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**HISTORICIZING THE VIEW FROM BELOW: AERIAL PHOTOGRAPHY AND THE
EMERGENCE OF A SOCIAL CONCEPTION OF SPACE**

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ABSTRACT

This article seeks to reconnect the late-twentieth-century theoretical development of a social conception of space in the social sciences and urban planning with a technique that was developed in the early twentieth century, during World War I: aerial photography. As a tool of representation, aerial photography has often been linked, in the work of numerous late-twentieth-century scholars, to "top-down" urban planning programs that ignored the psychological needs of urban inhabitants on the ground. As we will see, however, the new ways of seeing offered by the airplane led, simultaneously, to the emergence of a "bottom-up" approach to urban planning that focused on the everyday experience of urban residents. The view from above, in fact, gave rise to the view from below.

In the aftermath of World War II, a novel conception of urban space began to emerge simultaneously in a variety of academic disciplines, among them sociology, anthropology, urban studies, architecture, urban planning, geography, and even literary theory. At the center of this new way of analyzing space was a focus on the subjectivity of urban inhabitants on the ground, that is, how local residents used and perceived the spaces in which they lived and worked. This idea, which was often encapsulated by the term "social space," provided an alternative to Euclidean notions of mathematical or abstract notions space; "social space" presumed that urban space was not pre-existing but, rather, was socially 'produced' in everyday life. One of the most famous exemplars of this "bottom-up" approach was the French Marxist urban sociologist Henri Lefebvre, who was based at the University of Nanterre, just outside of Paris.

Analyzing the history of the social space of various societies, Lefebvre suggested that the hierarchical social structures created by capitalism were reproduced in the physical world, in the organization of urban space. The most crucial task for late twentieth-century social scientists, according to Lefebvre, was to better understand this process in order to find ways of changing it. As he wrote in the mid-1970s, "Knowledge of (social) space is now being established as a science, even though it is still in an early stage."¹

Despite the continuing influence of this idea throughout the social sciences, urban planning, and architecture, historians have not yet asked two key questions: How and why did the 'social' and the 'spatial' come to be conceptually linked in twentieth-century French social scientific research? What was the impact of this social conception of space on concrete urban planning programs in postwar France? As scholars continue to turn to Lefebvre's work in search of a framework for analyzing contemporary events -- especially the riots that occurred on the outskirts (*banlieues*) of large cities across France in 2005 and 2007 -- a contextual history of his ideas is overdue.

By examining the history of the concept of "social space," the connection to aerial photography, a technique of observation and representation that was closely associated with the French colonial state and military, becomes apparent. Although Lefebvre and his colleagues, including the philosophers Michel Foucault, Guy Débord, and Michel De Certeau, often equated aerial photography with "top-down" urban planning programs that ignored the true needs of local inhabitants, the very idea of social space was actually engendered with the help of this military technique of representation. Beginning in the 1920s and 1930s, social scientists working in the then-burgeoning fields of human geography and ethnography, as well as history, experimented with aerial photography in their work investigating the spaces of human habitation in French

colonies as well as in France. Crucially, the device helped these researchers to see the connection between social organization and spatial organization.² After WWII, this way of analyzing space engendered a new approach to urban planning that attempted to illuminate the perspective of urban residents. The view from above, therefore, gave rise to the view from below.

Historicizing the concept of social space serves to illuminate how the problem of the *grands ensembles*, or large, publicly-funded housing complexes that were constructed on the peripheries of cities across France in the 1950s and 1960s, was ultimately conceptualized by late-twentieth-century urban planners, policy-makers, and social scientists. Working within interdisciplinary and government-sponsored urban research teams, Lefebvre and other sociologists used the idea of "social space" to argue that the social problems associated with this new form of modern housing -- including depression, juvenile delinquency, and high unemployment -- were not a product of the buildings themselves. Rather, they were a direct result of the *distance* of these residential complexes from the social, cultural, and political centers of French cities. With the aid of the concept of "social space," therefore, Lefebvre and others reformulated the problem of the *grands ensembles* as that of the modern *banlieue*. This way of thinking about the problem of the *grands ensembles*, and social housing more generally, remains entrenched within urban planning and governmental institutions both inside and outside France even today.

CAPITALISM, MODERNITY, AND THE GOD'S-EYE VIEW

In order to understand the genesis of this postwar concept, then, we first need to go back to the interwar period, to a moment when the airplane was the subject of much enthusiasm for

the public and politicians alike. Public enthusiasm for flight permeated the great economic, political, and social instability of the 1930s; the airplane was often used as a metaphor and political device, as well as a tool for scientific and social scientific research. Responding to the passion for airplanes and aerial views within the public, politicians on both the left and the right used aviation and aerial photography to bolster their political programs.

The tool was, for instance, a favorite among right-wing politicians such as Mussolini. The distance provided by god's-eye views from the chaos of everyday life, Mussolini argued, was critical to taking a novel perspective on the human condition. For him, aviation was the ultimate symbol of modernity, leadership, technological progress, optimism, and citizenship – all the essential qualities of a future Italian state as he and other fascists imagined it. Moreover, Mussolini's employment of aerial views has been described as part-and-parcel of the logic of 'high modernism' and its aim to free humankind from history, tradition, superstition, and myth-making.³ The detached view of the world provided by aerial photography furthered this project: From above, the world appeared as a *tabula rasa* upon which a new human history could be written.

ETHNOGRAPHY FROM THE AIR

Not so was it for interwar French social scientists, who interpreted the God's-Eye View in a radically different way. These pioneers in ethnography, history, and human geography used the airplane to bring to light the history and social complexity of French colonies as well as France. One key example was the Africanist Marcel Griaule, an aviator and ethnographer who had served as an aerial spotter and navigator during World War I. In the mid-1930s, while based at the *Musée de l'Homme* in Paris, Griaule used aerial photos to study the cosmology and

iconography of Dogon society in West Africa. Dogon society was very secretive, and it was difficult for an outsider to gain access to important information. Griaule circumvented this problem by using an airplane. He surmised that if aerial photos could help him to see trenches hidden deep within the landscape, they could also aid in bringing to light the invisible aspects of cultural, social, political, and economic organization.

