **(Fig. 30)** Like the family section, this was presented as a three-dimensional installation. Preceding the ring-around-the-rosy in *The Unfinished Work*, it caused exactly the same uproar in the segregationist United States of 1955. But there was another photograph

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in 1956, Israel in 1957, to Yugoslavia, Cuba, Venezuela, Lebanon, and simultaneously with the American National Exhibit to South Africa, Laos, and Indonesia in 1959, in 1960 to the United Arab Repblic, Iran, Afghanistan, and Belgium. In retrospect, it does not matter so much how many countries and versions were toured, since the attendance and the amount of venues of the show still remains unchallenged today. Steichen donated a complete version of the exhibition to the country of Luxemburg, his native country, where it is still on display. In recognition of its historical value, this version was added to UNESCO's Memory of the World register in 2003. It is also one of the most successfully disseminated publications in history and has been continuously in print since 1955 until today.

[514] Staniszewski, Mary Ann, *The Power of Display: a history of exhibition installations at the Museum of Modern Art*, The MIT Press, Cambridge MA, 1998, p. 256.

[515] For further reading I would suggest Mary Ann Staniszewski *The Power of Display*, 1998 and Eric Sandeen *Picturing an Exhibition: The Family of Man and 1950s America*, 1995.

[516] Staniszewski, Mary Ann, *The Power of Display*, 1998, p. 240.

[517] Lugon, Olivier, "Edward Steichen as Exhibition Designer," *Edward Steichen: Lives in Photography*, edited by T. Brandow & Wiliam A. Ewing, Thames & Hudson, London, 2007, pp. 267-273.

that distracted criticism from the harmless children's scenes and made conservative America howler: *Death Slump at Mississippi* was a press photograph showing the corpse of a lynched Afro-American man chained to a tree. The image was part of the section dealing with the theme of death, suffering, religion, famine, inhumanities and justice, but caused so much reaction that it was quickly removed from the exhibition. In the narrative sequence of the exhibition, it was followed by a rectangular photograph of a dead American soldier, fallen in the Korean War, after which came a call for world peace by an enormous photomural representing the United Nations assembly. In Staniszewski's analysis "this climatic installation was to some extent The Family of Man's counterpart to the marching soldiers mural of Road to Victory."[518] The exhibition was concluded with two children, walking hand in hand, out of the forest, and into the light. While all photographs in the show were in black and white, this black and white image was softly coloured in pink undertones.

Even if Steichen had a noble intent to create a dramatic experience of unified human emotions and likenesses, the universal message of the MoMA's most costly show to date was quickly assimilated to serve the American Cold War ideology. "Ironic results from an exhibition that fought against Cold War ideologies," Eric Sandeen wrote. "A congressman might not be able to understand Abstract Expressionism," but he did comprehend the language of The Family of Man.[519] When it travelled to the American National Exhibit, it most definitely shifted into a full-blown propaganda show. In his autobiography, Steichen wrote that he was "sent over by the State Department to attend the opening of the big American Exhibition in Sokolniki Park" and that he was seated "on the platform with Premier Khrushchev, Vice-President Nixon, the American ambassador and other dignitaries" for the official opening. "As far as I was concerned," wrote Steichen, "the high spot of the project was the 1959 showing in Moscow."[520] Jack Masey was not as convinced when he was introduced to the trimmed version of The Family of Man:

> I originally didn't want The Family of Man! To my amazement I noticed the exhibition was mobbed! It was so crowded! It drew the biggest crowds. We had the Eames movie in the dome, but you couldn't get too many people into it. They had to wait, until another showing came on, but The Family of Man, you could just walk through it. It could accommodate more people. The longest lines in the US pavilion in Moscow were at The Family of Man. I learned that too. I went over and watched the people. They were obsessed! There was a death scene, a love scene, some photos were from Thailand, some from Cambodia, and I thought that in the

[518] Staniszewski, Mary Ann, *The Power of Display*, 1998, p. 249.

[519] "A congressman might not be able to understand Abstract Expressionism, the favoured artistic style for export, or might feel uncomfortable having an African-American such as Louis Armstrong, the designated American musician in the international concert circuit, represent the United States abroad through the indigenous art form of jazz. But even if he had not seen The Family of Man inside the United States he would certainly have constituents at home who had the exhibition catalogue on their coffee tables. (…) The Family of Man furthered careers and helped the agency (USIA) define its role in the Cold War world, ironic results from an exhibition that fought against Cold War ideologies." Sandeen, Eric J., "The Show you see with your Heart: The Family of Man on tour in the Cold War World," *Public Photographic Spaces*, edited by Jorge Ribalta, 2009, p. 480.

[520] Steichen, Edward, "The Museum of Modern Art and The Family of Man," *Public Photographic Spaces*, edited by Jorge Ribalta, 2009, 2009, pp. 464-468. Steichen also recounts the story of a conversation he had with a Russian artist whose opinion was that the abstract paintings were "abstruse and incomprehensible," but that he on the other hand also got the question why there was no abstract photography in The Family of Man, to which Steichen replied that The Family of Man "was an exhibition in which abstract photography did not have a place." Steichen also pointed out, like Jack Masey, the importance of bilingual guides to the success of the exhibition.

> end this was good for us. It is not how I wanted it to be, but it showed the soviets that we cared about the world. I had to admit it was a knock out! And I ended up being happy with it.

Steichen's exhibition was not a warmongering exhibition. On the contrary, it was created as a peaceful, moralizing message of introspection, countering a xenophobic society in favour of the United Nations Universal Declaration of Human Rights.[521] This sentimentalizing "expression of compassion for all human beings" was in itself already perceived as a "potentially unpatriotic utterance."[522] Comparing white American farmer families with people of colour was at the time a daring, suspicious undertaking. Although too much self-criticism was not condoned, with for example the removal of the lynching photograph, it was still a very strong message. When it entered the arena of the Cold War international expositions, it became a strong message of inversed propaganda. And there it proved that too much self-criticism was censored. For in the original exhibition at MoMA, there was a yet unmentioned image that was a key-element in the scenario of The Family of Man: between the image of the lynching and the panel of the United Nations, in a darkened space, hung "a 2 by 3 meters backlit transparency of a nuclear bomb explosion. The only colour reproduction in the exhibition, and the only image to be isolated in its own room, this vision of fundamental annihilation was, in fact, a political message in the charged atmosphere of the Cold War."[523] **(Fig. 31)** The caption, written by Bertrand Russell read:

> The best authorities are unanimous in saying that a war with hydrogen bombs is quite likely to put an end to the human race? There will be universal death – sudden only for a fortunate minority, but for the majority a slow torture of disease and disintegration.[524]

This dark undertone, of quintessential importance in the narrative plot of the exhibition, casted a shadow of guilt over the American audience, while at the same time it warned for a total erasure of mankind. "I never knew that," Masey said:

> That is a fabulous idea! I never knew about that photo. I would have insisted on having that in the Soviet Union! Some people above make these crazy decisions. They just can't accept to do the thing, be a purist, get it over with. It is all part of the fabric of something. Its not going to change anything, it's not going to wreck the world. But this fear I understand. We are still suffering from guilt complexes from back then, in those days, after World War II, from the bombing of Japan. Very profoundly. That has always been a very complicated subject, for me at least. We have done exhibits in Osaka, I have spend a lot of time in Japan, have talked to a lot of Japanese. Yes, there is resentment against the US for having used nuclear weapons. We are the only ones that have used them. Nobody else has

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[521] Roland Barthes rightfully criticized the content of the exhibition when on display in Paris. Nonetheless, it was a step forward in the recognition of equal human rights. It should also be noted that Barthes saw the censored USIA version, lacking crucial images and without the impact of the architectural set-up. Barthes' article "La Grande Famille des hommes" (The Great Family of Man) can be found in his 1957 book *Mythologies*.

[522] Sandeen, Eric J., "The Show you see with your Heart," *Public Photographic Spaces*, edited by Jorge Ribalta, 2009, p. 485.

[523] Ibid., pp. 472-473.

[524] Ibid. Although the photograph was censored from the exhibition and the book, Russell's quote remained in both.

> used nuclear weapons. We are telling Iran not to use nuclear weapons, but we used it on Japan.[525]

The light box colour photograph was originally placed in a separated, darkened space in the MoMA, after the body of the fallen American soldier of the Korean War and before the United Nations panel. It must have been a tremendous downer, a frightening experience. Although the image escaped censorship in the original version, it was censored in all subsequent venues, eliminated in the touring exhibitions as well as removed from its printed version. After its public display in the MoMA, its pivotal presence in the narrative sequence of the exhibition was denied for a long time, and the hydrogen blast light box has remained a good secret. Staniszewski's research at the MoMA has been essential in revealing this information, and according to her, "Steichen's choice for the bomb was a plea against nuclear weapons."[526]

An anti-war statement it may have been, but there was something particular about this nuclear bomb photograph. It was not an image from the Hiroshima or Nagasaki explosions, and undefined which explosion it was. In her book *Power of Display*, Staniszewski's published an installation photograph of Wayne Miller, which is the only depicting left from that particular photograph. I have researched all public images of nuclear bomb tests and discovered that it was an image of a hydrogen bomb explosion. More precise, the cloud's tail revealed that it was a photographic record of one of the earliest tests of the thermonuclear weapon in 1954: *Operation Castle Bravo*. **(Fig. 32)** Since 1952 several tests were carried out in the Pacific, of which Bravo was deemed the most successful. It was turned into the first practical fusion bomb in the US arsenal. With 15 megatons it was 1.200 times more powerful than the weapon dropped on Hiroshima. When Bravo was detonated it formed a mushroom cloud of seven kilometres across, and was described in the records as, coincidentally, "a golden dome." Now, here is a nonjudgmental thought that crossed my mind with discovering this history: imagine what would happen if Khrushchev, on his *Kitchen Debate* stroll with Nixon, would encounter a 2 by 3 meters photograph of America's newest and deadliest weapon. It would most probably not be understood as a remorseful message of peace, but rather interpreted as a warmongering threat. Instead, without the image, Khrushchev eventually said to his rival: "You're a lawyer of Capitalism, I'm a lawyer for Communism. Let's kiss."

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[525] Jack Masey (clearly taken aback): "Truman was given a very tough decision to make. By the end of World War II, this war is dragging on and Japan does not quit. I don't think Americans realize that for about a year before the end of the war, from 1944 to 1945, we were firebombing Japan. Japan was burned to the ground already. There was nothing left. Yet they would not quit. So Truman went to the Japanese and said: "Look we have the bomb, quit now and we won't use it." They couldn't bare the idea of losing that war. Yet they were finished. We had a whole armada ready, a million men on ships ready to invade Japan. It would have been a nightmare if we had to do that. The losses would have been tremendous, mostly for the Japanese. They had little kids with broomsticks instead of guns on the shores of the four islands! So Truman decided to authorize the dropping of the atom bomb. The devastation! The whole city disappeared. By this time the Japanese had already over 500.000 casualties from the firebombing. Hiroshima was about a 120.000 in five minutes. So we asked them to take a look at what we had done and asked them to stop. They had trouble with getting from Tokyo to Hiroshima. The roads were bombed and they couldn't get there. They couldn't see the destruction. And you had these militarists in the government that thought they could still win the war. There was nothing more to be won. It was over. But they wouldn't quit. I don't think we ever gave them an ultimatum. Which I think we should have done. We had three bombs. That is all we had. One we had used for Hiroshima. The second one was for Nagasaki. I don't know why we picked that city. We waited for four five days and heard nothing so we dropped the bomb on Nagasaki. That ended it. The Emperor played an important role. After Nagasaki he surrendered. But that was just grim."

[526] Staniszewski, Mary Ann, *The Power of Display*, 1998, p. 250.

Leaving the photograph out, dramatically changed the meaning of the entire exhibition, but leaving it in, when on tour, also dramatically changed its meaning. In any case, it severely weakened the explosive content of this peace-bearing exhibition. It is also odd that Steichen was so enthusiastic about The Family of Man pavilion in Moscow, since its entire set-up was different. Besides missing certain controversial images, it also had to cope without the magnificent architecture of Paul Rudolph, and the intentionally structured scenario and prescribed route. As a result, it was a different exhibition when it was uncomfortably installed in Nelson's *Plastic Umbrellas* pavilion. **(Fig. 33 & 34)** When the planning process began, Jack Masey was certainly not as enthusiastic as Steichen:

> But I have to tell you that originally I didn't want to do it. I felt it was a waste. We were going to be there for six weeks only. That was the length of the show. For the first time in history, we would be directly dealing with Soviet people. We had a six weeks shot at talking to the Soviet people. They had never seen anything about us. They have only heard about us that we were the super enemy. I was in charge of the design. When I heard that they suggested The Family of Man to us, I wanted to know what was in the show. It was about the whole world. And I said: I don't want it. Because here is what I felt: I wasn't very happy with The Family of Man because it wasn't quintessentially *American*. We are here to talk about America and, believe it or not, my job in the Soviet Union was to tell to the Soviet people the American story. Not a *world* story! I don't have the time and luxury for that! It is too abstract and too wonderful. It is a terrific idea, but I don't want it. And I fought, I have to admit this, I fought, The Family of Man because I wanted it to be an *American Family of Man*. I wanted to do a photo show just like the *Ten Photographers* exhibit we did for Osaka in 1970. About what we Americans were like. That is what I wanted. Just like Szarkowski did for that show, I said, why don't we send some photographers out to photograph the land and the people, much like the *Ten Photographers*, and then we have an American show for a Soviet audience. This is the first time the Soviets would see anything about America. Uncensored! That was the deal with the Soviets. In the end we didn't have the money to find the photographers, we didn't have the time and Washington said: "We have got this show and it is ready to go. Jack will love it." We were getting desperate. There was very little budget. Anyway, I settled for The Family of Man. After all, it was free!" (laughs)

Ironically, the original idea for The Family of Man started at MoMA "in 1949 with a proposal of René d'Harnoncourt, the museum's director, to 'use Steichen's talent for dramatization' in a 'self-portrait of America, an exhibition of photographs on American life by American photographers, including both professionals and amateurs from all groups that make up this country.'"[527] Steichen lifted the idea to an international level, to a global story about humankind, instead of confining it to a national context like Jack Masey's rather conservative sounding *American Family of Man*. Yet, Steichen still managed to convey a purely American view of patriarchy, anthropology and cultural supremacy. When Masey, a convinced democrat, finally got a chance at creating his Americanized version of The Family of Man, as part of the US exhibition at Osaka Expo 1970, it most certainly was not what you would expect.

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[527] Tagliaventi, Alessia, "Photography at MoMA: Four Landmark Exhibitions," *Photoshow: Landmark exhibitions that defined the history of photography*, edited by Alessandra Mauro, Thames & Hudson Ltd, London, 2014, p. 177.

America in Japan

After the American National Exhibit, Jack Masey was rewarded with the responsibility to organize a series of single-theme exhibitions behind the Iron Curtain, as part of a bi-lateral exchange program between the USA and the USSR that lasted three decades. He directed the first five of these travelling exhibitions that toured the Soviet cities, such as *Plastics in America*, *Medicine USA* and *Architecture USA*. His next big assignment followed as Chief of Design for the US pavilion at the *Universal and International Exposition* of 1967 in Montreal. *Expo '67* was another cultural confrontation between the US and the USSR. It was the first Universal Exposition after Expo '58, and this time an actual trench parted the opposing pavilions - while in Berlin, a concrete wall had suddenly divided the former allies since 1961. In Montreal, the USA had to cope with yet another defeat in the Space Race: Yuri Gagarin's space flight in 1961. Nonetheless, the content of the US pavilion was mainly focused on an imminent lunar landing, with displays of spacecrafts from the Apollo program. While photomural backdrops were a key element in the simulated lunar landscape of the *Destination Moon* exhibit, photography did not play an important role in the US pavilion. Besides the American cinema section, which presented giant blow-ups of Hollywood film icons, there was hardly any photography present. Modern art was the focal point of the pavilion, with twenty enormous paintings of Mark Rothko, Franz Kline, Barnett Newman and others. Commissioned by the USIA, it was an expansion on the Abstract Expressionist *American Painting Now* exhibition and the work done in Moscow, with adding the Pop-Art of Robert Rauschenberg, Roy Lichtenstein, Jim Dine and Andy Warhol. Montreal, however, was a lot closer to the USA and it received an abundance of American visitors. As a result, the art exhibition created a storm of conservative critique. Although the USIA agency had fully deployed the potential of modern art as propaganda, the criticism more or less ended the CIA-USIA funding of modern art. One of the paintings, a work by Jasper Johns, featured an icosahedral *Dymaxion Air-Ocean Map* by Buckminster Fuller. Fuller had again been Masey's first invitee. He created an enormous icosahedral dome of 76 meters, a 3/4th spherical lattice-type structure covered with a transparent acrylic membrane. Fuller originally also proposed to act as curator of the US pavilion, and made an attempt to fill the entire dome with a selection of his own works, with special attention to his *World Game*, a participatory simulation of global economics.[528] Instead, the pavilion was dedicated to the *Creative America* theme, described above and mainly irrelevant for this study. There were no external structures, besides the *Skytrain* monorail, an in order to focus on the genealogy of the photographic pavilion, we should move on to Expo '70 in Osaka.

Translucent lattice-type pavilions seemed to be the trademark of the US pavilions in the Cold War period, reflecting the Crystal Palace of 1851. When planning begun in 1967, a translucent lattice-type pavilion was proposed for the Osaka Expo '70 by a group of associated architects: Chermayeff & Geismar, Rudoph DeHarak, Davis, Brody &

[528] "In 1964 the United States Information Agency asked me to consider the design of a building and an exhibition that might be adopted as the United States entry in the Montreal World's Fair of 1967, later known as Expo '67. I made a proposal and the exhibition part of it was rejected. I was asked to continue however, as the architect of the USA building to house an exhibition designed by others. Insofar as I know, I was the only one considered as architect of the building. I think this was because of the success the United States had experienced with my 1954 world-around, air-delivered, geodesic-dome trade fair pavilions and the USA Moscow Exhibit dome of 1959, which was purchased by the Russians as a permanent building after the United States exhibition was concluded." Fuller, Buckminster, *Critical Path*, 1982, pp. 165-167.

Associates. Their original proposal was a balloon-like air-supported translucent structure of 83 meters that doubled as an unbounded projection surface for films. The cinematographic space would screen films from within on the roof, the floor, and every stage in between, from the top of the pavilion to the bottom, visible inside as well outside. The eventual plan resulted in a low, partially subterranean pavilion with an inflated roof that was hardly visible from the outside.[529] The pavilion was air-pressurized to support the inflated, vinyl-coated fibreglass skin of 141 meters long by 83 meters wide.[530] The membrane roof allowed sunlight in by day and had an outside glow at night. According to the official folder of the US pavilion, the "super-elliptical enclosure constituted the largest and lightest clear span, air-supported roof ever built." Jack Masey was involved in the development of the pavilion as Deputy Commissioner General of Design:

> The Osaka pavilion was a big inflatable. We had a terrific engineer. It was the largest inflatable roof at the time. It covered two football fields and it was made out of one piece of fabric. One day I am reading the New York Times, about three or four years ago, very recent, and there was a critique by somebody that implied that the US pavilion in Osaka 1970 leaked. I read this and got crazy. It was the *Pepsi* pavilion that had a leak! There was a major hurricane that hit Osaka during the Expo. We were one of the few pavilions that survived beautifully."

The innovative, Archigram-inspired technology seemed to be another understatement, in comparison with the extravaganza of the Expo '70 pavilions. While the USSR pavilion stood lonely at the top, still competing for the highest and the biggest, the USA opted to be the lowest structure on site. It was a clever understatement in outer appearance, backed by outstanding technical mastery. The form of competition had changed, and it appeared that the Cold War competition was also shifting direction, emphasized by the positioning of both pavilions; instead of opposing each other face to face, they were located on the far ends of the exposition grounds. **(Fig. 35)**

Progress and Harmony for Mankind was the subtitle of the Japan World Exposition.[531] The nation had overcome the horrors of nuclear destruction, but the world, however,

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[529] "The vast air-supported pavilion by the chosen design team would have been outstanding for its economy of material, its appropriately temporary look, and its bold form - geometrically between a sphere and a cube. The double-walled inflated envelope, 275 ft. in diameter, would have served both as an efficient enclosure and as an enormous projection screen. Visitors would have entered by a spiral ramp, overlooking a platform for live performances, then ascended through a sequence of platforms, from which continuous films of U.S. scenes would be viewed. At the top, they would have passed through an enclosed space, with exhibits of real artefacts, then emerged on a vast plateau to view films of space exploration projected on the upper half of the structure. From the descending spiral, they would have seen aerial films shown on the bottom of the envelope. Further investigation by the selected design team revealed that the 275 ft. inflated structure could not be constructed within the estimated budget for building and exhibits, which had declined from $9.3 million to $7.8 million. A new scheme was developed, with four air-supported theatres (showing the same film program in rotation). The visual impression of unbounded projection surfaces would have been preserved, along with such features as the entrance spiral. The pavilion that will actually be built at Osaka will hardly be visible to passers-by's. Its vast roof - a cable-restrained, air-supported dome spanning an area 260 ft. by 470 ft. - will not be revealed until the visitor has entered the exhibition area. This vast, unexpected canopy, sheltering two acres of heavily planted terraces, will have considerable impact. So, hopefully, will the movies, and other exhibits in the pavilion. Not even a hint will remain, however, of what we might have built." "The U.S. at Osaka: Competition Entries for the U.S. Pavilion," *Architectural Forum*, October 1968.

[530] Masey Jack, & Conway Lloyd M., *Cold War Confrontations*, 2008, pp. 350-399.

[531] "Japan's desire to stage a World's Fair goes back as far as London's Crystal Palace of 1851 when Asia was not considered significant in the world. Later, at the 1867 Paris Exposition Universelle, Japan appeared for the first time with a pavilion and a representative display of products. World's Fairs soon became important to Japan's industrialization; it wanted to stage one as early as 1877 to show its own progress. It received little encouragement. A

had just escaped a full-scale nuclear war. The *Cuban Missile Crisis* of 1962 was the closest moment the world had come to nuclear warfare. The Cold War had escalated on all fronts. The USSR was internationally condemned for the violent repression of the *Prague Spring* revolution in 1968. And the USA was facing internal opposition from civil rights movements and anti-Vietnam protestors. Leonid Brezhnev had replaced Khrushchev in 1964, and in the USA Richard Nixon became president in 1969. Both superpowers were still highly engaged in the hot Vietnam proxy war, but did not make any mention of this in their pavilions. Hippie protestors at the entrance of the US pavilion were quickly forgotten once inside, where visitors stood eye-to-eye with an actual piece of moon rock. This time, the Americans played out their victory in the Space Race; on July 20, 1969, American astronauts had landed at *Tranquillity Base* on the Moon.

This obviously became the spear point of the entire exhibit, with the lunar landing module, landing pods with parachutes, and the Moon rock in the centre of attention. There were seven major exhibits on two levels. Next to space displays, the 'American way of Life' was explored in a historical sports section and five art exhibitions. A folk art show, a painting exhibit, *New Arts*, an architecture photography display and the photography show *Ten Photographers.* In the painting show, Abstract Expressionism was replaced by 21 figurative works from the 19th and 20th century, on loan from the Metropolitan Museum of Art. This conservative action against modern art was countered with the exhibition *New Arts.* New Arts pioneered radical experiments between art and technology. The *Los Angeles County Museum of Art* displayed eight works from its *Art & Technology* program in which artists cooperated with scientific and industrial firms, "exploring advances in technology and transmuting them into art."[532] These artists "utilized techniques ranging from laser light beams and visible gasses to pseudo-optics and three-dimensional photography."[533] Sculptures of Claes Oldenburg were shown alongside an advanced laser show by Rockne Krebs and Tony Smith's *Cave of Tetrahedral and Octahedral Cardboard Units*.

The highlight of the Art & Technology program was however to be found outside the US pavilion, in the corporate pavilion of Pepsi. Perhaps one of the most exciting pavilions on site, it anticipated the missing Buckminster Fuller dome for the US pavilion by creating one themselves. A geodesic dome clouded in a fog of water vapour hosted an immersive installation that combined cinema projections, photography, moving sculptures and interactive light and sound experiments.

Although the US pavilion was certainly not that experimental, it was originally conceived as an immersive cinematographic space. With too many conservative exhibits to include, it did not manage to become as radical as the Pepsi pavilion. But as a whole, the US pavilion did become a hybrid photographic pavilion. A continuous architectural landscape of light-boxes replaced the multiple projections. Giant backlit photographs served as a leading thread throughout the pavilion, as backdrops of scenic installations,

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fair scheduled for 1912 was cancelled after the death of Emperor Meiji, and plans for a 1940 world exposition in Tokyo were well underway when war broke out in Europe." Findling, John E., *Historical Dictionary of World's Fairs and Expositions, 1851 – 1888*, Greenwood Press, Westport, 1990, p. 339. The Expo '70 master plan was designed under the supervision of Japanese architect Kenzo Tange.

[532] "Experiments in Art and Technology" was officially launched in 1967 by LACMA curator Maurice Tuchman, the engineers Billy Klüver and Fred Waldhauer, and the artists Robert Raushenberg and Robert Whitman. The program ran until 1971 and realized projects with, for example, James Turrell, Robert Irwin, R. B. Kitaj, Richard Serra, and Andy Warhol.

[533] "Japan World Exposition Presentation Catalogue," US Pavilion, USIA, 1970.

or as exhibitions in themselves. The moon landing was evoked by spacecrafts and explained by backlit photographs placed in a lunar setting, with astronauts floating in front of a humongous photomural. This full-scale reconstruction created a simulated reality through photography. The automobile show and the folk art displays were empowered by photographic settings, while the sports exhibit displayed enlarged press photographs of the most important victories. And the two photographic exhibitions were the structural backbone of the pavilion. The architecture exhibition was a three-dimensional installation of light-boxes that premiered large full-colour images as backlit transparencies. Peter Blake, the curator, had assembled a number of photographs of significant American buildings and had commissioned the Magnum photographer Elliot Erwitt to portray his interpretation of the theme. These colour images of Erwitt were mixed in the light-box installation with other photographers whose names were kept anonymous. **(Fig. 36)** A similar display was created for the *Ten Photographers* exhibit. On the second floor, immense floating panels, suspended from the support beams of the inflatable roof, featured sets of ten photographs by ten photographers. These white painted panels were giant light-boxes, up to six meters long, with enlarged black and white rear-lit transparencies placed in cut-outs. The luminescence of the backlit was necessary to counter the influx of light through the translucent roof and provided an exceptional surrounding of synthesis. What had started as a one-off installation with Steichen's hydrogen bomb had here become a total installation. The novel display of large black and white, as well as colour photographs in light-boxes in *Ten Photographers* and the architecture exhibition would have a significant influence on future artist-photographers. **(Fig. 37)**

The general aim of this study is to describe photography through its physical properties, and in the case of sublime synthesis, to relate that embodied image to the content of the photograph. The image is thereby of a lesser importance in the framework of my research. In *Ten Photographers*, it could be argued that the images and its architecture could do without one another, and discussing the images in this exhibition is perhaps not relevant, but in this case, I do have to make an exception. The set-up of the *Ten Photographers* show was perhaps less exciting an installation than the architecture section, but it was most remarkable in its meaning. Not because of its novel light-box display, which would have a significant influence on future artist-photographers such as Jeff Wall, but because this Americanized version of The Family of Man is one of the most poignant photography exhibitions that has been completely omitted in the history of photography.

The exhibition was created by John Szarkowski, who was the successor of Edward Steichen as Director of Photography at the MoMA, and by then the curator of *The Photographer's Eye*, *New Documents* and Garry Winogrand's solo exhibition *The Animals*. Szarkowski commissioned ten photographers, who each presented ten photographs: Ansel Adams, Diane Arbus, Bruce Davidson, Lee Friedlander, William Garnett, André Kertész, Joel Meyerowitz, Duane Michals, Paul Vanderbilt, and Garry Winogrand. **(Fig. 38 & 39)** *Ten Photographers* was a critical and introspective portrayal of the USA, seen through the eyes of these ten radical photographers. "A panorama of landscape, lifestyles and faces," the folder read. The most controversial set of photographs were images of an Afro-American man unsuccessfully trying to shake hands with his Caucasian-American brothers in the street. **(Fig. 40)** It set the tone for Winogrands disturbing images of dismembered veterans living in poverty and Davidson's images of

poverty and the living conditions of fellow Americans in so-called minority groups. **(Fig. 41)** Kertész addressed the Vietnam War with photographs of hippie protests, Diane Arbus presented her eerie images of misfits, and Lee Friedlander closed with an ironic image of Mount Rushmore and an iconic self-portrait in which he photographed a roadside church with the words "God Bless America" while questioning his gaze in the mirror of his car. **(Fig. 42)** Jack Masey knew very well that with inviting John Szarkowski, his brainchild would become a dystopian version of The Family of Man:

> I mean, they were rough stuff! Coming back to the potency of the image, I have a little secret to tell you about the importance of the photograph, about one photograph in the Expo '70 in Osaka. I was working on Expo '70, proposing certain exhibits. We were certainly going to show the space program, because I knew that we were heading for the moon back then, and we did get to the moon late 1969. In addition to everything else, I felt that we had to have a photography show, a snapshot of America in 1970, to show the Japanese what America was like. What the land and the people were like. The good, the bad and the ugly. Show it all. I recommended that to Howard Chernoff, the Commissioner General of the US pavilion, who was a very conservative democrat. I suggested that we would go to the Museum of Modern Art, to John Szarkowski, who was then the curator of photography. "Let them do it," I said "and if anything goes wrong, they will get the blame." Besides that, I don't think the US government should be in the photography business. He said that it sounded like an interesting idea, so I went to New York to meet Szarkowski, a very interesting guy. I said: "Would you be interested, on behalf of the Museum of Modern Art, to do a snapshot of America in 1970, as recently as we could get it, as close to the opening as possible. We should do the land, the diversity, the cities, the mountains, the slums… And the people. The upper class, the lower class, the middle class, racial diversity." And he said: "Keep talking, I like it. It is a very intriguing challenge. I have only one condition: nothing will be censored from this. The US government can not change anything." We shook hands on that. Nothing can be changed and that's guaranteed. It is a Museum of Modern Art show and we are just putting it in. After three or four weeks I went to the MoMA and met him and he said: "I want to do a show called *Ten Photographers*. And all these photographers have a different view of what America is like. Some are landscape photographers, some are urban photographers, and I am going to assign each of them to express themselves. I will pick ten photographers, and will ask each photographer to do ten photos, it will be a hundred photos in total and that's it." All the photographs were taken especially for this exhibition. I wanted it to be like a Polaroid, as up to date as possible; a quick look on America. I didn't want anything that was taken ten years ago. I thought it was great and went back to Washington. My boss was quite worried about this and said that I was giving a lot of significance and importance to one person. And I said: "Yes but he is the best! I don't know anybody else like Szarkowski." When I went back to New York, Szarkowski sat me down in his office and he had the Ten Photographers show. He had an 8 by 10 inch of every single photo that he wanted to use. It was Gary Winogrand and the whole gang. He saved Diane Arbus to the last of his presentation. He pulled out all the stops. She would photograph freaks and crazy people and whatever and Szarkowski knew that of anything, that would cause a problem. For us it would be the sort of Americans that she depicted. And then he saved a photograph of hers to the very

> end. Let me tell you that there was one thing wrong with that image. Read what is on the button that boy is wearing. *Bomb Hanoi*. (laughs) And now read the other ones! We were in the middle of the Vietnam war! So he shows me this photograph and I went back to Washington with that image of Diane Arbus. I knew I would have a problem with my boss. And just as Szarkowski showed me the collection with this image at the end, I showed my boss the same methodology. He picked it up and said: "Jack, you got to be kidding me! We are in the middle of a war and I don't want to bring Vietnam in to the US pavilion in Osaka. Is this the culture of the United States? No other country is handling any wars. Why should we? This cannot go in. This opens up the entire Vietnam war discussion." Which was then explosively controversial. There were protests, students were having riots, and so on. I promised Szarkowski we would not censor any photograph. "But you are censoring this one," he said, "I am not allowing this. Go back to New York and tell him to replace this photo. Take another from Diane Arbus." So I went back to meet Szarkowski. He got very upset, insisted that the photograph stayed in and threatened to have a press conference to tell them that we were censoring this. In Washington I had to say that Szarkowski was adamant that he won't take it out of the exhibition. I had to phone him and say the following: "If you don't take the image out, you are off the job." This was rough. So I tell him: "It is about one picture. You have an amazing show. My boss doesn't like any of Arbus' photographs at all. He didn't like seven of the ten photographers! All the images are controversial. But he has accepted that, but he can't have that one picture because it is a political statement. The image is too controversial and it has to go. If you don't my boss is ready to pull the plug. He wants to drop the MoMA and will go to someone else." Szarkowski folded in one second at that point. He said: "Okay. If you feel that strongly about it…" I never expected that. This was the most disturbing experience I had, working on the Expo.[534] **(Fig. 43)**

Even though its most controversial image never made it to the exhibition, *Ten Photographers* was received as a provocative, scandalous exhibition, with most complaints from its American audience. It concluded a short history of potent photographs, from the Manhattan skyline over the interracial ring-around-the-rosy, the lynched man and the hydrogen bomb, to the young boy wearing a straw boater and a couple of significant buttons. Many of these images functioned as an essential part of a larger framework. Their precise location provided impetus to a narrative plot, as crucial points within a photographic landscape. Their contents even superseded the context, expanding beyond the exhibition design to embellish the physical space around it. In these rare cases, photography and architecture balanced in synthesis.

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[534] Jack Masey: "And I will give you a note on that story. So Szarkowski replaced the photograph. A terrible image. This story never saw the light of day. This story started in 1970. So, flash forward: in 2003, I am in New York and John Szarkowski, who had since left the MoMA, had made an exhibition of Ansel Adams at the MoMA. And he is sitting out front signing copies of his book. And I saw him sitting there. We had not been in touch at all. He didn't know who I was. Understandable. I walk up to his desk and said to him: 'Mr. Szarkowski, I want to remind you of something. Way back in 1970 we had an exhibition in Osaka and you helped us assemble it.' 'Oh yes,' he said, 'I remember that, it was quite something.' And I ask him if he remembers something particular about that. 'Like what,' he asks. He had forgotten all about it. I have been guilt ridden forever! And he had forgotten the whole thing! (laughs out loud) He didn't care about it. I said: 'Do you remember the Diane Arbus work? The picture with the boy and the straw hat?' He said: 'Mr. Masey, I don't know what you are talking about.' It says a lot. You win some you loose some. It is a wonderful story. Well in the end, it never made any difference. He forgot the whole thing. He even said: 'Gosh, that sounds like an exciting time, I wish I could remember.' The power of that one photograph!"

But times had changed, again. The student protests of 1968 incited a world revolution, denouncing the geopolitics of the USA and the USSR. Immanuel Wallerstein wrote that "after 1968, neither the United States nor the Soviet Union would ever be able to regain the unquestioning fidelity of their presumed allies or the unquestioning belief in the bright futures each was guaranteeing to everyone."[535] It also ended a period of prosperous expansion in the world economy, and slowly headed for a time of monetary crisis. As a result, the Cold War shifted into a different position. World's fairs were not a priority of the United States anymore, with the omnipresence and international radius of multi-channel television as a full-blown propaganda channel. When Jack Masey left the USIA in 1979, budget cuts had reduced most of the international expositions to purely touristic and corporate events.[536] "Don't compromise on mediocrity," Masey concluded, "because mediocrity is no less expensive. That's what I've always said."

> The US, I think, has disgraced itself in a shocking way in the past fairs. They started a very bad habit with going to the private sector. That was a disaster. The same happened with the Expo in Shanghai in 2010. (…) In fact, it was a corporate pavilion that represented itself as the United States of America. Alarming! It has something shocking that a government can't represent itself. Or doesn't think it is important. This is a story in itself of the failure of America in the recent years.[537]

This assembly of States on the North-American continent started an international practice of showing corporate advertisement pavilions that radically dropped the high quality standards set for the first International Exhibition in 1851. The *Arts and Industry* philosophy introduced by Queen Victoria and Prince Albert fragmented in specialized technology fairs, marketing communication strategies and an exclusive art world – which subdivided in art biennales and art fairs, emerging in the 1970s. While world's fairs have played an essential role in the display of contemporary art and photography, the extensive propagandistic misappropriation of the integrity of the visual arts

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[535] Wallerstein, Immanuel, *The World System After 1945: Keynote address at Points of Connection, the Vienna L'Internationale Conference, October 27, 2010*, M KHA, Antwerp, 2010, pp. 15-16.

[536] After Masey left the USIA in 1979, he founded *Metaform Design*, with the designers Ivan Chermayeff and Tom Geismar. The firm created exhibitions for the *Ellis Island National Museum of Immigration* and the *Statue of Liberty*, the *Harry Truman Library and Museum* and the *National D-Day Museum* in New Orleans. In the 1980s, two unsuccessful world's fairs were held within the USA, in Knoxville (1982) and New Orleans (1984). These economic and propagandistic failures resulted in the suspension of US government funding for world's fairs. This was not coincidentally at the end of the Cold War: it was no longer needed in the post-Soviet world. The USIA was abolished in 1999.

