Poetics of assembly
Albert Kahn and D.W. Griffith in the birth of the Machine Age

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1. Con el ejemplo de Albert Kahn, aunque no en su propia voltereta sino en la de su mimicria, la perspectiva de lo que llamamos architektonisches Denken es evidente. Kahn, en su época, se aproximaba al tema de la arquitectura con un lenguaje visual que evocaba formas y geome
dricas de la naturaleza. Su trabajo abarca desde la arquitectura industrial hasta la arquitectura religiosa, pasando por la arquitectura urbana. Kahn es conocido por sus diseños de edificios públicos y privados, así como por su capacidad para transmitir su visión del mundo a través de sus obras.


3. En paralelo, la filosofía de Albert Kahn, aunque no en su propia voltereta, se refleja en su obra de manera directa. Kahn no solo es un arquitecto, sino también un filósofo del diseño, que busca expresar su visión del mundo a través de sus obras. Su enfoque es el de la arquitectura como manifestación de la cultura y de la ciencia.

4. Este es un tema que se encuentra plasmado en el libro "DELANEY, Mary Ann. The emergence of the machine aesthetic. 1944-1946. 


8. En consonancia con las teorías de la didactica de la imagen, el trabajo de Kahn es un ejemplo de cómo la arquitectura puede ser una herramienta para transmitir ideas y conceptos. Kahn es conocido por su capacidad para crear imágenes que evocan la naturaleza y la cultura, y que transmiten su visión del mundo a través de sus obras.


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Cinema and modern architecture

First, we want to put forward our interest in establishing a relationship between cinema and modern architecture because the obvious coincidences in time that the usual historical records of these disciplines explains and that place the birth of both in a very limited territory parentheses. Although in both cases the existence of predecessors is common knowledge; the Lumière and Méliès; the brothers Muybridge; the innovators of cinema or Adler Loos, Perret and Behrens in modern architecture, their disciplinary origins can be located with certainty in the first two decades of the twentieth century. All film historiography coincides in considering DW Griffith as the true initiator of cinema as a discipline that has a vital relationship with the establishment of Fordism, which is independent of the theater and the pictorial or documentary shots of the pioneers of American and French cinema and which is beyond the simple discovery of technical innovations necessary for their development.

This role as the founder of a new discipline, which in the case of cinema is little discussed; presents numerous questions and ambiguities when we are speaking of modern architecture. The names of Gropius, Mies and Le Corbusier immediately appear in our memory, but in none of them can we find the seed that can explain the subsequent evolution of architecture as a whole. We realize that there are branches, vigorous and principal, which must arise from a common trunk. This article presents the hypothesis that, without understanding the birth of architecture like Wright and Behrens, the common origin comes from the American industrial architecture of the early twentieth century, specifically the industrial work of Albert Kahn, and that it is due to certain characteristics that bring it close both conceptually and procedurally to the nascent film industry.

We also believe, as does Walter Benjamin that cinema unravels - dismounts and remounts - all forms of vision, all rhythms and all the preformed timings of contemporary machines in such a way that all the problems of contemporary art can only find their final form in correlation with cinema. That is, cinema has produced a new conception of temporality and of the procedures of artistic production, its birth revolutionized in such a way the contemporary world of the cinema of the era and of the machine and production in all creative disciplines including architecture.

This influence is expressed in a number of common conceptual characteristics between cinema and modern architecture. The birth of both fields very significantly coincides with the establishment of Fordism as a new industrial religion and with its expansion to other areas of human life. This includes and explains other disciplinary coincidences that are based on the conception of the importance of technology and the establishment of a new type of temporality, one of a purely Fordist filiation. Cinema and modern architecture are two activities based on the use of technology. The existence of cinema is not possible without machines and is very difícil to escape the modern movement of the main intermediate areas of more significant poverty (...), which must arise from a common trunk. This article presents the hypothesis that, without understanding the birth of both fields very significantly coincides with the establishment of Fordism as a new industrial religion and with its expansion to other areas of human life. This includes and explains other disciplinary coincidences that are based on the conception of the importance of technology and the establishment of a new type of temporality, one of a purely Fordist filiation. Cinema and modern architecture are two activities based on the use of technology. The existence of cinema is not possible without machines and is very difícil to escape the modern movement of...
mechanical in general in regard to all that is human, assembly presents its user as an engineer or as a worker, art assimilates the factory, the production of material goods. In conclusion the assembly had to find in the film maker, after all a machine, the ideal place to express itself, as they had also done with photography, urban planning and engineering. Therefore, assembly embodies the quintessential characteristic of the modern world.