From the air, Griaule noticed the checkerboard pattern of Dogon agricultural fields (fig. 1). On the ground, he discovered that this same pattern was reproduced on the facades of sanctuaries, painted on rocks, and weaved into funerary blankets (fig. 2). This observation led him to argue that the Dogon had an integrated cultural system in which the various spheres of their lives were harmoniously integrated in the Dogon unconscious (fig. 3). Griaule repeatedly asserted that this "scientific discovery" would not have been possible without the aid of the airplane.⁴

Interwar architects and urban planners also experimented with the use of aerial photography in their own work. In 1935, for instance, the architect and urban planner Le Corbusier published a book titled *Aircraft* in which he used aerial photos to critique the 'disorderly' organization of space in western capitalist societies.⁵ He contrasted the 'natural' organization of space in non-western areas, where people were happy, with the chaos of capitalist cities in the West, where people (according to Le Corbusier) were individualistic and unsociable. Also the 1930s, using aerial photography in a very different manner, the architect Marcel Lods used aerial photos to develop plans for the first *grands ensembles* on the periphery of Paris. The idea was to document the growing 'chaos' of suburban areas and to help alleviate the housing crisis by developing a form of housing for the masses, rather than for the individual.

AERIAL PHOTOGRAPHY AND "SOCIAL SPACE" IN POSTWAR FRANCE

Ideas about the connection between the 'social' and the 'spatial' were therefore already percolating in the interwar period. But it was only in the aftermath of World War II, during an era of urban reconstruction, that the concept of "social space" began to appear in numerous published works in the social sciences and to take hold within urban planning circles in Paris. World War II had provided the opportunity for social scientists to become involved in urban planning programs, and the notion of "social space" helped sociologists to differentiate themselves within interdisciplinary urban research teams.

It was Paul-Henry Chombart de Lauwe, one of Griaule's students, who, drawing on pre-war anthropological theories of spatial organization, first developed this idea, with the aid of aerial photography. In his 1952 work, *Paris et l'agglomération parisienne: l'étude de l'espace social dans une grande cité*,⁶ Chombart de Lauwe argued that the "social space" of French cities demonstrated not only the continuing spatial segregation of Paris, but, more generally, the continuing inegalitarian nature of French society. Far from the ideals of the French Revolution, he suggested, France still epitomized a society divided along class lines.

Chombart de Lauwe used the notion of social space in this work to argue for an alternative notion of "needs" to that outlined by CIAM (Congrès Internationaux d'Architecture Moderne), an organization founded in 1928 for the purposes, at least ostensibly, of distributing ideas about the Modern Movement in Architecture.⁷ In 1943, Le Corbusier and other CIAM members published the Athens Charter, a highly influential document that outlined ninety-five key points for the creation of a "rational" city. Any such city, the Charter suggested, would be divided into various zones for living, and these zones would be based on what CIAM considered as the four main functions, or needs, of urban inhabitants: living, working, recreation, and

circulation. The Athens Charter favored the creation of functional, high-rise apartment buildings, and had an immense impact on government officials at major urban planning institutions in postwar Paris. In contrast to the functionalist notion of needs outlined in this document, Chombart de Lauwe argued that architects and planners should instead consider the *psychological* and spiritual needs of urban residents, and design cities with these in mind.

Aerial photography provides, of course, views of the surface of the earth. But, for Chombart de Lauwe, the technique was key to gaining insight into what laid *below* this exterior. For instance, in his 1952 study, Chombart de Lauwe used aerial photos -- and graphic representations based on aerial photos -- to show that systems of social relations were intimately tied to the location of individuals in urban space. Aerial photos of Paris made visible, in a new and more exciting way, a fact that anyone who had walked through the streets of the city already knew, that this environment was divided both geographically and socially: Bourgeois residents mostly lived and worked in the West, while working class individuals largely inhabited the East.⁸ The wide and geometrical streets of the bourgeois neighborhoods in the West were lined with classical houses situated on geometrical streets with plenty of open space around them, while those in working-class sections in the East were easily identifiable by their narrow, irregular streets and closely-knit buildings (fig. 4). Chombart de Lauwe linked these apparent differences in spatial relations with differences in habits, familial norms, and levels of sociability. Bourgeois individuals in the West, he argued, had very little contact with local merchants and neighbors in daily life, while workers located in the eastern parts of the city were found to have much deeper ties to their neighborhood.

This study served to reinvigorate old political concerns, and successfully joined urban planning and Marxism. What was novel, after all, was not Chombart de Lauwe's conclusion

about the social and geographical division of Paris, but rather the methodological basis of his assertion. Chombart's use of aerial photos demonstrated, in a manner that government officials, planners, social scientists, and the public alike viewed as “objective” and scientific, the continuing relevance of Marxist theory in the postwar era.⁹

It also helped him to gain authority within government and planning circles. Chombart de Lauwe secured funding for his 1952 aerial study of Paris in large part due to his long-term friendship with the architect Robert Auzelle, who at that time was head of the section within the MRU devoted to *l'aménagement du territoire*. Chombart de Lauwe and Auzelle had met and worked together under the Vichy regime at the *Ecole des cadres d'Uriage*, a school created to infuse future leaders of France with the values of the National Revolution. In addition, in the late 1940s, Auzelle and Chombart de Lauwe collaborated on plans for the reconstruction of the town of Petit-Clamart, southwest of Paris, in which they attempted to integrate Chombart de Lauwe's sociological ideas with urban planning and architectural realities. Now, in the early 1950s, in the wake of Minister of Reconstruction and Urbanism Eugène Claudius-Petit's call for interdisciplinary studies of urban problems across France, the Ministry of Reconstruction and Urbanism (MRU, *Ministère de la Reconstruction et de l'Urbanisme*) funded three pilot studies, one of which was Chombart de Lauwe's study of Paris and the Parisian '*agglomération*.' Auzelle himself was highly sympathetic in his own work about the prospect of integrating sociological theories into the practices and pedagogy of urban planning and architecture.

Trained at the IUP, Auzelle was also deeply engaged, like Chombart de Lauwe, in the development of visual techniques for the study of social life in urban environments. In the late 1940s, he authored a multi-volume encyclopedia of urban planning that demonstrated how social life in urban areas could be examined from multiple perspectives with the use of aerial

photography, street-level photography, statistics, cartography, and other methods.¹⁰ Auzelle here maintained that aerial photography and mapping were essential methods for gaining insight into the sociological details of an agglomeration, as well as obtaining a holistic view of any urban environment.¹¹

Then, in 1953, Auzelle published a work titled *Techniques of Urbanism (Techniques de l'urbanisme)*, for the “*Que sais-je?*” series, in which he explored various ways of studying the complexity of urban environments and called for a new approach to urban planning. In the book, he argued that visual techniques, among them aerial photography, street-level photography, and cartography, were critical tools for understanding the complexity of modern-day cities because they offered an empirical approach, which in addition to interdisciplinary perspectives was key to developing a "rational" and scientific understanding of that complex entity known as an “*agglomération*.” “A rational urbanism,” Auzelle wrote, “must indeed be based on as exact a knowledge as possible of humans and their multiple needs. Acquiring this knowledge requires the convergence of a mass of disciplines that stretch to the most diverse domains: biology, ethnology, sociology, history, geography, demography, political economy, etc.”¹²

