



Congestion and Movement: Cities, Crowds and Chandigarh

Michael Chapman & Steffen Lehmann

To cite this article: Michael Chapman & Steffen Lehmann (2007) Congestion and Movement: Cities, Crowds and Chandigarh, Design Philosophy Papers, 5:3, 129-147

To link to this article: <http://dx.doi.org/10.2752/144871307X13966292017595>



Published online: 29 Apr 2015.



Submit your article to this journal [↗](#)



Article views: 23



View related articles [↗](#)

Congestion and Movement

Cities, Crowds and Chandigarh

Michael Chapman and Steffen Lehmann

Michael Chapman works as a research assistant, design tutor and part-time lecturer at the University of Newcastle where he is currently writing a PhD focussing on contemporary architectural theory.

Dr Steffen Lehmann is the Chair of Architectural Design at the School of Architecture and Built Environment and Director of s_Lab Space Laboratory for Architectural Research and Design. www.slab.com.au

In his now famous book *Delirious New York*, Rem Koolhaas argued that Manhattan was the epitome of a “culture of congestion”. Representing the antithesis of sprawl, the density, heterogeneity and vertical dynamism of Manhattan was, for Koolhaas, a model of a new cultural paradigm where urban populations can exist in dense, spatially confined environments, while still maintaining the traditional characteristics of urban life. Fundamental to this “culture of congestion” is the crowd.

The relationship between Koolhaas’s definition of ‘congestion’ and urban planning has traditionally been a negative one. Much modern urbanism is concerned with movement, circulation, ventilation and other dynamic qualities necessitated by the movement of people and the demands of public transport. Modern planned cities demonstrate coherent strategies of ‘movement’ and removing congestion, but at the same time seem to lack the kind of residual spaces where humans can gather and socialise. They represent urban environments of movement and exchange. However as Koolhaas argued, congestion is equally an essential urban quality, particularly in cities of high density where large populations share small spaces.

As urban populations become denser and cities continue to grow, the demands placed on urban spaces become more critical. One of the characteristics of urban spaces which is undervalued in contemporary criticism is the space of the crowd – one of the tangible by-products of increased density and modernisation. Drawing from crowd theory from the 1960s, this paper considers the notion of urban congestion by revisiting the iconic modern city of Chandigarh. Fifty years after its construction, the city has accommodated the demands of rapid population growth and increased infrastructure, but the quality of its vast urban spaces is much less understood. The paper will look at the urban spaces of the city within the context of Koolhaas's notion of congestion and Corbusier's broader theory of urban space. Modernity, in the work of Corbusier, is a thesis calibrated to remove congestion, but can be equally hostile towards the residual activities of modern life and in particular the crowd.

When India's first Prime Minister Jawaharlal Nehru presided over the inauguration ceremony of the new Parliament of Chandigarh in 1963 he described the administrative cluster as "a temple of the new India"¹. Only ten years earlier, at the foundation ceremony for the new capital, Nehru had described the project, famously, to build "a new city, unfettered by the traditions of the past, an expression of the nation's faith in the future"². Chandigarh, born at the junction of a tumultuous series of upheavals which tore the Punjab in two, became the product not only of the fluctuating present which had necessitated the epic construction project but, at least symbolically, of a 'new' future, guided by the orienting principles of European Modernism and the aspirations of the infant Indian democracy.³

The relationship between Chandigarh and its 'future' was explicit throughout the planning stages. Le Corbusier established growth as an organising principle in his own metaphor describing his buildings and plan as the seed of the future city, which, through growth, would 'flourish'⁴. Originally organised in two clear stages, the urban organism was structured around a centralised and delineated planning system that could accommodate population growth, technological improvements, traffic increase and the requirements of urban infrastructure well into the future. In the first phase, 36 square kilometres of land was used to construct the initial 30 sectors (each 1200 × 800m) with a further seventeen being planned for the second phase. Within this structure, a hierarchy of seven transport modes was laid down and proportioned to cope with future growth (the eighth, pedestrian and bicycle, has since been added). Originally planned for a population of only half a million, the population of the city was, in the 2001 census, approaching 1 million, at a density of 8000 humans per square kilometre, compared to nearly 10,000 in Delhi, 12,000 in Jaipur, and over 20,000 in Calcutta and Mumbai. In comparison to these cities, Chandigarh boasts one of the most efficient traffic systems

in India, the highest proportion of green space and gardens, and was ranked one of the most “e-ready” cities in India in recent country-wide surveys.