In architecture, the adoption of the mechanical paradigm by the pioneers of functionalism produced the birth of modern architecture. This led to the adoption not of science but of technology as a new leader and guide of the destiny of architectural activity. Technique becomes the most important driving force behind architecture and in general of the twentieth century European society. The main influences that acted to impose this on the architectural discipline, most preeminently the figure of Albert Kahn, can be divided into two main categories: the supra-disciplinary influences and the inter-disciplinary categories.

The first category of influences refers to the global adoption of Fordism as a theoretical framework with a larger scope than architecture. This influence, at first limited to the organisation of industrial production, and that would later be extended to all areas of human activity, would be critical in the case of modern architecture. All pioneers of modern architecture eventually defined themselves as Fordists or at least widely quoted Henry Ford in their writings. A quote from Le Corbusier is enough to estimate the importance of Ford in the modern world: "With Ford all is cooperation, unity of vision, unity of purpose, the perfect convergence of all thought and action".

Fordism is adopted as the new industrial religion in such diverse places as Western Europe and the newly created Soviet Union, where Stalin regarded Ford as 'the world's largest industrial' and the Russian translation of the fourth edition of the memoirs of Ford included an introduction stating that: 'Fordism is a system whose principles have been known for some time, and that had already been established by Marx'. The study in depth of the relationship between Fordism and architecture has no place in this article, on the other hand it has been detailed in numerous publications, leading to the formation of the concept of functionalism and the adoption of the technical object as a model for the modern architectural project.

Interdisciplinary influences however, account for the different ways in which the engineering values are transferred to the architecture. For Fordism, the architect is no more than a toolmaker, while for the designer of buildings, it is a tool for building film syntax, Kahn is the creator of the buildings where Fordism first took shape: Ford’s Highland Park and River Rouge factories. Kahn is not only the author of some of the buildings that came to function as real machines (comprising the building, workers and machinery in a total symbiosis) and in which technical objects were mass produced (the car at that time was still considered a simple element and was not loaded with the current symbolic, cultural and social overdeterminations) paradigms of modernity and shapers of a new urbanism. He is also the creator under his client’s requirements of the first architectural firm with a Fordist functionality.

They both have an extremely confuse production. If in monographs about Griffith, a total of 496 films belonging to the period between 1908 and 1931 are listed, Kahn’s buildings had already been used in more than 1,500 buildings in the United States and 90 in the UK, system that was exported from that year on around the world. We believe that in both cases this huge productivity has a common cause and consequence. The Fordist organisation of both production systems and in the assumption of industrial processes for both disciplines that did not exist before (architecture was until then an activity of an artisanal and artistic character, and the film was associated to this until the arrival of assembly with the documentary activity or the fairground). The consequence is that a duplication of results occurs due to the standardization of elements, materials and procedures of both constructions; in architecture and cinema. This new ease to technically respond to a predetermined object, leads to the standardization of many films of Griffiths early days and to the reproduction of Albert Kahn’s Ford factories throughout the United States. This replicability, which is a key feature of technical objects and implies the partial independance from the constraints of the implantation site, is inherited by architectural modernism and ends up being one of its most criticized features by the next generation of architects.