One of the techniques of vision that Auzelle helped to develop while at the MRU was the *maquettoscope*. In 1949, while directing the *Centre d'études* at the MRU, Auzelle asked engineers at the *Institute Optique de Paris* to develop a tool that would allow planners to visually enter into a model in order to gain a ground-level perspective on volume and mass.¹³ As H. and J. Vulmière, the key engineers who invented this instrument, explained, Auzelle asked them to develop a system that would "respond to the following question: What will an observer situated in such a place determined by the model see: street, window, panoramic views?"¹⁴ Architects and planners had used other instruments to attain this perspective before, borrowing the

cystoscope, or instrument used to peer into the insides of blood vessels, from the medical world. The *maquettoscope* was similar to the *cystoscope*, except it could also *photograph* this ground-level perspective, which could then be used in developing plans. It also provided better quality images than those produced by the experimental instruments of the historian and planner Gaston Bardet at the IUP in the pre-war period, such as the "inverse perioscope."¹⁵

Justifying the development of such a tool in the mid-1950s, Auzelle explained that, previously, most planners could not predict how their plans would translate into reality at the street-level. By allowing the planner to visualize volume and mass, the *maquettoscope* would help urban studies be completed faster and more accurately. As he wrote in the mid-1950s, "architects now have the possibility to take into consideration in a very precise manner the effect of volumes in a model composition, realizing real conditions and natural light at its maximum...[it] offers architects...[the possibility] to place themselves in the position of spectator..."¹⁶

The *maquettoscope* offered, in short, a technical means for obtaining a street-level perspective. Stressing the need for multiple perspectives on the built environment in an article describing the development and utility of the *maquettoscope* in the mid-1950s, H. and J. Vulmière likened the difference between viewing a model on its own versus with the aid of this tool to looking down on a section of the city from above and seeing it from the ground.¹⁷ "Paris seen from the top of the Eiffel Tower or even from its first platform is...hardly comparable to...the Paris that we travel through in our everyday lives," they wrote.¹⁸ While aerial photos were crucial for providing a "*vue d'ensemble*" on a reduced surface, "they are insufficient for a detailed examination and will be advantageously completed with the addition of views taken from the *maquettoscope* from carefully chosen points."¹⁹ They ended the article by presenting

the notion that future engineers may find a way of filming at this minute level, allowing for virtual "strolls through the streets of *maquettes*."²⁰

Given Auzelle's own interests in visual techniques and sociological explorations, as well as his friendship with Chombart de Lauwe, it is little wonder that he supported Chombart de Lauwe's 1952 study of Paris, which demonstrated the utility of both to understanding contemporary urban planning problems in France. In this work, Chombart de Lauwe argued that the discipline of ethnography had much to contribute to the endeavor to analyze and find solutions to urban problems. The analysis and solution of urban problems in France, he contended, required an outsider's perspective; this could be achieved, *literally*, with the use of an airplane, and furthered by ethnographic fieldwork on the ground. Both a top-down and bottom-up perspective were therefore necessary for obtaining a truly 'objective' look at the problems facing postwar French cities. As he wrote:

There is an ethnography of large industrial cities like a sociology of non-machinist peoples. To neglect the ethnography of large cities is to look at our own civilization in a non-objective manner. The ethnography of large cities requires, even more than that of remote countries, its own state of mind. It requires attention to the details of everyday life, to the reaction of characters we rub elbows with every day, and a capacity to disorientation and participation in concerns of people and groups, which is gained at the price of a long learning process. This learning process alone can give the investigator the required assurance of objectivity.²¹

After the publication of Chombart de Lauwe's 1952 work, the contribution of sociology to urban planning and architecture -- and qualitative methods more generally -- started to become more accepted. This is clearly evident in the example of the planner Alexandre Burger, one of Auzelle's students, who drew upon Chombart de Lauwe's notion of "social space" in his award-winning 1957 study on the use of aerial photography in urban planning, in which he used aerial

photos to compare the socio-economic characteristics of two sections of the city of Colmar, in northeastern France.²² In a chapter devoted to the contribution of sociology to urban planning, Burger centered his discussion upon Chombart de Lauwe's extensive use of aerial photos and his notion of "social space."

Burger began by quoting from Chombart de Lauwe's 1952 book on Paris, in which he had called for empirical studies to prevent the development of "abstract plans" that ignored the true needs and aspirations of local populations. Like Chombart, Burger now maintained that interdisciplinary collaboration between experts in a wide range of fields, and especially between sociologists and planners, was absolutely critical to solving the problems that faced postwar cities in France. At the same time, he noted how difficult this collaboration was to achieve in practice, and suggested that aerial photography could be used to construct an interdisciplinary bridge between sociologists and urbanists. "By using the same methodological tool," he wrote, "everyone is driven to become more clearly conscious of his neighbor's concerns and to confront the results of his research."²³

By placing social facts within the physical world in which they evolved, Burger concluded, aerial photography made sociological data more comprehensible to urban planners. Aerial photos at a large scale clearly exposed the geographical contours of *quartiers* within Colmar, as well as the city's sociological character and the level of sociability among local residents (fig. 5). What planners were viewing on an aerial photo of an agglomeration, he explained, was not only a city's geographical traits but also its sociological composition. Only aerial photos provided a planner with a view into the relationship between disparate spaces within a city and how these networks (*réseaux*) had evolved over time.

As a case in point, Burger cited the example of aerial views of two different sections of the city of Colmar in Alsace, obtained from the MRU. The first, a view of the Saint-Marie neighborhood, appeared relatively homogenous on a simple topographic plan. Yet aerial photographs of this section revealed crucial details, allowing urban planners to see into its character at a glance. For instance, looking at an aerial photo, one could clearly see the existence of two types of housing within the section, individual houses (*pavillons isolé*) and collective apartments (*grands ensembles*). Examining the photograph even more closely, a planner could see that each type of habitation was associated with a different type of garden: those attached to the *pavillons isolés* had trees, while those in the *grands ensembles* were used solely for growing food. This difference, Burger argued, pointed to different socio-economic levels, as those living in individual houses could afford to lose valuable land for cultivation, while those living in the *grands ensembles* could not.

Going further, Burger compared the “social space” of Sainte-Marie with a neighboring section of Colmar, Château-d’Eau, which aerial photos revealed to have a very different character. Château-d’Eau was composed entirely of spacious houses, all with decorative gardens. Each house had a garage, and the streets were harmoniously aligned and well-maintained. The form of the houses, gardens, and surrounding streets revealed that the population of Château-d’Eau was more bourgeois than that of Sainte-Marie.²⁴

Burger’s analysis of the social space of Colmar, based on aerial photos, recalls Chombart de Lauwe’s study of the social space of Paris. It shows the role of photographic techniques and empirical observation in the development of a new approach to urban planning. By helping to quantify urban space and its sociological dimension, aerial photos presented an alternative way

of designing urban environments that was not utopian but, in the eyes of its advocates, "scientific."