As one of the most populous regions on the planet, the rapidly urbanising sub-continent is at the frontline of the increasingly complex balance between urban density and public space. With more than forty per cent of its 1.1 billion people surviving on less than a dollar a day, and ongoing high population growth, it is estimated that if India can maintain the current annual economic growth rates of about eight per cent, it will still take about 25 years to end poverty.⁵ This has other consequences, nevertheless: with respect to climate change, India is now one of the world’s top polluters, ranked fourth behind the US, China, and Russia.⁶

As density and population continue to accelerate in India, the relationship between crowds and urban space becomes increasingly critical for managing the social and cultural life of cities. In Chandigarh, a meticulous system of expansive public spaces, gardens and monumental plazas provides an alternative and in many ways, polemical, model of urban space to the uniquely congested and highly populated streets of cities like Delhi and Jaipur. These cities in northern India are based on a culture that is traditionally organised around crowded, internalised urban spaces (walled courtyards and bazaars) which are continually energised by human activity. This culture of spatial ‘congestion’ and human density is equally an attitude towards urban space. It is *per se* the urban space of the crowd.

If Jaipur and Delhi are cities that favour congestion and the crowd, then Chandigarh is a city that resists it. Chandigarh, in this sense, is organised around the “absence of congestion”. It is a city constructed from movement and flows, the efficient transportation



Secretariat, Chandigarh,
photo taken in 2006
by Danny Hanlon
(<http://dannyhanlon.com/blog/2006/12/20/chandigarh>)

of people from centre to periphery, and from space to space. The ill-defined urban spaces at Chandigarh seem to resist the crowd, demanding transit *through*, rather than collective gathering. Even when a crowd gathers at the Capitol, such as at the inauguration ceremony, the vast flatness and epic scale ensure the overwhelming characteristic is one of emptiness and solitude. Humans, even in groups, are dwarfed by the scale of the buildings and the vast horizontal dimensions that divide them. While well-organised, regimented, efficient and ordered, the urban spaces of Chandigarh maintain this slightly uneasy relationship between the buildings that frame them, and the individuals which inhabit them.

The bodily sensation of being in a crowd is so much a part of life in Northern Indian cities, and so rarely experienced in Chandigarh, that it cannot go unnoticed. The crowds of the markets and alleys of Jaipur and Old Delhi can be readily contrasted with the shopping districts of Chandigarh which, sun-drenched and horizontally vast, create ample spaces for individuals to meander. The dense and well-configured conduits of Jaipur and Delhi always appear full; while the plazas and plateau's of Chandigarh, like Giacommetti's existential sculptures or Giorgio de Chirico's metaphysical paintings, connote a kind of monumental loneliness. Does Corbusier, in a country which is defined by the overwhelming presence of humanity, deliberately create such a metaphysical space at Chandigarh for individual solitude and introspection?

Whilst still below many other Indian cities in both size and density, the extent to which Chandigarh has grown as a city provides an interesting context to reflect on the idiosyncratic relationship between crowds, pedestrians and the urban spaces of the city, and the broader theory of urbanism that is embedded within it. The epic horizontality and emptiness experienced at Chandigarh can be read as both a historical relic of the now displaced modern movement as well as the spatial by-product of a city built exclusively around movement and transportation. While many of the urban planning principles have proved successful in accommodating the growing city, even fifty years on, and nearly double its intended size, there is still a vast loneliness that accompanies the urban spaces of Chandigarh, and that particularly engulfs Corbusier's monumental works at the Capitol. This emptiness, or 'lack' of density, is still the characteristic of Chandigarh that appears the most nebulous and least understood. What are the theoretical and urban lessons embedded in the urban spaces of Chandigarh, and in particular the tension that exists between the technological obsession of modernity with movement and what Rem Koolhaas has termed a "culture of congestion"?

Cultures of Congestion: Technology and Movement in the Modern City

The relationship between urban form, crowds and public space has been a consistent theme in theorising the modern city, but

has been pursued along competing trajectories: one towards a technological culture of movement, transit and information and the other geared towards the residual life of the city and its inhabitants. It is not difficult to position the planning strategies of Chandigarh within the context of these recent theoretical investigations into the nature and future of urban space. Itself a speculative project of technological mastery, the Punjab capital was, from the outset, geared towards the changing demands of an accelerating society where automation, transport and the flow of information would one day be equated with economic prosperity.⁷ Corbusier, pursuing the ideas that had given form to the earlier technological utopias such as the *Villa Radieuse*, saw in India a frontier, not yet modernised, but expanding outwards through technology and population growth. Movement – of trains, cars, pedestrians and information – shaped the infant city, and provided a backdrop for its expansion along the anticipated trajectories of Modernism.