[537] Jack Masey: "Speaking of world's fairs. New York 1939 was my first fair. I was 15. The US, I think, has disgraced itself in a shocking way in the past fairs. While I was working for the US, during the cold war, from the 1950s to Osaka, which was my last worlds fair since I left in 1979, we always got a government appropriation. We went to the United States government and the government represented the American people at the fair. Then something changed radically in the first category Expo's. Congress started backing off and they didn't give what was needed. The US pavilion at Seville 1992 was a catastrophe, the beginning of the end, because Congress was backing out. At the next Expo, Hanover in 2000, we didn't participate at all. The Germans were very upset. The beginning of the 21st century and the super power doesn't show up. Then it was Aichi in 2005. Don't ask me how it happened that the Japanese got another expo after Osaka. The BIE is another bureau of nutcases. But here, the executive branch refused to even go to Congress to ask for money. Congress did not say it wouldn't pay. But you have to ask for an appropriation. They started a very bad habit with going to the private sector. That was a disaster. The same happened with the Expo of Shanghai in 2010. Another disaster. Shanghai from what I have seen was a shock! The entrance way was only company logos. When I did the expos you always had very simple entries. A photo of the president of the US with a line welcoming the visitors to the American pavilion, signed by whoever was president. Here was just a wall of logos, of business' that had made the pavilion possible. In fact, it was a corporate pavilion that represented itself as the United States of America. Alarming! It has something shocking that a government can't represent itself. Or doesn't think it is important. This is a story in itself of the failure of America in the recent years."

eventually led to a purely artistic quest for critical analysis, instead of an abusive form of synthesis. It most definitely ended a brief history of hybrid photographic pavilions.

16.

Peter Bunnell's Photography into Sculpture

Avant-garde was originally a military term, used to describe a part of the armed forces that was pushed ahead to find and engage the enemy in order to secure the passage of the main army. In the early 20th century, the term was appropriated in artistic circles to describe a similar, but aesthetic manoeuvre. During the Cold War, the meaning of the word was to be found in the middle of these two definitions. Artists and photographers were pushed to the invisible frontline of international propaganda shows, often unacknowledged and misappropriated. This twilight provoked many vanguard artists to search for contextualization and critical analysis, especially questioning the semiotics and the medium specificity of photography. The artists involved in the exhibition *Photography into Sculpture* were looking for synthesis in a much more refined and nuanced way, while delivering political critique instead of affirmation. These artists were experimenting to sustain photography's artistic integrity across the boundaries of the medium, subscribing it into the larger conceptual framework of the visual arts: "a new kind of photography in which many of the imaginary qualities of the photograph, particularly spatial complexity, have been transformed into actual space and dimension, thereby shifting photography into sculpture."[538] Most of the artists involved worked from a photographer's perspective into the broader context of the arts, while their counterpart contemporaries were incorporating the photographic medium in the visual arts. The prevailing outcome was the use of photography as a mere reproductive medium by the latter, within Conceptual Art. But these new three-dimensional photo-works by the forefront group offered an intrinsic change of both media that would have a lasting impact on the display strategies and the exhibition context of photography - of which the influence is only now becoming clear.

The press announcement stated that:

> *Photography into Sculpture* embraces concerns beyond those of the traditional print, or what may be termed 'flat' work, and in so doing seeks to engender a heightened realization that art in photography has to do with interpretation and craftsmanship rather than mere record making.[539]

The person quoted in the announcement was Peter C. Bunnell (1937 -), director of the exhibition and then curator of the New York Museum of Modern Art's *Department of Photography*. I went to visit him in his house in Princeton, New Jersey, for a lengthy conversation.[540] His life story is emblematic for the transition of the photographic field in the second half of the 20th century. During his short position as curator of the Department of Photography at MoMA between 1968 and 1972, he played a key role in the transition of the photographic field in the 1960s. In 1972 he became the inaugural *McAlpin Professor of the History of Photography and Modern Art* at Princeton University. It was the first endowed professorship of the history of photography in the United

[538] MoMA press announcement, "Photography into Sculpture," April 8, 1970.
[539] Ibid.
[540] This interview took place on July 29, 2014.

States, a decisive moment in the art historical study of photography. From 1973 to 1978 he was also director of the Princeton University Art Museum, and stayed on as its curator of photography for over thirty years. As an acclaimed writer, he has been continuously shaping the discourse around the medium and had a significant impact on teaching, exhibiting and collecting photography. After his retirement Princeton University honoured his legacy with the *Peter C. Bunnell Curatorship in Photography* endowment, naming him a truly iconic figure in the history of photography.

Bunnell understood the multifaceted possibilities of photography from within as a practicing photographer, and from early age. As a young boy he stumbled on photography by accident. An accident that became a life-changing event:

> My best friend was given a photography kit and we decided to give this a try. Somehow we overlooked the fact that you have got to do it in the dark! Everything was fogged. We couldn't figure out what was going on. So my friend got angry and said I could have it. We lived around the corner and down the street in a little two-bedroom house. The laundry room was in the basement, where there was a small light bulb, but no natural light. It accidently worked and I was hooked. So I started on photography and realized that if I got really good at it, I could get out from under my fathers desire for me to go into math and science. We lived in Poughkeepsie, which is 70 miles north of New York. I had saved my money somehow, went to New York by myself, and bought a used 4 by 5 camera, two or three film holders and a box of 4 by 5 film. And decided to become a photographer. I had already started working after school for a commercial portrait photographer, developing his negatives. Then I thought about all these kids that go to the prom and want to have a photograph. A young couple comes in, he puts his arm around her, and BAM! That was it. Five dollars earned. It was a great success! So then it became time to go to college. And I said to my father that I wanted to study photography. My father told me later, sitting incidentally in my office at the Museum of Modern Art, that he was disappointed beyond disbelieve but he knew that if he tried to challenge me that I would rebel. This was 1955. The only place to study that was *Rochester Institute of Technology (RIT)*. I was going to try to be Richard Avedon, or Irving Penn, but I didn't even know who Daguerre was. I have been so lucky. It was just the right moment. I met Beaumont Newhall and Minor White on a bus during my first week at Rochester. One of the places that had just opened in 1949 was the *George Eastman House*.[541] I stepped on to the bus and said "Does this bus go to Eastman house?" and a voice behind me said, "Yes it does! Get on." These two guys sat across from me and one asked me if I attended RIT. "Oh we teach there," he said. That was Beaumont Newhall.[542] On the way to the entrance Newhall said to me: "I'm busy today but if you want to come back sometime, I'll show you around." He eventually asked me to come and work at Eastman house and assist Minor White on Aperture magazine. I worked there for 10 years every summer. I edited the first edition of

[541] The George Eastman House is the first museum purely dedicated to photography, founded in 1949 in Rochester, New York. The museum is located on the estate of George Eastman, the founder of the Eastman Kodak Company. In 2015 it changed its name into the George Eastman Museum. It is a world leading museum and a renowned centre for the conservation of photography.

[542] In 1940 Beaumont Newhall became the first director of MoMA's newly founded Photography Department, to be replaced by Edward Steichen in 1947. When Bunnell met him, Newhall was curator at the George Eastman House. Newhall became the George Eastman House's second director, from 1958 to 1971.

> Edward Weston's daybook. One of the great collections they have at Eastman house is the *Eadweard Muybridge Archive* that has the cameras, the negatives, the shutter trips, the positives, and the finished images. I catalogued every one of them. There was no catalogue before. It was Beaumont who said that if we were ever going to go anywhere in this history of photography, we should have full academic credentials and teach it in a professional way in a major school. So I had four years of college at RIT [1955 - 1959], studying and practicing photography as a fine-art medium. I then did two years of postgraduate work for a master's degree at Ohio University [1959 - 1961], and then I went to Yale University [1961 - 1965] for a PhD in photography history and art history. I got a job cataloguing Alfred Stieglitz's archive that Georgia O'Keefe had given to the university. Nobody had even opened the boxes. I proposed a dissertation of Stieglitz's years in Europe and went there for a year to do research.[543] While I was in Amsterdam, the long distance phone rings in the hotel where I was staying. The landlady calls me up and said it was John Szarkowski on the phone. He had talked to Beaumont, and asked me if I wanted a job. I immediately accepted without knowing what he was paying me. And I never finished my degree. After a year I was promoted to assistant curator. It was about 1966 and I stayed until 1972. And so it all went and you do a couple of shows and 40 years later some people say it was groundbreaking. I can't believe it…

In 1962, John Szarkowski was nominated by Edward Steichen as his successor to be the next director of the Department of Photography at MoMA. He had a very different approach to photography as his predecessor, giving way to more formal and theoretical explorations, instead of appropriated group shows where style was subjugated to populist narratives. Where the master was generally looking into the past, the pupil was on the verge of the new, featuring artists such as Lee Friedlander, Joel Meyerowitz and Diane Arbus in landmark exhibitions such as *The Photographer's Eye* (1964) and *New Documents* (1967). He honoured the artistic integrity of photography by displaying original prints in their original dimensions, adhering importance to its materiality. Steichen's architectural installations gave way to the white walled neutrality, prevalent throughout the museum, and photographs reappeared on the wall. Bunnell witnessed this transition from close by. When he started working for Szarkowski, he often had the opportunity to talk to Steichen. As a student, he visited the original *Family of Man* exhibit at the MoMA in 1955. In a good position to compare, Bunnell talked about his experience of witnessing the exhibition "that it had its good effects and its bad effects," and how it influenced his own curatorial theories:

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[543] Bunnell: "I got nominated for a *Kress Foundation Fellowship*. A grant in Art History. Each university could nominate one person of their own choice. A few weeks went by and a letter came from the head of the Foundation saying: 'There must be some mistake, we only give Fellowships in the Arts. Photography is not art.' The university was perplexed but didn't do anything about it. I told this story to Beaumont, who was outraged and he in turn told Ansel Adams. Ansel at that time was very involved with Edward land, the co-founder of the Polaroid Corporation. So Ansel tells Edward Land this story, that photography is not art, and Edward Land calls me up one day and tells me: 'Ansel and Beaumont have told me this terrible story, and told me about you. I will give you a fellowship. How much money do you need?' So off I went with a serious amount of money. I took the *SS United States*, in the way Stieglitz did it. Turns out I was in an upper class bar sitting next to Henry Fonda. I spend a few months in London, at the Royal Photographic Society. I would visit Bill Brandt and take a train to visit Alvin Langdon Coburn. Can you imagine Coburn was still alive! Coburn said one day: 'I want to take your portrait.' And I took his in turn. So Eastman House, who has Coburn's negatives, now has Coburn's portrait of me in their collection, and I have his portrait here at home. Then I went to Germany, to Hamburg with the boat, to Paris, Berlin, Munich, Holland and finally the year was almost up."

I went to that exhibition as a student. The line went all the way around 53rd street to 6th avenue and all the way down 6th avenue to Radio City Music Hall. That is how popular that was. It was an incredible situation. Steichen was scared to death it was going to be a total failure! And it had cost a fortune. Of course, two days after, he realized that this was the blockbuster of all times.[544] And of course it went all over the world, to Russia and China. One complete set was sunk in the second Arab-Israeli war! In the harbour of Haifa I think. A bomb hit it and the boot sunk and that was the *Family of Man* going down. There is one lying on the floor of the Mediterranean! (laughs) As far as I know, I remember the image of a nuclear explosion being in. But I can't confirm the colour.[545] It would surprise me that it would be a transparency. Architecturally that big, I wouldn't know how you would make a transparency that big in those days, unless you put it together as windowpanes. It was taken out of the exhibition and became a kind of mini controversy. I think in the end, judging from the rest of the exhibition, it lend a note that was too fatalistic, too negative. Also, obviously, who dropped the bomb? So the whole idea that the USIA and the United States are sending this exhibition all over God's creation, while we are all trying to figure out how we can get out of saying that we were the ones who dropped the bomb. Bombsssss… (articulates the plural) It would stand to reason. Well, there is no colour in the book and you can't ask Steichen anymore, but I know where they would get the image actually. The irony is that Clarence White junior, son of the famous photographer and a friend of Steichen, was the chief photographer in the Navy, not at Hiroshima or at Nagasaki, but at the Atoll tests, beforehand. And he photographed in colour.

But the fact that he had appropriated the negatives from the photographers, and then he contextualized them, as well as architecturally devised them with Paul Rudolph, the architect, wasn't good. And a lot of credit of Steichen should go to Paul Rudolph. It was the era of *Life* magazine and that was of course the common practice. You handed over your negatives to the editor who decided what would happen to the picture. It wasn't altogether unusual. Steichen of course came out of that whole experience of magazine journalism and publication. When Steichen, for instance, made an exhibition of *Camera Work*, he went to the library and checked out all original *Camera Work* magazines, took a razor blade, and cut out all the pictures! He didn't do a glass case exhibition with the magazines opened in the cases. He took the images out of the magazine itself, had them matted and did the show. As far as he was concerned, photographs were just reproductions.

So in a way you had Newhall, who was ultra historical and ultra refined. **(Fig. 1)** He was interrupted of course by World War II and was then in effect ousted and

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[544] Bunnell: "When they finished the book, he signed over the contract of the book to MoMA's Photography Department. As you probably know that is the largest selling book ever published after the Bible! And so today if you look carefully, you will see a credit line on a purchase that says *Family of Man Fund*. And that is where the royalties come from." The book is one of the most successfully disseminated publications in history and has been continuously in print since 1955 until today.

[545] In the original *Family of Man* was a photograph of a nuclear explosion, a 2 by 3 meters backlit transparency in colour. The image was withdrawn after the exhibition ended and censored from the travelling exhibitions and its catalogue. The MoMA denied the existence of the image for some time. I asked Bunnell about this image and he confirmed its existence. Later, I found an installation photograph by Wayne Miller in Mary Ann Staniszewski's *The Power of Display: a history of exhibition installations at the Museum of Modern Art* and could trace the image back to a photograph of a hydrogen bomb explosion. It was a photographic record of one of the earliest tests in the Pacific of the thermonuclear weapon in 1954 named *Operation Castle Bravo*.

Steichen took over, who moved in another directions. It was a lively moment in photography. We all went to *Limelight*, which was Helen Gee's Gallery down at Sheraton Square. She did a Stieglitz show for instance, and I think you could have bought one for 50$ maybe. I bought an Atget for 25$ when she did an Eugène Atget show with the reprinted Berenice Abbott photographs. And shortly thereafter Lee Witkin founded his photography gallery. If you look at the list what Lee Witkin showed over the years, it is incredible. He had a little brownstone gallery where you had to go upstairs. He showed pictures on all the walls and he had bins with pictures! He started showing only contemporary photography, and of course there was no market. Nobody bought. And there were no other places. The only other place to look at photographs was Steichen's gallery, which was in the basement of MoMA. Steichen did all kinds of one and two men shows. He showed Robert Frank and Harry Callahan down in this funky little gallery in the basement, which was where the entrance to the movie theatre was. And the men's room. (laughs) So you went downstairs into this gallery that had these panels hung on wires from the ceiling, and on there he would put the pictures. He was all in favor of having prints specifically made, mounted on *Masonite*, and then cut to the edge of the print.[546] They sort of floated on the wall. But they were never treated as really exquisite objects. They were treated really almost again only subject matter wise. By the time you get to Szarkowski doing Walker Evans, you have all original prints, very custom made contact prints from the 8 by 10 negatives that were borrowed from the library of congress. He showed the duality of Walker Evans, both as a social documentarian, as well as an aesthetic photographer. And that really became John's hallmark. In a way Steichen set the option for Szarkowski to move in the directions that he did, but John got over that very quickly. Like me, John was also a single image large format photographer. He recognized that the art of printing was an area that Steichen had disallowed.

Szarkowski had been there three years before I came, so he obviously had to deal with the residue of the Steichen mystique and the whole notion of who he was. The perception was that we had let go the dean of photography, the greatest living photographer in the world. And now, who is this hick from Minnesota whose name we can't even spell? When Szarkowski took over in 1962, Steichen couldn't leave. He would come once a week to the MoMA, walk down to the smoking lounge at the *Rockefeller Center* to get cigars from his private humidor, walk back and come upstairs to sit down in his old office, John's office, and smoke these gigantic cigars. I mean, they made Churchill's look like little cigarillos! And so Szarkowski asked me if I would sit with Steichen and talk to him to keep him occupied until his chauffeur came. Well, we had some wonderful conversations and I took a lot of notes. But I was scared to death because he had this big bushy beard and I kept thinking to myself, if the ash ever falls in his beard he is going to have a fire! It lasted until Steichen did a press conference in which he announced that he felt that the Family of Man was in a way focused too much on men, and so he was going to do the *Family of Woman*. He did this publicly and on his own. And the next thing is that the MoMA hears about this in the newspaper, and John Szarkowski hears about it, and that was the end.

[546] *Masonite* is a type of wooden hardboard made of pressure-moulded wood fibres.

In 1964, the new Philip Johnson wing opened and each department got a gallery structure of their own. Photography, prints and drawings, architecture, design, and what have you. Nobody else could show in the two photography galleries. That in a way lessened the competition and also lessened the idea that if you are going to do a show on the first floor it had to be a crowd pleaser, it had to have a draw. So we had in one gallery a semi-permanent installation, a sort of mini history of photography that we changed about twice a year. And then there was one gallery, with two entrances, where we could do maybe a thirty or forty prints show. But without anybodies permission!

My whole place at MoMA was to theoretically balance Szarkowski's interest in contemporary photography. I was seen as the *Newhallian* historian, as part of that whole aesthetic that was propounded by Beaumont and Nancy Newhall. I was to be the balance, but when I got there, I saw that John used to carry a little list in his wallet, of what he wanted to do. And every now and then after work we would go to a bar down the street and have a couple of drinks and out would come this little scrummy paper. He would say: "We have done Dorothea, and Walker is next and then I want to do Cartier-Bresson." And I realized that John was not so interested in very contemporary photography. John was focusing on the kind of stellar people, like Cartier-Bresson, Dorothea Lange, Walker Evans, Bill Brandt, that kind of thing. And then, every now and then, he did a thematic exhibition. We were a pretty good team. John was really one of the great people. He was so generous and so open minded. I did many projects with Szarkowski. We did *New Documents* in 1967.[547] **(Fig. 2)** By that time, we had been through the sixties and Vietnam and we had a whole different attitude. The attitude that Szarkowski articulated in *New Documents* was that the documentary photographers at that time were not so preoccupied with making social change, but rather with social observation.

Lee Friedlander, Garry Winogrand and Diane Arbus were also in that show you mentioned, for the world's fair in Osaka. I worked with John on that show. John and I really worked as a team. He and I would sit after hours, looking at these prints and he would ask me which print to use, and how to do it and we were a good partnership. We did other shows for the USIA that didn't go to world's fairs, but that travelled to US embassies. When you think about it, the idea that the outfit that actually showed Diane Arbus, including that photograph of the boy in the straw hat, was the Museum of Modern Art - that was pretty radical![548] But Diane never made any pretence about taking a political stance.[549] I don't know

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[547] *New Documents* took place at the MoMA from February 28 to May 7, 1967. It featured the work of three young photographers, Diane Arbus, Lee Friedlander, and Garry Winogrand who started practicing a kind of personal, unpersuasive street photography, showing life as it is experienced. John Szarkowski wrote in the press announcement: "In the past decade a new generation of photographers has directed the documentary approach toward more personal ends. Their aim has been not to reform life but to know it."

[548] For the exhibition *Ten Photographers* at the US Pavilion at Expo '70 in Osaka, John Szarkowski selected a controversial photograph of Diane Arbus. It was an image of a young man wearing a straw boater and a button that stated "Bomb Hanoi." The image was withdrawn from the selection because it was regarded as too provocative and at a time when the US was still at war with Vietnam. The goal was to avoid any politicization at the international exposition.

[549] Bunnell: "I went with her to the flea circus and she would often come to my office to visit. And to use the ladies room. She used the MoMA as her 53rd Street pit stop. One day we went for coffee outside and she had her camera and tripod with her. In comes this homeless bag lady with a wheel cart, full of rags and garbage. She sits down and Diane kept looking at her and said to me: 'I have got to get that one.' So she goes over, greets the bag lady, buys her coffee,

> anymore how we solved that other than to take out the picture. I don't know if John faced any problems from the administration, but I think I would have heard about it. But I remember there was a photograph of Friedlander looking through the window at Mount Rushmore. So when we did the selection, the senator from South Dakota who was on the committee from the congress about the American representation at the World's Fair, piped up and said, "there is no picture from my state! We can't allow this." So we figured out what was in his state, which is Mount Rushmore, and Friedlander was literally commissioned to go there and to make a photograph, so we could add it to the group that went to the world's fair. Which it did, it obviously passed this loony congressional approval. But I always look at that picture and I think that it looks like he was on his usual circumnavigation of the country and went to Mount Rushmore. I think the fact that he didn't photograph the mountain per se, but rather the reflection in the glass of the visitors' pavilion, was part of the idea that he really didn't wanted to do this. But he knew he had to do it and was being paid to do it. And so that it how that all happened. It was a very interesting moment.

In the 1960s, the field of photography was in a continuous transition. As Jorge Ribalta argued, the *Family of Man* "represented the end of the historical moment in which photography was key to visual paradigms and techniques in propagandistic exhibitions."[550] Although it was the culmination of the photographic exhibition format based on expanded vision, and large display strategies gradually disappeared, photography as a medium kept expanding. In response to Steichen's disregard of the artistic integrity of the photographers he exhibited, Szarkowski started making exhibitions with emerging photographers and high regard for the aesthetic object of the photograph. Or what he named 'the thing itself,' its 'detail,' 'sequence,' and 'frame.'[551] Photography, at that point still an under-theorized medium, expanded in depth and more subtle changes. While Szarkowski focused on observational photography operating within the illusionistic picture plane, Bunnell already started thinking outside of the frame, emphasizing the distinctive surface of the print itself. He thought of the photographer as a printmaker who made use of a wide variety of materials, ever since its invention. Bunnell's interest in mixed media and interdisciplinary experiments between the classical distinctions in the arts led him to organize the exhibition *Photography as Printmaking* in 1968. In the press announcement he wrote that the "approach to photography as printmaking seeks to make the medium *visible*, whereas the so-called straight approach seeks to make it *invisible*."[552]

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sits down and talks for 20 minutes, and then sets up the tripod, poses the woman, and takes about three or four photographs. There were all these people standing around wondering what was going on. She never printed it. Apparently it didn't work. But it was just incredible to watch her work. I saw her the day she killed herself. She came to the MoMA, left her bag in my office, went to the bathroom, and went out to buy a scarf or something, and then came back and got all her junk, left and said 'See you soon.' There was no great despair or anything like that. And the next day Marvin Israel calls up and says: 'They found her in the bathtub.' You never know…"

[550] Ribalta, Jorge, *Public Photographic Spaces: Exhibitions of Propaganda, from Pressa to The Family of Man, 1928-55*, MACBA, Barcelona, 2009, p. 26.

[551] In his exhibition *The Photo Essay* (1965) Szarkowski divided the documentary medium in several categories, among which 'the thing itself,' 'detail,' 'frame,' 'time exposure,' and 'vantage point.'

[552] In the press announcement, Bunnell wrote: "Photography as Printmaking, a survey of the more than a century-old tradition of the fine and often unique photographic print, will be on view at The Museum of Modern Art from March I9 through May 26. Over seventy works by about fifty-five photographers, from 1842 to the present, demonstrate the unique characteristics and expressive potentials of various techniques used by the photographer to produce an image. They reveal the continuing interrelationship of technique to photographic aesthetics, from the daguerreotype to contemporary work, to which over half the exhibition is devoted."

> I had caught on to this idea that photography was undergoing a transformation of identity and identification, let alone, technique and technology. I started that with the *Photography as Printmaking* show where I essentially said that a photograph is not just black and white, 4 by 5 or 8 by 10, mounted on a white cardboard. It is all over everywhere! I often toured around giving lectures at universities and I always went to see the work of the students in the photography departments. I began to realize that some of these people were doing things in cyanotype, in gum bichromate, collages, things like that. That is how I started on the *Photography as Printmaking* show. **(Fig. 3)** And so I did a whole show on it in the same two galleries, going all the way back to the 19th century, showing daguerreotypes, and what have you. Szarkowski was very open minded about it, but when I wanted to show a Robert Rauschenberg, a multiple silkscreen, which had to be borrowed from the *Print Department*. He was kind of negative, and said: "It is not a photograph." And I said: " Well John, how else did he make the goddamn thing? I mean it is photosensitized, a photo silkscreen, and they are copies of photographs." "Well I know," he replied, "but that is a print." But I showed it. I showed the big one of the skeleton.[553] I showed a key Robert Heinecken piece called *Five Figures*, a little wooden frame with these fractured figures sections.[554] Heinecken is really the person whom I had great familiarity with. I got to know him through the *Society for Photographic Education*.[555] It was because of him and his photo boxes, puzzles and cubes that I knew something was going on. I would see him and go to his studio and see his work. As a matter of facts, I would stay with him and his then wife and children in their house in Los Angeles. Very near the time of 1967 I can remember being out at the university over there, where I suddenly started to see these three-dimensional things. I am sure that I took it up with Heinecken. And it was during the research for *Photography as Printmaking* that I saw these things happening in California. We were right at this moment in the late sixties where obviously the gallery world hadn't yet taken over, and the kind of pre-eminence of the *Westonian*, Ansel Adams-attitude hadn't codified. These young people were absolutely doing everything. A few of them were actually graduate students of Robert Heinecken. They were painting on things, printing on Xerox, doing sculptures, making three-dimensional images that transformed the illusion of dimensionality in to the three dimensions.

Throughout the 1960s visual artists and photographers started to experiment across the boundaries of medium specificity and towards hybridity. Robert Rauschenberg (1925 - 2008) and Robert Heinecken (1931 - 2006), mentioned by Bunnell, were both pioneers in interdisciplinary artistic research. Heinecken combined photography with printmaking, collage and sculpture. He referred to himself as a *para-photographer*, a darkroom experimenter who often made photographic works without the use of a camera.[556] He appropriated, re-photographed and re-contextualized images from the popular press and advertisement world and started making photo-sculptures as early as

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[553] Peter Bunnell is possibly referring to Raushenberg's work *Booster* (1967), a lithograph and screen-print on paper, but this cannot be confirmed from the checklist or the installation views that the piece was actually in the show.
[554] Robert Heinecken, *Five Figures* (1968). Film, print, and plastic assemblage.
[555] The *Society for Photographic Education* is a non-profit organization in the United States that promotes a broader understanding of the medium in all its forms.
[556] Respini, Eva, *Robert Heinecken: Object Matter*, The Museum of Modern Art, New York, 2014, p. 9.

1965.[557] Robert Raushenberg's silkscreen painting series (1962 - 1964) are an absolute antecedent in the use of photo-emulsion screen-printing combined with painting.[558] In many of his works he combined these two-dimensional photo-paintings with sculptural elements and motorized movement, as in his *Revolver* series (1967). He even pushed the limit towards architecture in a work as *Solstice* (1968), a full-blown pavilion with silkscreened Plexiglas windows mounted on a platform. These so-called pop-art works thrived on basic photographic strategies of reproduction and serial repetition, taken from magazine and television culture. Heinecken and Raushenberg both contracted around the same idea, but with very different intentions. Where pop-art was searching for a commercial means of reproduction, like photography and silkscreen printing, to *commoditize* the formerly unique medium of painting, the photography world wherein Heinecken was embedded was looking to *commodify* photography as a unique visual art. Photography, attributed with a low economic value, became marketable within the art gallery system by treating it, against its own nature, as non-photographic mono-prints.[559] The act of making a unique photographic object was every closely connected to the manual labour invested in creating a third dimension. In that way, achieving a three-dimensional art object became the main objective, as well as its own subject. Heinecken wrote that:

> This kind of photograph must be looked at more intensely than one is used to looking at photographs. The meaning is probably not on the surface or necessarily associated with the subject matter. It may be operating on completely unfamiliar levels. It may not even seem understandable. The photograph in this context is not a *picture of* something but is an *object about* something. It seeks to trigger response, not simply to identify subjects or situations. I try to distinguish between *making a photograph* and *taking a picture*.[560]

Heinecken also suggested that neither the meaning of the word 'sculpture' or 'photography' covered the meaning of the exhibition's title, but mainly the middle word 'into' best described it.[561] Object-hood and the transgression of materiality became its self-reflective subject matter. The press announcement of *Photography into Sculpture* stated that the artists involved "are moving from internal meaning or iconography - of sex, the environment, war - to a visual duality in which materials are also incorporated as content and at the same time are used as a way of conceiving actual space." This formalist approach was far removed from photography's primary function as an illusionistic window on the world. Instead it started constructing a new reality on its own. These artists found meaning in, according to the press announcement, "a wide variety of techniques reflecting our modern technological culture":

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[557] Heinecken was operating from Los Angeles, where there were fewer dictates around the medium of fine art photography. In 1963 he started teaching at the photography program of the University of California (UCLA) where he had a big influence on his students, some of who were part of the Photography into Sculpture show.

[558] Richard Hamilton's series of works *Towards a definite statement on the coming trends in menswear and accessories* (1962) can also be counted as antecedent. The photographic image of John F. Kennedy coincidentally appears in both series of works.

[559] "The formalist approach to the medium is problematic for many reasons: it not only strips photographs of their social and historical contexts, but also facilitates the commodification of objects that previously had little or no monetary value." Respini, Eva & Sawyer, Drew, "A New Prominence: Photography at MoMA in the 1960s and 1970s," *The Photographic Object 1970*, edited by Mary Statzer, University of California Press, Oakland, 2016, p. 59.

[560] Heinecken, Robert, "The photograph: Not a Picture of, but an Object about something," *Robert Heinecken: Object Matter*, edited by Eva Respini, 2014, p. 155.

[561] "(…) the middle word of the three, Photography *into* Sculpture, best describes it." Robert Heinecken quoted in Statzer, Mary, *The Photographic Object 1970*, 2016, p. 51.

> Contour vacuum-moulded plastic containers for photographs and film transparencies; film positives layered in *Lucite* constructions of varying depths, which are seen by reflected or transmitted light; photosensitized contour-moulded cloth sculptures; life-size figurative compositions constructed from several hundred glass transparencies with multi-dimensional views; fabricated pictorial or illusionistic boxed environments; participation puzzles; topographic landscapes which are contoured by a vacuum process; *Lucite* cubes of photographs; three-dimensional wall constructions; reductive, or minimal, sculptures of multiple pictorial boxes; and light/negative constructions.[562]

Photography into Sculpture was announced as "the first comprehensive survey of photographically formed images used in a sculptural or fully dimensional manner." It was the first exhibition to sum up these new experiments inspired by innovative photographic materials such as Kodak's *Kodalith* and *Argenta Photo-Linen*. On show were 53 recent works created by 23 American and Canadian artists, assembled by Peter Bunnell.[563]

> I was coming from a formalist point of view. An object oriented point of view. I started with a long knowledge of Heinecken going back to the sixties, I had known Heinecken for 8 or 9 years already, and continued to know him of course until he passed away. It was Heinecken who introduced me to Michael Stone for instance, or to Richard Jackson, who did the marvellous piece with the table and the negatives. **(Fig. 4)** I then said, if Heinecken and a couple of his students are doing this, this is interesting and I should show it. I came upon Ian Baxter, who had an artist pseudonym called *N-E-Thing* and he did all these kinds of re-photographed photographs, books and maps with photographs, through a show that was in preparation at MoMA. It was called *Information*, that Kynaston McShine did.[564] He in turn invited me to come to Vancouver and that's how I came upon the Canadians. There was Jack Dale who did the big cut glass piece with the transparencies in them, Michael de Courcy, all these different people that were doing fascinating things in this genre. I found out that there was a connection in experimental photography between the Vancouver crowd and the LA crowd, they would come down the coast. Michael de Courcy knew everything that was going on in LA. So in a way the axis of the *Photography into Sculpture* show was Vancouver to Los Angeles. And then there were all kinds of other people. Dale Quartermain was in Delaware at the time. Douglas Prince who makes these boxes was in Florida at the time. So I started gathering all this material. And you know, in those days you didn't have *iPhones* and little cameras.

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[562] MoMA press announcement, "Photography into Sculpture," April 8, 1970.

[563] Photography into Sculpture took place in the Museum of Modern Art in New York from April 8 to July 5, 1970. It featured 53 works from 23 artists. The artists selected for the exhibition were Ellen Brooks, Robert Brown, Carl Cheng, Darryl Curran, Jack Dale, Michael de Courcy, Karl Folsom, Andre Haluska, Robert Heinecken, Richard Jackson, Jerry McMillan, Bea Nettles, Edward O'Connell, James Pennuto, Giuseppe Pirone, Douglas Prince, Dale Quarterman, Charles Roitz, Leslie Snyder, Michael Stone, Theodosius Victoria, Robert Watts, and Lynton Wells.

[564] *N-E-Thing Co.* was the pseudonym of Ian Baxter and his wife Ingrid Baxter. They are considered to be early conceptual artists. They were part of the exhibition *Information*, which Bunnell mentions. *Information*, curated by Kynaston McShine, was one of the first institutional surveys of conceptual art, focusing on artists using "mail, telegrams, telex machines, etc., for transmission of works themselves - photographs, films, documents - or of information about their activity." The exhibition ran from July 2 to September 20, 1970 and opened a few days before Photography into Sculpture ended. The subject of Conceptual Art and its relationship with photography is too big to handle within this essay will be treated in the following case studies.

I had an old Nikon single lens reflex and build up a kind of visual archive. One year before the show, I think in '69, I published an article in *Art in America* on the topic that reproduced the Heinecken piece, Carl Cheng, and one or two others, and said that this was something that we are going to see more of. And either I knew at the time that MoMA had approved the show or I was in the process of getting approval. But it was the signal that something was happening, and that we were going to deal with it. That is what was on my mind at the time of the show.

The *Painting and Sculpture Department* was furious about the show. They said it shouldn't be called *Photography into Sculpture* at all. They said it should be called *Three-dimensional Photography* or something like that, whatever you want to call it. They send me a memo after I gave my first presentation to the committee, objecting to this title. Objecting! The memo got lost somehow and they found it after the show was already on the wall. They send me a copy of it, with an apology. And I said, well, it comes too late because it is on the wall. *Photography into Sculpture*, whether you like it or not, that is where it is. But even John couldn't quite figure out, where this would fit.

So then I did the show. On the first day of building up the show, John came by. I did this show completely alone, as I did the *Photography as Printmaking* show. John had never seen any of this, except in my snapshot research photographs. I had already hung two or three pieces. Leslie Schneider's wonderful piece hung from the ceiling. So he could get an idea of this. **(Fig. 5 & 6)** I loved the Leslie Schneider piece, which was called *Leda*. It were two great, huge *Plexiglas* things that hung on piano wire, off kilter, so that as the air moved, the piece moved. You could see through the picture. One was this outrageous photograph of the swan, and the other was of a woman, but there wasn't too much ambiguity about sexuality and the myth of Leda and the Swan. It was absolutely marvellous and it was huge. It was the first thing you saw. You saw it at the end of the gallery. And I had a lot of plastic boxes with the objects, like the Heineckens, inside. **(Fig. 7)** Of course Heinecken was in to that idea of participatory viewing, but in a museum you can't do that, you can't have 10.000 people twisting this thing around because it won't last. John looked over all that and said, "this is really very strange and unusual but I think this is going to be fabulous, so keep at it." Then he left. And I didn't see him again until the opening night. All the press came, and then the public, and it was very controversial.

Opinions were really diametric. There were people that thought this was absolute absurdity and other people thought it was incredible. In fact one of the things that keeps coming up in some of the commentary is the Vietnam War. There is nothing overtly Vietnam in this exhibition. It is more about sexuality and gender identity. I was young and I didn't think about a lot of heavy issues. I was living in New York, high up in the sky, having a wonderful time and working hard. The war was not a big issue for me. I was not of draft age. People like Michael Stone would have probably been at draft age. Michael Stone's piece was about racism and police brutality, about a very famous case of police brutality in Los Angeles. It was

like Rodney King that got beat up on the street by the police, but then earlier.[565] The police chief is in one of those pieces.

The Michael Stone was in colour. The other colour piece in there was the moulded plastic by James Pennuto and Robert Brown. This mountain of dirt in a kind of orange color. I own that piece. And than there was the tire tracks piece that was blue. Carl Cheng was in colour. There was Jerry McMillan and his bags. Jerry McMillan introduced me to Ed Rusha, who wasn't in the show, he didn't make anything like this, but he was doing all those famous books. Many of those things were hand coloured. Lynton Wells worked on photosensitized linen that was hand colored. **(Fig. 8)** The Bea Nettles picture in there is printed on photo linen and was hand coloured. So colour at that stage, 1970, was rare. Colour photography was not being shown because of the technical aspects of conserving it and because of the expense of dye transfer. The first copy was very expensive, and the second one not anymore. Once the matrices were made, and the formulas for the dyes were made out, it is all done. But the first one, to get the colour balance correct, is enormously expensive. And enormously time consuming.[566] Dye transfers were thought to be, perhaps not permanent, but close to it. But everybody was petrified about how long the stuff was really going to last.