Film editing in Griffiths case is done with tools created by himself such as close ups, the American shots and detail shots, the ‘flashback’, the suspen of the ‘last minute rescue’ and the parallel and alternate editing. Kahn’s assembly is expressed in several ways. First Kahn produces a dismantling of the load bearing and enclosure functions that anticipated the Modern Movement in its industrial constructions with concrete or metal structures where the former load bearing facade that alternated solid and void becomes a continuous and light membrane, a light collector and a dissipater of gas and hot and flawed air produced by internal activity. On the other hand, he produces a dismantling and subsequent reassamble of the industrial sites functions. Highland Park ‘assembled’ at the same time several factories with different functions in a compact whole. In River Rouge, fitting parts separated by functions resembles an industrial city, in which the constraints arising from the movement of materials and people predominate. In the field of his architectural syntax, Kahn produced an assembly of sections, freeing the plant of any functional binding and making it a mere scheme, a score in which to place, with the right rhythm for production, the different necessary sections. Kahn’s assembly of sections comes as an inverted mirror in comparison to Le Corbusier’s free plan assembly. This assembly in both disciplines is produced by having to introduce a time factor in the overall planning of both objects, film and building. This result is often perceived as a mechanical and to Fordism, to a next generation of filmmakers and architects who paradoxically are not found, as expected, in the American context but precisely in the embryo that in the near future would be his political opponent in the international arena; the nascent USSR.

Griffith’s influence on Soviet cinema is widely documented. Only one letter from Leonid Trauberg to Griffith himself, dating from 1936, gives an idea of the intensity of this influence:

‘You certainly know how important the effect of your films was on us: screenwriters and actors. We saw your films in 1923-1924 with the exception of ‘Intolerance’, which we saw in 1919-, in that time in which we all -Eisenstein, Pudovkin, Vertov, Vasilieff and we two (Trauberg and Kozintsev) - had just started working as directors. Under the influence of his films (...) we created our style.’

This letter is backed by countless material written by the directors of the Soviet era who recognized Griffiths influence, especially in his film ‘Intolerance’. As Sanchez-Biosca account’s:

‘Legends soon circulated around the reception of ‘Intolerance’ from the Soviets. It is claimed that Lenin offered Griffith the USSR film direction, it is also said that the film was studied at the Film Institute in Moscow, experimentaly manipulating it to reverse its ideological message (...). In any case there is no doubt in the authenticity of Kuleshov, Pudovkin and Eisenstein’s statements on the revelation that Griffith’s film ‘enthusiastic’ was for them-and for the rest of their companions.

This same process of transmission and training, but with an amazing change in scale took place in the field of architecture, during Albert Kahn’s stay in the USSR, during which one can say that under his tutelage, an entire generation of Soviet architects was formed. As in the previous case on Griffith, this influence is recognized in a letter he wrote to Viktor A. Vesnin Albert Kahn’s wife on the death of the architect in 1942:

‘Soviet engineers builders architects send you their sincere sympathy in connection with the death of your husband, Albert Kahn, who rendered us great service in designing a number of large plants and helped us to assimilate the American experience in the sphere of building industry.’

This situation is part of the emergence of a pre-culture that included the programmatic acceptance from the Soviet scholastic of Taylorism and of Fordism and add to this Americanism, technicality and militant mechanization of the Soviet vanguard. Also at the same time it presents the need for massive industrialization, framed in the first Five-Year Plan, that entailed the planning and construction of many industrial compounds. All these prior components reacted having as a catalyst the presence of Albert Kahn Inc. in the USSR, which came with the signing of two contracts with the Soviet state, one to
design the Stalingrad tractor plant and a later contract that made them consultant architects for all industrial buildings of the USSR. This industrial construction volume and investment is the main constructive activity of the USSR at that time. It was managed by huge specialized agencies that were ‘real offices of engineering’, with the participation of architects.