SOCIOLOGICAL EXPERTISE AND THE STUDY OF THE BUILT ENVIRONMENT

As the idea of "social space" developed and began to take hold in the social sciences and urban planning, so did the perception of the application of sociological expertise to the fields of urban planning and architecture. Throughout the late 1950s and 1960s, sociologists were increasingly in demand within interdisciplinary, government-sponsored studies of urban problems, especially the *grands ensembles*. Only sociologists, government officials exclaimed, could bring to light the "reality" of social life in these residences.

Here, we meet up with Lefebvre, where our story began. In the late-1950s and 1960s, just as he left the French Communist Party, Lefebvre became involved in government-funded studies alongside Chombart de Lauwe and other sociologists, such as Raymond Ledrut, who was based at the University of Toulouse. Like Chombart de Lauwe, Ledrut and Lefebvre used the concept of "social space" in both their government and academic work to offer a new way of conceptualizing the problem of the *grands ensembles*. The main issue, they argued, was not the buildings themselves, as many at the time were suggesting. Rather, the key problem was the organization of space in French cities. In other words, at fault was not architecture but the organization of urban space.

Yet, unlike Chombart de Lauwe, Lefebvre and Ledrut -- along with many other contemporaries, such as the philosophers Michel Foucault and Michel de Certeau -- criticized exactly the technique of representation that had inspired the concept of social space in the first place. Lefebvre's disdain for visuality was part and parcel of a more general critique of western

capitalism. The emergence of this mode of production, Lefebvre argued, was accompanied by the hegemony of sight, a sense that he equated with distance and passivity. Techniques of representation such as aerial photography only served to 'flatten' the complexity of social life, reducing its richness to an abstraction impoverished of meaning and experience. Although planners claimed that these qualitative methods were indispensable to the 'scientific' analysis of urban environments, Lefebvre warned that they actually concealed more than they revealed.

In particular, Lefebvre asserted that these abstract techniques masked the omniscience of the state in local affairs, especially in urban management, under the neutral umbrella of "science." According to Lefebvre, the state maintained its vast bureaucracy largely by collecting data on all areas of social life. Visual methods were particularly important in government record keeping, because officials, planners, and others considered them as more objective than others, because they were quantifiable. The quasi-colonial presence of the state in local affairs, Lefebvre argued, perpetuated the boredom, monotony, and sterility of everyday life under western capitalism, wherein authenticity was lost to abstract representation.

Lefebvre was here expressing concerns that were typical within intellectual circles in Paris at the time.²⁵ The philosopher Michel Foucault, for instance, in *The Order of Things* (1966),²⁶ likened the emergence of humankind as a subject of research in the human sciences to that of a king gazing upon his subjects from afar: The methods used to compare, measure, and 'order' social life reduced the complexity of humankind, Foucault argued, much like the taxonomic table used by natural scientists to visibly order their knowledge of the natural world.²⁷ Ironically, a concept that was engendered by the holistic view of the world offered by the airplane in Chombart de Lauwe's work years earlier now represented the distance that Ledrut, Lefebvre, and others perceived between their own sociological "bottom-up" approach and the

"top-down," authoritative approach of government officials and planners. A literally vertical perspective was transformed into a metaphorical one.

Understanding this shift requires us to look deeper into the context in which it unfolded. In the wake of the atomic bomb, the Algerian War, and the first satellite photograph of the earth, the distanced view from above was dehumanized. In contrast to World War I, in which aerial photography was utilized primarily for the purposes of surveillance, during World War II it was used as an instrument of aerial bombardment. The destruction caused by aerial bombardment left an indelible mark on the technique. By the 1960s, aerial photography epitomized governmental power over local citizens.²⁸

This was matched by a shift in the scale of urban planning programs, especially those regarding the *grands ensembles*. Under de Gaulle, the *grands ensembles* were no longer built as an emergency response to the postwar housing crisis, as they had been in the 1950s. Instead, they were part of a de Gaulle's nationwide program to revitalize French cities in the hopes of modernizing the country as a whole. The large-scale project of "urban renewal" was already underway in 1955, as entire slum areas (*îlots*) of Paris and other cities were targeted for demolition, in order to be replaced with office buildings, commercial centers, and luxury dwellings. But in 1958, when de Gaulle returned to power, the move to regenerate the country through the revitalization or 'reconquest' (*réconquête*) of urban areas throughout France increased dramatically. By destroying low-cost housing within the center of the city, these revitalization efforts created the need for even more affordable housing in outlying districts, leading to an explosion in the size and scale of the *grands ensembles* in urban areas across France made possible by new government incentives and privatization.

Moreover, the widespread construction of the *grands ensembles* in the 1960s went hand-in-hand with the acceleration of a long-standing program to decentralize French cities that began in the 1940s under Vichy. In 1963, de Gaulle created an entire institution devoted to this very purpose, *la Délégation à l'Aménagement du Territoire et à l'Action Régionale* (DATAR). Ironically located in the very center of Paris, DATAR accelerated the project of regional development by identifying eight cities as designated “growth poles” or *métropoles d'équilibre*, a concept borrowed from the human geographer Paul Vidal de la Blache. Only through the development of provincial centers, it was thought, could France reach its full economic, social, and cultural potential.

In 1965, the new head of the District of Paris, Paul Delouvrier, who had participated in the *École des Cadres d'Uriage* under Vichy alongside Chombart de Lauwe and Auzelle, initiated an ambitious program to address the problem of growth in Paris. Developed in collaboration with intellectuals, planners, and many others,²⁹ the *Schéma Directeur d'Aménagement et d'Urbanisme de la Région de Paris*³⁰ proposed to deal with the rapid expansion of the suburban areas of Paris by creating five 'new towns' (*villes nouvelles*) around the city that would be connected to the center. Roads and highways as well as railway networks including the suburban trains (RER) would connect these new towns to the center.³¹ As one historian maintains, “The purpose of this vast new circulation system, integrated into Paris proper and branching out across through the axes of the *Schéma Directeur*, was to bring the region into a state of equipoise, in which any location was equally within reach of the center.”³² In other words, much like the proponents of *l'aménagement du territoire*, Delouvrier proposed addressing the growing chaos of Paris and other French cities by implementing an urban scheme on a grander scale than ever before. The goal was to decrease dissatisfaction among urban residents by creating new centers

of activity and by providing better transportation to and from the older city. As Delouvrier explained:

Paris and its future must respond to three imperatives: to put to the best use a space that is very dense, old and small in extent; to respect the complexity of the functions and structures indispensable to the equilibrium between its territory and that of its region and, equally, the ensemble to the national territory.³³