Described by Evenson as “a futuristic poem, a hymn to technology, to speed and to movement”⁸, the planning of Chandigarh is heavily dependent on the arterial transportation routes that connect points on the grid and orchestrate transit between them. The way that movement, or in particular *speed*, would reconfigure urban form was central to the rewriting of urban theories in the second half of the century, firstly through transport (increased automation and technical advancement) and then through cyberspace, where the collapse of physical space is supplemented with highly advanced technological networks. Paul Virilio is only one of a number of important thinkers who have reconceptualised the city within the technological labyrinth of the late twentieth century.⁹

Equipped with a well-managed and hierarchical transport network, seven separate vehicular conduits and situated strategically at the geographic confluence of important routes of travel, the organisation of Chandigarh in and around these systems of transit is easily recognisable in the context of a modernist obsession with movement and exchange. The city is configured as a dynamic spatial network where individuals are continually organised and displaced by efficient conduits that distribute bodies across the city and remove congestion from heavily trafficked areas. However while the sophistication of these transit networks which underpin the city and, fifty years on, remain more than adequate to handle its expanding transport requirements, is central to the planning agenda of Corbusier specifically, and modernism in general, there remains a vast and ill-defined sea of urban spaces that not only connects these places of movement but, conceptually at least, problematises them. It is the interstitial spaces connecting buildings, the vast horizontal squares, the famous gardens and the arterial plazas of the central sectors which comprise the flesh of this mechanical skeleton and, inadvertently,

position the city at the junction of another important trajectory in urban theory: the emergence and displacement of the modern crowd.

In his 1977 book, *Delirious New York*¹⁰, Rem Koolhaas's polemically inverted prevailing principles of urbanism away from a technological fascination with movement and exchange and towards what he called a "culture of congestion". Retrospectively reconstructing the urban DNA of Manhattan, Koolhaas argued for a cosmopolitan city built from the congested arterial streets of gridlocked New York and the vertical towers that overshadowed them. The twin agendas of vertical density and an orthogonal grid enabled the city to expand horizontally and vertically creating spaces of life and activity across the island. Representing the antithesis of sprawl,¹¹ the density, heterogeneity and vertical dynamism of Manhattan was a model, for Koolhaas, of a new cultural paradigm where urban populations can exist in dense, spatially confined environments, while still maintaining the traditional characteristics of urban life. Fundamental to this "culture of congestion" is the crowd, characterised by the concentration of bodies in a confined space. Where the modernist city valued horizontal movement into and out of the city, Koolhaas argued that in the congested city, vertical movement up and down the central cores of the newly constructed towers enabled a dynamic urban culture of density to emerge. Architecture, rather than responding slavishly to these new patterns of automation, was freed from its technological interior, allowing its skin to be expressed independently of the functions that took place inside. Koolhaas valued this spatial "lobotomy"¹² with the same enthusiasm that Corbusier had reserved for the automated and calibrated modernist utopia.

While Koolhaas found this "culture of congestion" in Manhattan, it resonates in many ways with the traditional Indian city where horizontal movement is limited and a vast array of functions are piled upon dense and collective public spaces that become the spatial and symbolic centres of urban life. The cosmopolitan nature of the traditional Indian city, and the diversity of uses that occur within this spatial structure, enable extraordinary density across the fabric of the city. It also replicates, in many ways, the pre-modern European (and the Victorian) city where spatial congestion is concentrated around internalised public spaces and communal lanes. The lack of ventilation and light in these highly-congested urban environments was central to the modernist critique of the historical city.

Congestion, in Koolhaas's sense, and movement, in Corbusier's, are competing terms, located against each other and the strategies of urbanisation that they uphold. While Koolhaas saw the Manhattan grid as the epitome of urban density, other authors, such as Gabrielle Esperdy, have shown that the grid was just as intimately connected with the organising structure of suburban

sprawl.¹³ The characteristic of 'sprawl' is, for Esperdy, one of 'decongestion', where 'movement' works with the grid to remove urban density and distribute it evenly across a landscape. If New York is a city of 'congestion' as Koolhaas has dubbed it, then Los Angeles is a sprawling city of 'movement', built solely around the automobile and expanding horizontally into infinity rather than upwards toward the skies. The conduits of vehicular movement into and out of Los Angeles relieve the urban 'congestion' of the city and in the process, as Reyner Banham observed, create their own internalised public space where urban life and social exchange is played out inside the car.¹⁴ The automated experience of the city manifests itself in its extravagant architectural culture which, rather than residing politely in a pedestrian street, screams for attention from a passing vehicle. The work of Frank Gehry, Morphosis, Eric Owen Moss and Neil Denari can all be equated with this automated Los Angeles condition, first identified by Robert Venturi and Denise Scott Brown in their polemical visit to Las Vegas in the late 60s.¹⁵