John was leery of collecting colour photographs, because of its preservation. We did a few things with colour photography and colour Polaroid's in the gallery before the famous William Eggleston show [in 1976]. We were dealing with colour, but at that point colour was very suspect. And also, Eggleston made only dye transfers. Of course, when John finally decided on Eggleston, he went all out and said it was the beginning and the end at once! (Laughs) Very slowly they added colour.[567] There is no doubt in my mind that the Eggleston show, and the tremendous response that Szarkowski gave to Eggleston, started the ball rolling. But the MoMA didn't buy any of the works of *Photography into Sculpture*, except for one or two Douglas Prince's, the boxes. And I think that is all. They didn't buy the one that I wanted, which was the Richard Jackson. I couldn't convince John to buy Carl Cheng, or anything else. We didn't have a lot of money. We had to raise money. Particularly for something new and unusual. If he wanted to buy ten Bill Brandt's, that was another matter and he had a greater opportunity to do that.

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[565] Tom Reddin was deputy police chief in Los Angeles when he supervised police and thousands of National Guard troops to beat down riots in the predominantly black *Watts* neighbourhoods after the violent arrest of a young black man by California Highway Patrol Officers in 1965. He later became chief of the department from 1967 to 1969, during which he became known when the police clashed violently with thousands of antiwar protesters. Reddin resigned in 1969 to accept a post as a news anchorman at the local news station KTLA Channel 5. Rodney King, mentioned by Bunnell, was a taxi driver who was heavily beaten on March 3, 1991 by Los Angeles Police Department officers. A witness videotaped the incident and sent the footage to KTLA. Four officers were charged with assault but acquitted, after which the *1992 Los Angeles Riots* started.

[566] The dye-transfer process required a printing matrix for each primary colour. The matrices transferred ink onto the paper by a printmaking process. The dyes were very pure compared to modern day techniques, but expensive and difficult to handle.

[567] Bunnell: "The Metropolitan Museum of Art, for instance, when they started collecting colour, they bought two copies. They put one in the collection and froze the other one. The art institute was the first one to do that. They had a morgue! It was a big joke in the community. They hired a company that builds morgues, for dead bodies, to build a refrigerator for colour photographs. The MET had bought a Jeff Wall, the one of the bridge with the group of people sitting down, for which they paid an enormous amount of money. I happened to be on the committee of the MET at that time. It had totally deteriorated, so fast, that it couldn't be exhibited. So they had to commission him to authorize a new transparency. And they bought a second one, locked that up in the dark, so that after the new one had deteriorated, they would have another one."

> But not with this kind of thing. It didn't sell. And most of them stopped working with three-dimensional photo works. The piece that I thought was the most interesting and had the most potential was the Richard Jackson, which was minimally priced at that point. He also stopped doing it. With Heinecken it was the same in a way. Heinecken was not widely collected. His work didn't have a lot of currency. He also did not promote his work. Up until then, if you wanted a Robert Heinecken you went to his studio, because he didn't have a gallery. But he didn't stop.
>
> Of course after a while they realized that there was money to be made if you called it *art*. Even today, you have a split between historical photography dealers and art galleries. Rauschenberg was at Leo Castelli's gallery and the last thing Castelli wanted to do was to say: "This is a photograph." Even with Rauschenberg's photographs - his actual photographs that he did after he got sued a couple of times for copying other peoples photographs - the last thing Castelli wanted to do was to say these are photographs! Even today you get somebody like Marion Goodman who says that Jeff Wall's works aren't photographs. That it is art! Contemporary art. Like the Dusseldorf school.[568] None of those guys are represented by photography people, but by contemporary art galleries. And they define contemporary art as *anti-photographic*. First of all it is colour, it has got to have colour. Forget black and white! That is over with. It is gone! Now, the wonderful thing is, that the prices for photography have gone up dramatically. You could now be paying 5 to 6 figures. Which is unheard of. I bought my Edward Weston's from Weston himself for 25$ a piece. That was back in the 1950s. There is an inequality. The idea that there aren't a lot of these around and there can't be any more. My argument, is that what that has done, is that it has set up in a way a kind of situation that is a little like the traditional arts, which is that there are only a certain number of these things, limited editions. That was all slow and coming. And of course that is what happened in the art museums. Rarity becomes more significant. Of course we contributed to that with the Photography as Printmaking show and Photography into Sculpture.

The works presented in *Photography into Sculpture* indeed went far beyond the surface of the print. But in my opinion, they rarely broke through the picture plane of the photograph. The illusionistic window of photography was rarely wrinkled, crippled or heightened in relief. Most of the works contained flat photographs that were incorporated into sculptural installations. For example, Lynton Wells' standing figure was created from exposed *flat* photo-linen, hand coloured and inflated with urethane foam. **(Fig. 9)** While Michael de Courcy simply pasted flat black and white photographs on randomly stacked boxes, Jack Dale's *Cubed Woman* series were made from photosensitized glass plates and Plexiglas squares stacked into cubes. And whereas Lynton Wells inflated her photographs, Carl Cheng inflated the shape around his photographs. **(Fig. 10)** His pieces were made from vacuum folded three-dimensional shapes that contained flat photographs:

[568] The *Dusseldorf School of Photography* refers to a group of young photographers who studied with Bernd and Hilla Becher at the *Kunstakademie Dusseldorf* in the 1970s, among them Andreas Gursky, Candida Höfer, Thomas Ruff and Thomas Struth.

> I put the film in between the plastic bubbles, glued the bubbles together, and trimmed the excess plastic. (…) I liked the idea of looking through a number of flat images and seeing a three-dimensional object appear.[569]

Jerry McMillan actually heightened the illusionistic window of photography by adding a third dimension to his images of paper shopping bags. **(Fig. 11)** In *Untitled (Wrinkled Bag)* (1965) he registered the surface of a wrinkled paper bag from all sides, and reproduced an exact copy of the bag with the photographs. The same literalness can be found in Robert Watts' *BLT* (1965): a flat photo of bacon, lettuce and tomato, sandwiched between two Plexiglas pieces shaped in the form of bread slices. One of the few works that actually had an intrinsic three-dimensional presence was Ted Victoria's *View* (1970), a camera obscura made from a magnifying glass and a Plexiglas pedestal. Three-dimensionality in this piece was attributed by displaying the mechanism of photography itself: the size of the photographic chamber. In regards to colour, it should also be stated that there was no actual colour photography present, since all works that contained colour were black and white photographs overworked with hand-applied pigments. Michael Stone's *Channel 5 News, KTLA Los Angeles, California, USA: Tom Reddin* (1970-2011) was made from hand-coloured black and white photographs, inserted in inflatable vinyl bags with a valve, and hung on a display rack that assigned it a third dimension. **(Fig. 12)** On of the most colourful pieces in the show was Ellen Brooks' *Flats: One Through Five* (1969). Her installation was made out of wooden boxes that were perpendicularly attached to the wall and contained a green landscape. She inserted a black and white photograph on photosensitized canvas of a nude couple embracing and rolling in the grass. **(Fig. 13)** In a larger, later version, she used a large square of *Astroturf* with figures printed life-size. In both works, however, the print itself clearly remained on the two-dimensional picture plane. But in an interview with Mary Statzer, she criticized the overall use of the flat photograph within the exhibition:

> In many cases, the flat picture plane continued to dominate. Some of the artists were trying to create or heighten the illusion of space rather than work with actual space or the space that the sculptural object occupied. Also, I was surprised to see a relative lack of interest in scale and materials. Many of the pieces were rather small, and the materials had little to do with the content of the work.[570]

In regards to the three-dimensional aspects, Mary Statzer also interviewed Richard Jackson, who had a similar opinion, but about Brook's work:

> I thought, "What's the best way to express this idea?" It's a photo. Other people in *Photography into sculpture* were going at it the other way: "Hey I want to make an object that is different using photography. I'll put it on *Astroturf* or all this other stuff." (…) I don't think it changed photography. Photography is always better when it is conceptualized, like painting or anything else. There needs to be a reason for that image, and if you project it onto a box or if you project it onto flat photo paper without an idea or a concept, then it's like putting lipstick on a pig. Do you know what I mean? It doesn't change anything to put it on a box.[571]

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[569] Carl Cheng interviewed by Mary Statzer in Statzer, Mary, *The Photographic Object 1970*, 2016, p. 136.
[570] Ellen Brooks interviewed by Mary Statzer. Ibid., pp. 121-122.
[571] Richard Jackson interviewed by Mary Statzer. Ibid., pp. 162-163.

Richard Jackson's piece *Negative Numbers* (1970) was a deconstructed light-box, a table with attached bulbs that illuminated two transparent negatives. Jackson never really pursued photography outside of this piece. He used photography as any other material to express his idea. He was one of the few visual artists in the show and approached photography in an entirely different way than the photographers who had a desire to create a unique, valuable object using the medium. The exhibition collected a contrasting group of people that were generally confused whether they were *commodifying* artist-photographers or *commoditizing* photography artists. Even Bunnell expressed his understanding about the difference in orientation of a visual artist and a photographer:

> In fact, to appreciate these multimedia directions one must recognize how distinctly the photographer adheres to the underlying photo-optical basis of his work – as opposed to the printmaker's traditional adherence to drawing or the sculptor's adherence to the manipulation of material.[572]

Regardless of being defined as one or the other, the artists, as well as their works, shifted continuously between being defined as photographs/photographers or as sculptures/sculptors. The alternative for these "mixed-media mutants" was installation art as a new practice.[573] The table, lamps and slides in Richard Jackson's piece became an installation, even if the slides were as good as flat. Like in Jackson's work, the double image in Carl Cheng's work points out something interesting: the three-dimensional presence of stereography. Stereography simulates the appearance of having a third dimension through the looking glass, but since its invention, it needs the presence of the looking glass itself. Stereoscopes do have a physical presence, whether hand held or exhibited on tripods or tables. As such, the viewing device adds a third dimension to the object. More than the vacuum-folded plastic surrounding his photographs, the wooden pedestals and the Plexiglas box made Cheng's work three-dimensional. The inclusion of a container instead of a frame made the distinction between *flat* photography and *self-supportive* photography.

It is clear that the few literary sources on the exhibition, including Mary Statzer's outstanding research, focus on the sculptural aspects of the pieces, since this is where Bunnell placed his focus. But they seem to have overlooked the real value of the exhibition, which is to be found in its installation design. This photography show required entirely different, alternative display strategies. The galleries were filled with three-dimensional Plexiglas pedestals, wall shelves and illuminated cases, many of which were an integral part of the piece itself. Not a single work needed to be framed or 'matted' as in Steichen's days. Not a single work was just hanging on the wall. The sculptural aspect made it possible for photographic works to support themselves. And the diversity of materials, Astroturf included, dominated the overall look of the exhibition. Although Photography into Sculpture may not seem to be as radical as the 19th century experiments of François Willème or Etienne Jules-Marey in protruding the picture plane of photography, it reintroduced and enhanced the three-dimensional *presentation* of photography. Heinecken referred to Willème in a talk in the San

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572 Bunnell, Peter, "Photographs as Sculpture and Prints," *Art in America 57 no.5*, 1969, quoted in Statzer, Mary, *The Photographic Object 1970*, 2016, p. 55.

573 In his press announcement for Photography as Printmaking as well as Photography into Sculpture, Bunnell uses the words *alternatives*, *mixed-media mutants* and *multimedia directions*.

Francisco Museum of Modern Art, when Photography into Sculpture was on tour at the museum, but did not directly connect his work to Willème's photo-sculptures.[574] It is not the protrusion that is important to these artists, but the expansion of a photograph into a self-supportive installation. Heinecken confirmed this in his writings and pointed out that we should look beyond a formalistic view upon photo-sculptural objects and look at the space around it:

> The volume of three-dimensional objects as typically depicted by the camera lens is of course an illusion of volume, and when actual volume or dimension is played against that flat illusion, its space becomes beautifully ambiguous. Scale or size in conventional photography has tended to be kept small because of the rather questionable canon that a fine pattern of grain is desirable. Grain size in a picture seems relevant only to the distances involved in viewing it. The history and presence of albums and books have perhaps tended to limit and condition ideas of appropriate scale in the medium. Exhibition space and controlled light, rather than page size, seem relevant as the context for a good deal of my work.[575]

Bunnell addressed the matter briefly in his press announcement:

> The sculptural ideas involved insist on volumetric properties that intellectually and physically correlate form, space, and light; the pictorial space is made to work in combination with an environment that is literally three-dimensional.[576]

In our interview he elaborates:

> Photography into Sculpture was a first floor exhibition, which people don't realize. That was where *New Documents* was for instance. It wasn't the palace it is now. It was a relatively small operation. And that gallery was actually the tunnel gallery that went to the restaurant, quite an interesting situation. On an installation view you can see that there is also a doorway that led into the garden. There we placed the camera obscura from Ted Victoria on a pedestal so that it looked out into the garden. So you would have the garden upside down inside this camera obscura. Going back to the *architectural* issue, I photographed the exhibition myself, in addition to MoMA. But where MoMA photographs the galleries empty, I photographed it when the people where actually in there. The MoMA people took installation views taken at night, with the lights on. So you don't get a sense of what happened to the people. In my photographs there is a wonderful shot of a woman, bent over, looking at this Ted Victoria, and then you get a sense that *that* is exactly the motivation and the physicality of the object. **(Fig. 14)** It is not just to hang there and for you to look at pictures on the wall, but to bend over and peer around. It is to stand there for you to walk around everything. Every pedestal was fully three-dimensional. So you could look at the back, as well as the front. I photographed it in colour. The MoMA in black and white. The walls, to give you and idea, were *turquoise green*. I didn't want white. I

[574] "Willème's photographs were never intended to be the end result. Rather, the two-dimensional photographic image was an essential but invisible component of the process used to translate the person into their three-dimensional likeness." Statzer, Mary, *The Photographic Object 1970*, University of California Press, 2016, p. 41.
[575] Heinecken, Robert, "I Am Involved in Learning to Perceive and Use Light," *Robert Heinecken*, edited by Kevin Moore, Ridinghouse, London, 2012, p. 10.
[576] MoMA press announcement, "Photography into Sculpture," April 8, 1970.

> wanted something that showed off this dimensionality against a tone and so the walls were in a light, very light, turquoise green. *This* was photography being rethought.

The architecture of the exhibition space became vitally important to the medium of photography once the medium had been drawn into sculptural or architectural dimensions. The idea of encircling a singular photograph was not sufficient; it was about *navigating* between multiple photographic objects. The set-up and juxtaposition of the pieces placed in the gallery space challenged the conventional notions of photography exhibitions, even those of Steichen's Family of Man. The 'good effects' of the Family of Man were present in its coherent architectural design, while the 'bad effects' were eliminated by drawing attention to each singular piece. The subtleties of seeing the detailed materials of each piece and its connection to the next made the distinction. It enhanced the interpretation of a photograph as an object that has been assigned with great value. The photograph became an *artefact*. But much more than a collection of separate pieces, it is the *collectiveness* of the show that was so significant. The exhibition's installation *as a whole* was the work of art. That is the significance of the green coloured walls.[577] And this is precisely the merit that should be given to Bunnell's exhibition: it profiled the photographic object in future exhibition making and presented the photographic exhibition as a spatial concept.

In 1979 Bunnell expressed his doubts about the impact of the exhibition: "When I look back, the sad thing about the two shows that I did, particularly the sculpture show, is that nothing happened."[578] In a conversation with Mary Statzer, Bunnell explained:

> I think what I meant by my comment in 1979 was that by that time, I had not witnessed a serious continuation of the formal or physical notions that *Photography into Sculpture* expressed. Many of the artists had turned in other directions and given up this concern for three-dimensionality. They may have continued with alternative processes, but the sculptural aspect was left behind. It is also true that by the early 1980s, the notion of appropriation in image making was gaining significant ground, in some cases among artists who did not come from a photographic background at all.[579]

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[577] The installation views are crucial here. Where photography is generally represented as the image alone, it should be represented by two records: the illusionistic view through the camera lens and an installation view depicting its physical properties. In Photography into Sculpture, there can only be installation views, which more or less defines the photograph as an object. The installation views are crucial for Photography into Sculpture, since they represent the exhibition as a whole. The green colour emphasizes the fact that they are detached from the wall.

[578] Statzer, Mary, *The Photographic Object 1970*, 2016, p. 3.

[579] The quote continued: "Finally, perhaps because I was no longer in the museum field, but rather teaching and doing only some curating, I was not in a position to further encourage the trends I supported in the *Photography into Sculpture* exhibition – that is, through successive exhibitions or publications. This may all change now that aspects of this movement are again attracting attention, with perhaps an actual renewal. I would like to think so." Ibid., pp. 31-32. In the interview I had with Bunnell, he further explained his choice for teaching instead of curating: "I was at MoMA from about 1966 and stayed until 1972. I left MoMA with great anxiety, to come here to Princeton in 1972, but I did it because my position was in doubt by David McKalpan, who was a collector and trustee of the MoMA, and he wanted to see that the history of photography was thought in an academic art history environment. I gave it a lot of thought. I was only ten years younger than John Szarkowski so I could see that he wasn't going anywhere. I had risen about as high as I could go at MoMA and the opportunity to educate the next generation interested me. So I came down to Princeton where I started this program from scratch. Just before Szarkowski retired and before they approached Peter Gallasi, they asked me about coming back but in the end they obviously wanted a younger man. So I stayed here and retired in 2002. Sometimes I wonder if I had made the right choice of leaving MoMA. But then again, it is fate. I will give myself a little benefit of the doubt that I did have an ability. But it was all serendipity. I never had to fill out a job application."

The exhibitions travelled for two years past the most important museums in the United States. Despite this enormous exposure, most of the artists in the exhibition received very little attention.[580] Most of these advanced-guard artists even stopped making photo-sculptures and dropped the line of research completely. The historic importance of this exhibition remained relatively unknown and unacknowledged until a private gallery - Cherry and Martin Gallery in Los Angeles who represented Robert Heinecken's work - decided to recreate the exhibition in 2011.[581] The majority of the original works were reassembled, encapsulating the radical gestures of these artists and Bunnell's vision. It is precisely the recreation of the entire show that emphasizes the importance of the photographic exhibition as a spatial concept. **(Fig. 15)** Photography into Sculpture fundamentally influenced the course of exhibiting photography. It was a true avant-garde exhibition that made way for the main troops: *Photo-Conceptualism*.

> I must tell you, I am actually absolutely dumb founded by the revival of this exhibition. When Philip Martin, from Cherry and Martin Gallery, called me on the telephone, and introduced himself, he said he found out about the exhibition through Heinecken. Their gallery was representing Heinecken in Los Angeles. He said that he had been digging around and found it an incredible exhibition. And they decided to redo my exhibition. They had found roughly 95% of the people. But the fact that they redid it was great! And then the press came out and I got tremendous publicity. Everybody said: "This is the greatest thing that has happened since whipped cream!" And then somebody said, "Do you realize this was somehow 40 years ago that he did this show!" And they sold some pieces, and then took it to Europe - which surprised me. And then they put it on at Hauser & Wirth gallery in New York! Plus, Mary Statzer is doing a book that the *University of California Press* has accepted. She interviewed me, and almost all of the artists.[582] It will be very interesting to see what happens to the works from Photography into Sculpture, since almost all of them were left unsold at the time. Some maybe, but Cherry and Martin borrowed most of those directly from the

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[580] Photography into Sculpture opened at The Museum of Modern Art, New York NY in 1970 and travelled for the following two years to the Krannert Art Museum, Champaign IL; Menil Collection, Houston TX; The Museum of Modern Art, Fort Worth TX; Vancouver Art Gallery, Vancouver, Canada; Virginia Museum of Fine Arts, Richmond VA; Phoenix Art Museum, Phoenix AZ; The Museum of Modern Art, San Francisco CA, and Otis College of Art and Design, Los Angeles CA.

[581] The exhibition was recreated by Cherry and Martin Gallery, where it was on view as *Photography into Sculpture/The Evolving Photographic Object* from September 10 to October 22, 2011. The gallery presented a selection of the exhibition at *Paris Photo* from November 15 to November 18, 2012. It further opened as *The Photographic Object 1970* at *Le Consortium* in Dijon, France from July 3 to September 28, 2013 and at *Hauser & Wirth Gallery*, New York from June 26 to July 25, 2014. The press release of Hauser & Wirth Gallery stated that: "The twenty-three young artists selected for inclusion in Peter Bunnell's exhibition 'Photography into Sculpture' represented an invigorating shift in photographic practices. For its early and revolutionary re-examination of the medium, it is one of the most important travelling exhibitions of the decade that gave national exposure to photography as an innovative contemporary art practice and exposed, for the first time, an alternative narrative in the history of photography. Today, its resonance with contemporary practices only attests to Bunnell's declaration that 'the vitality of this work, and the delightful anxiety with which many have responded to it indicates that this provocative direction has by no means reached the zenith of its significance.'"

[582] Mary Statzer's book is the most complete survey on the Photography into Sculpture exhibition. The book was published two years after my interview with Peter Bunnell. When at his house, Bunnell handed over a typed letter with suggestions for further reading: Arts Canada #144/145, June, 1970; Bunnell, Peter, *Degrees of Guidance: Essays on Twentieth-Century American Photography*, Cambridge University Press, 1993; Bunnell, Peter, "Remembering L.A.," *The Collectible Moment*, Norton Simon Museum, 2006; Demarais, Charles, *Proof: Los Angeles Art and the Photograph 1960-1980*, Laguna Art Museum, 1992; Statzer, Mary, "Photography into Sculpture Exhibition," *Aperture Magazine #213*, 2013; Hirsch, Robert, *Transformational Image Making*, Focal Press, 2014.

artists. And then Hauser & Wirth borrowed some more. As I say, I am absolutely astounded about the interest in Photography into Sculpture.

But I know for a fact that today there would be no hope of doing Photography into Sculpture, as a new, original show. Ironically, because of the same attitude that is represented in that revival, people are now looking back and saying: "Wait a minute, why isn't that just as good a photograph? Or a work of art?" Why is it that we revere Edward Weston, who just wrote Edward Weston underneath his prints, and you look at it and see that it is Point Lobos. So what, you know? I can see where someone like John Baldessari was coming from. But that is what your generation doesn't understand anymore. Your generation doesn't have a clue! My analysis of that of course is that photography has changed because of the digital camera. And because of easier printing mechanisms. You just raise it up and click click click. And it has no shape or volume. It disappears into the Internet. It amazes me what comes up on the Internet. I'm glad I don't have anything to do with that anymore. I'm old fashioned enough to question how we can account for all the money we spend to buy and maintain the actual pictures, while we are digitizing all the photography collections. All you have to do is sit somewhere and key in and up comes all you want to see. I don't even know why they are doing it. I don't know why you need every single picture accessed all over God's world. It is a relevant discussion. And now we are back to old formalist language again: when does it mean something for you to go to the museum and actually look at the damn thing?

Photography as a material substance ceased to exist with the replacement of film by the digital. So it dates now from 1839 to about 1989 maybe. On the outset! Maybe even earlier. 1982. Photography, as we knew it, has *ended*. If photography has a future it is to be found in its *materiality*, not in its *subject matter*. But I think there is a definite generational backlash, in spite of the fact that everyone of those young people is walking around with one of these digital phone cameras. The interesting question would be: if younger people go into this, is there going to be some future where photographs still have to have a dimension or an architectural size? Will we see a revival for instance of the photomural or of photo-architecture? Where and when will the realm of the physicality of the photo-object end? I don't know…

17.

Dennis Adams's Bus Shelters

Dennis Adams's *Bus Shelters* are ideal examples to describe the integration of photography into installation art. His photographic installations moved out of the museum and into the open space. These independent architectural structures displayed illuminated photographs along a non-existent bus line dispatched across the globe. Within the familiar setting of an urban bus shelter, passengers and passer-by's were confronted with social and political imagery on an almost subliminal level. Dennis Adams (1948 -) replaced advertisements with appropriated photographs from press archives, substituting and shifting their context and meaning. Furthermore, he created his own pavilions, deconstructing the bus shelters into dysfunctional installations that pointed towards the memory of the site-specific environment. This tactic of displacing familiar settings and reframing photography within architecture runs throughout the work of Adams. His installations have always had the aim to recall forms of cultural manipulation in photography, architecture and public space. In his office at the *Cooper Union University* in New York, we talked about memories lost and found.[583]

> I hope I can answer your questions. My work has mutated a lot. I'm at a different point now. It is a good timing though, since I have been working on my archive. I know a lot more about my own work now… (laughs) To preoccupy yourself with your archive is to drown yourself in melancholy. All I can remember is whom I was sleeping with. For each project, I should put some one's name on it! It is all fucking melancholy. Terrible! Anyway, I already lived too long… (Laughs) [584]

A joke it may be, but archiving and unravelling information has always been at the core of Adams's installations. Mary Anne Staniszewski described his work as "architectures of amnesia."[585] And in a press release for his exhibition at the Museum of Modern Art in 1991, Laura Rosenstock described the nature of his work as raising "questions concerning the fragile and selective nature of memory" by which he "compels the viewer to focus on events pushed to the periphery of public consciousness - events suppressed or distorted in our collective memory."[586]

In Adams's formative years, 'information' and 'installation' were part of art's new jargon. These words were defining an emerging movement that was capitalizing on photography's contested status: *Conceptual Art*. The practice of photography was seriously critiqued in the 1960s and its contested status is best exemplified by three

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[583] This interview took place on July 9, 2014 in Dennis Adams's office at the Cooper Union University in New York, where he is professor in the studios of 3-Dimensional Design, Sculpture, and Public Art.
[584] Dennis Adams: "Talking about memories, I did a big exhibition in Belgium in '94, at the Museum of Contemporary Art in Antwerp. Antwerp is a dark place. My whole experience with that show with Flor Bex is kind of dark, but I was also in a dark place in my life. Antwerp is kind of a touchy subject for me actually. I had a kind of physical reaction to that place. Not the people so much, but the place. I felt there was an underside to it. More than a bit of racism, but also something else I couldn't put my finger on. The lighter side would need to survive and a human being would not find it there. But yes, I had a big show there, had the whole museum to my display." The exhibition Adams is referring to is "Dennis Adams - Trans/Actions" at the M HKA from March 12 to May 29, 1994.
[585] Staniszewski, Mary Anne, *Dennis Adams: The Architecture of Amnesia*, Kent Fine Art, New York, 1990.
[586] MoMA press release, "Projects: Dennis Adams," January 12 - February 28, 1991.

photography exhibitions that ran simultaneously at MoMA: *Photography into Sculpture* (April 8 - July 5, 1970), which displayed the photograph as a unique sculptural object, *Protest Photographs* (May 23 – June 2, 1970), which appealed to photography's political and documentary nature, and *Information* (July 2– September 20, 1970), which was the first institutional survey of Conceptual Art. These three exhibitions embodied how complex and multifaceted the photographic medium was at the time. *Information*, curated by Kynaston McShine, focused on artists using "mail, telegrams, telex machines, etc., for transmission of works themselves - photographs, films, documents - or of information about their activity."[587] This exhibition, which opened a few days before *Photography into Sculpture* closed, featured artists such as Ed Rusha, Jan Dibbets, Vito Acconci, Hans Haacke, Dennis Oppenheim, Jeff Wall, and Joseph Kosuth. A principal work from the latter, and exemplary for this threefold position of the photographic medium, is the self-referential work *One and Three Chairs* (1965). It presented the object of the chair itself, a documentary photograph of the object, and a reproduction of the object's definition out of the dictionary - an interplay between object-hood, photographic representation and linguistic content.[588] Lining up these different media, Kosuth successfully pioneered the integration of photographic information into installation art. **(Fig. 1)**

Although Information was not intended as a photography exhibition, it formulated the theoretical framework for photo-conceptualism. Conceptual artists started using photography in its most elementary, descriptive form, documenting performances and happenings, as well as sculptural and architectural actions. Instead of integrating multiple media into a single object, they added photography to their list of visual techniques, often using the medium's contact sheets as documentary proof next to other commonly accessible materials within their mixed-media installations. The use of laymen's materials fitted the idea of self-descriptiveness, where the work identifies itself in language, material and colour. Photography was exploited for its reproductive assets and turned art into democratized objects, playing with the notions of *commoditization* and *commodification*. Photo-conceptual artists clearly separated themselves from 'art photographers,' using the medium as a vernacular form of automaticity and a source of ready-mades.[589] Bearing Duchamp's use of photography in mind, and his ties to the scientific use of *chronophotography* by Etienne-Jules Marey, photo-conceptualists deployed the medium purely as a means of factual registration, tearing down the exclusivity of art photography. The conceptualist approach to photography was anti-theatrical and focused on ridding the ascendency of painting, explicitly creating an "opposition between artists using photography and photographers."[590] Ed Rusha insisted that he was "not a photographer at all," and Jeff Wall argued that photo-

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[587] McShine, Kynaston L., *Information*, The Museum of Modern Art, New York, 1970, p. 3.

[588] This was largely set in motion by Marcel Duchamp in the first decades of the 20th century. His piece "Fountain" (1917) accumulated status through appropriating and displacing a urinal within an artistic context. Photography further legitimized it as a work of art. It can also be seen in Duchamp's chronophotographic versions of his piece "3 Standard Stoppages" from 1913-1914, which bears resemblances in appearance to Joseph Kosuth's piece "One and Three Chairs." Duchamp's antecedence is clearly recognized in Kynaston McShine's catalogue of the exhibition "Information," in which he reproduces the photograph "Dust Breeding (Duchamp's Large Glass with Dust Motes)" by Man Ray, who registered Duchamp's "Large Glass" installation collecting dust in his studio.

[589] Kelsey, Robin, "Hazarded into the Blue: John Baldessari and Photography in the early 1970s," *Light Years: Conceptual Art and the Photograph 1964-1977*, edited by Matthew M. Witkovsky, The Art Institute of Chicago, Chicago, 2011, pp. 138-139.

[590] Chevrier, Jean-François, "The Adventures of the Picture Form in the History of Photography," 1989, quoted in Fogle, Douglas, *The Last Picture Show: Artists Using Photography 1960-1982*, Walker Art Center, Minneapolis, 2003, pp. 113-128.

conceptualists only acted as amateurs in order to critique the aestheticism of art photography.[591] "I'm not a photographer," Dennis Adams argued in our interview, "I'm an artist. To say I am a photographer has so many negative connotations!" In an article from 1999, Adams reminisced the time's atmosphere and situated his own position:

> Conceptual artists did not use the forms of the dominant culture because they were believed to be poisoned – except in their most debased form, as pure information. There was a belief that form embodied certain kinds of messages. So with that generation there was an idea of melting into the informational domain as a way of resisting the more spectacular forms of cultural propaganda. My generation was sceptical of all this and saw the contradictions in the works of artists like Buren and Kosuth who almost from the very beginning were generating seductive graphic products in the name of neutrality. In the 70s I began to appropriate the seductive look of advertising culture. The idea was to inhabit the forms of the dominant culture with the hope of coming out on the other side. With this idea of disguise came the possibility of a larger audience. The work could not be as easily dismissed as dry avant-garde production.[592]

While the display strategies of museums were disappearing into white washed neutrality, the domain of exhibition design was being transferred from the museum as an institution to the creative dimensions of artists' installations.[593] After photography had expanded into installation design, architecture, and sculpture, photography moved into photo-conceptualist installation art. It inscribed the flat photograph into a three-dimensional format. These informational installations rather copied the advertisement industry than the modern art museum's display strategies. But the attempt to use photography and corporate display strategies as laymen's materials, as alternatives to an aesthetic elite, once more assimilated and sublimated the photograph as an integral part of the art object of the photographic installation.

> That was the birth of conceptual photography. If you talk about the art world and not the photography world! In the art world the whole discussion was about photography. Everybody seemed to be focused on it. There was a moment that I remember where the informational notion of conceptual art was very much in the air. Everything was reduced to something informational. I would however certainly not call myself first generation. Not like Hans Haacke was.[594] I was more a little brother of the first generation. The seriousness of that generation was broken by some jokesters like John Baldessari, William Wrightman, Gilbert &

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[591] In his seminal text "Marks of Indifference: Aspects of Photography in, or as, Conceptual Art" Jeff Wall claimed that dismantling art photography was paradoxically a precondition to photography as a modernist art.

[592] Beros, Nada, "Dennis Adams: Street Ventriloquist," Art Press n°252 December, Paris, 1999, p. 29.

[593] "The framework for the artist' work expanded, both in physical space and in its ideological domain. The installation design, previously the responsibility of the museum as an institution, was now incorporated within the creative dimensions of the artists' pieces. (…) The *Information* show is a rare example of a site-specific group exhibition at MoMA, and it marks the pivotal moment when the creativity and accountability of a show's exhibition techniques were being transferred from the preserve of the museum to that of the individual artist." Staniszewski, Mary Ann, The *Power of Display: a history of exhibition installations at the Museum of Modern Art*, The MIT Press, Cambridge MA, 1998, p. 276.

[594] Dennis Adams: "Actually the place you are sitting now was his office for 30 years. I took Haacke's job when he retired. He is a dear friend and we showed together a lot. Also, there are different sides to Hans' work. There are certain works that are more directive than others. Hans had at least 20 phenomenal projects. Most artists can't say that. They die with three or four amazing things. He is 79 today and still cruising. He was an early supporter of my work."

George. I don't think of that as purely conceptual photography. They were also a second generation. They were trying to make it funny, away from the manifests that had been prepped around it. A lot of that happened at the John Gibson Gallery.[595] That was an instrumental gallery in what I would call second generation conceptual photography. At that time, John Gibson was selling a lot of work in Europe and he was selling all these 30 x 40 inch photographs. He carried them oversees himself, and a lot of it to Belgium. Nobody in America cared about it.[596] Baldessari showed there and a figure called Bill Beckley that was very important at the time. He was huge. He was also working with language in relation to photography, sometimes installation, even with jokes. Everything you basically see today in the work of Richard Prince. And literally everything you find in the work of Jeff Wall you can trace back to a figure named James Collins. Photography wasn't fetishized at that point. Nobody, until the 70s, thought about marketing photographs. There was a small market, but insignificant. Here we had Leo Castelli, and I remember that everybody was talking about the fact that Castelli showed and sold photographs. Castelli said that photography was the new world order, and the old man called it. Seriously, I think the whole history about that period and the figures that were responsible is simply not true. The real histories are never written about. If you are part of a place and time you see things emerging.

I want to put that in perspective a little bit. I arrived in New York in 1975. It wasn't the first time I came, but then I came to live here. Well first, mentioning all these people, I would clearly like to separate myself from them. In a lot of ways their work was lighter then mine; mine was very critical. Robert Cummings' work was influential to me.[597] But he had too many ideas. Another enormous influence on my work was Mies Van Der Rohe's *Resor House*, an un-built house by Mies that exists only in drawings.[598] He crops with these very severe photomontages. These photo collages were very important to me. Of course there are earlier examples of that in Russian Constructivism, to some degree. Mies' work is certainly as important as Lissitzky is to me. Although you have to realize that in the 1970s, we knew very little about that. Almost nothing had been published. It wasn't until the late 80s, or more precisely after the Berlin Wall fell, that a lot of that stuff came to light. When I was on my learning curve, I had seen maybe two or three images of that, trying to imagine what Russian Constructivism was all about. I did see an image of Gustav Klutsis but I didn't really know what it represented. There were few articles. And then later came the writings of Allen Sekula and that Buchloh article, which was a great opening article about that period.[599] That was a

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[595] The New York based John Gibson Gallery was founded in 1971 and closed in 2000. The gallery was primarily known for representing and supporting conceptual artists from the United States and Europe.

[596] Initially, conceptual art was more supported in Belgium and the Netherlands than in the United States. The history of this transatlantic exchange is described in detail in the book "Conceptual Art in The Netherlands and Belgium 1965-1975," NAi Publishers/Stedelijk Museum, Amsterdam, 2002.

[597] In the 1960s and 1970s, Robert Cummings, a photo-conceptual artist, was fabricating functional constructions in order to photograph them. In these small architectures, he explored the relationships between architecture, text and images.

[598] In the designs for this vacation house, Mies Van Der Rohe progressed from making composite photomontages to photo-collages in which he pasted found photographic content from film posters and magazines over his architectural sketches.

[599] Adams is referring to Allen Sekula's article "The Traffic in Photographs" from 1981, his book *Photography against the Grain: Essays and Photo Works 1973-1983* from 1984 and Benjamin Buchloh's text "From 'Faktura' to Factography" from 1984.

beautiful essay. That essay actually influenced me. But when I started, there wasn't any of that.