Aerial photos, maps, and diagrams, meant to make the city of Paris and its surroundings more 'legible,' were central to the *Schéma Directeur* as proposed by Delouvrier. He even began by defining the Parisian region "as seen from an airplane."³⁴ Delouvrier used these visual aids to pinpoint areas of growth and develop a transportation network to serve specific locations. He continually stressed the need to approach the problem of growth through a plan that encompassed the totality or 'ensemble' of the *agglomération parisienne* rather than focusing on isolated parts. Aerial photos, maps, and diagrams were central to this holistic or 'synoptic' perspective, which was intended not only to be geographic but also social, economic, and cultural. As Delouvrier remarked in the conclusion to the plan,

Ideas, techniques, needs, and income will continue their evolution or their growth; the way to register them in the urban texture will be modified; similarly the desire of these people to project their distant future and to anticipate their immediate future will be asserted in the actions of the day; similarly, after the year 2000 the increase in number of inhabitants of France will continue...This is why this guiding scheme does not plot an urban region closed on itself – whatever the surface area – but project toward Rouen and the sea, through the Val de Seine, directions through which, based on the progress of its wealth and population, Paris, if needed, will be able to advance.³⁵

CREATING THE "BOTTOM-UP"

If "social space" for Chombart de Lauwe was intended to encapsulate the view from

above, therefore, for Lefebvre and many others it signified only the view from below. During the 1950s and 1960s, when the French Left was riddled with conflict, the new analytical category of "social space" provided left-wing sociologists such as Lefebvre and Ledrut with a way of continuing to discuss their political concerns while moving away from the French Communist Party. In addition to the traditional Marxist categories of class, race, and gender, left-wing thinkers now had a new arena in which to explore the effects of capitalist modes of production: urban space. If 1968 did not succeed in revolutionizing spatial relations in Paris, it did, at least, provoke a new era of theorizing (social) space.

Lefebvre, working closely with Ledrut, outlined his spatially-oriented left-wing program through the creation of a new journal, *Espaces et sociétés*, the first issue of which appeared in 1970. One of Lefebvre's first articles in *Espaces et Sociétés* was titled "Reflections on the politics of space."³⁶ In it, Lefebvre challenged the notion that 'space' in all its many forms – rural, suburban, and urban – was neutral, and that the practice of urban planning was a 'scientific' endeavor. On the contrary, he argued, "space is political!"³⁷ Urban space may appear to be homogenous and shaped by scientific management, yet it was, in fact, produced by social relations. Modern urban planning, which was tied to the French state, effectively disguised the political nature of space in order to perpetuate its practice of social control.

Lefebvre proceeded to compare urban planning techniques in postwar France with the process of French colonization: The large-scale construction of the *grands ensembles* and new towns all over France under de Gaulle's Fifth Republic had resulted in what he referred to as the "internal colonization" of French cities. "There are no colonies in the old sense," he wrote, "but there is already a metropolitan semi-colonialism."³⁸ The drastic changes occurring in cities across France, he suggested, were indicative of a major transformation in French society and

culture. His call for a 'politics of space,' of which the journal *Espaces et sociétés* was to be a key vehicle, was intended bring the significance of these spatial changes to light, not only to intellectuals, planners, architects, and government officials but to the French public more generally.

In the 1970s, Lefebvre expanded upon his theoretical reflections on the politics of space in two works, *The Urban Revolution* and *The Production of Space*.³⁹ In the *Urban Revolution*, Lefebvre used the terms 'urban' and 'urban society' to signify his theoretical approach. As he wrote, "the expression 'urban society' meets a theoretical need. It is more than simply a literary or pedagogical device, or even the expression of some form of acquired knowledge; it is an elaboration, a search, a conceptual formulation."⁴⁰ The project of theorizing the urban was to serve a practical function: to help promote an 'urban revolution,' by which he meant social revolution, by bringing to light the political practices embedded in the organization of space in French society.

The *Production of Space* of 1974 explored the connection between the spatial and the social, and the role of space in social revolution, in more depth. Lefebvre devoted an entire chapter to "social space," in which he insisted that 'space' was not a thing but rather "a social reality -- a set of relations and forms."⁴¹ Social relations, and especially relations of production, he suggested, simultaneously produced space and were produced by it. Lefebvre here attempted to use the idea of "social space" to counteract the widely-held notion that space was simply an empty container in which objects and people are placed; this view of space, he argued, was not only an "error" but an "ideology" – it was promoted by those whose interests it served, namely, the French state, urban planners, and architects.⁴² On the contrary, Lefebvre contended, space was full: full of social relations, culture, and history.

In all of these works, and others, Lefebvre came back to the theme of colonization. Urban space had been colonized, he wrote, “through the image, through publicity, through the spectacle of objects.”⁴³ During the Urban Revolution, according to Lefebvre, the political nature of space would finally be uncovered: “Space reveals its true nature as...a political space, the site and object of various strategies.”⁴⁴ Any move to transform politics and social relations in France and elsewhere, therefore, must include a corresponding emphasis on the organization of urban space. “If,” Lefebvre exclaimed, “there is a connection between social relationships and space, between places and human groups, we must, if we are to establish cohesion, radically modify the structures of space.”⁴⁵

In elaborating upon the theme of "internal colonization," Lefebvre even referenced Griaule's 1930s work on Dogon society in West Africa that, as we have seen, he carried out with the aid of aerial photography. Lefebvre, in a work titled *De L'État*, compared the morphological forms of habitation produced by Dogon social structures and cultural values to those produced in France by the capitalist modes of production and state dominance. In Dogon society, "The head, limbs, male and female genital organs, and feet are represented by the grouping of huts: command huts, huts for socializing between men and women, huts for storing work tools, and so on."⁴⁶ By contrast, in western capitalist society -- a society dominated by visual images -- spaces of human habitation and urban space more generally were disconnected from the human body. As Lefebvre wrote, "The space of state control can also be defined as being optical and visual. The human body has disappeared into a space that is equivalent to a series of images. Perspectival space inaugurates this scotomization of the body, which was preserved, albeit in changed form, in symbolism. In modern space, the body no longer has a presence; it is only *represented*, in a spatial environment reduced to its optical components."⁴⁷

By the 1970s, then, the anthropological critique developed in the 1930s, as we saw in the case of Griaule, had become a full-fledged attack on contemporary urbanism. With the aid of aerial photography, the notion that spatial organization and social organization were intimately bound to one another was not considered just an interesting theory; it was seen as a scientific *fact*, which could be proven with quantitative methods. Even after the technique was discarded in the 1960s and 1970s, the language of aerial photography, that is, "social space," remained a powerful reminder of this, and the apparent disconnect between the ideals of France as an egalitarian society (as put forth in the French Revolution) and its present reality. Any attempt at social change would therefore be incomplete without a total transformation of urban space.