However this vast horizontality and geographic stratification is equally problematic in a social sense, making ownership of a car a prerequisite for urban experience. The freeways become not only conduits but boundaries, demarcating the urban thresholds where the disenfranchised members of American society collect. As James Steele writes

The homeless in Los Angeles – who seem to be metastasizing daily in spite of numerous, wellintentioned but disorganized attempts to help them – are dispersed around the city, with particularly noticeable concentrations along freeway onramps, where drivers must stop for metered lights that stagger entry. They remain a graphic reminder of the marginally thin line between inclusion and exclusion in a pitiless society now having to run faster to stay in what only seems to be the same place. [...] The final irony presented by the phalanx of homeless lining the freeway ramps is that this is the most critical confrontation that takes place between society's participants and its outcasts, since the car is an extension of the home for a majority of Angelinos and its repossession is one of the last stages before marginality.¹⁶

While Los Angeles represents the most extreme model of this urban culture of movement and exchange, it is endemic to the 'modern' city. Corbusier's unbuilt proposals for Algiers and Rio De Janeiro in particular, are submissive to the passage of the car as a generator of architectural form as well as urban space and social hierarchy. However it is Brasilia, the Brazilian capital built by Lucio Costa and Oscar Niemeyer in parallel to Chandigarh, which has become a symbol of the social inequalities of these nomadic cities.¹⁷ Unlike the congested streets of Brazil's coastal metropolises, the new

capital was serviced by broad, expansive highways that celebrated automation and the technological convenience of the modern age. However the well-organised passages into and out of the city became flanked by sprawling housing sectors of the urban car-less that quickly surrounded the capital and became the scene of crime, poverty and disease. As a result, Brasilia became a city of transit for politicians who generally resided in Rio de Janeiro and visited the capital only intermittently. The residents of the city, most of whom had been instrumental in its construction, were relegated to ramshackle *favelas* enveloping the periphery. In Brasilia, the urban gentrification enabled by the car seemingly enforces a rigid social stratification between the monumental majesty of the governing elite and the less-glamorous dwellings of the working class squatters. This divisive relationship between the centre and the periphery is inverted in Los Angeles where more privileged residents are migrating outwards from the social problems of the inner city.

This process of decongestion, where the residual life of the city is displaced to the periphery is central to the urban strategy employed at Chandigarh. Corbusier himself acknowledged this in the four basic principles he used to shape his city summarised by Evensen as: “(1) decongestion of the centers of cities; (2) increase of density; (3) enlargement of the means of circulation; and (4) enlargement of the landscaped areas.”¹⁸ As Evenson demonstrates, the layout of Chandigarh is hierarchical in nature, allocating more space at the centre to wealthier landowners and creating working class areas around the perimeter. These peripheral sectors, connected to the centre through transport, are the densest, with the plots being the smallest and most affordable.¹⁹ The outcome of this centrifugal effect is that density is concentrated at the perimeter of the city, reinforced by the prevention of further development within a five-mile radius around the city’s outer edge. The effect of this decentralisation was particularly exacerbated in the first years of Chandigarh’s existence when many of the plots in the wealthier internal areas remained undeveloped.

This centrifugal model of urbanism concentrates people at the edges of the city and relieves congestion at the centre. It is, in Corbusier’s own words, a strategy of decongestion. The central commercial sectors of Chandigarh are transient spaces, which people move to and from, but lack the residual qualities of more randomly planned Indian cities, where commercial, residential and manufacturing programmes are seamlessly entwined and geographically collapsed. Koolhaas’s polemical re-reading of Manhattan, revaluing congestion in a positive way, can be read as a polemical rewriting of the modern city against the centrifugal, outwardly radiating trajectories of movement away from the centre. Characterised by a lack of horizontal movement, Koolhaas’s retroactive reconstruction of Manhattan has a particular resonance

with India, where 'congestion' or spatial density is intrinsic to urban life. If the theory of movement has underpinned the history of Chandigarh up until the present, then these alternate spaces of the residual crowd will become increasingly central to the future of the city, as its density grows and the urban pressure on these vast spaces increases.