Those were all ideas that played into my interest in American propaganda. My work was coming out of certain memories I had about television and media in the 50s. I was the first generation that saw television. I grew up as a loner so I spent a lot of time looking at images. The kids I grew up with were playing baseball. I seemed to have a lot of time on my hands and started to diagnose TV. Of course I wouldn't have been smart enough to analyze it, but I did start to look at it with a more critical eye. I was especially interested in early notions of American propaganda. Especially Joseph McCarthy, the senator from Wisconsin. I had seen the McCarthy hearings on television.[600] He was instrumental in cropping photography! And I got very interested in that in the early 70s. He was going in front of committees of the United States Government trying to prove who was a Communist and who was not. And in doing so, on several occasions he used cropped photographs. He was cropping people in or out of a photograph. Long before *Photoshop* this guy started to crop and was manipulating photography, having someone doing that in the darkroom. Of course the Soviets had been great at that. And now it happens all the time. But that was the first time in America where we saw that happening. And he was caught red handed in one of those meetings. That had influenced me. And that notion of the crop, the frame of the photograph, of something being excluded off frame, that was for me the moment of intellectual indoctrination of what I was going to do with my life: the possibility of something not being there.

Even if we are not talking about crop photography, if we just use it as a philosophical concept, in all photographs there is something not there. I guess that is an obvious fact but as a kid of 20 years old, it was something that was sticking in my head, that notion of exclusion. The cropping started when I was younger and was doing a project about my family.[601] Well, my parents divorced, my family fell apart, and the only thing left was a trunk of photographs. And I began looking at them and trying to work out my history. You see, I had a sister who was always there. Because she was retarded, she had nowhere to go. In every family function, she was there. I don't have to see that she was there, because I know that she was always present. But she never appears in any of the photographs. I don't have a single photograph of her. She appears in none of the films my father shot. Nowhere to be found! My god, she is always there and she is

[600] Joseph Raymond McCarthy was a Republican politician who served as US Senator from the state of Wisconsin from 1947 until his death in 1957. In the Cold War tensions of the 1950s, he embodied the public fear of Communism by accusing numerous US citizens of espionage for the USSR. McCarthy attempted to expose Russian spies that had allegedly infiltrated the US government, universities, film and art industry, etc. He tactically used television and the written press to spread and intensify this public fear, generally referred to as the *Red Scare*. The atmosphere of suspicion was so strong that his insinuations were enough to be indicted. In 1954 McCarthy accused the Army of being infiltrated by spies. The televised Army-McCarthy hearings, to which Adams is referring, ran from April 22 to June 17, 1954, on national television. This turned out against McCarthy, being accused of falsifying evidence. He was finally disciplined and censured by the Senate.

[601] In an interview with Nada Beros, Adams answered to the question "What was your childhood like": "It was very simple. I came from what's called 'trailer trash.' Actually, I didn't really grow up in a trailer park, but I was one step away from it. I interacted a lot with that class of people. My father was homeless from the age of ten on, living in the streets of Kansas City and my mother was the daughter of a maid. I was raised by a Christian Scientist, by a hysterical mother in menopause. Christian Scientists don't believe in saints, idols or any kind of images. Everything is in the mind. No one connects with anything physical." Beros, Nada, "Dennis Adams: Street Ventriloquist," 1999, pp. 28-29.

totally never included… (sighs) I was analyzing films and sometimes I would find a fragment of her hand, or a little something she was holding, but never a full image. Only little fragments. That was very influential. Very influential… I came to the idea of exclusion with looking at all that material.

But you know, I can't claim that space. I can claim it personally for myself, but at that moment, there were a lot of people interested in family photographs, in many different ways. There were several books coming out in the 70s on the analysis of photographs, like Roland Barthes' books *A Lover's Discourse*, or *Barthes on Barthes* - I had the first fucking copy of that.[602] And there was a book that every artist had seen: *Wisconsin Death Trip* by Michael Lesy.[603] In the 70s it was revolutionary! It was an analysis of history in text and image. He found all of these images in Wisconsin and discovered that all these people committed suicide. And there is no explanation for it. And he tries to track that. He crops the photographs, repositions them, blowing them up a little. He starts to create a sort of pulp, a poetics of analysis.

In addition to that, I then found myself in the darkroom, because I had built a huge darkroom in New York, and I started printing great, big photographs. I never did the little photographs. So I was in the darkroom, cropping a lot. You crop when taking the photograph and you crop in the darkroom when framing the print. And I got a little obsessed with the violence of that act. Obviously, this is understood by every photographer, but for me it was a little more existential. I always thought the viewfinder is really related to a gun or something. We all know that, but some people were taking it a little more for granted. I was really thinking about the edges of that frame. And that led me to architecture. The minute you have that frame you have to think about the inside and outside, you have to think about its edges. And the way it's framed is in fact an *architectural* problem.

Therefore I began to *extrude* it. I thought: "Okay, if you crop the photo there and you build a wall there, you see, you are just pulling that part out." And I began to build rooms and spaces around it. But not in a too formalistic way. It was more like dividing it up psychologically. With a sense of what could possibly be extruded. So you could have two spaces. Some people could be on this side of the space, doing one thing, and you could have people on the other side doing something else. And maybe you would have a third party watching those groups. That was somehow the theoretical framework. That is how I came to architecture and then to the bus shelters. The idea to *extrude architecture from photographs*.

The bus shelters were not like real bus shelters. I would build those myself. I constructed them with my own hands in my studio. Sometimes the photos passed

[602] Adams is referring to Roland Barthes books *Roland Barthes par Roland Barthes*, published in 1975, and *Fragments d'un discours amoureux* from 1977, translated in English as *A Lover's Discourse: Fragments* in 1978.
[603] *Wisconsin Death Trip* is a photographic book by Michael Lesy published in 1973. Lesy appropriated a collection of found photographs by the late 19th century photographer Charles Van Schaick. These were mostly taken in the city of Black River Falls in Jackson County, Wisconsin, and pictured the harshness of rural life in the community and the effects it had on the psychology of its inhabitants. He combined these strange photographs with newspaper clippings of the same period reporting on unusually high rates of crime, mental illnesses and collective suicides. Later, it has been argued that the river passing through the region was perhaps temporarily poisoned with algae that caused hallucinations.

through walls and stuff. Bus shelters with images already existed, of course, but fairly recent. The first one appeared in 1968 in Lyon, one of those *Decaux* bus shelters.[604] What relationship did I have to this existing icon? That is an interesting question. Why the bus shelter? There seemed something very direct about this processional space, created with these empty planes. In comparison, Mies' *Barcelona Pavilion* is somehow like a bus shelter. It is not directly a processional space, but there is at the very least a hidden directive. The walls are no longer connected to supporting the building, so he could slide with the walls. I once did a work in there, but that was years later.[605] Going back to the shelter. My first idea was going back to the street. I liked the idea of the street because it was kind of a contested territory. It was not a purist modernist space. So you could come upon a modernist object on the street. If it is small enough people would kind of move in and out. And I liked that idea of expectation, waiting and coming and going. It had a lot of excess movement around it. It could be seen from many angles, come upon from many directions, and I liked that. But the number one reason why I was attracted to that is because it was not connected to the site specific. And that was embedded in the original bus shelters that were put up by *Decaux* in France. They are not site specific. They simply follow a bus line. They cut through cities. I thought there was something very violent and global about that. In the late 60s everybody talked about the sense of place. Before there was context-specific work, there was site-specific work. And I was always suspicious of those motherfuckers talking about that. It always seemed a bit nostalgic to me. So those bus shelters freed that up. I simply would screw one of my bus shelters down, wherever a bus stopped. And as a result of that, it broke with a certain sense of place. They were *no places*.

Bus stops are indeed 'no places,' invisible sites of arrival, departure and, perhaps most of all, delay. Without noticing the surrounding structure, visitors are often stuck in a cyclical pattern of leaving and returning to the same insignificant place - at the end of the day and again the next morning. But these unnoticed bus shelters are in fact strong signifiers, scripted spaces routed along a carefully laid out plan. They hold the promise of mobility, offering the ability to travel. But they are also restrictive, creating boundaries while intersecting areas. These abstract patterns reveal the structure of the urban landscape. And along these power lines in the environment, passengers are continuously confronted by photographic advertisements on an almost subliminal level, in structures that disappear in their surrounding.

Dennis Adams's adapted bus shelters further complicate the context of these scripted spaces. The site-specificity of these seemingly non-existent sites suddenly becomes very important. *Bus Shelter I* (1983), for example, was originally situated on the corner of Broadway and 66th Street, at an actual bus stop without official bus shelter - its precise location contradictorily affirming its random location within the city. **(Fig. 2)** Adams

[604] Jean-Claude Decaux, who began working as a poster-boy, specialized in roadside displays. In 1964 he invented the advertising bus shelter, offering cities bus shelters free-of-charge, managed and maintained by his company and financed through advertising. The city of Lyon granted the French firm its first contract for the installation and maintenance of 40 bus shelters. In the 1970s, the company expanded outside France, introducing the bus shelter concept to Belgium. In the 1980s, JCDecaux began to operate in other major European countries, before it opened offices in the US in 1994. Today it is one of the largest outdoor advertising companies in the world.

[605] Adams is referring to the installation "Freeload," created for the 75th anniversary of the Mies van der Rohe Pavilion in 2004.

wrote that "*Bus Shelter I* was intended as a decoy, a mutant public amenity that would infiltrate the network of mass transit, reworking the conventional relationships between architecture, photography, and text."[606] The odd construction and imagery of his shelters draws attention precisely to the object itself. And more importantly, it draws attention to its surroundings, shifting between site-specificity and context-specificity. In a way, complicating the relationship between the passenger and the bus shelter simplifies their understanding. Adams confronts his audience in their own environment and treats this public space without imposing hierarchy, eliminating the privileged point of view offered by the museum.[607] By moving out of the museum, beyond an artistic context, the scope of social and political implications widens. As Adams stated earlier, "with this idea of disguise also comes the possibility of a larger audience."

Additionally, with taking his works outside, they surpass the idea of *installation* and become *architectural*. Although they are dysfunctional in essence, not being officially connected to the bus line network, these aluminium and galvanized steel pavilions are fully functional, since they can be utilized to sit, repose, and take shelter. They can be defined as pavilions with a general kiosk size of 3 by 5 meters, covered by a roof. The nonsensical alterations in the functional conventions of bus shelters, like their odd design or benches attached on the backside of the pavilion and outside of the shelter area, do not cripple this function.[608] In the design of *Bus Shelter II* (1986), ephemerally located on 14th Street and 3rd Avenue, two bus shelters are reworked into one, creating an interwoven confusion of two benches, two back-wall's, and two double-sided, back-illuminated images. **(Fig. 3)** This precisely emphasizes its differentness, orientation and intention. The architectural framework of his bus shelters often intersects the back-illuminated photographs with support beams or wall panels. This unpractical construction is often used to push the waiting passengers discomfortingly close against the images. And so it becomes clear that the discrepancies in design and dislocation of these carefully constructed pavilions all point towards the *act of publicly displaying photography*. The draw towards these fragmented images is emphasized by the glow of illuminated light-boxes.

The light-box, adapted from the advertisement industry, was very compatible with the theoretical framework of conceptual art in the will to work with ordinary materials, and a manner to frame photography as a laymen's material – away from intimate formats and white matted black and white prints. This is of course connected to a series of new inventions. First of all, during the 1970s, colour film and printing paper rapidly gained precision and durability, while prices decreased. By the 1980s, colour had eclipsed black and white as the dominant form of popular photography and slowly set foot into the toolbox of artists. With the introduction of colour in television and newspaper printing, the entire view upon the world had shifted from a chronic, historicizing black and white into the acute here and now reality of colour. Secondly, large format colour printing simplified rapidly, replacing the difficult and expensive dye-transfer with fast and more

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[606] Adams, Dennis in Staniszewski, Mary Anne, *Dennis Adams: The Architecture of Amnesia*, 1990, p. 24.
[607] "The installation functioned as an architectural metaphor, destabilizing the museum's authority as a repository of official history and culture. (…) He has said that his pieces, in general, are situated on "thresholds, entrances, exits," places he considers marginal, transitional, sites that catch the viewer off guard. These marginal, "threshold" locations are appropriate sites for revealing the ellipses of collective memory, or what I've been describing as the political unconscious of a location." Staniszewski, Mary Anne, *Dennis Adams: The Architecture of Amnesia*, 1990, pp. 9-10.
[608] Adams's bus shelter benches give an entirely different meaning to Kosuth's "One and Three Chairs," shifting all three meanings into one total photographic installation.

affordable techniques. In the 1970s Eastman Kodak Co. developed the *Endura Transparency* print, a large-format backlit colour transparency film commonly known as *Duratrans*. In Europe, a similar printing process invented in the late 1960s named the *Cibachrome* was fully marketed by the 1980s. As a third component, the newly invented *Diasec* process of face-mounting photographs, glued on high gloss acrylic sheets allowed these new colour transparency prints to be inserted into the light-box. The light-box, capable of sustaining the harsh weather conditions of the outdoors, became an important alternative to the billboard. Combined, this threefold was primarily used for promotional advertising displays in the public space before being adapted by artists.

When talking about colour photography and light-boxes, the work of Jeff Wall immediately springs to mind.[609] Adams and Wall simultaneously started using colour photography and the light-box in the late 70s, but with very different orientations - equally valid and important. Wall used the light-box to juxtapose the ordinary to the original; using common materials versus painterly composition; the size of advertisement photography versus the tableau size of large-scale painting; a low edition of prints versus the high edition of 'normal' photography and the uniqueness of painting; the democratic versus the aristocratic. Comparing the two, the main difference is the location of presentation, which entirely changes the meaning of the work. Where Wall exclusively hangs his photographic work like paintings on the walls of art institutions, Adams takes his light-boxes outside where they operate closely to its public position of publicity. Wall's early work thrives on contradiction and instigated a reactionary "new regime of art photography" in the 1980s.[610] Adams's work, on the other hand, leans closer to the political nature of documentary photography. For Adams, the radiating glow of the light-box holds the same hypnotizing effect as television, while offering the same plurality of addressing cultural, social and political issues. It affirms the originally intended purpose of the light-box in an attempt to maximize the disguise of his undercover art object.

> Jeff Wall is a painter, not a photographer. He came out of art history. And he kept scaling things up until they looked like big paintings. It still innerves people. He talked about the 'elsewhere' of the light and stuff like that, but I don't think people ever got it somehow. They just fell for it. He wanted to have a contemporary component and found it in the light of advertising. He was looking for something as a 'saving grace,' the glow underneath. These gorgeous *Decaux*

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[609] The light-box has an antecedent in the *Autochrome*, invented in 1903 as the first marketable colour photography procedure in history. These were developed as transparencies and were to be viewed by transmitted light, for which small light-boxes were often used. In 1950, Edward Steichen used small light-boxes in the exhibition *Color Photography*, where "visitors were occasionally plunged into a dark zone dotted with a few dozen glowing images, whose effect lay somewhere between a movie-theatre projection and a TV monitor." Lugon, Olivier, "Edward Steichen as Exhibition Designer," *Edward Steichen: Lives in Photography*, edited by T. Brandow & Wiliam A. Ewing, Thames & Hudson, London, 2007. According to Lugon, "Steichen felt that exhibitions were a modern extension of photography, as were illustrated magazines, periodicals, movies, and television." In my research, we have seen the light-box appear for the first time in 1955 in Steichen's *The Family of Man* exhibition – a colour image of a hydrogen bomb explosion. We have also seen the broad use of light-boxes in Szarkowski's exhibition *Ten Photographers* for the Unites States Pavilion at Expo '70 in Japan. Neither Adams nor Jeff Wall can claim antecedence for its introduction into the art institute.

[610] "The protracted moment between 1978 and 1981 when three young artists in different parts of the world – Wall in Vancouver, Thomas Ruff in Düsseldorf, and Jean-Marc Bustamante in Provence and Northern Spain - more or less simultaneously started to make photographs that I am not the first to see as exemplifying a new regime of 'art' photography, one that the learned and acute French critic Jean-François Chevrier has characterized as the 'tableau form.'" Fried, Michael, *Why Photography Matters as Art as Never Before*, Yale University Press, New Haven and London, 2008, p. 14.

> bus shelters were actually the real predecessors. That vernacular of the back illuminated image was already in place in '68! There was something embedded in them that was profound. These things would cut through places and radiate light. At the time I used the word *clairvoyant*. I wanted them to be clairvoyant, not site specific. You would see it, and forget where it was. It was just kind of there. It was strange, but it didn't define a place. It just existed, like a mental image. That's it, like a *mental image*! And in some ways, the downside of that is that it ties it back to the tradition of the *flâneur*, of the city being a kind of image board for mental thinking. I might have thought that I was being radical but in fact I was swept back into the relationship of the *flâneur* in the 19th century. I wanted it to be a physical object but to be more of a mental image.
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> After he had seen *Bus Shelter I*, Dan Graham said to me: "I like very much the way it was sited." It could in fact have been anywhere. And there were several occasions were somebody would have seen the first one and made a comment about it, but didn't remember where he had seen it. Dan mentioned that he was very much intrigued by it, but he didn't know where it was sited. I met Dan in Philadelphia, summer 1972, in a house somewhere in Germantown. He was still doing his text-based pieces and videos, while I was already working on the bus shelters. He knew my work. I'm not saying his work had anything to do with mine, but we knew each other's work. Dan even mentioned at one point that he saw relationships to my shelters and his constructions, and that may be, but they came out of two completely different places. I came directly out of photography.

'Clairvoyance' is a very specific term used by Adams to describe his Bus Shelters. In a literal way, his self-made constructions are transparent in their open design and translucent in the use of *Duratrans* prints, *Plexiglas*, and light-boxes illuminated with fluorescent light. Some of them use high-tempered glass plates and semi-transparent mirrors, positioned at such angles to reflect the photographs. But figuratively, the use of the words 'clairvoyant' and 'mental picture' indirectly point towards the synonym 'prediction.'[611] Combined with imperative slogans and the political content of the photographs, they do seem to act as prophetic warnings from the past.[612] *BECOME THE SYMPTOM* was the slogan on the outside of *Bus Shelter I*, with on the inside photographs of Senator Joseph McCarthy and Roy Cohn -figureheads of the *Red Scare*.[613] **(Fig. 4)** Between 1983 and 1987, Adams kept his *Bus Shelter I* in function, continuously replacing the text and image panels, like any other advertisement billboard. Directly addressing pedestrians with *YOUR INVISIBILITY IS OBSCENE* or *INVISIBILITY IS YOUR REVENGE*, Adams alluded to the *no place* of the location. And as well as the futility of human existence, for example, in using Jenny Holzer's text *OUTER SPACE IS WHERE YOU DISCOVER WONDER, WHERE YOU FIGHT AND NEVER HURT EARTH. IF YOU STOP BELIEVING THIS, YOUR MOOD TURNS UGLY*. The complexity of these multiple readings of

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[611] In French, the term 'clairvoyant' literally means clear-sighted. Over time, the English word 'clairvoyant' took on the psychic meaning of 'seeing things beyond the range of natural vision.'

[612] The use of imperative slogans in public advertisement is reminiscent of Ray Nelson's short story "Eight O'Clock in the Morning" from 1963, in which the protagonist finds a pair of special sunglasses through which he can see through the omnipresent mass media advertisements their actual subliminal messages. In the film out of the book, "They Live," a science fiction film from 1988 by John Carpenter, this is visualized in a cityscape filled with billboards with the imperative words: OBEY, CONSUME, SUBMIT, CONFORM, BUY, REPRODUCE, STAY ASLEEP, WATCH TELEVISION.

[613] Roy Cohn was an American attorney who served as Joseph McCarthy's chief counsel during the Army-McCarthy hearings in 1954. He was also the US Department of Justice prosecutor at the espionage trial of Julius and Ethel Rosenberg in 1953.

the same object was lessened in *Bus Shelter II*. *Bus Shelter II* propagated a photograph of the 1950s arrest of Ethel and Julius Rosenberg, who were United States citizens executed in 1953 for committing espionage for the Soviet Union. Two double-sized light-boxes each displayed a different cropped section of this photograph on the inside. On the backside of these light-boxes were the words *RECOVER* and *IMITATIONS*, commenting on their conviction and the believed innocence of the Rosenbergs as victims of Cold War paranoia.[614] **(Fig. 5)** Adams used iconic red and blue contrasts for his slogans, and red enamel back-panels, adding more than one reference to the use of language, colour and photography in the work of El Lissitzky as well as Edward Steichen's exhibitions *Road to Victory* and *Family of Man*.

The use of language gradually disappeared in Adams's series of bus stops, making way for more narrative sequences of images. In the 1987 *Bus Shelter IV*, Adams builds up a plot around the Nazi war criminal Klaus Barbie. **(Fig. 6)** Known as the 'Butcher of Lyon', this former SS and Gestapo functionary had escaped to South America with the help of the CIA, only to be trialled and convicted for crimes against humanity in Paris in 1983. The photographs on the outside show his lawyer's defence in court, with the accused Barbie sitting behind him in the defendant's box. The two images facing inwards show enlarged details of the outward facing photographs, a portrait of an anonymous man witnessing the trial. **(Fig. 7)** Created for the *Münster Skulptur Projekte* in Germany, Adams points towards the atrocities of the Nazi era, as well as an involvement of the United States in the aftermath of World War II. His troubling imagery is "a display of fragments extracted from collective visual memory and an examination of the perception of historic events filtered through the media."[615]

Adams did not record his own photographs, but used imagery that comes from press photographs and television broadcasts. Like an archaeologist, he excavated and reconfigured found footage from media archives. He treated repressed or manipulated imagery from society's collective memory or, for that matter, its collective *amnesia*.[616] The motive behind his signage was to deal with a new and, at that time, exorbitant flow of information. This overwhelming and ungraspable feeling of over-information was exemplified in *Bus Shelter VIII*. **(Fig. 8)** At a public bus stop in Toronto, Adams placed two back-to-back bus shelters, on which he wrote:

> On a traffic island at one of the busiest intersections in Toronto and across the street from City Hall, I constructed two conventional-looking bus shelters at an oblique angle to one another. The shelter that faced the oncoming buses functioned like a standard glass-enclosed waiting space with a bench inside. Running the length of its backside and facing the other shelter was a light box

[614] Julius and Ethel Rosenberg were accused of providing top-secret information from the United States Army, especially about the new nuclear weapons, to the Soviet Union. For a long time, it was believed that they were innocent victims of the Red Scare. After the fall of the USSR, it was revealed that they actually were Soviet spies.
[615] König, Kasper, *Skulptur Projekte Münster 1987*, Westfälisches Landesmuseum für Kunst und Kulturgeschichte, Münster, 1987, pp. 19–22.
[616] "I use the term 'collective memory,' rather than 'history,' to suggest a remembrance of things past that exists as recollections of individuals. Traditionally, history is affiliated with ideological closure and functions as recorded truth; collective memory suggests a reconstruction of the past that is disseminated within a population limited by prejudices, shaped by contexts, and continuously changing with time. And unlike traditional history, which is a selective representation of great events and master accomplishments, collective memory spans the spectrum of experience, from our most famous monuments to the overlooked signposts of everyday life." Staniszewski, Mary Anne, *Dennis Adams: The Architecture of Amnesia*, 1990, p. 6.

> displaying a photographic image of native Canadian Indians staging a street protest outside the Parliament building in Ottawa. As dusk came on, this photographic shelter reflected off and through the second shelter, which was made of smoked glass and was completely enclosed, without an entrance. Barred from its functional program and operating only as a receiving zone for the photographic image, the second shelter became a kind of phantasmagorical replica of the first. The plight of the dispossessed reverberated through the structural interfacing of two architectural bodies.[617]

In order to view the complete photographs, the spectator had to pass between the borders of two shelters. In this narrow buffer zone, the spectator was then too close to view the image in its entirety. This awkward inability was very much connected to this overflow of information and dissolving borders. As Adams mentioned earlier, he was the first generation to grow up with television and that "it wasn't until the late 80s, or more precisely after the Berlin Wall fell, that a lot of information came to light." After decades of decolonization, the 1980s and 1990s witnessed a new implosion of borders with the collapse of the USSR block. With pulling down the Iron Curtain, an excess of information was released from a relatively unknown world, transmitted by TV. This connection of information and dismantling boundaries echoes in the locations of Adams's bus shelter, but most of all in his act of *appropriation*. In the 1980s, appropriation became an art on its own, as a strategy to challenge the traditional notions of originality and as a tool to comment on the massive rise of mass media.[618] So here we find a photographer not taking photographs, but appropriating, assimilating and deconstructing existing ones, while revaluating avant-garde strategies.

Over time, his ongoing series of bus stops, initiated in 1983, gradually became less political, and more introspective. Initially, his act of appropriation clearly had a strong political undercurrent, but it did already take a step back from the political activism of some conceptual artists, like his predecessor Hans Haacke. Adams's ambiguous and self-referential language allowed a double reading of his imagery and still maintains to comment, without too many moral judgments, on all aspects of culture and society. In *Bus Shelter XI* (2011), for example, Adams introduces the existential philosopher Martin Heidegger to his daily encountered waiting audience. **(Fig. 9)** The photograph of Heidegger, posing in the woods, draws a parallel with the actual woods behind the bus shelter, as if it was a window into time, and thereby also makes an analogy with his inquisitive commuters and their enigmatic and philosophical occupancy of waiting.[619] The Heideggerian concept of *gelassenheit* is here projected on a group of strangers that gather in a shack to engage in the higher act of 'meditative thinking' in order to understand the truth of being.

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[617] Ibid., p. 50.

[618] Appropriation is a strategy used by artists since the dawn of time, by passing on or copying forms and shapes of pre-existing images and objects. The term took on new significance in the 1950s with the Pop Art of Richard Hamilton, Robert Raushenberg and Andy Warhol. In the 1970s and 1980s, appropriation became an art on its own, uplifting the act of intentionally and literally copying other works of art. A group of American artists, including Richard Prince, Barbara Kruger and Sherrie Levine, began with appropriating photographs, re-photographing Marlboro advertisements or producing exact copies of Walker Evans photographs, which eventually led to large lawsuits on copyright.

[619] Martin Heidegger proposed the idea of 'gelassenheit' and 'meditative thinking' in "Conversation on a Country Path about Thinking," 1966.

At the time, there were a lot of people who would have loved to dismiss me as a political artist, although the term would be too strong to describe me. But all images are political. Back then I was looking for images that were still contested by society at large. People would not have fully diagnosed the historical meaning of a certain image. These were open-ended images that had not yet been closed by history and were still under discussion. And in that contested moment there was an opening to comment. But those were vague impressions. I worked more from impressions and that is why there are all these tentacles in the work. I did use a little bit of language in the early works, but I cut that out and just used the images. I was putting a lot of impressions together, which you should not do as an artist. But I did. Artists often carve a little niche for themselves and that's it. I didn't do that. When I participated in the *Art on the Beach* exhibition in 1985, I made a huge piece with Reagan's face on it.[620] **(Fig. 10)** From certain angles, you could see the Twin Towers behind it. It didn't need text to be political. It got caught up in the iconography of the time. It wouldn't be my favourite piece I have done, but it was a spectacle. It was large. It was cut. You could climb into it. We had performances that were held inside of it. It was a monster. It was huge! And it was hit by a hurricane… I was very nervous since it was all suspended there at the beach and then you get this fucking hurricane! It survived, but the photograph not so well. I went out on the beach for five or six days to retouch it. In the end the whole photograph was painted by hand. It started as a photograph and after retouching it, I looked at the thing and thought: "Fuck it, this looks like a Richter painting…" Lufthansa had the piece in their brochures for a while. I saw it once from the airplane when I was half-drunk flying somewhere. Well, it was probably the greatest site ever, with the World Trade buildings behind it. It had resemblances to Steichen's propaganda shows, which are still radical. Things leaning or lying down on the floor. Certainly a lot more radical as a lot of photography you see today.

I did a lot of research on Steichen at the Museum of Modern Art. I was interested in the history of Russian Constructivism, and if you trace the genealogy of Steichen, it goes right back to it. The MoMA has a dark side, you know, with all those propaganda shows. I understood that. I was probably one of the first artists analyzing it to some degree. There were probably art historians interested in it, but no artists. And I did a piece about that at the Museum of Modern Art itself. I was invited by the MoMA for the project space and decided to work with the Steichen photographs.[621] I knew the article that Allen Sekula did on Steichen, it is one of the best things Allen Sekula did actually. That was a great essay.[622] I wanted to use the Steichen photographs and went to the MoMA archive. And you

[620] Adams is referring to the exhibition "Art on the Beach" at the Battery Park City Landfill in 1985 where he presented the work "Podium for Dissent," a collaboration with Nicholas Goldsmith. The work was a construction of steel tubes that carried an enormous portrait of Ronald Reagan, cut in two parts. Between his nose and mouth, was a performance stage. Ronald Reagan was a famous Hollywood actor before becoming Governor of California from 1967 to 1975 and the 40th President of the United States from 1981 to 1989.

[621] The website from the MoMA gives the following information on the "Projects" project: "The Elaine Dannheisser Projects Series was established at the Museum of Modern Art in 1971 to present work by emerging artists and to bring reactionary, avant-garde art into the context of the museum. The series was intended not only to give undiscovered artists the opportunity to display new work, but also to give the junior curatorial staff the opportunity to initiate and organize exhibitions of art new to the museum. (…) Experimental and innovative, the Elaine Dannheisser Projects Series continues to challenge and expand viewers' ideas about art and art practice." Adams's project was organized by Laura Rosenstock, Assistant Curator in the Department of Painting and Sculpture.

[622] Adams is referring to the above-mentioned article from Allen Sekula "The Traffic in Photographs" from 1981.

know what? They turned me down! They invited me to do an exhibition and then they said: "We do not allow an artist to use the work of other artists. We do not believe in appropriation." So they said: "You have to do something else, you can not have the Steichen photographs." And meanwhile I pretty much had developed the project. I even had a model and stuff. So the story goes that I went out with a friend to a boxing match, an old buddy of mine. I told him the story. We were sitting there, drinking a beer, and I mention that Steichen was a reconnaissance photographer, and this guy said to me: "The Museum of Modern Art can't own those, Steichen was working for the United States Government. He can't take military property." So I went back with that story to the MoMA but they didn't buy that at all! I wanted the aerial photographs. They said that those photographs were in the collection. Steichen was the Photography Department's curator and chief back then. But they didn't give it to me. So that led me to call the National Archives in Washington. I talked to a guy on the phone and he said: "We have all the reconnaissance photographs of Edward Steichen here on file. Hundreds, maybe thousands. We have 'em all. You can do everything you want with those images. They are in the public domain." They are in the public domain! So he said: "You have to come down here, with a copy camera. We can't have anything leaving the premises. But you have total freedom to take those images and do what you want with them." So all of a sudden I had these beautiful images of Steichen.[623] Of course I went back to the Museum of Modern Art and said: "I will be moving forward with the Steichen exhibition! I do not need you." (Laughs) There were two parts to that exhibition. There were photos on the wall and than there were these glass showcases. In these vitrines I showed the reconnaissance photographs of Steichen. **(Fig. 11)** Had I done it over, I would have probably only used the showcases. The other part, the photos on the wall, were installation views of Steichen's propaganda exhibition *Road to Victory*. I wanted to use one of the photographs of *Road to Victory* on the poster for my exhibition. And that image was under their control. It was photographed in their space. And they had it. Because I was already struggling with MoMA at the time, they stopped me again. I just wanted to use it on the poster. They said: "We can't use an artist's work to promote another artist's work." I said: "It is an historical exhibition, it goes beyond an artist's work, it is an historical reference point, it is the history of America. And it was an enormous influence on me. It is important intellectually, politically and artistically." They didn't want anything to do with it. But than, strangely enough, they made a separation between the reconnaissance photographs, and the photographs they had taken in-situ, the installation views. And so, installation photographs were, according to their legal department, not under the same laws of governance. I couldn't use it for a poster, but to use it in the show was okay. They are fucking crazy! And that is when I made this second part. I said: "Fuck those people! I'm bringing it inside my exhibition." And I had big walls build to hang a big photo of the *Road to Victory* exhibition. **(Fig. 12)** Those were huge photographs and I hired a guy that had could glue them to the wall, a professional who did an amazing job. He was shrinking it somehow. This

[623] Adams: "Now, the difference was that their images were in mint condition, because only one other human being had ever asked to see them. And that was a critic named Christopher Phillips. He is an art critic, who wrote a lot about photography. And I saw his name on the check out list." Christopher Phillips is a critic, curator and photography historian who wrote the seminal book *Steichen at War* in 1981 and was co-author of *The New Vision: Photography Between the World Wars*, published in 1989. Together with Buchloh, Sekula, and Kraus, Phillips has been instrumental at unravelling the propagandistic use of photography in the work of Edward Steichen.

> guy was doing some kind of goofy shrinking! (Laughs) He was an old world professional. And I congratulated him. And he said: "Well yes, I did the originals for Steichen's exhibitions."[624] What are the odds? (Laughs)

Besides sharing the same installer, the exhibition shared the same title as the wartime exhibition organized at the MoMA by Edward Steichen in 1942. The press release for Adams's *Road to Victory* spoke of "a site-specific installation combining photography and architecture", where, "as in Steichen's exhibition, the installation architecture dictates the meaning of the photographs."[625] Adams created an indoor procession of display cases, in a gallery with large windows. **(Fig. 13)** These display cases were empty and obstructed with smoked glass. At the base of each structure, a sheet of glass reflected a backlit photograph that was set into the underside of the display case. The reflected photographs were World War I aerial reconnaissance photographs. These were taken under Steichen's supervision while commanding the *Photographic Division* of the American Air Service, and retrieved by Adams from the National Archive in Washington.[626] Opposed to the row of darkened vitrines was a black painted wall with a large floor-to-ceiling wall partition that provided an additional backspace. On the front side he displayed an equally large blow-up of an installation view of Steichen's Road to Victory, in which aerial reconnaissance photographs were presented to the visitor in order to promote the American engagement in World War II. On the other side of the wall the visitor saw a "reflection from a light box set into the back of the partition," "an image of a U.S. Army soldier covered with *Desert Storm* camouflage netting."[627] **(Fig. 14)** Adams's analogy with the moment of engagement in World War II was affirmed when the US declared war to Iraq, several days before his show opened. According to the press release, he also intended to emphasize how the emotional force of Steichen's exhibition installation "deflected attention from the suffering that war entails," thereby "metaphorically destabilizing the museum's position as the archive of established culture." [628]

Adams's critique on the workings of art institutions deployed the same strategies and held the same duality present in his Bus Shelters. The appropriation of photographs, the integration of photography into installation art, and the use of common materials wherein the work identifies itself in language, material and colour. He played with the notion of uniqueness by reproducing photographs and inserting them into unique objects. Where conceptual art lined up most of these different points in installations, Adams surpassed the confines of the public exhibition space. His shift to public open space furthered the reframing of photography embellished within the architecture of independent pavilions. In a process of reconstructing after deconstructing, the opaqueness of history became a little more transparent in Adams's dark mirrors. Finally, his Post-Constructivist constructions accentuated the generally disregarded and disavowed influence of the aforementioned antecedents of photo-conceptualism. In a

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[624] The name of the installer is unknown, but we know that Homer Page was responsible for the enlargements of the prints. Herschdorfer, Nathalie, "Chronology," *Edward Steichen: Lives in Photography*, edited by T. Brandow & Wiliam A. Ewing, 2007, pp. 293-307.

[625] MoMA press release, "Projects: Dennis Adams," 1991.

[626] During World War I, Steichen served as a Lieutenant Commander in the United States Army, commanding units designated to military photography. In World War II, Steichen served in the United States Navy as Director of the Naval Aviation Unit that was making aerial reconnaissance photographs. From 1947 to 1962 he was the Director of MoMA's Department of Photography.

[627] Staniszewski, Mary Ann, *The Power of Display*, 1998, pp. 296-298.

[628] MoMA press release, "Projects: Dennis Adams," 1991.

more recent work, entitled *The Family of Man* (2012), Adams ironically reveals a certain unoriginality and the secluded appropriation of concept and form throughout the history of photography – prior to El Lissitzky and post Edward Steichen.

> I want to show you something. This is relatively new work. I am tagging texts on books. This is the back-cover of Steichen's *Family of Man* catalogue. Read what I printed on it… [629] **(Fig. 15)**

[629] The superimposed print on Edwards Steichen's catalogue of *The Family of Man* reads: "The old chameleon knows that color is only part of the game."

18.