The importance and extent of the influence of Kahn in Soviet architecture can’t be undervalued if one takes into account the balance offered by Sonia Melnikova-Raich:

‘When Albert Kahn’s architects and engineers left Moscow (in 1932), they had designed and built (or were still under construction) hundreds of plants and factories in 21 cities. About 4,000 Soviet architects, engineers and draftsmen had been trained in Kahn’s offices (...). This left behind Soviet architects trained and able to develop similar facilities throughout the country (...) It is estimated that more than 500 built industrial structures were completed on using Kahn’s projects (...). In addition, Kahn’s ideas formed the basis of the Soviet school of standardized and prefabricated industrial design. His ‘assembly chain’ design process became the universal method of work for all Soviet organizations dedicated to architecture.’

Importance otherwise undervalued in modern historiography, in which it seems that only Russian architects committed to the socialist cause as Mendelsohn, Ernst May, Mart Stam or André Lurçat, worked, forgetting the main actors of this episode and the authors of the most important Soviet-era’s social condensers”: factories.

But it is in the urban area where you can better appreciate the consequences of the use of the assembly concept on architecture and the influence of the industrial experience transferred by Kahn to Russian soil. The implications of their application in the field of urban design are extremely important producing theoretical proposals that dismembering the traditional continuity of human life, turn the inhabitant into a spectator rather than an actor in the city. Life in the new towns designed from Fordist principles reach their peak in the functional breakdown proposed by the Charter of Athens, in Le Corbusier’s urban proposals and the utopian proposals of Soviet de-urbanists, which as discussed below are closely related to Kahn’s presence in the USSR. Life in these new urban centers paradoxically reaches a level of individual immobility that resembles the one demanded by film projection.

Soviet cinematographic city

Simultaneously to Kahn’s presence in the USSR, and as explained above, most likely due to its direct influence, the problems of an urbanism directed at the creation of new ‘servant’ cities of industrial faculties are raised later on using Kahn’s projects (...). In addition, Kahn’s ideas formed the basis of the Soviet school of standardized and prefabricated industrial design. His ‘assembly chain’ design process became the universal method of work for all Soviet organizations dedicated to architecture.

These convergences at the conceptual level and in the design strategy produce a morphological coincidence between both systems. The Sotsgorod of Miliutin take the appearance of a film footage ‘mechanical River’, of a huge assembly line, capable of infinite linear growth. In both, everything is designed so as not to interrupt the flow of the line; transverse circulations always occur at different levels, no crossings. All components of the city-factory are strictly separated, uses do not overlap in time, people also serve as a viscous fluid which travels in a synchronized way from one functional area to another. The modular and prefabricated elements, that come from Kahn’s experience is total. These parts are distinctly spaced to allow maximum flexibility in growth and change, and are willing to act as real technical items intended to accomplish one simplified task: sleep, eat, educate, raise children and build social relationships.

Both in the city-factory and the factory-city, the ground plan, as an element which details human activity disappears, giving way to the flow scheme that articulates the assembly structure from a simplified and ‘scientific’ point of view from which all the complexity and unpredictability that derives from individual behavior has been removed. Soviet planners translate Kahn’s factories in proposals for the new socialist cities, always associated with centers of industrial production, which morphologically replicate Detroit’s architect’s buildings. In the case of Sotsgorod in Miliutin the whole city started to function as a Fordist factory, with a banded linear organization that required the mechanization of all aspects of human life, and that would lead to a new way of communal Soviet life, which involves disassembly and reassembly of the capitalist way of life.

This produces the first film scheme for a city in history. A utopia in which lies in the verse making machine on the ‘poetic Artaud’ of Machado’s Juan de Mairena, ‘on the one hand the world enters, on the other leaves poetry’. In Sotsgorod of Miliutin, life comes in on side and on the other side industrial production goes. What is between is the machine, which already comprises the entire city. The result is mechanical because it’s elements are. The result is that the assembly line occurs following the outline of a single dominant feature: the mechanized movement. This kinematic predominance also becomes cinematographic because it turns the inhabitant into a viewer.

The film makes the world go while we remain static, in the same way that it happens with an assembly line. The city moves in front of the inhabitant that remains still and encapsulated. As happens with the film viewer, life goes on ‘in a room that seems out of time and