Yet historicizing the view from below allows us to see more clearly not only the genesis of Lefebvre's ideas, although this is important. It also demonstrates that the distance between "top-down" and "bottom-up" urban planning -- a division still widely used today -- was not as great as Lefebvre and others would have us believe: Both emerged, in fact, from the same conceptual and institutional sources. Going still further, we can see that he and others in fact constructed the very notion of the "bottom-up" during the 1960s in order to carve out their sociological terrain within interdisciplinary research teams. In the process, they crafted the very idea of the "top-down," as well as the powerful bifurcation that remains strong in the social sciences and urban planning even today.

Ironically, however, it was still this "bottom-up" perspective that gave Lefebvre and others authority within government-sponsored urban research teams. It helped to distinguish the contribution of sociology to urban planning from the contribution of many others, especially geography. It is, then, perhaps no surprise that this approach became dominant after the 1970s, because it was developed from *within* the system. The organization of space in France may

never have been transformed in the way that Lefebvre and his postwar predecessors had hoped. But the outside perspective offered by the airplane succeeded in making sociologists become considered, by government officials and planners, as "insiders" to planning practice.



Fig. 1. The checkered pattern of Dogon agricultural fields that Griaule saw from the air. Fonds Marcel-Griaule, Bibliothèque Eric-de-Dampierre, MAE, Université de Paris Ouest Nanterre La Défense, France.

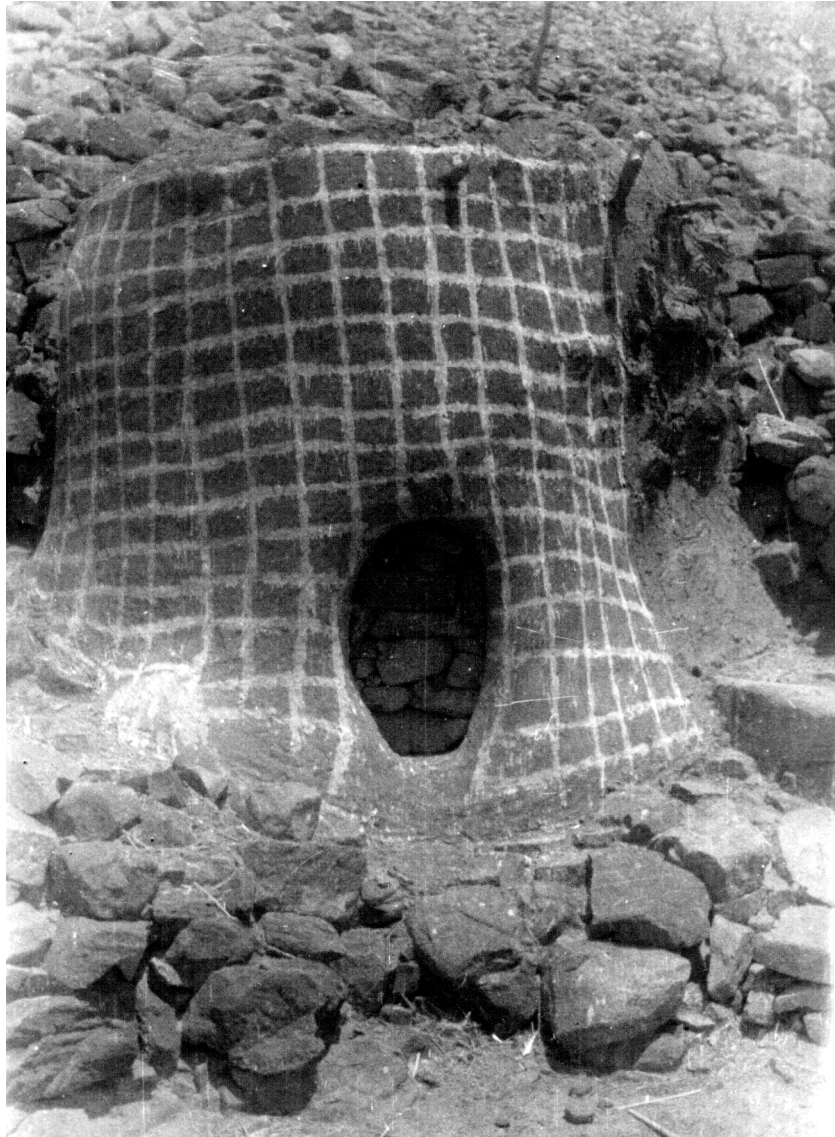


Fig. 2. The same checkered pattern reproduced on a sanctuary façade. Fonds Marcel-Griaule, Bibliothèque Eric-de-Dampierre, MAE, Université de Paris Ouest Nanterre La Défense, France.