Jeff Wall and Dan Graham's Children's Pavilion

In 1989 Dan Graham and Jeff Wall presented their plans for a photographic pavilion to be built in the *Parc de la Villette* in Paris. Their collaborative project was carefully explained in drawings, models and photographs. **(Fig. 1-3)** The *Children's Pavilion* was going to be an honorary space for the young, balancing between a temple pavilion and a playground. It was to be a concrete structure buried underneath an artificial hill, like a tumulus or a sewage pipe on an adventure track. The interior would have grand circular features that resembled the Pantheon in Rome: a domed rotunda with an oculus that would focus a strong beam of sunlight. The divine nature of panthea would be reflected in a series of large portrait photographs in circular light boxes, sacredly depicting children of different origins. A list of architectural and conceptual references was documented in a co-written essay, in which they summed up temple pavilions and mausolea, playground hills, grottos, follies and gazeboes. The caves at Lascaux were mentioned as sites of "primeval image making" and planetariums and observatories were cited as "photographic or cinematographic apparatuses." I had the fortunate opportunity to have meetings with both Jeff Wall and Dan Graham to talk about their wide range of influences, as well as the viability of their utopian project.[630]

"Dan Graham is or has been a sculptor and a photographer," Jeff Wall (1946 -) wrote, "an essayist and a performer, an architect, a curator, a gallerist, a teacher and an archivist."[631] In his introduction to a book on Graham's writings, Wall explains that Graham "began writing and taking photographs and, in the spirit of conceptual art, proposed that at least some of the writing be considered works of art. He has never gone so far as to claim that his photographs are works of art."[632] "I started taking photographs of houses in suburbia," Graham said in an interview. "Being without money and having no formal art training, I turned to photography because it didn't cost any money or need any special skill."[633] Writing texts was even cheaper to do, and Graham has produced an abundance of discursive source material. "To work at making a translation, I couldn't make three-dimensional structures, for this required money. It was pretty important to do something that required no money and that wasn't collectible at that moment."[634] But in all his texts and interviews he omitted his most important influence that initiated his translation of photography into architecture. At the time of this interview, Dan Graham (1942 -) was not as sharp as he used to be, and his discursive intellect digressed in an unmethodical passing from one topic to another. But in these illegible moments he disclosed vital information that he hadn't revealed before. His fast associations proved

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630 I interviewed Dan Graham on the 30th of January 2014, when he opened the exhibition *Models and Beyond* (February 1 – May 25, 2014) at De Pont in Tilburg, The Netherlands. I spoke to him again in New York on the 22nd of July 2014. The interview with Jeff Wall was recorded on February 28, 2014, at the press conference of his exhibition *Jeff Wall: Tableaux/Pictures/Photographs 1996-2013* at the Stedelijk Museum in Amsterdam, The Netherlands.
631 Wall, Jeff, "Introduction: Partially Reflective Mirror Writing," *Two-Way Mirror Power: Selected Writings by Dan Graham on His Art*, edited by Alexander Alberro, The MIT Press, Cambridge MA, 1999, p. X.
632 Ibid.
633 Gerdes, Ludger, "Interview with Dan Graham," *Two-Way Mirror Power,* edited by Alexander Alberro, 1999, p. 69. The interview was conducted in 1991.
634 Ibid., p. 72.

key to understanding his ventures in architecture, and specifically in understanding the Children's Pavilion:

> My favourite photographers are Ed Rusha and Wolfgang Tillmans. Tillmans uses all kinds of formats. I think a lot of his photographs are taken very fast. I like Walker Evans' books because they are conceived as books. Evans worked a lot for magazines and his portfolios were magazine essays. Like Ed Rusha's books are also conceived as such. He did it more as a hobby, or at least acted as if. Much like my *Homes for America*. I took them with very cheap cameras and afterwards somebody asked to publish them in a magazine and I designed them to that format. It was a comment on American suburbia. Afterwards I actually made them into singular enlarged photographs as an edition. A lot of my work comes originally from the *Hudson River School of Painting*. Bierstadt… Dan Flavin, who influenced me a lot, loved Bierstadt. Ed Rusha told me Bierstadt was essential to him.[635] So a lot of Rusha's work is actually landscape painting. But light is a very important element in terms of integrating my architectural pavilions in landscapes. Another big influence on me was Mies van der Rohe's *Barcelona Pavilion*. What I think about the Barcelona Pavilion is that it has a lot to do with landscape gardening. It's landscaping. When you walk around it, you see light coming through the hedges, you see an image of yourself on the glass, and the pool reflects the sky. Mies was very much influenced by Schinkel. Schinkel landscaped all his pavilions like houses. The other reason for a relationship is the star sign *Aries*. They were both Aries. And me too. What star sign are you?

"I'm a Libra…" I answered quite hesitative.

> Oh that's great, that's why you are smiling all the time! Well, I was right at the beginning of that genre that combined architecture with film projection. Trying to combine corporate architecture with art. I went to the Osaka World's Fair and that was very important to me because there I saw pavilions that integrated art and technology. That's where I saw the *Pepsi Pavilion*.

And this is new and crucial information.[636] While the *Pepsi Pavilion* has disappeared in the annals of history, its legacy is reflected in Graham's pavilions. The corporate pavilion that represented the *Pepsi Cola* brand at the *Japan World Exposition* of 1970 in Osaka was a collaborative project by *Experiments in Art and Technology. E.A.T.* was an extensive program initiated by the Los Angeles County Museum of Art that paired contemporary artists with scientific engineers.[637] The Pepsi Pavilion was the program's largest

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[635] Albert Bierstadt (1830-1902) was a German painter who moved to, and grew up in the United States. He is mostly known for registering the American landscape during his journeys with the *Westward Expansion* and famous for depicting a radiating light in his paintings. He was a part of the Hudson River School, a group of landscape painters influenced by Romanticism, based along the Hudson River in New York State.

[636] The *Pepsi Pavilion* is mentioned as a possible influence in an essay by Beatriz Colomina, "Beyond Pavilions: Architecture as a Machine to See," *Dan Graham: Beyond*, edited by Elisabeth Hamilton, The MIT Press, Cambridge MA, 2009, pp. 191-207. But it is only listed in a series of examples ranging from Bruno Taut's *Glashaus*, the glass industry pavilion at the Deutscher Werkbund Exhibition of 1914, to Coop Himmelb(l)au's *Cloud* presented at Documenta 5 in 1972, and Aldo Rossi's *Il Teatro del Mondo*, a temporary theatre built for the 1980 Venice Architecture Biennale. There is however no description or explanation whatsoever as why the *Pepsi Pavilion* is mentioned and there is no analogy drawn between the mirror dome of the *Pepsi Pavilion* and the distortions in Dan Graham's two-way mirror pavilions.

[637] Experiments in Art and Technology was officially launched in 1967 by LACMA curator Maurice Tuchman, the engineers Billy Klüver and Fred Waldhauer, and the artists Robert Raushenberg and Robert Whitman. The program

achievement. It was a Buckminster Fuller-like geodesic dome clouded in water vapour, a vale of fog that turned the structure into a gigantic sculpture.[638] **(Fig. 4)** The pavilion was created by a laboratory of over 70 artists and engineers, headed by the artist Robert Breer. It hosted an immersive media arts installation that combined cinema projections, photography, moving sculptures, interactive light and sound experiments. But its main attraction, and the most important feature relevant to Graham's work, was a full spherical mirror of 27 meters in diameter. Reached by a darkened staircase into the interior, like in the old panorama pavilions, visitors entered a half-spherical dome that was entirely clad in highly reflective aluminized panels. **(Fig. 5)** It was an unseen experiment in spherical mirror optics, made possible by the involvement of NASA's Californian Space Program. The spectators saw anamorphic images of themselves, upside down with the centre of the floor hovering up against the ceiling. As such, they became active participants, a cohesion between viewers looking at each other, stimulated by the perceptual immediacy of the reflections. Dan Graham once said about his move from video performances to his first pavilion pieces:

> The change, if anything, was a change from making pieces that were camera obscuras – which placed you almost inside the camera and were referring to the optical system per se- to showing the spectator, in terms of the perceptual process, as an audience, as a spectator, rather than as a work of art. The principles were the same, but these were the spectator in relation to materials commonly used in the city that had psychological and physiological properties.[639]

The first use of architectonic elements in his work dates back to the piece *Body Press*, created between 1970-1972, right after Expo '70.[640] **(Fig. 6)** For this piece, he used a large sheet of curved, reflective glass as an anamorphic lens that partly surrounded two performers holding cameras while they circled around each other. Graham said that "mirrored glass made it into a *photo* opportunity. And the idea of an amusement park, a fun-house situation creating kaleidoscopic space."[641] The installation photographs, as well as the films documented by the performers, bear an uncanny resemblance to the few remaining photographs from the Pepsi Pavilion's interior. And this is what dawned on me with his remark on Osaka's World's Fair of 1970. The genealogy of Graham's pavilion/sculptures can be literally traced back to this life-changing experience.

> Enter the Pepsi Pavilion and you enter an involvement in sights and sounds and feels you have never experienced before. You are a participant, not an observer, in a technological environment. The white domed pavilion shrouded in a cloud a

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ran until 1971 and realized projects with, for example, James Turrell, Robert Irwin, R. B. Kitaj, Richard Serra, and Andy Warhol.

[638] At certain intervals during the day, the pavilion would be shrouded in a mysterious fog. The fog cloud of the Pepsi Pavilion clearly influenced Diller + Scofidio's *Blur Building* in Yverdon-les-bains, constructed (and deconstructed) for the International Expo 2002 in Switzerland.

[639] Metz, Mike, "Interview with Dan Graham," *Two-Way Mirror Power*, edited by Alexander Alberro, 1999, p. 189. The interview was conducted in 1994, and was first published in Bomb n° 46, 1994, pp. 24-29.

[640] In an interview with Eric de Bruyn, Graham answered to the question "Why is *Body Press* dated 1970-1972": "It took a long time to realize." De Bruyn concludes: "In other words, the 'idea' of *Body Press* dates from 1970." De Bruyn, Eric, "Interview with Dan Graham," *Two-Way Mirror Power*, edited by Alexander Alberro, 1999, p. 102. The interview was conducted in 1996 and was first published in Moure, Gloria, *Dan Graham*, Centro Galego de Arte Contemporanea, Santiago de Compostela, 1997, pp. 195-205.

[641] Metz, Mike, "Interview with Dan Graham," *Two-Way Mirror Power*, edited by Alexander Alberro, 1999,p. 193.

> mysterious fog holds a world you never experienced before. A 90-foot, spherical mirror captures overhead your image, upside down.[642]

Although Graham has never before mentioned the overwhelming influence of his visit to Osaka in 1970, he has always acknowledged his interest in "demonstration pavilions of new architecture for temporary expositions," such as El Lissitzky's exhibition rooms and Mies van der Rohe's *German Pavilion* created for the 1929 *Barcelona International Exposition*.[643] In his notes on his first pavilion/sculpture *Public Space/Two Audiences*, exhibited at the Venice Biennial of 1976, he describes the biennial as the heir of the 19th century world's fairs:

> Each national display is a "showcase" for the culture of that country (…) Collectively, the ensemble of "spaces" is to represent a socially relevant, topical, and unifying viewpoint or framework (…)

Graham took the idea of "showcase" quite literal in his pavilion. He made the spectator become the subject by using a two-way mirror between two adjacent rooms. Through the looking glass, the first group sees itself mirrored in-between the second group, while the second group, unaware of the first, finds itself in a double reflection.[644] The indoor installation made of wood, drywall and glass assumed a double function as architectural pavilion and sculptural form. For another large-scale international exposition, the quinquennial of Documenta, he created his second pavilion: *Two Adjacent Pavilions*. In 1982, six years after *Public Space/Two Audiences*, he installed his first outdoors two-way mirror pavilion, entirely made of stainless steel and distortive glass. The first sentence of *Two-Way Mirror Power*, Graham's text about *Two Adjacent Pavilions*, clearly referenced the influence of international expositions:

> In Western culture the pavilion placed in a park setting began with the Renaissance garden, where it was often used for Disney-like special effects. In the 19th century it grew in size into the Crystal Palace of the 1851 World's Exposition in London. It now encompasses the quasi-utilitarian modern "non-place" bus shelter and telephone booth.[645]

The paragraph even holds a remarkable reference to Dennis Adams's *Bus Shelters* from the 1970s - self-constructed, dysfunctional bus shelters that accommodated light-boxes with enlarged photographs. In his text *Corporate Arcadias*, Graham relates pavilions to the glass-covered arcades of Paris, Victorian greenhouses, the Crystal Palace, Mies van der Rohe's *Farnsworth House,* the buildings of Philip Johnson, Robert Venturi, and Frank Gehry, as well as to the "18th century notion of the Arcadian rustic hut" set forth by Marc-Antoine Laugier.[646] And in their mutual text of 1989, *A Guide to The Children's*

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642 "Expo '70 Official Guide," The Japan Association for the 1970 World Exposition, Osaka, 1970.
643 "This corresponds to a group of works that I researched or had physically seen often, done by architects, such as Rietveld's sculpture pavilion for the Otterlo Kröller-Müller Museum or demonstration pavilions of new architecture for temporary expositions." Ardenne, Paul, "Dan Graham: A Modern Archaeology of Perception," Art Press n°178, Paris, 1993, pp. 3-4.
644 A two-way mirror, synonym to a one-way mirror, is a semi-transparent mirror that is partially reflective and partially transparent dependent on the direction of the source of light.
645 Graham, Dan, "Two-Way Mirror Power," *Two-Way Mirror Power*, edited by Alexander Alberro, 1999, p. 174. The text ends with the following caption: "This text was written in 1996. It is previously unpublished."
646 Graham, Dan, "Corporate Arcadias," *Rock My Religion: Dan Graham Writings and Art Projects 1965 - 1990*, edited by Brian Wallis, The MIT Press, Cambridge MA, 1993, pp. 266-283.

Pavilion, a Collaborative Project by Jeff Wall and Dan Graham, Graham and Wall openly address the influence of world's fairs on the conception of the Children's Pavilion:

> In recent world's fairs, for example, spherical structures present the cosmos and our earth as one world. These are emblems of a promised future, to be achieved through scientific progress, which would reunite us into one global community, one "family of man." The mirror-clad "La Géode" in Parc de La Vilette in Paris is the most recent and striking example.

This short paragraph holds three interesting references. The first reference to world's fairs is quite clear. After Buckminster Fuller's original geodesic dome at Expo '67 in Montreal, spherical structures started to appear everywhere. Although art and industry had always coexisted at world's fairs, there hadn't been many systematic attempts to integrate the two. Until Expo '70, where Graham saw many "pavilions that integrated art and technology." Besides the Pepsi Pavilion, the Expo '70 playground-like master plan of Kenzo Tange showcased multiple hexagonal domes. The white domes of the *French Pavilion*, the black dome of the *Pavilion of West-Germany* that embellished a symphonic concert hall, the colourful *Midori-Kan Pavilion* - and so on. The corporate Midori-Kan pavilion presented the *Astrorama*, an immersive experience in which images covered the whole interior surface and visitors were totally surrounded by film projections. Film was omnipresent at Expo '70 and maximized in the *Fuiji Group Pavilion*, which premiered the first *IMAX* movie ever made.[647] "I was right at the beginning of that genre that combined architecture with film projection," Dan Graham said in our interview, and he was right.

The Children's Pavilion was originally designed for the *Parc de La Villette* in Paris, to stand close to *La Géode*, a geodesic dome of 36 meters in diameter built in 1985. La Géode was built to accommodate an *OMNIMAX* projection screen of 26 meters.[648] Seen against the history of recent exposition pavilions, its main novelty was that it is entirely covered with stainless steel triangles, reflecting the surrounding 360 degrees horizon line - like a giant *gazing ball*. This second reference was another influence to the idea of the Children's Pavilion, as well as on Graham's later work:

> My sculpture/pavilions call attention to the look of the spectator, who becomes the subject of the work. A two-way mirror and steel structure has "cinematic" special effects.[649]

The third reference finally draws us closer to the work of Jeff Wall. The association with the photographic exhibition the *Family of Man* by Edward Steichen in 1955 is mainly made in a conceptual way, alluding to its theme of global solidarity and a united, equal world. I would like to come back to this thematic thread further on in this essay, but for now I would like to pursue a more material argument connecting the *Family of Man* to Wall's work. Together with the architect Paul Rudolph, Steichen exhibited hundreds of extremely enlarged photographs and over a dozen giant photomurals at the MoMA. "The only colour reproduction in the exhibition was a 2 by 3 meters backlit transparency of a

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[647] The first IMAX movie made was *Tiger Child* by Donald Brittain, 1970.
[648] The architect of La Géode was Adrien Fainsilber.
[649] Graham, Dan, "Two-Way Mirror Cylinder Inside Cube and Video Salon: Rooftop Park for Dia Center for the Arts," *Two-Way Mirror Power*, edited by Alexander Alberro, 1999, p. 166. The text was written in 1991 and was previously unpublished.

hydrogen bomb explosion."[650] As far as I know, this was the first time a light-box of this scale was used inside a museum. Paired with colour photography, it is a unique predecessor to Wall's signature work. Not that he would have known about it, since this light-box image was censored from the book and unmentioned in the further life of the exhibition. But it is not a coincidence. Steichen regarded the exhibition format as a contemporary extension of the photographic medium, just as much as television and cinema. He used smaller light-boxes in different exhibitions to compete with the hypnotizing effect of these new light-based media. And Wall shares that motivation. Although it was reactionary to the work and workings of Steichen, Wall adapted similar strategies.

Colour photography at that time was linked to fashion photography and the light-box to the advertisement industry. Wall adapted both to juxtapose ordinary materials with painterly compositions and the size of advertisement photography with the size of large-scale painting – away from intimate small formats and matted black and white prints. And this is another overlap. In the *Family of Man* Steichen was obviously trying to compete with the format of advertisement billboards. Dan Graham ironically noted in his writings "that at the same moment that Abstract Expressionism was evolving its oversized painting, advertising forms also made a shift toward the oversized billboard and the use of colour photography."[651] Together with the wide-screen cinema it "plunged the viewer inside giant images." Indeed, when photography had finally caught up with the size of modern painting, contemporary painting was again expanding to the size of aristocratic history painting. Following the painterly medium in its tail, again, photography adapted this "larger-image size, to be framed and hung on a wall, to be looked at like paintings," as the French critic Jean-François Chevrier wrote:

> The restitution of the tableau form (to which the art of the 1960s and 1970s, it will be recalled, was largely opposed) has the primary aim of restoring the distance to the object-image necessary for the confrontational experience, but implies no nostalgia for painting and no specifically "reactionary" impulse. The frontality of the picture hung on or affixed to the wall and its autonomy as an object are not sufficient as finalities. It is not a matter of elevating the photographic image to the place and rank of painting. It is about using the tableau form to reactivate a thinking based on fragments, openness, and contradiction, not the utopia of a comprehensive or systematic order.[652]

As such, the expansion in size was strongly related to the new media of advertisement and the cinematic, more so than to refer to the ascendency of painting. While conceptual art was deploying photography as an act of democratizing resistance to the painterly medium, this "freedom to make things as art that did not resemble art," - Jeff Wall wrote about Dan Graham's early photographs - worked contra-productive, as "everyday experience had, for centuries, included the experience of works of art as they had

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[650] Sandeen, Eric J., "The Show you see with your Heart: The Family of Man on tour in the Cold War World," *Public Photographic Spaces: Exhibitions of Propaganda, from Pressa to The Family of Man, 1928-55*, edited by Jorge Ribalta, MACBA, Barcelona, 2009, pp. 472-473.
[651] Foster, Hal, "Legacies of Critical Practice in the 1980s: Discussion," *Two-Way Mirror Power*, edited by Alexander Alberro, 1999, p. 34.
[652] Chevrier, Jean-François, "The Adventures of the Picture Form in the History of Photography," 1989, quoted in Fried, Michael, *Why Photography Matters as Art as Never Before*, Yale University Press, New Haven and London, 2008, p. 143.

been."[653] This new 70s generation "accepted that there was no longer anything to be gained by behaving as if photography was only effective as a provocation to the academy."[654] They fully embraced all qualities of photography, from the document to advertisement, from the pictorial to the cinematic. Wall adapted the large-scale size and the luminescence as much from the tableau painting as from the cinema screen. In our talk, he looked back:

> If you look at Eugene Atget as a classic example, he was doing contact prints from his glass negatives, so the size makes perfect sense. Although with some of his photographs, I wouldn't mind seeing them a bit bigger. That would make them even more wonderful. But that didn't happen at that time. They printed contacts, which is great for books, but it didn't necessarily brought out the best aspects of Atget's work. It was the time I suppose. When Robert Frank made *The Americans*, he had a book in mind. When he made his pictures, he knew how they were going at that size. And they were very successful. And it is a wonderful book, because it was meant to be as such. So if you were making something for a book, such as Frank or Walker Evans did, it works, but if you make larger things, in this kind of tableau form, it doesn't work. I have struggled with that. I don't think my work looks good when it is small. I always think my photo's are lost in books and just regard them as documents. That's why I like bigger shows, because you get to see the actual works in which you can see the details of the picture. Basically, the tableau, in any other medium or size, escapes. That is the relationship. It can only be a miniaturized caption of its presence.

Another important reason for this change, for the painterly medium as much as for the photographic, was an expansion in size of the museums of modern art. Within the MoMA, for example, Steichen's Photography Department moved from a small room in the basement to large galleries, after the museum's extension in the 1960s. From the 1970s, museums of *contemporary art* started to open across the world. The visual arts withdrew from world's fairs and specialized in separate art biennials and art fairs. Meanwhile, the size of private collectors' houses grew as rapid as the contemporary art industry. Quite suddenly, living artists had to compete with vast amounts of white walls - and drywalls. Architectural engineering had made walls bigger, and visual artists had

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[653] "This freedom – to make things as art that did not resemble art - was animated by the desire to have art draw itself closer to everyday experience. The contradiction was that everyday experience had, for centuries, included the experience of works of art as they had been." Wall, Jeff, "Introduction: Partially Reflective Mirror Writing," *Two-Way Mirror Power*, edited by Alexander Alberro, 1999, p. XI.

[654] "Conceptual and performance art from the late 1960s and early 70s, passes through what came to be called the 'postmodern' arts of appropriation, quotation and re-photography, and concludes with large-scale photographic tableaux. (…) Photography has made its strongest claim to art not by choosing between these oppositions but by insisting on having it both ways, putting itself forward as the medium best placed to dramatize the tensions between artwork and document. Towards the end of the 1970s a number of important artists began to propose forms of photographic art that shifted image making away from conceptualism's interest in traces and towards a an exploration with the photograph's potential as 'picture'. (…) Such works understand photography not as a pretender, not as medium to hang on the wall with irony or the mocking distance of an outsider. On the contrary, these artists accepted that there was no longer anything to be gained by behaving as if photography was only effective as a provocation to the academy. (…) That thread has something to do with both the trace and the picture, the document and the artwork. Something is recorded before for the camera but the camera also poses, theatricalises what it records. The camera is not outside of what is presented to it. Rather, it is complicit with it." Campany, David, "Traces and Pictures," *Through the Looking Brain*, edited by Stephan Berg, Hatje Kantz/Kunstmuseum Bonn, 2011.

to follow if they wanted to outrun the disappearance of their works into a great white void.[655]

Anticipating the next phase, we have to go back to Expo '70 in Osaka. As the curator of a photography exhibition in the United States Pavilion, John Szarkowski, then Director of the Department of Photography at the MoMA, faced a new architectural challenge: no walls, just a great white void. The translucent, inflatable US Pavilion offered a vast amount of open space. Although the US pavilion was not as radical as the Pepsi pavilion, it was originally conceived as a translucent, bright space during daytime, and as an immersive cinematographic space at night, when the roof would be turned into a projection screen from within. In order to compete with the strong influx of light during daytime and a darkened pavilion after dusk, Szarkowski adapted the light-box for this dual function to present enlarged photographs of contemporary photographers. These light-boxes became independent structures, floating wall segments with rear-lit photographs inside. These panels were up to six meters long. The light-box as such was deployed as an architectural element in a three-dimensional photography exhibit – once initiated by Steichen.

And this three-dimensional spatial presence was precisely what Wall was driving up to the extreme. What they share is *transparency*. But where these earlier light-box experiments are entirely based on encouraging the spectator to look through the surface into the virtual scene, thereby eliminating the material surface as a bearer of pictorial meaning, Wall's use of the light-box technique contrarily heightens the surface of the photographic artefact.[656] That entirely differentiates this work from the before mentioned light-box experiments of Steichen and Szarkowksi. In Wall's work content and the use of material actually connect – and that goes for the entirety of his magnificent oeuvre. His first light-box piece dates back to 1978. *The Destroyed Room* is a Cibachrome transparency, illuminated from behind, with a size of 1,59 meters high on 2,34 meters wide. **(Fig. 7)** The monumental light-box takes on an autonomous, three-dimensional presence. The architectural frame has a thickness of about 30 centimetres, literally heightening the surface of the photographic artefact. But also its content has more to do with architecture then first meets the eye. Besides its physical presence detaching from the wall, the virtual image is a photograph of a self-assembled architectural construction, a stage-set that was fabricated with the pure intent to be photographed. This image implies an architectural construction, an actual staging, which Wall referred to as "cinematographic reconstructions," and is also presented as an architectural construction.[657] The constructed filmic content of his work in general is

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[655] Sometimes things are simple. When artists are secretive about their practice, as usual, theory seems to overestimate their motives. It isn't as reductive as this, but combined with the previous arguments, it gives a good sign of the times.

[656] "(…) although the photographic artefact has a surface (it is in a sense, all surface), the viewer tends inevitably to look 'through' or, more accurately, 'past' that surface to the depiction as such. (…) Thus it might be said that one important function of the tableau form has been to counteract or compensate for the transparence of the photographic surface by keeping the viewer at a distance not just physically but also imaginatively. (…) In Wall's work of course, transparence is at once thematized and heightened by this lightbox technique." Fried, Michael, *Why Photography Matters as Art as Never Before*, 2008, pp. 187-189.

[657] The theme of *The Destroyed Room* relates to the painting *The Death of Sardanapalus* by Eugène Delacroix, painted in 1827. The composition in Delacroix's painting is restaged in a fabricated film set. Wall uses the word "re-constructions" for this strain of works, which are often based on pre-existing images that he "re-constructs" into a new image. In *The Destroyed Room* he "re-constructs" an elaborate painting into an everyday scene, depicted as a photograph on a monumental, almost life size scale. Wall often referred to the history of painting in his photographs, but called them "cinematographic." His works were produced in the manner a film was recorded, by using a set,

enforced by the use of backlit transparencies, giving it artificial, cinematographic qualities. Wall is writing with light to produce a photograph, but also consequently applies this photographic action to its display.

And here we can also find the most important link between Dan Graham and Jeff Wall: *translucency*. Translucency is the main idea that connects their separate oeuvres. Shortly after Graham had started to construct his photographic two-way mirror pavilions, Wall started to construct his architectural light-boxes. They both relied on translucent architectures. Combined, it became the crux of the Children's Pavilion.

> Dan and I have known each other for a very long time, since the 70s, so we had a long dialogue of like 45 years. So one day we are riding a train and talking about our stuff, and we were talking about circles. I remember, cause, he was talking about the moon and about using circles as doors for his pavilions. I don't know how it came up. We have known each other for so long and we appreciated each others work and we have written about each other, so we thought: "Why couldn't we ever collaborate? It could be very interesting." And we came off around the circle. So whatever came out of that conversation was that we would do a circular building with circular images and that it would be all about children and bubbles and parts of texts that we had written. Those texts we wrote had set out the perimeters of the project. It had to do with the global, the ephemeral, a bubble or a globe, a cosmos, a circular mirror… And that was how the thing got designed. Dan was really getting into domes, oculus's, pools, ponds, reflections…

In two different interviews, Dan Graham reminisced that a specific work of his was the actual trigger for their cooperation:

> There was a children's pavilion built for the *Chambre d'Amis* project in Ghent, in which artists were commissioned to work in private spaces, the homes, backyards, and gardens of people who lived in the city. (…) I made it on a playground scale. It was after seeing this work on video that Jeff Wall had the idea of making Cibachrome photographs of children, and for me to design a children's pavilion on a very large scale to house these photographs. This underground pavilion is an enlarged earth mound/children's magic mountain with a concave/convex one-way mirror oculus opening at its top.[658]

Once they formulated the concept, they started making drawings, sizeable models, and conceived a text. **(Fig. 8)** Over time, the text was lengthened, revised and shortened several times and by both authors. But all versions give a clear description of the pavilion, the photographs and the influences to the design. It stated the following:

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lightning and a crew. He refers to as "nearly documentary" photographs in a different strain of his works, making a slight difference between his staged photography and his documentary photography. I am deliberately not investing into a discussion about Wall's progression from staged, analogue photography to his digitally composed images. This work, and most works discussed in this essay, was made before digital photography and the subject is treated in the following essay about Wolfgang Tillmans.

[658] Hatton, Brian, "Dan Graham in conversation with Brian Hatton," *Two-Way Mirror Power*, edited by Alexander Alberro, 1999, pp. 152-153; Metz, Mike, "Interview with Dan Graham," *Two-Way Mirror Power*, edited by Alexander Alberro, pp. 183-198.

> The Children's Pavilion (1989) is a public building located at the periphery of a playground. It is built into, and enclosed by, a landscaped hill. The structural shell of the hill-form is engineered in concrete. It includes a network of stairways, leading to a walkway around the summit. Large areas of the exterior surface are planted with lawn. The structure is entered through a portal in the form of a three-quarter circle. The interior floor, made of concrete, is composed of three descending concentric rings with a system of steps leading from level to level. The central circle is a water basin. The interior walls form a drum, which supports a low dome, at the apex of which is an oculus. In the oculus is installed a one-quarter sphere of two-way mirror glass, its convex surface facing the interior. Visitors inside the pavilion can look out through the oculus, and those on the walkway at the summit can look into the building seeing the sky continuously altering, as it alters the relation between their reflected image of themselves and the sky and the transparent view through the lens of people inside looking up, and the wall-mounted circular photos of children against various photographic skies. The diameter of the water basin is the same as that of the portraits. The diameter of the quarter-sphere in the oculus is twice that of the portraits.[659]

The first paragraph of their text gave a fair description of the building. Like in many of his pavilions, Dan Graham is proposing experiments with optics. In the text, he places a strong emphasis on reflections and transparency in the two-way mirror lens and the pond, both in turn reflecting the translucent light-boxes of Jeff Wall. The beam of light is subsequently compared with the oculus of the Pantheon of Rome, "Boullée's neo-classical dome projects," and the caves at Lascaux, as if all four were supposed to be camera obscuras with wide-open apertures – which is a very interesting thought.[660] They wrote in their proposal that "the optical dynamics are connected with the pavilion's relationship to observatories and planetariums, forms dedicated to intensive searching, gazing, and observation." The observatory is merited as a recording "photographic or cinematographic apparatus," while the planetarium is described as a domed projection device, a cinema which "democratically inspired dissemination and production of knowledge." Both these functions of the planetarium and the observatory were introduced to the pavilion by the double function of the concave/convex mirror oculus. **(Fig. 9)** Looking into the convex lens from the inside, kids could see themselves reflected within the miniature cosmos of the pavilion, while from the outside, looking through the concave lens, kids could see themselves as giants against the sky, corresponding and identifying with the enlarged backlit photographs. "I was afraid the children would fall in to the concave mirror oculus looking down, because they see themselves as giants," Graham said during our conversation:

> The railing around the oculus on top comes from the Antwerp zoo. When the Antwerp zoo was rebuilt, it used a sort of fencing, slightly curved, on the outside of one of the cages. It was iron and curved and the kids could lean into it. That's

[659] Wall, Jeff, & Graham, Dan, "The Children's Pavilion," *Two-Way Mirror Power*, edited by Alexander Alberro, 1999, pp. 167-172. The text, co-written by Dan Graham and Jeff Wall in 1989, was revised and expanded by both authors for this publication.

[660] "The Children's Pavilion also relates to the Roman Pantheon and to Boullée's neo-classical dome projects." Wall, Jeff, & Graham, Dan, "The Children's Pavilion," *Dan Graham: Beyond*, edited by Elisabeth Hamilton, 2009, pp. 203-205. For this book Dan Graham revised the text in 2004. In this book, the text mentions the following credits: "First published in *A Guide to The Children's Pavilion*, exh. brochure (Santa Barbara, California: Santa Barbara Contemporary Arts Forum, 1989); and The Children's Pavilion/Der Kinderpavilion," Parkett, no. 22 (1989): 66-70. Text revised in 2004."

> what I used for the oculus on the top. The project was extremely detailed. It was actually based on the English garden. The entrance was in rusticated stone.

Accessing a concrete sewage-like tube in rusticated stone, visitors would enter a domed circular space. Like in a real pantheon, children were revered as gods in nine circular light boxes of monumental size. In our interview, Wall explained:

> After we had made the first design, I made the pictures. I went back to the studio and very shortly after that I made those pictures that would be the adornment of the building. So that was a very specific relation between the architectural form and the images. They were a unity, much like Baroque or Rococo rooms. Not necessarily the circular form but more that the notion of the building, the architecture and the decoration would be a *unified design*. Because the pictures really are in a way *adornment*, decoration… You could easily imagine a children's pavilion having no pictures in it. A playhouse, a pool, it could easily do without pictures. But it happened to have pictures because of the way we designed it. So the pictures are adornment in the same way that *Fragonard* handled his paintings in some salons. So I guess they are quiet essential. But I can also imagine them being deleted. They are moveable.

In the Children's Pavilion, the architecture and the decoration are a unified design in which the photographs do have an essential place and function. Rather than a collection of objects in a superfluous interior, the luxurious Rococo style has here been abandoned in favour of a homogenous pavilion that most of all expressed a unified idea. Since the 18th century, the *ensembliers* in France had mastered the art of synthesis, fusing exterior architecture and interior design, furniture and painting into a coherently styled whole. A reflection of this kind of *gesamtkunstwerk* can also be seen in the Pepsi Pavilion and the US Pavilion at Expo '70. **(Fig. 10)** But Wall's reference to Fragonard is very interesting. In 1771, The French artist designed a set of paintings for a new pavilion in the castle gardens of Louis XV's mistress. The largest paintings featured Arcadian landscapes and Epicurean scenes of luscious men and women, while the smaller series of paintings depicted about nine angelic jesters completing *The Progress of Love*. In 1915 they ended up in the house of the industrialist Henry Clay Frick, where they became part of a new unified Rococo design.[661] **(Fig. 11)** Both Wall and Graham had to be acquainted with the *Fragonard Room* in the Frick Collection on the Upper East Side in Manhattan. We are both interested in Baroque paintings," Graham said in an interview, "the angels that appear on the ceilings in Baroque paintings."[662] And Graham certainly referred multiple times to the rustic hut when he retraced "the history of the pavilion as a type of architecture, from the Rococo pavilion on the prince's estate to the 19th century belvedere, from the bus shelter to the pavilion presented in temporary exhibitions like Mies van der Rohe's Barcelona Pavilion."[663]

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[661] The four originally commissioned paintings were eventually rejected by Madame du Barry. In 1790 Fragonard brought the paintings to his cousin's house in Grasse, along with two additional large panels, four over door panels, and four slender panels of hollyhocks. *The Progress of Love* was an ensemble of paintings depicting love scenes - bearing titles such as *The Pursuit, The Lover Crowned, Love Letters, Love the Jesters, Love Triumphant,* etc. - many of them displaying childlike, winged angels. The paintings decorated a private house in London before Henry Clay Frick acquired them in 1915.

[662] Metz, Mike, "Interview with Dan Graham," *Two-Way Mirror Power*, edited by Alexander Alberro, 1999, p. 195.

[663] Dan Graham quoted by Colomina, Beatriz, "Beyond Pavilions: Architecture as a Machine to See," *Dan Graham: Beyond*, edited by Elisabeth Hamilton, 2009, p. 204.