Congestion, Decongestion and the Crowd

The centrifugal strategy of decongestion in Chandigarh, and the broader culture of 'congestion' that is rampant throughout Northern India are both accelerated by the increased densification and rapid urbanisation which is transforming the subcontinent. One of the most lasting effects that the industrial revolution has had on societal structures is the momentous and rapid urbanisation of many parts of the world, necessitating high-density living and, as a direct by-product, the concentration of large numbers of people in spatially confined urban areas. One by-product of this concentration of socially connected individuals in space has been the visible proliferation of the crowd in the spatial organisation of the city and its emergence as a political force in the structure of democratic societies. As a condition of modernity and a product of urbanisation, the requirement of cities to accommodate the crowd, both spatially and culturally, can be seen as the latest of a series of social paradigms that have intensified the relationship between the individual and the city. As a result, the twentieth century has seen the evolution of the discipline of "crowd psychology" which, faced with the violent and tumultuous acts of crowds across the breadth of the nineteenth century, attempted to understand the transformation that occurs when rational individuals enter into a crowd and the impact this has on the broader urban community.

The crowd has been a recurring theme in writings on the modern city, problematised and romanticised in the first half of the century by writers such as Georg Simmel,²⁰ Walter Benjamin²¹ and Siegfried Kracauer. Experienced through the lens of the Parisian *flaneur*, these writers saw an intrinsically modern crowd that was symbolic of the tension between urban pleasure and individual estrangement. Documented in the impressionist paintings of Seurat and Manet, and the poetry of Baudelaire, the psychology of this 'crowd' and its relationship to the urban spaces of the city were representative of early twentieth century attempts to rationalise urban spaces and unite the city with its denser residential population. The grandfather of "crowd psychology" was the French psychologist Gustave Le Bon, whose groundbreaking work of 1895 *The Crowd: A Study of the Popular Mind*²² was prescient in establishing a generalised, albeit politically conservative, psychological profile of the crowd.

One of the principle shortcomings in the discipline of crowd psychology is the failure to acknowledge the importance of

urbanisation and spatial structures in the psychology and political development of the crowd.²³ Fundamental to the evolution of crowd theory is the development, historically, of large cities. As J. S. McClelland has acknowledged “crowd theory in its modern form would have been unnecessary, and perhaps impossible, without an awareness of the teeming life of large cities, of a world increasingly populated and pressed for space”²⁴. In this sense the theory of crowds is fundamentally linked to urban, spatial and architectural principles as well as the more widely explored social, political and cultural ones.

The pioneer of this model of research into crowds and space was Elias Canetti who, from the outset, conceptualises his crowd as a spatial, rather than psychological, phenomenon. In the opening section of his classic 1960 work *Crowds and Power* Canetti defines the spatial experience of the crowd as a reversal of the “fear of being touched” where individuals, instead of maintaining a degree of spatial security around them, take solace and safety in the close proximity of others.²⁵ The crowd becomes so dense that individuals no longer even notice the bodies that are pressed against them and surrounding them. This has a profound effect on the way that space is inhabited and experienced in urban environments. As an extension of this principle and a clear refutation of Le Bon’s principle of the “mental unity” of crowds, Canetti’s definition of the characteristics of the crowd are all inherently *spatial*.²⁶ Canetti saw the ideal spatial environment of the crowd as the large public square of virtually unlimited dimension – “On huge squares so big that they are hard to fill, the crowd has the possibility of growing, it remains open.”²⁷

The publication of Canetti’s work on crowds coincided historically with Corbusier’s project for Chandigarh, where such “huge squares” receive an architectural language unprecedented in urban form. These vast horizontal spaces, punctuated by over-scaled monumental buildings and unified within a rational spatial composition are as much a response to the dramatic lessons of the European city as they are a polemical rewriting of the Indian city. However they are not spaces of the crowd in that they lack the characteristic of density and spatial coherence that is central to the transformative effect of crowd psychology. They also lack the architectural boundaries which mark the tension between the crowd and its spatial container. A primary motivation of the urban crowd, at least in Canetti’s work, is “an attack on all boundaries”²⁸ which, at Chandigarh, are rendered obsolete by the vast horizontal distances that separate them. While the urban spaces of Chandigarh support crowds, they are just as equally the platforms of urban introspection and individual estrangement that Canetti saw in the overly-geometric configurations of modern architecture.