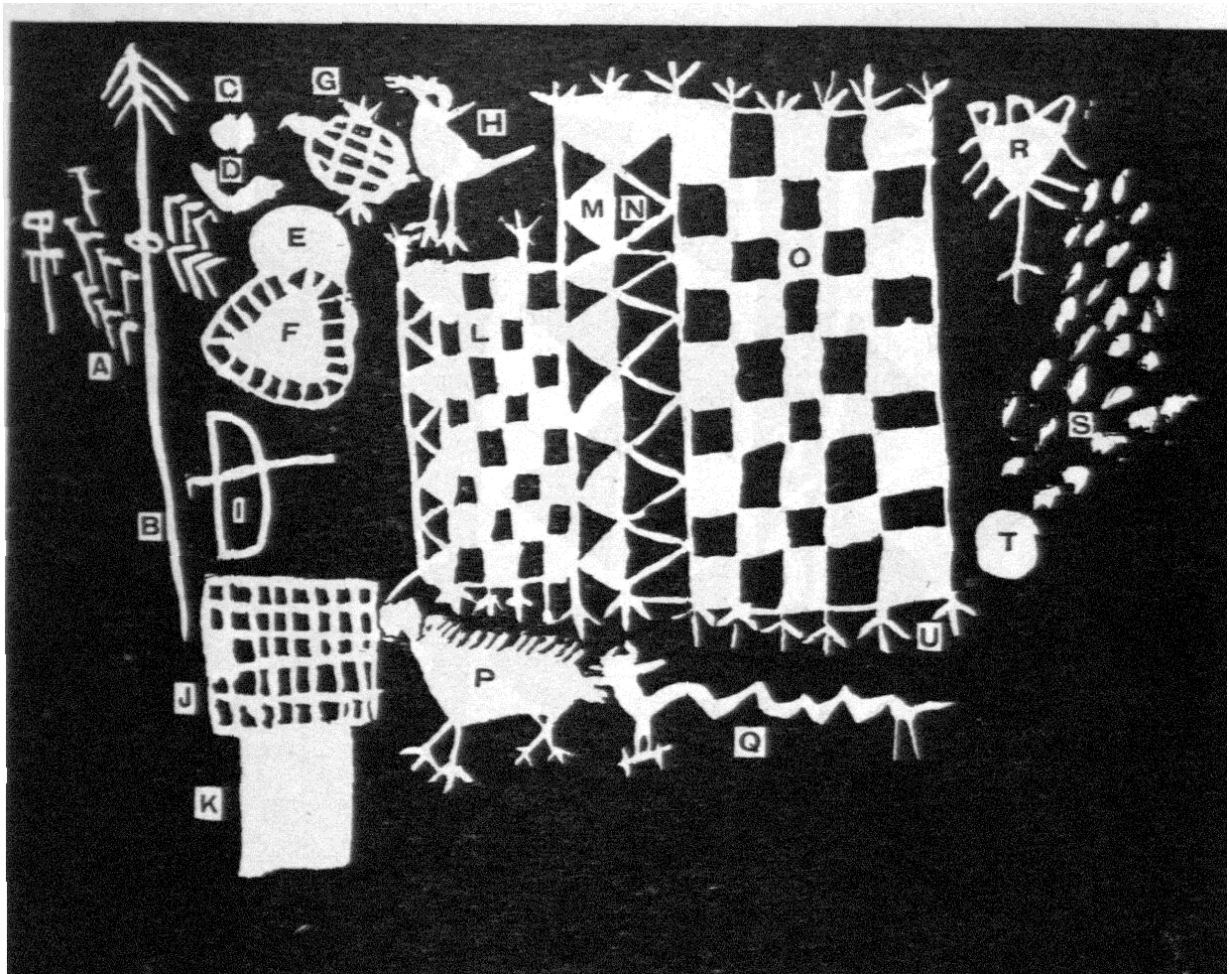


Fig. 3. Griaule argued that this checkerboard pattern connected multiple aspects of social life in the Dogon unconscious. Marcel Griaule, "Blasons totémiques des dogon" (1937).

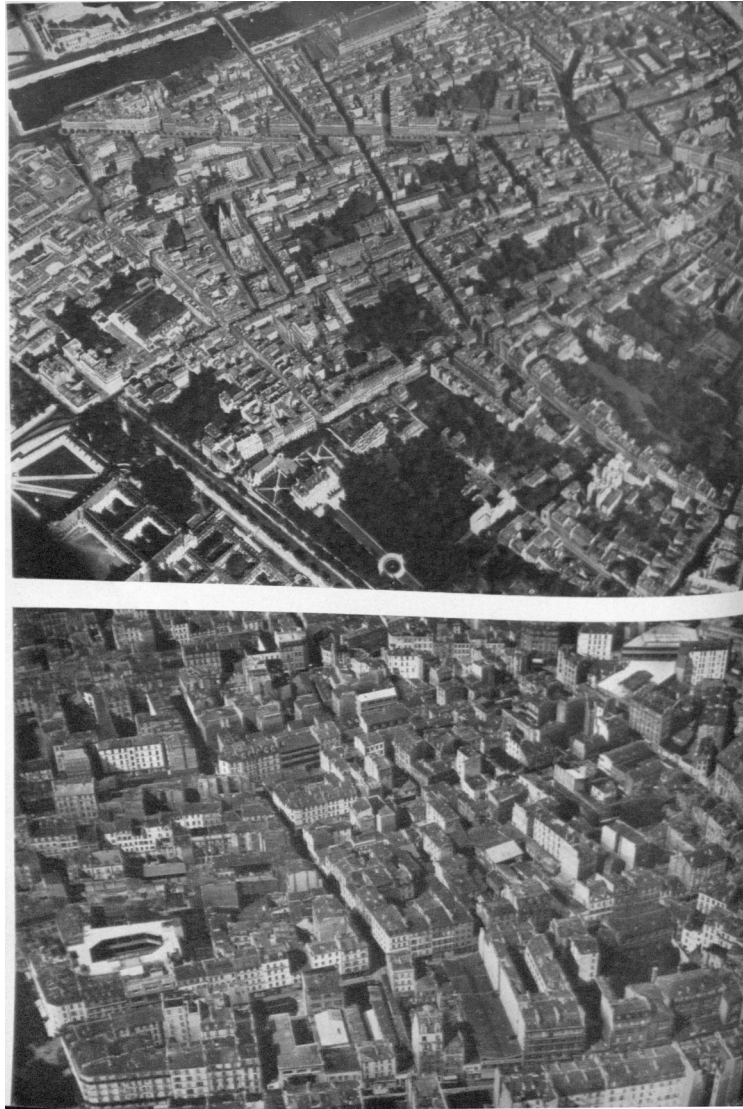


Fig. 4. In *Paris et l'agglomération parisienne* (1952), Chombart de Lauwe demonstrated, with the use of aerial photos, that the city of Paris was divided between East and West. Viewed from the air, the wide, tree-lined streets of the bourgeois sections of the West (above) contrasted with the narrow and chaotic streets of the working class neighborhoods of the East (below). Chombart de Lauwe linked these spatial differences with differences in sociability and everyday life on the ground.



Fig. 83. — PHOTOGRAPHIE AU 1/5 000 D'UN QUARTIER D'EXTENSION (Sainte-Marie, Colmar, Haut-Rhin)

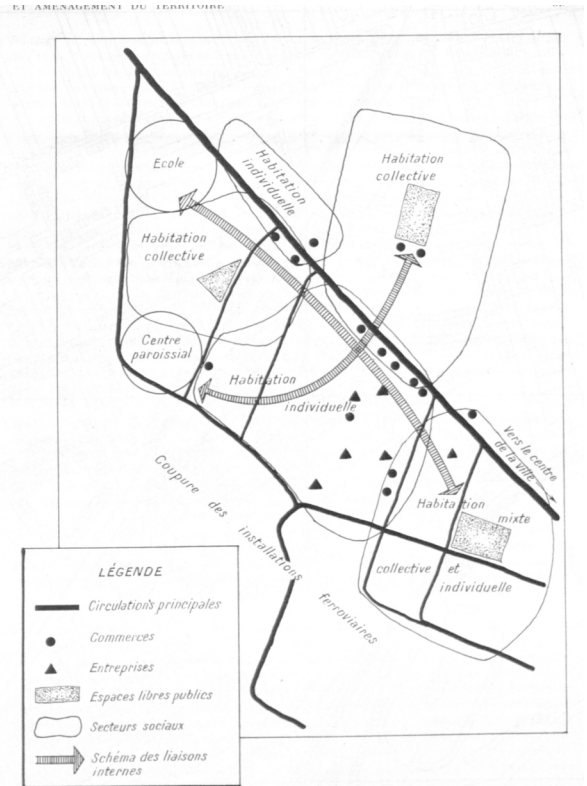


Fig. 84. — EXEMPLE D'INTERPRÉTATION DE LA PHOTOGRAPHIE AÉRIENNE AU 1/5 000. Détection des secteurs sociaux, des points d'attraction (commerces, école, centre paroissial).