Perhaps far-fetched, but in 1968 the plot of a very well known film unfolded in a space that could be described as somewhere between the Children's Pavilion and the Fragonard Room. In Stanley Kubrick's *2001: A Space Odyssey* a space traveller ends up in a room beyond space and time. The room has a floor that is entirely made out of luminous light-boxes covered with opaque panels. The interior is ornamented as a whitewashed, unified Rococo design. The only colour present in the space comes from several paintings, inserted into the wall like Fragonard's work, and from furniture in the style of Louis XV. **(Fig. 12)** The only colour present inside the Children's Pavilion comes from Wall's illuminated photographs of angelic children. Similarities are not only to be found in the interior design, but as well in its idealistic concept. This architecture of premonition was very popular at the time. The information age was changing into an age of critical utopian infrastructures. The futuristic designs of *Superstudio*, a group of radical architects, designers and artists from the Italian avant-garde of the 60s and 70s, draw a very close parallel between Kubrick's Space Odyssey and The Children's Pavilion. In the purely hypothetical drawings from *Il Monumento Continuo*, the group's most famous project of 1969, they proposed a *continuous monument* made of an expandable unit that could span the entire globe. **(Fig. 13)** In the associative drawing *Film Script (Continuous Monument) by Superstudio*, 1969-1971, the designers even connected the monolith to Stonehenge, then Leonardo da Vinci to Le Corbusier, Etienne-Louis Boullée's *Cenotaph for Isaac Newton* to Joseph Paxton's *Crystal Palace*, and finally the monolith to their Continuous Monument. This monolithic structure would be entirely made of two-way mirror glass facades, reflecting the natural landscape during daytime and turning into a gridded, white light-box at night. The backlit grid we also see in Kubrick's film as well as in the roof of the US Pavilion for Expo '70, illustrated a natural impulse to divide the Earth in parallels and meridians - permanent white lines in the Nazca desert, motorways, the World Wide Web. Putting "cosmic order on Earth" by creating a unifying piece of architecture, that was Superstudio's intent. Likewise, Kubrick's film is a multilayered allegory on the origins of humankind and its final destiny in the universe, motivated by a desire to discover the miracle of life, on Earth as well as in outer space - in the very last scene of the film, the rapidly aging space traveller experiences the miracle of rebirth when he transforms into a foetus. In their joint text for The Children's Pavilion, Wall and Graham reference a whole list of "utopian alternatives to present civilization," pavilions that "combine the provision of temporary shelter with an inducement to participate in specific acts of memory, contemplation, and philosophical speculation." In their widest analogies, they refer to the circular design as the "symbol of the cosmos," as a grotto for "lunar goddesses, nymphs, prophecy, birth, and a passage through subterranean realms of rebirth," to a "maternal enclosure" as well as to a "flying saucer":

> These are mostly seen in films, often films aimed at children (…) The spaceship promises an adventure, a journey to other worlds, a voyage into a hypothetical future. (…) Adventures in which past and future are intermingled, in which archaic forms appear futuristic and futuristic forms can be ruins.[664]

These examples, including Space Odyssey, *The Continuous Monument* and the Children's Pavilion, place architecture at the crossing of art, technology, utilitarianism and sacredness. They adhere to a moderate, critical utopia, illustrated by an iconography of

[664] Wall, Jeff, & Graham, Dan, "The Children's Pavilion," *Two-Way Mirror Power*, edited by Alexander Alberro, 1999, p. 170.

popular culture. Comparing the Children's Pavilion with the work of Stanley Kubrick and Superstudio might seem redundant, but Dan Graham went much further in our interview:

> Jeff was actually enormously influenced by Spielberg! That is his favourite filmmaker and what Jeff basically is doing, is a sort of Victorian sentimentalism. He has gone back into formal photography now, but… The Children's Pavilion wasn't just a fantasy situation. Jeff in the beginning was taking it very serious. He wanted to show children from all different kind of nations against different skies. He will deny this, but that is actually Benetton![665]

In Wall's circular light-boxes, "children of different racial and ethnic backgrounds" were portrayed against different skies, representing different times and places. **(Fig. 14 & 15)** The sentimental idea of children as gods was an idea that fitted their utopian intentions: "The celestial void is the home of angels or 'putti' (…) who emanate directly from God in infinite numbers at every second of endless time." In their joint text, Wall and Graham continued that:

> The group's multifunctional composition implies the plurality of nations and, therefore, forms an image of world culture. One classic manifestation of this idea is the photographic exhibition and book, *The Family of Man*, organized by Edward Steichen in 1955.[666]

Besides similarities in form, there are indeed strong conceptual parallels to be drawn between the themes of the Family of Man and the Children's Pavilion. In our interview, Jeff Wall confided his own critical confusion about the subject:

> Dan was totally into that sort of thing. I liked it too, I am interested in it too, but he was kind of the leader of the humanistic aspects. But he and I had the same background in responding to these agitations in the 50s. I think we were parodying it a bit. We were definitely not talking it too seriously. I don't think it is easy to answer… It was kind of sincere and it was also kind of ironical, because the form in which we were doing it was full of play. I don't think either of us can really be sure about our attitude, as a matter of facts. I don't think it is fixed, I'm not really sure…" (laughs)
>
> Well it was critiqued throughout the 70s so much that you couldn't do anything with it. I think that we were both used by the fact that, despite all the critiques that had been developed - and we helped developing them - against that globalised, universalized, humanistic treatment of imagery, we both kind of had sheltered attachments to it ourselves. We weren't really totally un-ambivalent. In a way it was bringing back something that had been already critiqued. It is not the same thing anymore. We knew that we were going to be critiqued on this. I don't think we had a very fixed point of view but we had a lot of affection for things that in some ways we would have problems with. We had a problem with

[665] Graham has mentioned this before in an interview: "The stereotype of a child probably comes from films; I think Jeff derived it from Spielberg films." Metz, Mike, "Interview with Dan Graham," *Two-Way Mirror Power*, edited by Alexander Alberro, 1999, p. 195.
[666] Wall, Jeff, & Graham, Dan, "The Children's Pavilion," *Two-Way Mirror Power*, edited by Alexander Alberro, 1999, p. 170.

> it, but we had affection for it at the same time. A doubt that comes through in the building, where we both can't decide, or we don't want to decide. It didn't need to be so clear. And that's visible in the building. It's slightly problematic and because of that it is not so easy to occupy, to interpret. It wouldn't be too simply affirmative.
>
> But I think that about the time we were working, mass media had gone into that and already took that to a whole new dimension. You know, now you see light-boxes with kids on them everywhere but at that time you didn't. My pictures are very simple and rustic in comparison with the techniques of advertisement at that time. They were just shot in front of a background. They weren't altered afterwards, because I couldn't do that at the time. It was too early, or at least, too early for me. But I didn't want them to be too slick. I wanted them to be realistic, to be very sharp, well lit. Not commercial, but that they looked like my own pictures. Well, I have also made the argument, and Dan doesn't like this one, that the Children's Pavilion also works without the building. It is anywhere I hang those pictures. It is still a very lively thing for me.

Jeff Wall is referring to his piece *Children*, which was originally conceived for a model of the Children's Pavilion. The photographs were printed on a smaller scale and are regularly exhibited as nine backlit tondo's. **(Fig. 16)** As such, they also seem to work better. Rid of the moralizing and sentimentalizing subject, they are simple and good *Wallian* portrait photographs of children. The problem with The Children's Pavilion clearly lies in its overall utopian subject. In the first version of their text, Wall and Graham quote Allan Sekula on the Family of Man:

> In his essay "The Traffic in Photographs" (1981), Allan Sekula wrote, "The Family of Man moves from the celebration of patriarchal authority – which finds its highest embodiment in the United Nations - to the final construction of an imaginary utopia that resembles nothing so much as a protracted state of infantile, pre-Oedipal bliss."[667]

The criticism in Sekula's text seemed to escape their attention, as if a state of infantile pre-Oedipal bliss is a good place, let alone, an imaginary and absolutely unreachable one. During our conversation, Wall pointed out the dichotomy in which he found himself trapped by the end of the 70s, when he mentions that "despite all the critiques" he and Dan Graham had uttered against a "globalised, universalized, humanistic treatment of imagery," he eventually felt tempted to exercise it – or exorcize it. Dan Graham said that one of the important things of conceptual art in the 1960s was "to destroy liberalism and humanism," a strong reaction against the "heroic and individual art gestures" of the 50s, but that this attitude changed by the late 1970s:

> At the time of the Children's Pavilion it was a break with the anti-humanist liberalism of the Minimal period and a return to, if you want, the *United Nations of*

[667] Wall, Jeff, & Graham, Dan, "The Children's Pavilion," *Rock My Religion*, edited by Brian Wallis, 1993, p. 308. This text supplemented their collaborative project when first proposed. It is closest to the first published text in Wall, Jeff, & Graham, Dan, *The Children's Pavilion*, FRAC Lyon, Lyon, 1989.

> *Humanism*. It was the beginning of the ecology period and I was looking for an underground, earth-oriented architecture.[668]

A caricature or not, the stereotypes of children and the grand sentimental story does not criticize the Family of Man in any way, but rather confirms it. Even more, all criticism disappeared from its universal message. Steichen's exhibition held the same harmless scenes of children from different ethnic backgrounds and caused a serious uproar in the segregationist United States of 1955. Steichen's 'multiracial' ring-around-the-rosy was as explosive as his full colour light-box image of a nuclear explosion. The Children's Pavilion's ring-around-the-rosy, or in their words, the "girls and boys chasing each other, round and round," did not possess that power. As it seems from these interviews, that was also not their intent. But their intent is still very diffuse and when we look at the criticism Roland Barthes had on the original Family of Man, it might as well be applied to the content of The Children's Pavilion:

> The failure of photography seems to me to be flagrant in this respect: to reproduce death or birth tells us, literally, nothing. (…) Whether the child is born with ease or difficulty, whether his birth causes suffering to his mother, whether he is threatened by a high mortality rate, whether such-and-such a type of future is open to him: this is what your Exhibitions should be telling people, instead of an eternal lyricism of birth. (…) So I rather fear that the final justification of all this *Adamism* is to give to the immobility of the world the alibi of a 'wisdom' and a 'lyricism,' which only makes the gestures of man look eternal the better to defuse them.[669]

The spirit of self-aware un-seriousness of The Children's Pavilion did in fact defuse a potentially new criticism. Right at the start of a new era in which 'globalization' was the new concept, it delivered proof that the trope of a unified world had resurfaced only to go under again. But this lack of clarity opens up a new front, one that touches the most interesting thing about the walk of life of the Children's Pavilion: its destiny *not* to be built.

> Dan worked on it with some French architects and that is the status as I know now. After we had the first design, which he left me to do too much of, he took over. I didn't do a very good job of it, so the first two designs were pretty badly thought through and weren't really that nice. Than he took over and did a third version quite a while later, which was good. In a way I got really excited about it. It would have been a beautiful space.
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> Anyway I'm sure there is an echo of that in my work. I would love to see *Children* together with my piece *Restoration* sometime. It's a photograph of the *Bourbaki* Panorama.[670] My photograph is a 180 degrees panorama, so it is exactly half of the building. It was calculated to be half. It is a half circle. A camera with a moving lens can actually do 720 degrees, you can do it twice, in one strip. But I wanted to

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668 Metz, Mike, "Interview with Dan Graham," *Two-Way Mirror Power*, edited by Alexander Alberro, 1999, p. 195.
669 Barthes, Roland, "The Great Family of Man," *Mythologies*, The Noonday Press, New York, 1997, pp. 100-102. Barthes text "La Grande Famille des hommes" was originally published in 1957.
670 Wall's work *Restoration* of 1993 is a photograph of the Bourbaki Panorama in Lucerne, Switzerland. The panorama of 1881 is a painting of Edouard Castres depicting the 1871 surrender of General Bourbaki's army in the Franco-Prussian War. Wall's work itself is a panoramic photograph inserted into a light-box of 119 by 490 centimetres.

> do it geometrical. I think there are as well some echoes of that problem to be found in *Morning Cleaning*.[671] **(Fig. 17)** Dan and I had a lot of discussions, because his mind is so rooted in the architectural. I am not so much interested in architecture, except as a motif for being photographed. I like al kinds of buildings. Bad ones, great architecture, I don't care. But some of the awareness of what I am doing has come out of some of those dialogues with Dan. So I got interested in the glass Barcelona Pavilion, probably because of talking to him. And I wanted to do a picture of a cleaner, cleaning a glass house. I don't know why, but I tried doing that at a private house of Mies, but that didn't work out. So I got the chance of doing it there, which was much better. The Barcelona Pavilion is the original model for modern architecture. I use some of the architectural tropes like the Barcelona pavilion, but also ordinary apartments, a barn, an underground chamber, a tacky nightclub… They are basically architectural domains that relate to each other and register what architecture is. I think the way I look at architecture is shaped by that discourse. It's a pity that the Children's Pavilion has never been realized, but there is still talk about it. Maybe one day it will.

The panorama of Lucerne perfectly connects the idea of the panorama pavilion to the Children's Pavilion. This large-scale painting of General Bourbaki's defeated army in the Franco-Prussian War was completed in 1881. In 1889 it moved from the panorama in Geneva to a new polygonal panorama building in Lucerne, after a new painting had been abandoned due to financial reasons - making it one of the last of its kind. In 1925 the panorama building in Lucerne was sold to a transportation company, and the painting became the backdrop for a car garage. Wall registered its restoration, before it reopened in 2000. "The interesting tension in the picture for me," Wall said, "is that between the flatness of the photograph I'm making and the curved nature of the panorama's space."

> It itself expresses the fact that the panorama is unrepresentable. Maybe this unrepresentability was one of its great historical flaws. The fact that panoramas emerged so strikingly and then died out so quickly, suggests that they were an experimental response to a deeply felt need, a need for a medium that could surround the spectators and plunge them into a spectacular illusion. The panorama turned out to be entirely inadequate to the challenge.[672]

The same, however, could be said about the Children's Pavilion. Wall's interpretation of the destiny of the panorama pavilion might as well be tied to the fate of the Children's Pavilion. While giant panorama pavilions were replaced - over a duration of a hundred years - by small photographs and early film projections, photographic pavilions were quickly replaced by the technological spectacles of new cinematographic experiences. The Children's Pavilion was originally designed to stand close to the hemispherical OMNIMAX theatre La Géode, and was no match for it.[673] Belonging to an entirely different era, The Children's Pavilion was eventually never built. Adaptations were made

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[671] "Morning Cleaning, Mies van der Rohe Foundation, Barcelona" (1999) is a photograph of a window cleaner at work in the glass German National Pavilion for the Barcelona International Exhibition of 1929. The pavilion was disassembled in 1930 and, because of its historical importance, reconstructed in 1986. The light-box of Morning Cleaning has a size of 180,7 by 351 centimetres.

[672] Schwander, Martin, "Interview with Jeff Wall: Restoration, 1994," *Jeff Wall: The Complete Edition*, edited by Thierry De Duve, Phaidon Press Ltd, London, 2009, pp. 86-94.

[673] "My original proposal for the Children's Pavilion was in a children's playground hill adjacent to La Géode before the area became Parc de La Villette in Paris." Wall, Jeff, & Graham, Dan, "The Children's Pavilion," *Dan Graham: Beyond*, edited by Elisabeth Hamilton, 2009, pp. 203-205. For this book Dan Graham revised the text in 2004.

for other cities – Lyon, Marseille, New York, Rotterdam - but plans were finally abandoned at the start of the 21st century. In our talk, Dan Graham looked back and like Jeff Wall, he talked about the influence of their project on his further work:

> You know that the Children's Pavilion was almost realized in the year 2000, for the French city *Blois*. Jack Lang was major then. The version you can see in the books is actually very different from the version that was first conceived. The one that Jeff sold has actually nothing to do with our project. I would like to talk more about a piece that you probably never have seen, the *Double Exposure* pavilion done for the *Serralves Foundation*. **(Fig. 18)** I think it is my masterpiece. The front of the pavilion is actually a transparent film, a photograph of a landscape fifty meters in front. So if the clouds change, you for example see past time and present time, and it keeps changing… the time of day changes, and different seasons change… so the photograph is in spring but you see fall. Like a cinema.[674] I conceived another piece for a world's fair situation.[675] It's a fish tank. You can dive in on one side and the fish are on the other side. Everything has an anamorphic distortion. There is a café and you can look through and see both the fish and the people swimming under water. There were some technical problems. The anamorphic glass is different from the safety glass. It couldn't take the pressure. So it had to be safety glass. Because of the pressure it also couldn't be that big. Kaspar Konig invited me to design the pavilion for Expo 2000 in Hanover, but turned it down. In 1989 I did another pavilion, *Two Way Mirror and Hedge Labyrinth,* where the Crystal Palace was in Hyde Park. Well… (hesitating) Looking back… the Children's Pavilion is like a kind of *fantasy world's fair building*.

And therein also lies its beautiful failure. Universal expositions have provided us over the centuries with countless new frameworks of the future to come, have structured archaeological treasures in museological systems, disseminated the newest discoveries in technology and displayed grand temporary architecture. They have been responsible for the first exhibitions of photography and contemporary art open to a general audience and have provided us with innumerable permanent museum buildings across the western world. Their history testifies of the gruesome evolution of Imperialism into Colonialism into Globalism. With the disclosure of the world's unlimited borders through the advent of television and Internet, the end of propaganda funds with the end of the Cold War and a separation of the arts into biennials and art fairs, the event of a world's fair has lost all meaning. By 1989, the brief history of hybrid photographic pavilions had already ended. That is the inevitable fate of the Children's Pavilion. It

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[674] The *Double Exposure* pavilion (1995/2003) is one of the few works of Dan Graham that actually combine architecture with photography. In most of his pavilions, the surrounding 360 degrees landscape and its distortion in the two-way mirror glass is regarded as a photographic or cinematographic *act*. But in this pavilion, Graham actually applied a giant colour transparency on one side of the triangular pavilion. The photograph is a reproduction of the landscape just in front of the pavilion, but once photographed on a spring day at dusk. "Spectators inside the structure can see the present, moving, landscape, through the static image of the transparency of the past view. Spectators inside or outside the pavilion see a prismatic superimposed and continuously fluctuating virtual image on the 2-way mirror sides' reflective/transparent views of the immediately surrounding landscape as well as images of gazing spectators inside and outside the pavilion," Dan Graham wrote about the project. In his pavilion, Graham is presenting multiple perspectives through the use of photography, as well as a view upon different times of past and present. The piece of 248 x 410 x 355 centimetres is installed at the Fundação de Serralves/Museu de Arte Contemporânea in Porto.

[675] Graham is referring to the piece *Swimming Pool/Fish Pond* of 1997. It is a model of a pavilion proposed for the Universal Exposition of Hanover in the year 2000.

connects to the ephemeral nature of world's fair pavilion, even if it never existed. The act of disappearing gives way to performative melancholy and remembrance, while the open end of projecting a possible future gives way to hopeful speculation and fantasy - thereby inscribing The Children's Pavilion in a long list of grandiose designs, leaving behind a fascinating series of drawings, photographs, models and noble thoughts. Fluctuating between utopia and dystopia, indecisive between believe and disbelieve in a 'future perfect' made it harmless, and in the end, expendable. Precisely in its failure we can find its beauty as a futuristic ruin.

19.

Wolfgang Tillmans's Performative Photo-constellations

For every exhibition, Wolfgang Tillmans creates new environments with his photographs. His practice allows a swift installation process, creating an entirely new display strategy. He has never gone so far as to construct his own architectures, neither to fabricate his photographs nor to exhibit his prints. There was no more necessity, since the widespread acceptance of the medium within the visual arts and the abundance of new exhibition spaces that emerged since the 1970s provided ample space to install his elaborate photographic environments. From the late 1980s onwards, Tillmans (1968 -) started customizing bars, clubs, white cube galleries, art fair booths, sheetrock biennial walls and contemporary art museums to display his immersive image spaces. "I genuinely never thought of myself as a photographer," was the first thing he said at the start of our interview.[676] Indeed, Tillmans is a visual artist, a book editor and curator of his own shows. His exhibitions, as a synthesis of the composite whole, have become the works. The transient nature of these constellations adds a new dimension to the photographic installation: performativity. Performativity, as a physical action, as well as a linguistic complex – even quantum mechanics. While all his images function individually, they are constantly subdued to change in format and meaning within new exhibition constellations, which he performs on the spot. In this action, the photographic communication of his installations becomes an architecture that describes and alters his and our universe, offering multiple views and relations within a scripted space that continuously changes.

> I do what I do because I have a heightened observational gift or ability that spots certain things. I can't help it. It is not something I earned. I'm not labouring for it. I don't even make an effort. It is just that I do see it. It is frustrating when you seemingly have a stronger sense of visual observation than others. Once there was an article written about me that was titled "The all consuming eye." It is a term that sounds good, no? The "all consuming eye…" In fact it is not the "all consuming eye." Not at all! It is exactly the opposite. It is clearly *not* looking at everything. I do look at everything. But I do not photograph everything.

In 1996, Tillmans pointed out that he "didn't set out to talk about youth culture, but to report on humankind."[677] With that remark he had already scaled down his ambitions set forth as a teenager obsessed with astronomy. His observations of the celestial bodies tempted him to chart and report on the whole universe, thereby revealing life's great mysteries. Such a big task perhaps proved to big, but it is essential in understanding Tillmans' relational mindset. As a young boy he was already aware that in the faraway future of 1999, a total solar eclipse would cloak Europe in darkness.[678] Before the

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[676] This interview took place in his Berlin studio on April 4, 2014.
[677] Göttner, Christian & Haase, Alexander, "Wolfgang Tillmans: Fotografie als Selbsterfahrung," *Subway*, November 1996, pp. 8–11.
[678] "When ten years old, he already knew that on 11 August 1999, years in the future, Europe would experience a total eclipse of the sun. Some of these very early scientific drawings and photographs are included with recent photographs of an eclipse in 1998 in his book *Totale Sonnenfinsternis* (Total Solar Eclipse, exh. cat., Galerie Daniel Buchholz,

moment arrived, he anticipated the event with photographing a total eclipse of the sun over Aruba in 1998. Throughout his career, he has often returned to such astronomic events. But all of the events he has photographed relate directly to his own position on Earth. Like the passage of the moon in front of the sun, the rotation of Venus around the sun allowed scientists to calculate the interplanetary distances, thereby providing a sense of location within the darkness of universe.[679] The planet entering and exiting the enormous disk of the sun "was really the only way at the time to locate ourselves in the universe, where we are in relation to what surrounds us."[680] Tillmans' words, spoken at a lecture in 2011, reveal his determination to keep charting his own experiential world. That is why his photographs of the Venus transit in 2004 are at the very core of his work. Most of all because it frames the sole object that gives life. The sun is the source of light and its photon quantums enable Tillmans' photographic act of adhering meaning to this life. Shaping light is Tillmans' pivotal centre point that maps out all his other orbiting images. It comes as no surprise that the sun is the subject of one of his earliest prints. And that it is the centre of his own constellation. **(Fig. 1)**

> I have to be careful not to sound over-romantic but the sun is light and without it, there is nothing. I can't explain the sun and I can't compete with it. You may have read that I had a childhood obsession with astronomy, long before there was art. That was somehow nurturing to me, giving me something deep that I was longing for. Basically I didn't feel alone there, out in the universe. It was a place to accommodate my loneliness. If it is so alone out there, it is less alone here. It is a paradox almost, like the stars. They are like mathematical dots. There is absolutely no dimension. They have a strong light, but no dimension, no surface - some literally don't have mass anymore and are just light. And that is of course a great sensation. Space is more like the flat surface of an ocean than a purely romantic idea of infinity.
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> What interests me about astronomy is to consider what is there and what is imagined. Any astronomer, professional or amateur, is constantly dealing with the question of dividing up the visual information into what is really there and what are optical disturbances. What are atmospheric phenomena, what are optical, photographic phenomena, and what are psychological phenomena. And that is so fundamental because I, as a human and as an artist, I am fascinated in what is real. What is this whole world about? And in astronomy, but surely also in other physics, you are always looking at what the apparatus creates. In quantum mechanics, they've come to such an extreme where observation influences the

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Cologne, 1999)." Kernan, Nathan, "Moments of Being," *Apocalypse: beauty and horror in contemporary art*, edited by Norman Rosenthal, Royal Academy of Arts, London, 2000, p. 134.

[679] Venus crosses the face of the sun about every 110 years, but always followed by a second crossing 8 years after the first. The photographic recording of the 'Transit of Venus' started in 1874. By 1882 the dry collodion emulsion plates had been invented to record sharper and faster images. At the time, different scientific parties were set out around the world to observe each of the transits. The results were important for determining the distance of the Earth to the sun and to measure the scale of the solar system. Very few photographs remain from these expeditions. The only other transits of Venus since the invention of photography occurred in 2004 and 2012.

[680] "This was of particular importance in science history, which led actually to the discovery of New Zealand, and Australia by Captain Cook, who went out on a mission to time the entry of Venus and the exit of Venus into the disk of the sun, compared to the same timing taking place in London, and from the two time keepings one hoped to determine the parallax, and determine the distance of Earth to the Sun. So it was really the only way at the time to locate ourselves in the universe, where we are in relation to what surrounds us. For me that was an extremely moving experience to see, like the mechanics of the solar system right in front of your eye." Tillmans, Wolfgang, "Lecture," Royal Academy of Arts, London, February, 22, 2011.

> actions of the particles. There is something that only by the very act of observing, not by the instruments, that causes a reaction. Which is crazy! I learned from an early age that atmospheric air movement makes the stars jump and that you can't see sharp through the telescope. That is why I like to observe so carefully: to see cause and effect. The rules that govern astronomy actually govern you and me, as well as the microscopic world. What can we see? What can you trust?
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> Now I can think about what you can and cannot see, about light, noise and pixels. I tried everything except photography. Until I was about 20. But I never pursued it much and came to it without training. But then I felt that I really wanted to know what the medium is. I was sheltered because my father, grandfather and grandmother were all passionate amateur photographers. I had the advantage of growing up without a bad feeling about photography, about an inferiority of photography in relation to other visual media. Because I also never understood myself as a photographer as opposed to artists. And I had the advantage of growing up with a natural understanding that colour photography is of course a valid medium. Which was a big step forward. I only needed to think about what I wanted to do with it. What can you dissolve in terms of resolution? And what can you represent? The difference between what your eye- and brain-processing powers see and what you can actually bring to the paper. This macro- and micro-conversion is something I did from the beginning with Xeroxing in steps of three enlargements, back in the 80s.

Growing up in Remscheid, near Düsseldorf, Tillmans was exposed to the great art collections in Nordrhein-Westfalen where he witnessed the lens-based paintings of Gerard Richter and Sigmar Polke, and the silkscreen paintings of Andy Warhol and Robert Rauschenberg. In previous interviews he has often mentioned their influence on his practice, in the same breath as Kurt Schwitters's Dadaist collages and German illustrated magazines of the 1920s.[681] Tillmans started his practice with painting and drawing. He has always understood the game of combining the uniqueness of the fine arts with the mechanical reproducibility of photographic procedures. "Very early on," Tillmans said during a lecture, "I recognized the potential of photography speaking about three-dimensional issues. The relationship between photography and sculpture to me is very strong."[682] After Canon introduced the first *Bubble Jet Copier* in 1985, he started experimenting with A3-sized photocopies. Often starting from pre-existing images from newspapers, he used the copy machine as a process of erasure and abstraction. After the first *Colour Bubble Jet Copier A1* was introduced by Canon in 1988, he started enlarging his prints. And exhibiting them. His process of mechanically reproducing images contrastingly led to unique and personalized prints, a process he intensified by attaching his prints to very palpable support systems. **(Fig. 2)**

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[681] "When I was growing up… all the art that touched me was lens-generated, like Gerhard Richter, or Polke, Raushenberg, Warhol. Those were the first artists I saw in the Museum Ludwig [in Cologne] and in Düsseldorf when I was 14, 15, 16. But it wasn't pop art that started this whole thing of taking photo-based images into art – there was, of course, Dada and Kurt Schwitters – he was a bit of a passion of mine. I was seeing art that touched me made out of cut-up newspapers." Jobey, Liz, "Wolgang Tillmans: The Lightness of Being," *The Guardian*, June, 26, 2010, quoted in Zanot, Francesco, "The Installation as Work of Art: From Conceptualism to Wolfgang Tillmans," *Photoshow: Landmark exhibitions that defined the history of photography*, edited by Alessandra Mauro, 2014, p. 227.
[682] Tillmans, Wolfgang, "Lecture," 2011.

As a late teenager I had this intuitive understanding, having grown up with the Polke's, Raushenberg's and Warhol's in the Rhineland museums, that these works were all printed photographs. In general, mechanically printed imagery had a very strong emotional impact on me. Despite the understanding that it is not perceived as art, that it is not expressive or at least not an expression done by the hand. The paintings I liked, the record covers I loved, the magazines… The image-giving source was always the lens. In that sense there was no distinction for me. My initiation moment was the discovery of this photocopy process. My affinity to photocopies dates from '86, '87, when I was about 18. At that point I already made large composite pictures out of A3 photocopies. But in 1992 I started using this Canon A1 Bubble Jet Copier. It was a photocopy machine of A1 size with an attached inkjet printer underneath. That printer could print in endless rolls in length, but only 59,4 centimetres wide, you know, A1, in colour. And I recognized the potential for myself. I liked the idea of ink in paper. It was very chalky paper. And there is nothing between you and that piece of paper.

Back then I felt that they needed a support. And I did the first three or four pictures on fabric. It was a sort of lining fabric for suits, which, when you heated it up, became adhesive. The glue melts. I was actually ironing the prints onto fabric! (Laughs) And somehow I thought not to hide the support and to just show it. Maureen Paley saw it when I first showed it at the *Unfair* in Cologne and she didn't like that. So we tucked the fabric away, folded it behind. But at the Buchholz show, two months later, we showed them with the fabric hanging out. And then, half a year later, at a show in Zurich I decided to put them onto stretchers. I wanted to give them a body. Not that I wanted them to be like paintings, but they needed to have a body. A thickness. So I made these stretchers, stretched bed cloth over them, and glued the bubble jet prints onto them. Even around the edges. When you look at them now, they look shambolic! I used UHU glue so you can imagine… (Laughs) Also the middle seam of the rolls of 59,4 centimetres… I literally glued the parts of the prints together with UHU. Of course the glue squeezed out occasionally, leaving smudges here and there. It is so cute to see the original *Lutz and Alex sitting in the trees* (1992), this hand made object with glue here and there.

I would say, those early incarnations are clearly valid as a sign that I was actively exploring the medium in a very different way. I clearly saw them not just as images. I use this term I found, *the embodied image*. For me photographs are 'embodied' images. That was totally at the hart and the start of how I even began to work with photography. On the one hand it allows you to talk *about* something. About nightlife or about the beach, but you can also talk about that in many other ways. What really matters is *how* you talk about something. That is what I really found so compelling.

I was fascinated by seeing a white A3 sheet of paper being transformed into a beautiful, grey mechanical drawing. I could do things with that. Things that are on the one hand clearly intended, but then the machine does something else with the pattern. Something that is completely outside of my control, it being moiré or a wrong enlargement factor, but has its own underlying rhythm and logic as well. I felt that I didn't need to paint that or print it onto canvas. But obviously, it was

> 1992. I was 23, 24. I was experimenting with these things and I was maybe a little bit naïve about the look this was sending out. I didn't realize that when I put a photograph onto canvas or fabric and on stretchers, that it started to look like a painting. And I didn't want that. I was really looking for material, volume and support. I only showed those a few times at Maureen Paley, Thaddaeus Ropac, and Daniel Buchholz's gallery. But I genuinely had no intention for them to be mock paintings. That is also why I abandoned it, realizing it was actually a bigger support structure than intended, and conceptually not necessary. The year before, I was already taping sheets of paper, the bare print, on the wall. It took me about a year and a half to achieve the purity and the conceptual clarity on all these different media: the magazine page, the bubble jet photocopies, the hand made c-prints made in my dark room.

Besides these four large scale prints glued on fabric, Tillmans simultaneously showed other works in a different venue of the Buchholz Gallery that set the standards for his future installations. In the tiny backspace of Daniel Buchholz' father's antiquarian bookshop, he presented the work *Chemistry Squares* (1992), a series of unframed black and white photos in an eye-levelled linear row, opposed to a non-hierarchical floor-to-ceiling presentation in full colour - original photographic prints opposed to magazine pages and photocopies, taped or tacked against the wall. **(Fig. 3 & 4)** Referred to by his fellow artist Julie Ault as a combination of salon-style hanging with the vernacular architecture of a teenager's poster-clad room, this composition has its formal roots in modernist display strategies. Ault draws a parallel with the exhibitions of Charles & Ray Eames, and in particular with Edward Steichen's *The Family of Man*.[683] In an interview Ault asked Tillmans for a response on this comparison:

> I was made aware of the exhibition in 1994… and found it interesting but despite obvious connections… not that relevant for me… it felt far too didactic and self aware in its attempt of the pictures making the space. It's touching but also a bit naïve to believe one can solve the problems in such a way… I grew up culturally too postmodern to believe in it wholesale or to approach my work the same way… I see my installation more like addressing the fractures and contradictory multiplicity of life as I experience it.[684]

In his hesitating response, Tillmans confirmed that he didn't have a formal problem with *The Family of Man*, but rather a thematic one. Nonetheless, he set out another parallel to his work besides the obvious formal likenesses: a global human interest. When compared, there are more overlaps to discover: both Steichen and Tillmans started as painters, have done important magazine work, shifted between pictorial, straight and abstract work, mastered a diverse range of genres from fashion to photographing celebrities, became visual spokespersons for their generation. Both artists have thoroughly experimented with displaying photography, releasing the worldview from photographic miniaturization and maximizing it into immersive, experiential spaces.

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[683] "Tillmans's use of such technique is partially in kinship with original intent attached to modernist-style display as it was devised through contextual curatorial engagement with modern art in the twenties and thirties, which was to some extent based on the desire to create a one-to-one relationship between viewer and art work. However, Tillmans regards viewers as social subjects in contrast to the modernist ideation of the viewer as autonomous." Ault Julie, "The Subject Is Exhibition (2008): Installation as Possibility in the Practice of Wolfgang Tillmans," *Wolfgang Tillmans: Lighter*, Hatje Cantz Verlag, Ostfildern, 2008, pp. 15-22.

[684] Ibid.

And like Steichen tore photographs from magazines to exhibit them as vintage originals, Tillmans presents his own magazine contributions on the same level as unique prints. Both photographers have constantly been working on the fringes of the medium, locating photography's impact and value outside itself. But there is one crucial distinction: where Steichen's work was commissioned and scripted, Tillmans' work is personal and unscripted. The visual technique of the propagandistic scripted spaces deployed by Steichen, Herbert Bayer and Paul Rudolph in their MoMA exhibitions of the 1940s and 50s had been mediated throughout the 60s and 70s. Past the object-hood of the photographic tableau form of the 80s, the multi-facetted modernist exhibition technique had become acceptable again as a de-propagandized, unscripted format. As a spatial palimpsest and purely formal template, prepared and preceded by other artists - like Richard Hamilton's *An Exhibit* (1957).[685] From 1994, Tillmans knowingly stepped into a long history of photographic spaces and started to construct visual environments with a wide range of image topics, printing techniques and installation methods.

> I was very enthused at that time because I had discovered my language. And how this work can travel so tremendously well on different media. It can travel on the pages of *i-D* magazine or whatever. i-D was an underground magazine with a small print run, but spread into many countries, trains, toilets and bedrooms. I designed the pages I did myself. The printed page of the magazine had its own beauty and smell. I carefully dissected those magazines and pinned the pages to the wall at Buchholz. They hung next to real prints, which I made in my mini-darkroom in my toilet. I knew in college that printing was important. That printing was actually making the picture. And that I was able to print, that I owned my medium, was a massive empowering step that I actively pursued. At the first Buchholz show, the c-prints were presented in clear polyester sleeves. I thought they would be protected in that way. Back then we used double-sided carpet tape to glue them on the wall. But that double-sided tape didn't work so well. Even the lightness of that paper caused it to fall. So Daniel Buchholz' father was opening the gallery every morning and finding works on the floor, you know. (Laughs) He had to put them up on the wall again. For the next show I realized that *Scotch Magic Tape* was the magic formula. And a year later I found a way with Magic Tape that did not touch the surface of the print at all. It enabled me to tape a print to the wall and remove it again without damaging it. I could only make that Buchholz show the way I did because I decided what technique to use to hang them, and then decided how to hang them. An offset print and a photocopy cannot be taped because you tear the paper. Those I pierced with a needle. But I would never pierce a photograph. Photographs you can tape, but real paper you can't tape. And there, the little needle prick is the least invasive way of fixing a paper to the wall. So for each paper and each object I found different solutions. I tried to find the least invasive solution and that allowed me to decide where, and how, I placed them on the wall. In any given space. Those thoughts and concerns are very connected to the content and meaning of the work.
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> The reason why I didn't frame was an economy of framing costs, an economy of transport costs, and of the practical possibility of making exhibitions happen. Somehow I believed in not planning my exhibitions too much ahead. I wanted to

[685] Tillmans portrayed Richard Hamilton in 2005.

have a whole dialogue of different elements. And it was not at all possible to fit those in a linear way. It also came from an abundance of material that I wanted to hang on the wall. It wouldn't even fit in a line anyway. So I had to go high and low! (Laughs) It was all presented so simple and seemingly light. This hanging was sometimes misunderstood as a grungy, low respect for the material, but in fact for me it was about a high respect for the material. I wanted to show the beauty of that page, the beauty of that print, whereas in other photographic art the print was usually obscured. Either with a window mount, or it was framed up to the edge of the print, like where the print actually runs under the edges of the frame. Or it was made to disappear as in the Düsseldorf School. The very attraction of *Diasec* is that you cannot locate the object, but then they made it into an object with a big fat frame around it. I have also been misunderstood in the sense that it is not about the individual picture but about the installation, and that the individual picture is forgettable. That is of course a misinterpretation. I like to do both. All these individual elements are tested beforehand. Every photograph I look at alone to see if it survives and then how they battle it out amongst each other. The installation process became quite a feature. There is always an evolution, a seed for the next faze. It seems revolutionary to the outside world, but in fact it is a slow change.

When I noticed this sense of transportability, the lightweight of prints, I realized the greater potential of it: a fascination for the flexibility of the picture that can travel and exist in many different contexts. Its non-uniqueness, but yet, it's actual real presence in the here and now. Those were experiences, and deliberate experiments, that led me to drop painting. In 1987, '88, '89, I was painting and drawing as well. In my show in K21 in Düsseldorf in 2013, I showed my drawings and painted images for the first time. For me it was completely a side-by-side practice. In 1990, I went exclusively mechanical, towards the lens. I was also better at lens-generated images and I didn't feel I needed to print those on a unique canvas anymore, as I said earlier. And the moment I did that installation in the first show at Buchholz in January 1993, I had set up an incredible feeling for myself. From that day onwards, it was clear that these are installations, not just photography exhibitions or picture shows, but *spatial installation art exhibitions*. That understanding allowed me to go with a box of pictures on the plane. No shipping, no framing, just going into the space and *performing* an installation process.

Tillmans's performative installation process has indeed become normative for a younger generation. It still holds an unsettling influence in its appearance, its notions of speed and alterability, and its critique in regards to the reproducibility of his photographs. His experimental exercise in salon-style hanging includes prints sizes ranging from 10 by 15 centimetres to 4 by 6 meters. His papers range from plain photocopy paper to high-end photosensitized papers. Each type is assigned with a very precise way of installing: needles piercing the magazine pages, Scotch Magic Tape that is always partially visible above and below the c-prints, bulldog clips for his large prints on *Hahnemühle* inkjet paper. These large prints are often produced in two sections, due to the width restrictions of the printer, and joined together at the back. By not using frames, these prints give an extreme sense of closeness, with indeed nothing between the viewer and the paper. Some of his prints are paired within an installation, some form permanent

ensembles, while others are preconceived parts of a singular work often presented in a grid form.

For example, in his exhibition at *Portikus* in 1995, an enormous print, sized 360 by 240 cm, hung next to an A3 format. **(Fig. 5 & 6)** On the adjacent walls, he repeated the combination of different hanging methods tested at the Buchholz Gallery. On one wall, he hung 12 prints arranged in a grid of two rows, while on the opposing wall he hung 26 prints in a disorganized salon-style. The exhibition included a room-filling installation of display cases that held magazine copies and photographs such as the Chemistry Squares series.[686] When this procedure was repeated at the *Tate Britain* in 2000, it crystallized into a template for all further exhibitions. **(Fig. 7 & 8)**

Tillmans shows magazine pages next to c-prints, presents photocopies as unique prints, and includes his highly editioned artists books as works of art. All these different suites of images again have different editions. He often includes the same image twice, with different dimensions and possibly different support systems. He even includes images of previous instalments, presenting them as works on their own. Some of his installations have become works on their own, and are sold and preserved as such.[687] Tillmans said that "it was a radical thing at the time, to show magazine pages alongside original photographs and to leave the photographs unframed; not to make a distinction in terms of value – you know, what belongs on the wall, what doesn't."[688] This play of value culminates in the one thing in his practice that cannot be assigned with a monetary art-market price: his installation performance.[689] Although some of these installations have become permanent works, he refuses to market or cultivate his modus operandi. But it did allow him to perform worldwide in rapidly succeeding and often simultaneously running exhibitions. "I can only do it in the designated space. I can only really develop it when I start working in a space," he said to me. Most of his works are printed up to days before the installation process begins. Often he even includes the printing process in the build up, with an inkjet printer on location, allowing an enormous amount of freedom and independence. Compared to the uniqueness of paintings, which demands a process

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[686] Zanot, Francesco, "The Installation as Work of Art: From Conceptualism to Wolfgang Tillmans," *Photoshow*, edited by Alessandra Mauro, 2014, p. 230.

[687] "In a Tillmans installation, the same picture may reoccur at different scale and with variant presentational means (…) Photographs of former installations may appear within installations, visually cross-referencing the artist's exhibition history. (…) Since 1994 he has cohered some of his installations as works, which are sold as such and may be accurately reconfigured with the aid of an installation diagram with x/y coordinates." Ault Julie, "The Subject Is Exhibition (2008)," *Wolfgang Tillmans: Lighter*, 2008, pp. 15-22.

[688] Halley, Peter, "In conversation with Wolfgang Tillmans," *Wolfgang Tillmans*, edited by Jan Verwoert, Phaidon Press Limited, London, 2002, pp. 8-33.

[689] Clearly, everything can be assigned with value in the art market. But Tillmans plays a clever game, even in the production of his books. The book "Wolfgang Tillmans," was designed by himself for his exhibition at Moderna Museet in Stockholm (2012 – 2013), and at Kunstsammlung Nordrhein-Westfalen in Düsseldorf (2013). The catalogue was free to take and only contained images. The titles were on the cover, the text and installation views were to be freely downloaded from the websites of the institutes. In the text of this PDF download, the author Tom Holert analyzes Tillmans's economic strategies: "The mobilization and reversal of value and meaning are central strategies in his praxis. He questions the 'language of importance' in photography and alters valencies of the visual by, for instance – in a 'transformation of value' – producing C-prints from the supposedly impoverished or inadequate visuality of old black-and-white copies or wrongly developed images and thus raising them to the status of museum art. However much he may set store by refinement and precision, he avoids conventional forms of presentation, that is to say, 'the signifiers that give immediate value to something, such as the picture frame'. (…) The economy of the art market – with its dependence on originality, authorship and uniqueness – is structurally at the mercy of the signature of the individual artist. Wolfgang Tillmans deals with this traditional mediation of the work and subject in a carefully considered, highly strategic manner." Holert, Tom, "The Unforeseen. On the Production of the New, and Other Movements in the Work of Wolfgang Tillmans," *Wolfgang Tillmans*, Moderna Museet, Stockholm, 2012.

of loans, crating and shipping, planned months, even years beforehand, he has created the ability for his work to travel fast and freely. Even to change the set-up and content of his exhibition by photographing, printing, and installing up to the very last second before opening. Where before photography was used to record a performance, now the photographs became the performance. These mechanics result in pervasive structures of original copies configured by his active multi-layered process performed on location.

> My first installations were maybe a bit though, with pictures buttered up next to each other, sometimes even overlapping. In 1994, I already went against my own practice of showing many different formats. It was clear already then that the curators involved wouldn't choose the work. It was immediately clear that I would choose the work, that I would make the installations. So I created this freedom, but that also came with a huge responsibility: a double role for making my own art and being my own curator. But it led me to the fact that I now have the freedom to choose my work a week before the opening and work to the last moment. So the exhibition is not done the day the work leaves the studio. My work is a lot of work! Like, whom are you talking to and how are you talking to them. Where do you put your threshold of what needs to be noticed. I don't actively try to charge it up with other discourse. I let the installations be themselves. For me, it is completely about the object.

Until that moment, Tillmans effectively had become the spokesperson for his generation, depicting nineties club scenes or addressing AIDS related issues. His encyclopaedic array of subject matters ranged from portraits, landscapes, cityscapes and celestial studies to banal still-life images like an opaque window or decaying flowers – vaguely reminiscent in style and topic of Steichen's exhibition *The Family of Man*. In his prints he played with miniaturizing and magnifying the real world that surrounds us – reminiscent of Charles & Ray Eames's film *Powers of Ten: A Film Dealing with the Relative Size of Things in the Universe and the Effect of Adding Another Zero* or their exhibition *Mathematica: A World of Numbers… and Beyond*. The distance to his subjects is different in every shot. When zooming in or out, either way you end up in abstraction.

From the year 2000, his installation performance started to reflect back onto his practice of photographing. The decisive moment of taking an image in a fraction of a second of an event in the outside world, was internalized within the studio. He exchanged the real, and the apparatus registering the real, for camera-less experimentation. Accidents in his developing process were already present in the earliest photocopy processes, or for example in his work with the tautological title *Dirty processing machine I* (1994), but they became a deliberate strategy that first appeared in his *Turner Prize* installation at Tate Britain. The focal centrepiece of that installation was the work *I don't want to get over you* (2000). **(Fig. 9)** Touching a very personal experience - the AIDS-related death of his life partner in 1997 - it is understandable that a certain distancing from the real and an amount of abstraction was needed and sought for. In his lecture from 2011, Tillmans remarked that "from 2000 – really from 1998, but more visible from 2000 - I included work that was not made with a camera, that was non-figurative and pretty much abstract in nature."[690] Tillmans started to venture into abstraction, accepting the cause and effect of any given series of actions: an infinity of rearranged contexts, duplication or citation of images within the same context, a tension

[690] Tillmans, Wolfgang, "Lecture," 2011.

between normality and the accidental, between reality and abstraction.[691] Abstraction became part of his performative language, widening the narrative of his symbolic communication to effect change in the world. Photography must not only report, it must do something and do it efficiently by maximizing input and output ratios.[692] Or in Tillmans' words: "To convey as much information and justice to the complexity of how I see life, by creating my own context for the individual parts of my work."[693]

In an interview with Dominic Eichler in 2008, Tillmans replied to the question "how one image sits next to another," figurative and abstract, and "how they influence each other":

> When I was working on the book *Lighter* earlier this year, which comprises some 200 installation views, I realized that this is actually the first book that shows what my work really looks like. You get an idea of how, in the constellations of pictures, I try to approximate the way I see the world, not in a linear order but as a multitude of parallel experiences. (…) It's multiple singularities, simultaneously accessible as they share the same space or room.[694]

When all his installation views are comprised, a kaleidoscopic effect is set in motion in which his continuously changing exhibitions keep on shifting. Where, in general, all photographic books purely represent the picture - the cropped illusionistic window on the outside world - Tillmans' book *Lighter* only shows the installation views of his works. **(Fig. 10-12)** And by doing that, he again changes the entire context through the framing of these installation views – which are occasionally lifted in status to an actual photographic work. **(Fig. 13)**

With adding abstract works to this already very heterogeneous and ever changing context, he further complicates his issues concerning the medium of photography, authorship, uniqueness and multiplicity, while simultaneously eliminating all possibilities of unilateral, or for that matter, propagandistic readings. By including abstract works, Tillmans' installations shifted from incoherent photojournalistic essays to indefinable constellations that suggest a higher meaning. Where in general, historical exhibitions on photography have always included imagery beyond the perceptible – the analysis of motion faster than the eye can see, X-rays, infrared radiation, microphotography, deep space studies, etc. – Tillmans' generalist focus not only went beyond the perceptible, but beyond the comprehensible. Like he said earlier in our interview, "observation influences actions."

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[691] Jacques Derrida's key remark in his poststructuralist theory of performativity, written in Tillmans' formative years, makes perfect sense in this context: "Every sign, linguistic or non-linguistic, spoken or written (in the current sense of this opposition), in a small or large unit, can be *cited*, put between quotation marks; in doing so it can break with every given context, engendering an infinity of new contexts in a manner which is absolutely illimitable. This does not imply that the mark is valid outside of a context, but on the contrary that there are only contexts without any center or absolute anchorage. This citationality, this duplication or duplicity, this iterability of the mark is neither an accident nor an anomaly, it is that (normal/abnormal) without which a mark could not even have a function called "normal." What would a mark be that could not be cited? Or one whose origins would not get lost along the way?" Derrida, Jacques, "Signature Event Context," *Limited Inc.*, Northwestern University Press, Evanston Il, 1988.

[692] "Postmodern knowledge must not only report: it must do something and do it efficiently by maximizing input/output ratios." Lyotard, Jean-François, *The Postmodern Condition: A Report on Knowledge*, University of Minnesota Press, Minneapolis, 1984.

[693] Ault Julie, "The Subject Is Exhibition (2008)," *Wolfgang Tillmans: Lighter*, 2008, pp. 15-22.

[694] Eichler, Dominic, "Wolfgang Tillmans," *Frieze, Issue 118*, October, 2008. The book *Lighter* was published in conjunction with the exhibition at the Hamburger Bahnhof Museum for Contemporary Art, Berlin, in 2008.

> When you wilfully make mistakes, then it becomes something different. A lot of my work process is pre-empting mistakes that I know that have a strong likelihood to happen. And that again is a dilemma. In my pure work, meaning artworks making philosophy, there is a coexistence of chance and control. Exerting as much control as I can and is appropriate, but to know when to stop. And when to let chance play its role. When your intentions might stop the good outcome of something. Because an artwork always expresses the intentions that go into it. When that intention to control and to design is the main one, then all you see is that intention and it is no longer a good work. Things are only ever a mistake when it goes against your intentions. I always found it great to take on accidents as long as they can be reconciled with your intentions. Or lack of intentions. It is only a mistake if you do not want it there.
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> When I left college I bought myself a small print Durst enlarger. That enlarger I installed in our guest toilet in my shared apartment. And it is this enlarger that I still use today to make the *Silver* pictures. Technically the *Silvers* are *chemograms*. Where the *Freischwimmers* are *luminograms*. The image giving process is primarily light, whereas in the Silvers the image giving is primarily a chemical process that I set out and influence. Let me show you this Silver. I used to not show the original master print, but only a scanned enlargement. Last year, I decided to allow this contradiction again: that this is a flat image and it is losing the three-dimensional textural qualities of the accidents on the surface. But in the small original print you cannot even see the details within. You cannot see the scratches and dust, whereas in the enlargement, they have a very significant presence. What no one sees is that dust has an incredible presence in analogue photography. It is impossible to make an enlargement without dust marks. I would say that 99,5 % of all the prints I made have been hand retouched with a brush and a palette of dies to get hair and dust out. That only occurs when you use negatives and many works of mine have been made without a camera. The abstract works made in the darkroom usually don't have a lot of dust because the paper comes straight out of the package, which is clean. It is exposed in minutes and processed immediately. But when you enlarge a negative, a ton of dust is involved. So these two prints of the same are mutually exclusive. It is a contradiction: you have something in the enlargement that is absolutely satisfying and great and complete, whilst you are missing something. And you have a complete satisfying experience in the small one, but you are also missing something. And that is a beautiful: completeness whilst missing something. That is what we have to deal with in life all the time.

Observing, to study as well as to process, is about all that Tillmans does to interact with his abstract prints. The abstraction originates from 'mistakes' in analogue development. The traces of a dirty processing machine, expired developing liquids, dust, etc. It began by collecting these mistakes and developed into a controlled process of wilfully making mistakes.[695] His *Freischwimmer* images look like particles gaining mass or faraway nebulas, big bangs, where dust starts to look like stardust. His superclusters actually have an uncanny resemblance to the most recent mappings of our universe. While giving

[695] "It began when I started collecting things that went wrong in the darkroom. Throughout my work mistakes have always been important. You could almost say that all progress is derived from mistakes…" Wolfgang Tillmans quoted in Kernan, Nathan, "Moments of Being," *Apocalypse*, 2000, p. 135.

value to these 'accidents,' these images shift from a psychological meaning to a physical meaning – *embodied images*. It isn't stardust. It is a wonderful process of chemicals on photographic paper, of which the result is scanned and enlarged to become ink on inkjet paper. The physicality of these prints is driven to an extreme. They are matte, tactile, and palpable objects, which is emphasized by their humungous size. *Ostgut Freischwimmer, right* (2004) has a size of 231,1 by 607,8 centimetres, and it is only one of two panels. The apparent heaviness of such a vast size is contrasted by emphasizing its unframed lightweight and fragility, hung on small bulldogs clips. In the Silver series, his actions are reduced to purely observing light and its impact on light-sensitive receivers: "And all I do is set up the parameter surrounding their making, they don't have my hand involved"[696]

> Unlike my other abstract work, the Silver images are mechanical pictures made by feeding them through a processing machine while it's being cleaned, so they pick up traces of dirt and silver residue from the chemicals. Because they are only half fixed and the chemicals aren't fresh, they slowly change hue over a few days. Sometimes I use this instability to create different shades and lines on them, before scanning and enlarging them to their final size.[697]

Only after scanning the original and printing the inkjet duplicate on a moderate size, Tillmans starts to actively intervene. Again, where before 'photographers' were only concerned about the image, and later, 'artist photographers' were more concerned about printing their images into objects, Tillmans' process is now about *placement*. Placing his Silver colour prints into large colour fields, thereby locating the work somewhere between photography, painting and installation. But also placing the work in new contexts, from bars and small galleries to large museums. Other works are made by minimal actions, like using a cigarette lighter in the darkroom to create the *Lighter* works. The *Lighters* are original and unique pieces, where the original photo paper is kept as the final product and the scanning and enlarging process is abandoned. The uniqueness and fragility of these works is accentuated by acrylic *Plexi* boxes. **(Fig. 14 & 15)** But in these works, he added volume and "made a transition into actually three-dimensional photographs that have been folded or creased either before exposure or after exposure."[698]

> The first *Lighters* were framed. They were straight away in boxes. Once, there was a single row of *Lighters* that I showed without frames. But that is totally unsustainable. The have ledges, folds, and collect dust within a week. It quickly became clear that the box is part of the work. Which is different from the frames I designed for the inkjet and photocopy prints. After a few years, in 1994, I agreed that collectors could frame prints when they bought it. At first, the large print was actually a photocopy of that small hand made print. I took this hand made print to the copy shop where they had this Bubble Jet Copier, and calculated how much percentage I had to put in to make the enlargement. Then I wrote on the back of the original print the enlargement factor, a short explanation how to reprint and enlarge it, and signed it. That was the first certificate for an inkjet print. I was

[696] Tillmans, Wolfgang, "Lecture," 2011.
[697] Eichler, Dominic, "Wolfgang Tillmans," *Frieze,* 2008.
[698] "In 2005, I also made a transition into actually three-dimensional photographs that have been folded or creased either before exposure or after exposure." Tillmans, Wolfgang, "Lecture," 2011.

doing that out of fascination for the economy of a large picture. If you move house, you could take the small picture with you, go to a copy shop that has the same Bubble Jet Copier, and blow up your own picture again. There was obviously talk about global warming, even 23 years ago, and I was of course very aware that there was an economy of shipping weight and volume. So this big picture, that has physical impact and presence due to its scale and immediacy, is something you cannot attach your affection or your possessive instincts to. Because those were organic dyes, organic inks. They were not pigmented inks. They started to fade within months. I have a twenty-year print that is very pale, not entirely gone, but it shifted colour within a year. So the certificate said – and it didn't say *if* but *when* – when the colour shifts, you are entitled to reprint this. So it was an intention: this should be reprinted. Not like a last resort restoration possibility, but to reprint it when they deteriorate in any way. If it is blown of the wall by the wind, or your children rip it down, or the sun fades it. And that gives it a real security, which is in total opposition to the perceived fragility of the work on the wall. This of course contradicts all ideas of *uniqueness*. The small one was the original print, but the big one was the piece. In fact if you loose the small one, than you have lost the work. Obviously they did not sell very well… The original *Lutz and Alex in the trees* picture was shown three times – with a price of 3000 Deutsche Mark, like 1500 Euro, an edition of 1 + 1 AP - and it didn't sell. That's what the market was like.

Until 1999 I did not want my works to be framed at all, but I started to understand that always exhibiting unframed photographs became an expected language that would just signify 'Tillmans.' But it activates the object-hood of the things that you look at. So I introduced the frames into my exhibitions from 1999 onwards. Which was again seen as a huge contradiction. But frames do something: they are protection. Before, I wanted to show the purity of the object, its object-hood. I wanted to show that it is a thing. And I realized that when people had them at home for a year or longer, a fly would sit on it and make a shit. Then you had all these little black dots on the print! Literally! Really… Fly shit sticking on the photos! (Laughs) Using frames is actually totally consistent with my logic about the purity of the object. Because a loose print can be preserved for three to six months with tape on the wall. But after six months the object deteriorates more than the obstruction that a frame causes. The reflection of the glass is an obstruction, but if the paper turns yellow and smudgy after some time, it is a bigger obstruction. They are seemingly safer. So I introduced them in the small and medium sizes. I introduced artist frames that I designed myself. I sort of wanted to duplicate the fragility of that object on the wall, that inkjet print. So the print is mounted within a shallow box frame, lifted off the backing so that it looks like it is suspended in there. A lot of people have looked at it since, so it doesn't seem that radical and new now as it was 15 years ago. The frames were of course much more successful as the bare inkjet prints. Those sold occasionally, but not a lot, even if the price was quite low. Whereas the large framed works were much more successful. You can also still buy those unframed bare prints. They coexist. They are both editions of 1 + 1 AP, same size. The unframed print is actually archival. It is really sustainable for a long time but can get dirty. But you do acquire the right to reprint. And with the other print in wood and glass you have no right to reprint.

> They do have an incredible beauty and precision in the way they are. And just because we are doing this complete roundup of materiality, this inkjet paper is a little bit thicker than photo paper. It is 310 grams. At this scale I found the thickness of the paper ratio to the size of the image disturbing. And so these are now all hand painted. The edges of all these prints are hand painted *around* the edge. I have a guy only working on retouching these edges. It is a little invention that we did here.

The detail of painting this one millimetre edge of paper makes an enormous difference. His eye for detail emphasizes the photograph as an object, and it makes a reproducible image unique. This procedure is applied with the framed prints, but not with the unframed, replaceable prints. His play with edition, citation, and framing, is perhaps the most visible in his series *Paper Drop*, in which he photographs, depicts, and cites, printing paper. **(Fig. 16)** His detailed focus on the edges of photographic paper started already in 2000 and belongs to his early experiments in abstraction. Photographing photographic paper reveals a different tautological focus than photographing the recording device – as for example Christopher Williams does. It is symbolic for Tillmans' focus on the print, rather than the image or the apparatus. And it is iconic for his play between figurative and abstract images.

Tillmans' masterful move was to let all these works coexist. By including his abstract imagery in his installations, he offered a different reading of the whole. This also had an effect on his installation procedures. The large colour-fields made different breaches in his placement protocol. At the same time, Tillmans found himself exhibiting in always larger museums. During the installation of a travelling exhibition in the United States, between 2006 and 2007, the character of his installations changed. Being nearly identical in content, these exhibitions were installed entirely different, according to the spaces. The three venues, the Museum of Contemporary Art in Chicago, the Hammer Museum in Los Angeles, and the Hirshhorn Museum in Washington D.C., offered vast spaces, which exponentially implied more spacious installations. **(Fig. 17 & 18)** "What one can say is that the linear hanging has definitely become more present in recent years. That may have to do with the scale of shows"[699] The "full Tillmans spectrum" was tempered by the size of the museums, leaving spots of blank wall and resulting in more concentrated groups of works.[700] Coexisting figurative and abstract images, unframed and framed, formed clearly separated constellations with new underlying meaning. His transition from figurative work to abstraction was symbolically underlined by his shift from worldly exhibition places to large and abstract white cubes.

In these exhibitions, however, Tillmans' soft *horror vacui* added another dimension to his installation methods. His level of abstraction was countered by a reaction of intensified realism. And too much open space was countered by including the void of the

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[699] Peyton-Jones, Julia & Obrist, Hans Ulrich, "Interview with Wolfgang Tillmans," *Wolfgang Tillmans*, edited by Hans Ulrich Obrist, Koenig Books, London, 2010, p. 24.

[700] "Tillmans himself feels that the character of his installations has changed since 2006/07, in other words, when different versions of a solo exhibition of his work toured to three museums in the United States. It was during this exhibition tour that Tillmans started to see the benefit of placing greater weight on individual groups of works in the various rooms of larger exhibitions. In so doing he gave visitors the chance to engage in a different kind of concentration, without the pressure of constantly having to deal with the 'full spectrum' of his oeuvre." Holert, Tom, "The Unforeseen," *Wolfgang Tillmans*, 2012.

museum floor. Until 2005, Tillmans had not left the safe haven of the museum wall. He had used solid white display cases in several exhibitions, but had never presented them as works. Although he configured most of his works and installations on tabletops, he had never used them:

> In my studio as well as when setting up exhibitions, I use tables to layout and look at pictures before they go on a wall or into a book. (…) The method of laying out two-dimensional objects on a table produces "clarity" and allows perspective.[701]

"It reduces all things to their relative proportions – to the truth," Félix Nadar wrote after he had taken his first aerial photographs from his hot-air balloon in 1858. Likewise, this change of vantage point allowed Tillmans to ventilate another abstraction by composing found footage from newspapers or Internet into a new constellation. The *Truth Study Center* examination reaches back to his first works of photocopying existing images and wrapped up his wide spectrum of things made visible. On the other hand, the format of museological display cases had the potential to occupy the open museum floor, normally reserved for sculptural installations. **(Fig. 19 & 20)** He applied the same strategy in the creation of these display cases as in all his other works: screwed together in cheap multiplex wood, and in four different heights in order to be able to intersect them with one another for cross-reading. With these tables, he reached the full scope of his coexisting installation methods - until now.

> Things have changed dramatically in 2009. I bought the first full-format digital camera in 2006, but only used it for installation shots. I realized in Chicago that I wanted to have high-resolution pictures that I make myself. But I did very few photographs with that camera apart from installation views. I could always see it was digital because optically it was not the same. So I was never tempted to use digital cameras. But in 2009 I learned that there were portable lightweight single-lens reflex cameras that acted like film, acted optically like my analogue SLR camera. And I decided I should learn this process, this language, before I get forced to do it. I really did do it in free will. I think a year later Fuji stopped making my *Reala* film and Kodak also stopped making my sheet paper in 2010.
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> Interestingly, digital photography also changed paper and printing sizes. In the last two or three years I found myself in a bit of a conceptual challenge on how to deal with sizes. Why continue using the two sizes of 12 x 16 inches and 20 x 24 inches, which I had adopted as a fixed size throughout twenty years of work, as a matrix, as standard building blocks, which were determined by the paper manufacturers. 20 x 24 of course comes from 4 x 5 inch, the film format. And 12 x 16 is the European size that doesn't exist in America. They have 11 x 14 and 16 x 20. 12 x 16 was for me always the smallest size where I can see the full potential of a picture, where it fully reveals itself. And 20 x 24 was the largest size that I

[701] "In my studio as well as when setting up exhibitions, I use tables to layout and look at pictures before they go on a wall or into a book. (…) The method of laying out two-dimensional objects on a table produces 'clarity' and allows perspective. A new text emerges through the combination of intrinsically different pieces of paper. The tables project was born out of the realization that a prime issue of our time is the problems and conflicts brought about by people claiming absolute truths. (…) Newspapers, photocopies, photographs, and files are equivalent objects of study. Papers are a source of information, as well as objects of a visual and physical attraction, which carry aesthetic and emotional charges. Traces of toner and digital artefacts on photocopies as well as deposits on a photo-chemically made picture are worthy of a close observation." Tillmans, Wolfgang, *Wolfgang Tillmans: Manual*, Verlag der Buchhandlung Walther Konig, Cologne, 2007, p. 428.

could handle with my hands and could hinge mount and tape to the wall without it acting awkwardly, because of its own weight and the plastic nature of its support. And when I enlarged these digital photographs from 2009 onwards, they were laser exposed to wide-format roll paper, like Lambda or Light Jet printing machines. I have accepted that and made it a very active part of my work.

For me it has been very clear from the start that the work is the sheet of paper, including the white borders. As I printed myself until 2000, I intuitively decided each time how the white border would look and where it would be. So the white borders are always different and part of the work. Sometimes I put it all to the left, or all to the right, or centred. Or reduce the image and have white borders all around. And that again was a decision not to trim the white borders, or not to have many sizes. But what happens inside that canvas is for me to decide. These borders were a conceptual thing that I accepted. I used the size of the canvas that comes from the box, as a given, just like A3 format was decided by whoever invented the A-formats. There is some beauty in that. Just like the size of my inkjet printer. The size of my large pictures comes from the double size of the A1 roll of the first Bubble Jet printer. And when I left that machine behind in 1999 I went to the first dedicated inkjet printer format, which was 135 cm wide. Somehow, I like to subjugate myself to certain givens. I don't need to control everything. If it fits, it's fine. Somehow I accepted that as a given fact.

When I was facing the dilemma of what to do with new techniques, I started questioning the issue of the borders again. The focus has, in the course of the *Neue Welt* exhibition, moved very much to the inkjet print. The latest emerging inkjet printers actually have a bigger colour gamma than the c-print, a bigger colour range. And the ink lasts much longer than the c-print. So when there is an edition of a large one, of that supreme inkjet quality, than why should the small and mediums be on c-print? In any case, with my experimentation on the white borders, and their relevance when printing on rolls, I realized that the borders are not just an admittance to standards set by the industry, and using that as a formal device. They are of course also an active composition, and primarily a conceptual device that says to the eye that this photograph is not just an image, that this is not a window into the world, but that you are looking at a thing. Here you are looking at white paper and one centimetre onwards, you are looking at ink on paper. You are not looking at a house but you are looking at coloured ink on paper.

There is a rigor, a continuity that allows all the prints to sit side by side in installations. Now they are a combination that contains elements of all three of my work types. The small and medium size c-prints, where I kept the white borders. The inkjet prints, where I kept the paper. And the free floating frames from the large c-prints. Because the frames I use now are an exact reduction in size of the large frames. So all three elements are in this new work now. And that has somehow been a key decision to make the installations cohere. In all the exhibitions there is always the rhythm of 30 x 40 and 51 x 61 centimetres running throughout. I stocked these formats as the two main building blocks for my installations – plus the postcard size of the first lab-prints, plus maybe occasionally a magazine page. Even though the pictures may be a little bit

> different in size, the papers are always the same. Whereas if there would be an infinite amount of scales, it would certainly look different, too random. That is what gives these installations an underlying coherence.

Zooming in on this nucleus, other particles start to appear. When analyzing Tillmans' use of material, it becomes clear that his installations are far more complex than presumed. Or oppositely, a very simple logic starts to appear. All of his works, his prints, as well as his installations, are actually based on preset film and paper sizes and on the discrepancies between sizes in recording, in film and in paper. Photographic paper sizes are historically set in the imperial system, while film follows the metric system. This slight difference in size between film, in centimetres, and paper, in inches, results in a print with a cropped image or in a full image with white borders. Embracing this anomaly to the fullest extent, Tillmans has based his entire performative system of printing and installing on a predetermined language of proportional relations: the ratio of image size versus paper size versus wall size. The standardized sizes of printing paper are consequently used as templates to form a grid system, and the paper-size grid system is proportionally measured against the dimensions of the exhibition space. **(Fig. 21-23)**

It is a quantitative relation in which colour and content are subordinate to the placing of the system, but determine the pace. As such they provide a second, visual layer, giving another order to his individual images. It is indeed a misinterpretation that it is more about the installation than about the individual image. They are on equal foot. Above all, it is about distances and relations. The flattened, imaginary distance within his images - zooming from the sun to Venus, to the moon, to wide landscapes, cities, bars, his studio, a friend pissing in his studio, a chair, his own leg - in relation to the distance within his prints - of ink to the border of the paper, paper size, the distance of a print to the next, the distance of an assembly of prints to the wall, the wall to the space, the interior to the exterior, the world to the moon, to Venus, to the sun. *If one thing matters, everything matters.* The emphasis in the title of one of his books has always been placed on *thing*, but should as well be placed on *matter*. It is not only *important*, it is also *physical matter*: a thing that has mass and takes up space by having volume. If one thing *materializes*… "Observation influences actions, perhaps even alters matter." Niels Bohr argued that light is either a particle or a wave, depending on the performance of observation. It has also been indicated that they are both simultaneously. This is how Tillmans creates his new world, or perhaps many worlds, simultaneously scripted and unscripted, ordered and chaotic, certain and uncertain, waves and particles - a *Neue Welt*. And so he keeps mapping out his own quantum cosmology, orbiting his waves or photons in (un)patterned trajectories with (un)foreseen collisions.

> Let me show you some new pictures, some recent developments I am working on. These I took in Saint Petersburg. It is white noise from an old TV that picks up old broadcasts. You don't see that anymore. I tried to photograph it 25 years ago and it didn't work, but now it does. It is because of digital photography that I was able to photograph it. The *End of Broadcast*. **(Fig. 24)**

20.

Into the Darkest Chamber

Observation influences actions, perhaps even changes matter. Wolfgang Tillmans's modus operandi reaches far beyond photography into physics. While his *chemograms* look like the most recent mappings of the superclusters that make up our universe, the images of white noise he photographed could actually be images of what we see when we keep zooming in on the fabric of life. Niels Bohr's manifest of quantum mechanics, the *Copenhagen Interpretation*, stated that the act of observing greatly affects the interpretation of the inner workings of atomic and subatomic processes. Elementary particles show predictable properties in one kind of experiment, while they become unpredictable when run through different devices. Through the *double-slit diffraction* experiment, we since long know that light is a particle as well as a wave. The Copenhagen Interpretation stated that light is neither, that it does not have properties prior to being measured, and that the outcome of this measurement is purely dependent on the set-up of the experiment, which affects and corrupts the measurement in the first place. But it was also reasoned that light is both at the same time, wave and particle, and that it can exist in multiple forms simultaneously. When we observe things, they change. Without the act of observation, everything might be nothing.

Be it quantum mechanics or quantum cosmology, the *Large Hadron Collider's* photograph of the *Higgs boson* particle or the *Hubble Telescope's Deep Extragalactic Survey*, ultimately we see what we believe is there. The *Pillars of Creation*, Hubble's photograph of the formation of stars in the *Eagle Nebula*, have in fact been photographed, but it is uncertain if it is a sequence of look-back time, or if it is actually still there – or if it is both at the same time. **(Fig. 1 & 2)** The Higgs boson is 'believed' to exist and 'believed' to be photographed. "Both experiments see strong indications for the presence of a new particle, which could be the Higgs boson, and is likely to shed light on other mysteries of our universe," was the official statement in 2012.[702] "We stated last year that in 2012 we would either find a new Higgs-like particle or exclude the existence of the *Standard Model Higgs*." The search for the answer of how particles attain mass resulted in an image of what seems to be a comets tail. This trace is supposed to be the energy released from a particle collision of two proton beams - not the thing itself, but the trace it left. As a self-fulfilling prophecy it is shaped by close observation.

The focus of observation has always pointed towards the predicted result. When we look back, we see a butterfly effect on the other side. While all eyes, in the case of the Large Hadron Collider, were pointed at the discovery of the Higgs boson, nobody noticed the test sites that arose around these experiments. Proving the Standard Model of particle physics is clearly the most important element of their research, but when we closely observe the trace of collateral damage, we can see a different trace this quest has left. The test site of CERN, the European Laboratory for Particle Physics, has five building sites and an inter-site tunnel crossing the Swiss-French border near Geneva, operating a

[702] Press release, "CERN experiments observe particle consistent with long-sought Higgs boson," July 4, 2012. CERN, the European Organization for Nuclear Research, is the world's leading laboratory for particle physics. It has its headquarters in Geneva.

network of a decelerator and six particle accelerators, of which the LHC is the largest. Buried a 100 meters underground, the LHC is a circular tunnel with a 27 kilometres circumference - most definitely making it the world's largest photographic camera. The LHC is not only the largest camera, it also generated the world's largest photo-databases. The LHC has generated vast quantities of data and photographs "by analyzing trillions of proton-proton collisions in 2011 and 2012."[703] Its *Intranet Backbone* streamed data and images through its *LHC Computing Grid* at 600 Megabyte per second for fast analysis to different sites across the world. After discarding trillions of empty images, storing billions on servers worldwide and selecting a few relevant documents which "found hints of the new particle," it redefined the whole idea of photography. Providing us with the invention of the *World Wide Web*, high profile digital cameras, new viewing devices and a few abstract images that speak to our imagination, CERN has since 1954 been changing the face of the world – and the world of photography.[704] With other objectives in mind, it has immersed us in media, submerged us in a parallel photographic second life with a strange side effect: if it hasn't been observed and recorded, it didn't happen or doesn't exist. When we look away from its objectives and potential results, it becomes clear that the trace of collateral damage is perhaps as important and that the tools for observation have to be taken in account in the equation. That is the effect of this butterfly, "fluttering in from an unknown place, a pure image in light, hovering for a moment, touching down and standing there fully exposed before fluttering away again, leaving everything changed in its wake."[705]

The word 'pavilion' comes from the Latin word 'papilio' and its French derivative 'papillon,' or butterfly. The ornate fabric and nomadic wanderings of upscale tents were associated with the wings of a butterfly. The butterfly effect of photography has left us with countless architectural pavilions in its ravage. Many of them were built to be photographed, such as the Crystal Palace, and many were part of the recording device, such as the camera obscura pavilion or the LHC. Like the objectives of CERN, the discovery and meaning of recorded imagery is clearly the most important element to be attributed to the invention of photography. But like in science, the subjective observer and the technical apparatus cannot be taken out of the equation. In other media we perhaps do not look as much at the tools – in painting for example, we do not regard the brushes as very important – but in photography, the apparatus has a much stronger relation with the result. Photography is an inclusive medium, incorporating the apparatus of creation and all its different strains of scientific and artistic research. When we consider the recording device as an essential part of the photographic medium, we can see architectures of all sorts appear. While all eyes were pointed at the incomprehensible projection through an aperture into a dark room, the camera obscura pavilion generated a large amount of matter as a building. The invention of photography resulted in the construction of countless purpose-built pavilions and test sites before photographic prints themselves started to assume architectural features. Between then and now, it was mostly about shrinking the technical apparatus and enlarging the photographic residue - often also resulting in pavilions, such as Charlotte Perriand's *Agriculture Pavilion* or Dennis Adams's *Bus Shelters*. Photography died in the 1980s,

[703] Ibid.

[704] Since the 1980s, CERN has pioneered the introduction of Internet technology. Their original program named *ENQUIRE* was changed in to *World Wide Web*, which activated its first website in 1991. On 30 April 1993, CERN announced that the World Wide Web would be free to anyone.

[705] Colomina, Beatriz, "Beyond Pavilions: Architecture as a Machine to See," *Dan Graham: Beyond*, edited by Elisabeth Hamilton, 2009, pp. 206-207.