Fig. 5. In *Photographies aériennes et l'aménagement du territoire* (1957), planner Alexandre Burger drew upon Chombart de Lauwe's 1952 study to examine the "social space" of Colmar, in Alsace, with the aid of aerial photos.

NOTES & REFERENCES

* Ph.D, History, University of Virginia, 2008. The present paper is based on her book, *Flight from Modernity: Aerial Photography, Social Science, and Urban Reconstruction in Postwar France* (MIT Press, forthcoming summer 2011).

1. Henri Lefebvre, *De L'État* (Paris: Union générale des éditions, 1976-1978). Quoted in Henri Lefebvre, *State, Space, World: Selected Essays*, ed. by Neil Brenner and Stuart Elden, trans. by Gerald Moore, Neil Brenner, and Stuart Elden (Minneapolis: University of Minnesota Press, 2009), pp. 226-227.
2. I am building here on the work of the French anthropologist Marion Segaud. In *Anthropologie de l'espace: Habiter, Fonder, Distribuer, Transformer* (Paris: Armand Colin, 2008), Segaud demonstrates how interwar French social scientists connected spatial organization and social organization, but she does not point to the crucial role of aerial photography in this development.
3. James Scott, *Seeing Like A State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale University Press, 1998), pp. 89-90.
4. Marcel Griaule, "Blasons totémiques des dogon," *Journal de la Société des africanistes* VII (1937): 69-79.
5. Le Corbusier, *Aircraft* (London & NY: The Studio, Ltd., 1935).
6. Paul-Henry Chombart de Lauwe, et. al., *Paris et l'agglomération parisienne: L'étude de l'espace social dans une grande cité* (Paris: PUF, 1952).
7. It is important to note that, of course, CIAM was a very complex organization, and the history of the Modern Movement in architecture was much more complicated than it appears at first glance; it may not have been a "movement" at all. See Giorgio Ciucci, "The Invention of the Modern Movement," in K. Michael Hays, ed., *The Oppositions Reader* (NY: Princeton Architectural Press, 1998), pp. 552-579 and Eric Mumford, *The CIAM Discourse on Urbanism, 1928-1960* (Cambridge, MA: MIT Press, 2000).
8. Chombart de Lauwe, et. al., *Paris et l'agglomération parisienne*, p. 106.
9. For a thorough discussion of the complexity of the term "objectivity," see Lorraine Daston and Peter Galison, *Objectivity* (NY: Zone Books, 2007).
10. Robert Auzelle, *Documents d'urbanisme, présentés à la même échelle, réunis et commentés* (Paris: Vincent Fréal, 1948).
11. The role of aerial photography in obtaining an holistic view of an urban environment is even more pronounced in Auzelle's *Documents d'Urbanisme*.
12. Robert Auzelle, *Technique de l'urbanisme* (Paris: Presses Universitaires de France, 1953), pp. 9-10.
13. Fernand Lot, "L'Urbanisme peut voir ce que sera son oeuvre dans la réalité," *Le Figaro littéraire*, Samedi 12 mai 1956.
14. H. and J. Vulmière, "Description et exposé technique," *Études et informations* 2 (février 1954): 23-27, p. 23.
15. Fernand Lot, "L'Urbanisme peut voir ce que sera son oeuvre dans la réalité."
16. Robert Auzelle, "Le Maquettoscope: Un appareil destiné à l'examen des maquettes," *Études et informations* 2 (février 1954): 21-22.
17. H. and J. Vulmière, "Description et exposé technique," p. 23.

18. Ibid., p. 23.
19. Ibid.
20. Ibid., p. 25.
21. Chombart de Lauwe, et. al., *Paris et l'agglomération parisienne. L'Étude de l'espace social dans une grande cité*, p. 25.
22. Alexandre Burger, *Photographies aériennes et l'aménagement du territoire. L'interprétation des photographies aériennes appliquée aux études d'urbanisme et d'aménagement du territoire* (Paris: Dunod, 1957).
23. Ibid., p. 71.
24. Ibid., pp. 66-71.
25. See Martin Jay, *Downcast Eyes: The Denigration of Vision in Twentieth-Century French Thought* (Berkeley: University of California Press, 1993).
26. Michel Foucault, *The Order of Things: An Archaeology of the Human Sciences* (New York: Pantheon Books, 1971). Originally published as *Les Mots et les choses* (Paris: Gallimard, 1966).
27. Jay, *Downcast Eyes*, pp. 403-404.
28. For more on the impact of aerial bombardment on the cultural and urban context of the postwar period, see Peter Galison, "War Against the Center," *Grey Room* 4 (Summer 2001): 6-33.
29. The historian Larry Busbea notes that in 1962, Delouvrier sent out a letter to cultural figures such as Michel Ragon requesting their input into future plans for the Paris region. "It is clear," Busbea writes, "...that the administration in Paris wanted at the very least to keep its finger on the pulse of the avant-garde in preparing what would become the city's most controversial master plan since the Haussmann era." Larry Busbea, *Topologies: The Urban Utopia in France, 1960-1970* (Cambridge, MA: MIT Press, 2007), p. 119.
30. Paul Delouvrier, *Schéma Directeur d'Aménagement et d'Urbanisme de la Région de Paris* (Paris: District de la Région de Paris, 1965).
31. It is important to note that the 1960s was characterized by a drastic increase in car ownership in France. By 1965, there were over two million automobiles in the city of Paris alone. Busbea, *Topologies*, 120.
32. Ibid., p. 121.
33. Quoted in Busbea, *Topologies*, p. 120.
34. Delouvrier, *Schéma Directeur*, p. 47.
35. Ibid., p. 212.
36. Henri Lefebvre, "Réflexions sur la politique de l'espace," *Espaces et sociétés* 1 (November 1970): 3-13.
37. Ibid., p. 10.
38. Ibid., p. 11.
39. Henri Lefebvre, *The Urban Revolution*, trans. by Robert Bononno (Minneapolis: University of Minneapolis Press, 2003); *The Production of Space*, trans. by Donald Nicholson-Smith (Oxford & Cambridge: Blackwell Press, 1991).
40. Lefebvre, *The Urban Revolution*, p. 5.
41. Lefebvre, *The Production of Space*, p. 116.
42. Ibid., p. 94.
43. Lefebvre, *The Urban Revolution*, p. 21.

44. Ibid., p. 44.
45. Ibid., p. 92.
46. Ibid., p. 230.
47. Ibid., p. 234.