Peter Bunnell said, only taking in regard the palpable print as photography. But when we look at the medium in all its facets, like we have done in these past pages, we can see that it did not: photography is evolving rapidly. It is continuously morphing, distributing and reversing the amount of matter from one side of the scale to the other. Perhaps the image itself has now attained a more ephemeral, virtual nature, but the storage sites in which they reside are continuously expanding, rapidly evolving into ever growing server databases to which we wilfully contribute the bits and bytes of our most intimate pictures. Now we are building rockets to send off giant cameras into deep space - one of which has already left our solar system – and subterranean tunnels to transmit ephemeral images made purely out of binary code. However different the technologies are - and deeper the focus - many of the principles are still the same and operate in the footprints of older technologies. Queen Victoria's *cartes-de-visite* have changed into *Facebook* and stereographic goggles have been replaced by virtual reality headsets. The *Grande lunette* of Expo 1900, the giant mirror pointed at the moon and enlarged by a lens of 60 meters long, has now been replaced by Hubble's space lens. The Large Hadron Collider as a camera facility even bears an uncanny resemblance to Etienne Jules-Marey's circular horse track camera facility, created to see zoological movement beyond the speed of human vision. It even seems that the balance between the photographic image and apparatus is back were it started: an ephemeral image in an obscured chamber.

Closely observing this history of photographic installations, I believe that the premise of this research - that architecture is an inherent part of photography - is true and hereby proven. The consequences shed a slightly different light on our history. The architecture of the camera obscura pavilion has given us the medium of photography, changing our entire perception of the world and opening a liberating path to abstraction in the fine arts. The medium of photography has caused a building madness for temporary architectures, such as the Crystal Palace, since it delivered evidence of their existence. Etienne Jules-Marey's experimental test grounds resulted in photographs and photo-sculptures that had a profound impact in the visual arts, inspiring Marcel Duchamp and the Futurists, and in the film camera, offering us the art of cinema. On the same foot, CERN has exerted an incredible amount of mass, changed our entire perception of the universe and has already been an undervalued facilitator of the visual arts. For example, its discoveries indirectly allowed Simon Starling to mine a silver salt particle from the photographic emulsion of a print of a Henry Moore sculpture, recorded by Moore himself. This extraction on a molecular level was magnified by 300.000 times into a bronze sculpture that formally looked like Henry Moore's *Reclining Figures*.[706] **(Fig. 3)** Photography has been preconceived by architecture, or sculpture in this case, but here at this point in time, exemplified by Starling's piece, it becomes uncertain if it still does. It brings us to a new causality dilemma whether architecture today still preconceives photography, or the other way around. The trace appears to be a circle - or more like the elliptical curve of a comet. Perhaps it is both simultaneously, or neither. In our quantum universe, this uncertainty principle might suggest that the more precise the position of some particle is determined, the less precise its momentum can be known, and vice versa. This is not a matter of infinite regress, but of a reversal of origins with unpredictable momentums.

[706] Roelstraete, Dieter, *Simon Starling*, Phaidon Press Limited, London, 2012, pp. 87-72. The piece of Simon Starling is entitled *Silver Particle / Bronze (After Henry Moore), A bronze sculpture of a single silver particle from a vintage, gelatine silver, photographic print of 'Reclining Figure No. 4,' 1955, by Henry Moore, enlarged x 300,000*.

While architecture most certainly preconceived photography, photography now preconceives architecture. Plan and elevation have been replaced by 3D programs, which ultimately render architecture so realistic that it does not necessarily needs to be built anymore. When we look at Victor Burgin's photographic film *A Place to Read* from 2010, we can see a poetic example of a digitally 3D-rendered non-existent building. **(Fig. 4)** In the 1990s, the photo-conceptual artist started making digital films based on still, historical photographs of, for example, Mies van der Rohe's *Barcelona Pavilion*, Albert Speer and Ernst Sagebiel's *Tempelhof Airport* in Berlin, and Rudolph Schindler's *Kings Road House* in Los Angeles. In *A Place to Read*, Burgin exchanged his real camera for a virtual one, digitally recreating the architecture of a torn down Turkish palace's garden pavilion to record footage inside this unreal building, as if it was really there. Contrarily, when we look at Thomas Heatherwick's *United Kingdom Pavilion* for the Shanghai Expo 2010, it is hard to distinguish reality from virtual reality. **(Fig. 5)** On a platform that looks like a virtually creased piece of paper, Heatherwick installed a six storey high object that looks like the pappus of a dandelion. The tuft of hairs was made of 60.000 slender, reflective rods, waving in the wind. The glowing rods illuminated the interior cavern and encased thousands of seeds into the ends. The seeds came from Kew Garden's *Millennium Seed Bank*, from the greenhouses where Joseph Paxton once worked. Nicknamed the *Seed Cathedral*, Heatherwick's design was to equal the innovating greatness of the Crystal Palace. As a whole, there were hardly any noticeable discrepancies between the 3D design and the real thing, deceiving the eye as if you were looking at a digitally rendered object in virtual reality. It emphasizes the fact that architecture is now entirely preconceived by computer-generated images, and even starts to assume virtual features in the real world.

Vice versa, this reversal of origins brings an unpredictable momentum. While digital photography now preconceives architecture, an expansive practice of the analogue photographic environment can be observed again. The principle of photography has expanded beyond any limits and has permeated every aspect of life. With the proliferation of digital media the photograph as such is continuously mutating. Like architecture is no longer necessarily a synergy of plan and elevation, the photograph is no longer necessarily a synergy of image and support. Photography has become a multiplicity of ephemeral images that we carry with us each day on our phones or tablets. An expanded photographic sphere, like a digital *Georama*, surrounds us at all times. Photography has superseded itself. A photograph is now often premeditated by *another* photographic construction. Even art is more than often premeditated by photography. Today, this bodiless image is provoking many reluctant artists to experiment with photographic procedures in search for a new physical presence of the photographic print. This regressive reaction has occurred before. It occurred the first time around the end of the 19th century, when Pictorialism reacted to the widespread use of the photographic medium and the invention of film, and turned towards the fine arts. The second time it was a reaction against the overwhelming force of television and mass advertisement, resulting in the incorporation of photography into conceptual art. Since the 1990s, we can see a shift from post-conceptual strategies to a Pictorialist, painterly approach of sensibility for the photographic object. Jeff Wall said:

> I like the fact that these different technologies collide in the picture. The layering of technologies is part of the 19th century 'spirit of the panorama,' and we are still

> involved with that spirit in our own fascination with technological spectacle. One paradox I have found is that the more you use computers in picture-making the more 'handmade' the picture becomes. Oddly, then, digital technology is leading, in my work at least, towards a greater reliance on hand-making (…)[707]

Nostalgia for the palpable and unique photograph has already instigated new generations of artists to create hybrid photographic installations, exchanging medium specificity for cross-media experiments. Referencing the shared ancestry of photography and architecture in the camera obscura pavilion and the Crystal Palace, Johan Österholm bought a small, disused greenhouse in 2014, and photosensitized the glass plates. He reconstructed the greenhouse at night, outside in the dark Swedish nature, and exposed it to the light of a full moon. Once developed, the underexposed plates revealed a blackened greenhouse, a negative image of itself, scorched by the reflection of the sun. **(Fig. 6)** Inside his pavilion, the stars were turned into pinholes and the moon became a wide-open aperture.

Today, photography has many forms. It can question its materiality as well as embrace the possibilities of its immateriality. The long search for the technique of fixing a shadow has resulted in the unfixed and ephemeral. But they can exist simultaneously. Today, analogue film negatives are digitally scanned, while prints are digitally lit and developed in the old fashioned analogue way. The paperless digital image has a synthesizing and collective perspective, while the unique, analogue photo-object is endowed with fragmentation and value, which will more and more be integrated into the visual arts. *Neo-Pictorialism* can now be combined with *Photoconceptualism*. Light can be two things at the same time, truth might be fake and time may even go backwards. And a camera obscura pavilion can again become a radically contemporary architecture, as we can see in Olafur Eliasson's *La situazione antispettiva*. Made for the Danish Pavilion at the 50th Venice Biennale in 2003, the pavilion has 250 hexagonal pinholes that project as many perspectives – and translates the kaleidoscopic situation into the predicament of multiplicity it stands for. (Fig. 7 & 8)

Photography is now a matter of probabilities. "Why do you want to take another picture in a photo-saturated world," Wolfgang Tillmans asked himself at the beginning of his career. Observation influences actions, perhaps even alters matter. It can be two things at the same time, or neither. Observation can also be found in reviewing and appropriating previous observations, managing and organizing information, structuring images. We look at everything or we don't look at anything, or both simultaneously, or neither. But the act of observing will always be a necessity. And there is one observational outcome that seems to be certain: photography and architecture are utterly intertwined. Perhaps they are both at the same time, like a collapse or superposition of photography and architecture. In either case, for this generation, the immateriality and transient nature of the digital image triggered a form of *Photoconceptual Pictorialism*, combining pictorial display strategies with conceptual object-hood – present, for example, in the work of Tacita Dean, Sarah Vanderbeek, David Maljkovic, Haris Epaminonda, or Johan Österholm.

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[707] Schwander, Martin, "Interview with Jeff Wall: Restoration, 1994," *Jeff Wall: The Complete Edition*, edited by Thierry De Duve, Phaidon Press Ltd, London, 2009, p. 93.

This is my generation, born in the analogue era. It is already hard to draw conclusions about my own generation, let alone younger ones. I do not wish to predict any possible futures, not even to research the multitudes of the present, but to find a solid historical point of departure. What interested me in this research was to construct an operation manual to develop my own form of photography by charting and analyzing little known experiments from the past - discursive research that instigates new and unexpected experiments in my own visual art practice. These are my personal choices and observations, made to find my own way of writing. The way we write with light has profoundly changed but it does not necessarily have to mean that *what* we write is different. Robert Heinecken's writings make this elliptical research full circle with a remark that is key for shifting *facts* into *artefacts*:

> The extreme proliferation of the photographic image has created certain obvious barriers which must be surmounted. However, the somewhat similar proliferation of the written word has not prevented poets from making use of words and language for artistic purposes.[708]

Today, on the 28th of December, on the Feast of the Holy Innocents, Childermas, Innocents' Day, the Feast of Fools and my brother's birthday, I was struck by a mysterious coincidence. Around noon when writing these last words, I had the incredible fortune of witnessing a spontaneous camera obscura effect manifest itself in my house. I am not writing this for the sake of poetry. **(Fig. 8)** Perhaps I wouldn't even have noticed if it had not appeared on this special day. The low winter sun perfectly aligned through the window and the aperture of the keyhole of the door of my dim room to project a small image of a clouded sun. An upside down sun. And I came to the realization that the most ephemeral of things will remain until the sun itself will be obscured. This world of shadows will outlive us all. In its darkness, the universe will keep observing itself until all its lodestars fade away. In knowing that it most certainly does not need us, it is quite amazing how many things we have made to fill that wound, and how much architecture has been projected through the aperture of that rupture.

[708] Heinecken, Robert, "The Photograph: Not a Picture of, but an Object about something," *Robert Heinecken: Object Matter*, edited by Eva Respini, The Museum of Modern Art, New York, 2014, p. 155.

X.

Regressionism

I grew up in a village named Sunville. The elusive name mirages utopian places, but it was far from an ideal town where the sun always shines. The commonly adapted English name *Sunville* was a poor translation of the village's Flemish name *Zonhoven*. I don't know who came up with that, since a literal translation of *Zonhoven* would make *Sun Gardens*. *Sun City*, a more common name used for old world estates and gated communities, was definitely too far-fetched for some farms around a church tower. So it was that we had a *Sunville Saloon*, a *Sunville Records*, and a *Sunville Tigers* baseball team - which by the way was pretty far from successful. The strangest reference to all things sunny came from the local tanning salon, a sun centre entitled *Eclipse*. As a kid, I was puzzled by this enigma, like, how do you get a freaking tan during an eclipse? Growing up, I started to understand that the occulted sun stood as a symbol for a state of exception. A bit of etymological research traced the name *Zonhoven* back to a contraction of *zon* (sun) and *ven* (moor). And that is exactly what it was. A sometimes sunny swamp. **(Fig. 1)**

The village was surrounded by forested nature, belted with swamps and sandy ponds. There were over a thousand small lakes filled with catfish and carp. Around the lakes, the carnivorous sundew lured insects into its mouth with glistening drops of mucilage that resembled morning dew. The shallow ponds on the south side of the village would dry out over the summer, revealing their uninteresting secrets. But the swamps, to my disappointment, were protected from the sun by dense woods and remained a reflection of light on a dark mirror. The mud supposedly swallowed German tanks during the war. Our desire to discover this secret lurking below the surface was not tempered by the carcasses of rusty tanks on the other side of the village. Elongated dunes pressed the north side, growing heather on its sandy, acidic soil. By the end of summer, the *Calluna Vulgaris* would cloak the moorland purple. The moorlands were military domain. It was forbidden territory. From the highest sand dune, we could see the unnatural black miner mountains in all the encircling villages. In the dry landscape, the tanks were out in the open, embedded in sandpits and rid of all mystery. They were marked with white crosses and targeted by fighter aircrafts. I remember the sound of bombardments and supersonic jets breaking through the sound barrier. This land was my land. **(Fig. 2)**

The centre of town was grouped around an oversized church. The pastor drove a white *Lada* with on his dashboard a skull wearing a top hat. After carnival, the church square would be littered with stolen goods, trailers, tires and shovels, snatched from gardens as prescribed by local tradition. In March, the annual market would boast a small *kermis* - the word *kermis* being a contraction of *kerk* (church) and *mis* (mass) - a fun fair that had bumper cars and the arcade game *Golden Axe*. The Maypole celebrations brought out the local harmony and *majorettes* (cheerleaders) for the last time of the season. There was little left to do over summer, besides scheming excavations of wartime skeletons. Or to visit actual archaeologists working around giant sandstones that were once used by Neanderthals to sharpen their primitive knives. Of course these *Devil's Stones*, as they were named, have always been suspected of witchcraft and supernatural powers they

regrettably didn't have. Next to the church was a bar named *'t Zonnehof*. Both the church and the bar boasted the coat of arms above the entrance, a radiating yellow sun with a bright smile over a blue sky. But older versions of the town's shield propagated a black face without a smile, a sad sun.

We lived in a street named *Halveweg* (Half Road). For us it was quite literally only half a road since the street was so busy with fast cars passing through, that we weren't allowed to cross it. I felt happy there. I can mainly recall that by seeing the yellow and magenta pictures from the family album and the bluish Super 8 films my father had recorded. I apparently was a smiling kid. You can see me in a green cradle or blowing out candles over cake. Unwrapping presents on a December morning. On a family feast my brother and I form a band with my nephews, marching through the house. In the next scene, the marching band halts in the garden and the sheer excitement and laughter alters into tears after my older brother rips the drum set out of my hands. You can see me drawing guns dressed as a cowboy and swimming in the sea on a holiday. My brother sitting on my mothers lap in an orange tent on a camping site. In the next scene, the modular architecture of the *Piscine Tournesol*, so it must have been France. My mother and her sister strolling in a rose garden. My grandmother cooking, the vase on her buffet. My uncle the policeman drinking beer in a black leather trench coat. You can see my father's three other brothers in the same room, still unaware that the youngest brother - not the policeman - would be excluded from the family. My father and mother in love, before we were born. Their marriage in the church and the party at my other grandmother's house. **(Fig. 3)** Two grandfathers talking, unaware that both of them would die quite soon. The forsythia and tulips in the garden. A communion with a boy's choir. In one scene you can witness villagers trespassing on the military domain to slide down the snowy dunes in a *Breughelian* landscape. **(Fig. 4)** In the next scene, my brother uses his winter gloves as boxing gloves. He was not a smiling child. Two enlarged portrait photographs that hung above the chimney in our Half Road house revealed an opposition of two different characters, a joyful and a melancholic one.

The films my father made were done quite well for an amateur. Short sequences on uncut film, shot with a firm hand from interesting angles. My father had artistic ambitions in his young days. He wanted to pursue painting and architecture but failed to do so, held back by his parents and an unacknowledged lack of talent and persistence. The films reveal a lot of information in the way they were made. He always handled the camera himself, hand held or from a tripod. Nobody ever filmed him, unaware, not acting. He filmed himself in artistic modes to distinguish himself from the peasant family he came from. Like, when playing the trombone or when painting lettering on trucks from the *Radson* radiator company. He always drew an introduction panel for each film, explaining what the audience was about to witness. Some scenes are beautifully surrealist, others reveal deep desires. An unknown nude, beach bound. A dark, curly haired beauty on a French nudist beach, caught on film and angered by my father's intrusion. **(Fig. 5)** Or, for example, he would film a door slowly opening, focusing on a pair of woman's legs in detail from the toes up. To my surprise, it was not my mother, but the newly wed wife of his best friend with whom they went honeymooning in Venice – well, *Lido di Jesolo*. I can see his fading interest in family life in the reducing amount and quality of films and photographs taken. He replaced his artistic ambitions and family life with drinking and silence, never his Instamatic M24 with a videocassette recorder.

An image I clearly remember myself from that time was one that was not filmable. The village had an annual tradition of creating an enormous bonfire on the eleventh hour of the eleventh day of the eleventh month. It was a pagan ritual celebrating the end of harvest and the beginning of winter. Trees were cut to logs for the long winter to come. The branches were used to create outdoor fire staples. Drunken celebrations would end in a wild manhunt, punishing the misbehaved. Christianized into *Saint Martin's Day*, the village upheld the heathen name *Hololool*. **(Fig. 6)** It was our own kind of Halloween. In rivalling neighbourhoods attempts were made to stack the largest bonfires, sometimes twenty meters high. Half Road had it's own. Luckily it was piled on a meadow on my side of the street. We collected copse wood and old tires with a barrow and held overnight wakes, guarding our construction against pillagers and intercepting pyromaniacs with fire arrows. I so distinctly remember those long dark nights, the uncomfortable bed of branches, millions of stars and the smell of pine. The whispering sounds of sneaking around and the cold dew of morning rise. I must have been seven or eight the first time, which is surprisingly young, as I wasn't even allowed to cross the street. When the eleventh day of November came, the burning staple was crowned with a life-sized human figure drenched in gasoline. The red caped knight on his horse, followed by a procession of torches, ignited the fire – as it still proceeds today. A doll was lynched, children rubbed charcoal in each other's faces and everybody else would get seriously wasted. A dark rubber cloud smouldered for days. The intense contrast of blazing flames against the black night sky was too strong for the sensitive film of the Kodak Instamatic. The afterimage was branded on my retina.

We moved to *Eikenenpad* (Oak Road or Oak Path) when I was about ten. There is very little photographic proof of that time, mainly memories attached to landscapes. Playing *Rambo* between the manoeuvres on the military domain, clad with empty bullets and the razor sharp film prop dagger. Our neighbourhood boy's club congregating in the garden shed over the music of Michael Jackson or George Michael, over *The Neverending Story* or Bud Spencer and Terence Hill, over Samantha Fox or Sabrina - for me, it has always been Sabrina. I remember shying away from real girls on Heather Beach. *Heidestrand* was a camping site around some of the lakes. It had an open-air swimming pool, which was a hunting ground for my older and taller brother. In short, it was village life and teenage problems. Except that my brother wasn't really a happy camper. There was a hairdresser on the corner of our new street that preyed on little boys around the block. He never molested me. He picked one from each family to prevent them from talking to each other. This man must have possessed an insidious force, convincing his victims never to talk. But an odd number of manic-depressives and junks originated in the hood, as well as suicides and ghost drivers. When my brother crashed his car straight into a wall and lived, he confessed. For the law it was too late, and for him too. When he finally took his own life, he had spent a few more decades trying to forget. His excessive drug abuse left him behind, poor and without identity, living in a caravan on Heather Beach – a spectre wandering the wetlands. After he got kicked out from the camping lot he reached a gruesome end in a tiny, lightless studio. These conditions brought me back to my childhood homestead.

In the forlorn months after his death, I wandered the countryside with a camera and stacks of accidentally expired film, registering locations of memories long repressed. The colour shifts in these exposed negatives suggested an indefinable time that foreshadowed our past. My photographs fused with snapshots from the family album

and footage found in the village's historical archive. They became metaphors for an erroneous un-locatable in-between time of landscape and memory. All photographs in this new series have been recorded between November 2013 and March 2015. **(Fig. 7-9)** These images, however, were so confronting to me that they would have never seen the light of day. Openly showing this new archive to an audience felt intimidating, but instead of hiding the fragility embedded in the series, I wanted to mediate it by developing display strategies. A certain amount of experiments lead me to create sculptures and photographic installations out of these photographs. These transmutations of the print transferred my personal history into a research on the materiality of photography.

A year before that disruptive moment in my private life, in 2012, I had started my artistic research into the physical embodiment of photography. Since I am not a photographer but a sculptor using the lens-based medium, the flatness of photography has always bothered me. In general, the photograph is seen as an illusionistic window through which the exterior world is explored, either represented as a straight view upon reality or as a mirror of the executor's expression and interpretation of it. In my opinion, the photograph brings an even more important reality: it is a physical object that has been made out of certain materials and can attain different sizes and dimensions. From 2014 onwards, I started producing these new photographs as formal objects and installations, where the physical presence relates to, and partially overtakes, their loaded contents. At first, the content of the photographs was to remain exclusive information. For an audience, the gaze through the viewfinder was to be of secondary importance to its physical object-hood - a mere registration of the reflection of light. I wanted to talk less about what is *in* the pictures and more about what the photographs *are*. I initially made an attempt to bury the images I had created within a distractive, layered plotline: the premise of this new series was to research the peripheries of the image and to analyze the photograph as a palpable object, far removed from personal stories. A first experiment was an attempt to create a direct translation from photography into sculpture, a conceptual change in perception of the photographic print as a two-dimensional window into a three-dimensional photographic object with a physical consistency.

One of the great paradoxes of photography lies in its ability to turn a real three-dimensional world into a photographic two-dimensional world. This two-dimensional illusion seems to evoke a three-dimensional world in the image depicted, but in fact it is merely a photosensitive chemical substance on a three-dimensional support. Fascinated by the material thickness of the first photograph ever made, a physical imprint in bitumen tar, I reasoned that since the invention of photography itself was marked by capturing an ephemeral projection on a three-dimensional support, photography was in fact a sculptural medium. Nicéphore Niépce's *Point de vue du Gras* (1826) was a black, sculptural object - the sort of abstraction I sought for. Besides the physicality of the support, a pewter plate coated with bitumen of Judea, the exposure process consisted of slowly inscribing the image into the bitumen, which gave it a physical depth - however infinitesimal.[709] It is the most eloquent manifestation of the fact that all analogue photography is in fact a three-dimensional imprint, a trace that light carves into a physical substance. At the dawn of photography every possible aspect and unprecedented ability of the new medium was being pursued. In the late 1850s, the

[709] Menegoi, Simone, *The Camera's Blind Spot: On the Materiality of Photography*, Palazzo De' Toshi, Bologna, 2016.

French sculptor François Willème invented the process of photo-sculpture to reproduce sculpture with the help of photography. He had expanded photography into a method to subtract sculptural forms out of photographs. This method made use of photography to collect accurate and precise information on volume, which was then reconstructed by the manual intervention of the sculptor. This abstract venture to reconstruct tangible spatial information from a flat photograph, to reproduce objects and subjects by the impact of light, pulsed a significant influence towards today - in the form of the 3D-scanner and printer.

Today, I reasoned, it should be possible to make an accurate translation of a photograph into a sculpture, with a minimal margin of artistic interpretation left between the scanning and printing. I made an attempt to extrude spatial forms out of flat images, sculptures out of photographs. In 2014, I started working in *Cinema 4D*, a 3D-software program. I imported a digital image and had the program translate the contrasts into actual depth. The lighter areas of the photograph would have a different level in depth as the darker areas. This assigned depth gave an abstraction to the image, which I found very interesting. The program accurately translated the contrasts into depth. This effect made it entirely different then the experiments of Willème and Etienne Jules-Marey, since the software did not consider the actual proportions of the figure, only the difference between tonalities. It produced an inaccurate figure. It's algorithm turned parts of the photograph outward or inward according to its own logic, altering the perceived reality into a physical impossibility. For example, the work *Photographer* is a symbolic photograph with strong light contrasts. **(Fig. 10 & 11)** In its conversion from 2D to 3D, the photographer's dark hair is pressed into the surface, while his jacket surfaces to the foreground. His black camera turns unrecognizable due to the strong light reflections on its surface. And the leaves in the background do not follow their natural shape, but peak where the light bounces back. This of course happens because the translation into depth is made by its light contrast instead of its accurate volume. Here, the software makes an entirely different interpretation than the artist's hand, delivering an inaccurate interpretation of reality. Nonetheless, as an artistic experiment, it delivered an interesting free form of a photograph that has been turned into a frieze. Progressing from this design, I had the file printed in plastic, coated black, and framed in a specially designed oak frame. **(Fig. 12 & 13)** As a whole, it subtracted a sculptural form out of photography, creating a distinctive union of the two media – what I like to call *additive photography*.

My interest in a sculptural, even architectural application of photography led me to record new, malleable images that could be appropriated to create spatial installations - seemingly meaningless pictures of abstracted nature that could be semantically altered by the impact of their physical framework and context, thus shifting their emotional meaning into a grid of concepts. I started applying this procedure to different photographs I had taken, in order to see different effects. I wanted to progress beyond this point of a flat surface rendered into a bas-relief. I started to analyze how Willème came to his photo-sculpture process and started thinking about his scanning room. Willème's glass pavilion and camera's in fact scanned an object in the round. Willème's glass photo studio offered an inversed view of what its predecessors, the camera obscura pavilion and the panorama pavilion, offered: an inward scan instead of an outward gaze. Encircling the object in the middle is exactly what a typical 3D-scanner does today. And it works entirely different than taking a photograph from one point of

view. In my historical research, I have come across many experiments connected to photography that apply very different vantage points. The camera obscura pavilion brought the outside world inside, functioning as a real-time cinema. It has a reversed perspective position as the modern day camera. The panorama pavilion displayed landscape views that were not on the other end of the wall, as in the camera obscura pavilion, but imported from distant, inaccessible places of wonder. The spectator was now placed in the centre of the image, surrounded by an all-round simulated landscape, radically changing the point of perspective. The multimedia panorama of the *Cinéorama* combined the invention of the hot air balloon with the new invention of cinema, again offering newly acquired points of view: the bird's eye view aerial photographs and films. It is precisely this point of view, a vantage point from outside onto Earth, which interested me to proceed with my experiments. It reduces the globe to an understandable size, and this relative proportion can be transferred to the photosphere as an object to be looked at from afar – like a little globe.

I started experimenting with handheld 3D-scanners, scanning the environment from a tripod, as in the preparation process of the panorama pavilion paintings. This is an entirely different perspective, opposite to the encircling movement of a basic 3D-scanner. It is an outward gaze instead of an inward scan. But these scans only delivered completely abstract information, mostly obscured non-information. While these pivotal scanners can perceive very accurate information inside closed spaces, they seemingly cannot handle the distances of outdoor horizons. Instead, I started recording panoramic photographs with a 8mm wide-angle camera and a special tripod equipped with a *nodal ninja*, which allows 360 degrees pivoting without horizontal alterations. In this way, with six photographs recorded, a full photosphere of 360 x 180 degrees can be stitched together in one equirectangular panorama, using a software program such as PTGui, or in the meantime – between 2014 and now - with an app on every Smartphone. With a full panoramic photosphere, different perspectives can be made. You can look at a photosphere as a rectangular photograph, rolled out as a flat image. From there onwards, the panorama can be folded back into a sphere, which you can witness from within, from the photographers point of view as in the panorama pavilion perspective, or from outside, as from a lunar perspective. Another option is presenting it as a disc, commonly referred to as a *Little Planet* and prefigured as a format in the 1850s by the photographer Viollet-Le-Duc. What interested me was looking at the folded sphere from a lunar perspective, from the outside. Which is something entirely different than the *Little Planet* discs. The lunar perspective turns the photosphere into an object, into a panoramic orb. Proceeding from this point onwards, I applied to the photosphere the same logarithm in *Cinema 4D*, translating the light contrasts into depth. And this gave an entirely different form when rendered. The skeleton of a tarpaper shack as a play of clear lines intersecting rocky foregrounds. An abandoned train tunnel as an elliptical form. **(Fig. 14 & 15)** A roundabout with a public sculpture featuring five rusty palm trees turns entirely abstract, with the palm trees cut into the sphere. **(Fig. 16 & 17)**

The next step was printing this file into an object. I have made an example in plastic of 20 cm in diameter with a high-end printer. The photograph on which it was based was an image of a forest, with a vantage point located between the trees. The panoramic photograph of the dense forest was turned into an object shaped like a star, the treetops turned into a wild landscape of spikes. **(Fig. 18 & 19)** It was however so detailed that it became very fragile. Therefore I experimented with printing these spheres in titanium:

to emphasize its sculptural being and to give the object both a physical and psychological weight in the perception of the object. Titanium printers are the most precise printers available and are able to build up complex self-supporting forms. The natural appearance of the printable alloy provided the necessary strength and weight. The originally photographed panorama was a landscape with a road, a field, a bit of forest and one clearly identifiable tree in the distance. It became an abstract object and rendered the photographed landscape nearly unrecognizable. **(Fig. 20)** Fluffy clouds became mountain ridges on a sea of sky, the horizon an abyss. A rare identifiable feature in this experiment was a nearby, naked poplar tree. Finally, *51°00'15.4"N x 5°24'01.3"E* became a photograph that has been converted from 2D to 3D. It is a 360 x 180 degrees panoramic photograph of a landscape that has been translated into depth. The landscape is seemingly carved into the surface, varying in depth according to their brightness in the original image. Here the image turns into a sculptural form. Once translated and materialized, these orbs look like stars, like a sun shaped by its own light. This sculpture, whose title gives the geographic coordinates of the place photographed, carries the idea of photo-sculptures to an extreme conclusion. **(Fig. 21)**

Through additive manufacturing, a photograph can now become a whole lot of matter. It can materialize in an entirely different form then before. Now a photograph can actually be a sculpture, and a sculpture can be a photograph. **(Fig. 22-25)** This sculpture can turn an overtly emotional image into an abstract object, hiding and bolstering its subject matter. But imagine an increase in size, like the photographic apparatus had first decreased from the architecture of the camera obscura pavilion into the sculptural form of a small box camera, to morph again into the architectural size of one or more pavilions. Imagine that the morphing of photography into sculpture could be enlarged to the size of an architecture like Bartholdi's *Statue of Liberty*. Then, the photograph itself would become architecture. That architecture would consequently be a photograph. And when placed in the landscape where it was photographed, it would reflect an inversed world inscribed on a stellar sphere. **(Fig. 26)**

As a sculptor, I have always found that a mere photograph was not enough. That it was too real and close-by, leaving no room for interpretation or mediation. But as I have also reluctantly discovered, formal experiments, as ends in themselves, are not always the most interesting objects. Cloaking the content of my photographs in abstract sculptures often went passed their potentially strong narratives. A research into the materiality of photography can also result in the realization that sometimes a photograph should just be that illusionistic window into an alternate plane.

Two artists came to mind that did succeed in bringing such vulnerable images as successful artworks. Both these artists made factual photographic records of places while secretly revealing more private motivations. The early work of Gordon Matta-Clarck hermetically questioned his own origins. His twin brother suffered from chronic psychological distress and threw himself out of the window of Gordon's studio in 1976. In the years before his suicide, Gordon had been desperately trying to reconnect with his brother in the Manhattan of their upbringing and early adulthood by buying up the tiniest plots of land in between buildings, and photographically recording the area. It points to the "grounding of his previous work in one specific and retreating urban terrain," the critic Thomas Crow remarked: "His transmutations of the photographic print had helped him map a network that encompassed his intimate experiences and

preoccupations within a dispassionately considered social reality."[710] An artist that is more open in his work about these uncomfortable and often uncanny memories is Mike Kelley. In *Black Out* (2001) Kelley used photography to recreate possible repressed memories of abuse and 'missing time' around his hometown village of Wayne, Michigan - next to Detroit. He photographed some 150 articles out of local newspapers, staged pictures with projective imagination, and recorded straight documentaries of his travels over the Detroit River. He decided to combine all these elements and to incorporate them in one large installation. During his trips over the river, he had collected debris form the river's edge and reassembled this into a large statue he recalled standing at the local high school – the John Glenn High. He collected the photographs into an archival cabinet and connected the two with leftover rubble. This excess of loose associations is in a way nonsensical, but meant to trigger so-called repressed memories. His pseudo-psychological research led to imagined stories and projective reconstructions about found footage photographs. A few months before he took his own life, Kelley said in an interview: "I realized that these fears of abuse were projected upon me, the artist, and one interpretation was that perhaps I had been abused myself as a child. I decided to capitalize on that notion – not so much of sexual abuse, but institutional abuse: suggesting that my art education itself had been a form of mental abuse."[711] These personal recoveries of memory, fact or fiction, led in both cases to very interesting projective reconstructions about their homesteads. They were hiding it in plain sight, presenting it as straight stories and factual observations. They were showing it as sculptural installations, while they were photographs. They succeeded in turning an average coming-to-terms story into great works of art. Because both projects shared a third motivation: an unexpected emphasis on the material qualities and object-hood of the photograph. While the plotline offers an interesting beginning, it is the exertion of memories into matter that is important.

Everyday people get inspired to do something creative with their grief and in some rare cases this disappointing sense of cause has actually lead to great works of art. Regressing into the ruins of one's past might also be a progressive action. I made an attempt to show the original images and to bring this new series beyond a eulogy or sublimating sorrow. My historical research has steered my visual practice and ultimately enforced the overtly emotional content, instead of cloaking it. And it delivered more aspects to the series than a bunch of sad facts collected. Large prints, self-designed frames, fragile papers. These concepts steered me towards photographic installations to emphasize, rather than mask, the vulnerability embedded in the original images. **(Fig. 27)**

With these ideas in mind, I recorded a tarpaper shack from all sides while pivoting on the tripod. The leftover wooden beams in the neighbour's garden were clad with memories, a broken chair, and an old nudie magazine buried beneath the thorn bushes. From these all-round photographs, I reconstructed the size of the shack, in order to deconstruct the beams into a new frame. It is not a smart remark on photography's ability of self-representation. Bringing to mind Heinecken's words, "it may be operating on completely unfamiliar levels. It may not even seem understandable." But it delivered a sense of freedom to reconstruct my own personal recoveries of vaguely lost memory.

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[710] Crow, Thomas, "Photography as a Sculptural Medium in the Work of Gordon Matta-Clarck," *Take Place: Photography and Place from Multiple Perspectives*, edited by Helen Westgeest, Valiz, Amsterdam, 2009, p. 45.
[711] Meyer-Herman, Eva, *Mike Kelley*, Stedelijk Museum, Amsterdam, 2013, p. 370.

This reconstructed space of a tarpaper shack marks a transition between narration, scattered histories, fabricated incidents, and the domain of things. In this moment of illegibility, a hint of truth appears. **(Fig. 28)**

Drawing the spectator into photographic installations worked in many cases, but other images just needed to be themselves. As said, a research into the materiality of photography can also result in the realization that sometimes a photograph should just be that illusionistic window into a metaphorical plane. The eerie images I had taken had to wait a while for processing and mediation before I wanted to show them - uncensored. I started to study the contact sheets. The expired film gave the photographs a remarkable filter, creating an inexplicit and acceptable distance of suggestion. They were so strange, distant and eerie, that I felt a strong urge to use them. I have not staged or altered a single image from its original recording, neither cropped nor coloured, but they look like they do. Sometimes they gave an *Instagram* hue, connecting them to the indefinable time of the family album, other times they achieved their raison d'être in their failure. I started recording new photographs, which did not escape a controlled view but added a more contemporaneous time zone to the series, widening the gap of the in-between time. And I included found footage from the family album as well as from the village's historical archive of local history. I wasn't necessarily looking to create new images, but more to find recollections of my past. **(Fig. 29)**

I made interpretations from the bluish Super 8 films my father had taken with his Kodak Instamatic, registering entire events with an extended shutter speed on a blank canvas. I projected his films on a screen and recorded sequences with my analogue photo camera. The extended shutter speed turned them in a matter of seconds into abstract drawings. More than places, these images are tangible events, solidified memories. The ray of light of my father's Instamatic M66 projector transmitted events long gone. Along with the invention of cinema, theories came about that if astronomical photography could capture images of stars that had died thousands of light years before, the night sky would be like a cinema that projected past events at a finite speed across the universe. The time elapsed in this cosmic time machine was referred to as *look-back time*. It was reasoned that if gigantic events like the formation of faraway nebulas were being received, than small events like passing civilizations should be somehow embedded. On the dark side of moons and planets, entire pictorial histories could be seen from afar. Somewhere in the galaxy, even the earth's radiated past could be witnessed and in this regressive happening, between archaic civilizations and contemporary wars, some insignificant events in a prosaic village were screened on a surface.

After six seasons, these recordings were symbolically ended with a partial solar eclipse over the village. **(Fig. 30 & 31)** The sun is inherently part of the photographic medium. Light is the essence of photography and the phenomenon was discovered when the crescent-shaped image of the sun in partial eclipse projected its shadow version through the leaves of a tree. The coincidental event mediated this regression into my ruinous past between a eulogy and a metaphor about photography, with the sun as its protagonist. This new series became a research into the peripheries of the lens-based medium and the object-hood of the photographic print – functioning individually in unique spatial installations and collectively within the constructed place of a book. The sun never sees a shadow, a philosopher once said, but it should be added that it casts many. Sunville became an aperture through which these recovered images were

projected over a ray of light through the eye into the darkest chamber. There, the sun has the deepest shadows.

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