For Canetti, spatial situations involving large populations dispersed in space without the characteristic of physical ‘touching’

or density are manifestations or manipulations of spatial power. Modern architecture's concern with ensuring that, as Edgar Piel has observed in his analysis of Canetti's work, "the distances separating each [individual] from [their] neighbour are regulated and kept to"²⁹ is antithetical to the existence of the crowd. One such example, according to Canetti, is the military formation, where soldiers are organised in linear ranks that can be seen as spatially analogous to rows of teeth.³⁰ The urban layout of Chandigarh, and the configuration of density at the periphery of the city, can be read in the context of Canetti's work as a strategy of regulation where bodies are prevented from accumulating in central areas by the scale of the urban spaces and the transit routes that displace them.

More recent accounts have extended Canetti's understanding of this by arguing for the importance of speed and movement in power relations and the crowd. In particular Virilio's influential work from 1986, *Speed and Politics*, draws strong connections between movement and the structure and organisation of space. Virilio saw the crowd as a model of consumption that passed *through* space, without occupying it. He saw the places of transit and exchange as the new centres of this cultural economy whereby architecture is affiliated with the forces of mobilisation and transit. This non-centralised economy of power was in a constant state of dispersal, concentrating bodies at the points where speed was greatest. Chandigarh was prescient in formulating an urban model for this paradigm culture of spatial mobility decades before Virilio's text.

Canetti's work on crowds, drawn inherently from the spatial experience of being in a crowd, is more inherently related to Koolhaas's own observations of a culture of congestion than the modernist transit systems of Chandigarh. In the congested city, the formation of a crowd functions as a kind of safety valve, where the internalised energies of everyday life are released through collective solidarity and communal festivities.³¹ Socialist Eric Hobsbawm has argued that the restructuring of Paris and Vienna in the middle of the nineteenth century – providing in each case, wide, expansive boulevards which were easily policed and availed themselves to popular celebration – was part of a broader urban strategy to manipulate the psychology of the crowd and provide a legitimate yet transient space in the city. These spaces allowed for the carefully orchestrated transgression of social and urban norms in order that more violent and sinister crowd action (such as riots and insurrections) were avoided. What happens in Chandigarh is the opposite, where this "collective energy" is displaced to the perimeter and diffused. Architecture in Chandigarh, from the Kafkaesque edifice of the Secretariat, to the individual housing cells that populate the urban grid, is expressed as individuation.

Chandigarh differs from the other Indian planned cities (such as New Delhi, Gandhinagar and Navi Mumbai) in that it was built

entirely from scratch, on a virgin site adjacent to the train connection that links Delhi with the important colonial hill town, Simla. In this sense, the city had no urban context to contend with, and it was the natural context – the imposing scale of the Himalayas and the cosmic movement of the sun – to which Corbusier turned to orient the new city. However the construction of Chandigarh is as much about the internal crises in Corbusier's own architecture as it is about the broader cosmic and natural context of India. While Corbusier embraced the architecture of India, particularly the Mogul structures in Agra, Fatehpur Sikri³² and Delhi, the composition at Chandigarh was equally indebted to the wounds inflicted by war across the tapestry of post-war Europe.

The post-war period of Corbusier's work is defined by a heightened introspection and base primitivism. Troubled by the ravages of war, Corbusier's work throughout the period is characterised by a meditative solitude complimented by spaces for communal or collective solidarity. This is expressed clearly in the churches at Firminy (only recently built) and Ronchamp, the monastery at La Tourette, and, at an urban level, in his residential block, the Unite d'Habitation in Marseilles. In each of these instances, Corbusier promotes a retreat from the outside and an internalised space of contemplation and solitude. The individual is defined as an isolated cellular organism, and expressed architecturally at the edges of the building through rough concrete and glass. The crowd, as the opposite of the individual, the collapse of divisions, is rendered obsolete. The random and chaotic activity of the street is refuted with organised, climatically controlled internal streets where the density of human bodies is regulated and managed. The cellular structure, rather than redefining the city, retreats from it, setting up its own counter-urbanism of interiority.

Corbusier's work after the war is dominated by this new introspective attitude towards urban space and, in this sense, the crowd. Modernism, as has been argued in James Holston's pivotal book *The Modernist City*,³³ worked to eliminate the chaotic life of the street and replace it with a new type of "urban order" as the principal domain of civic life. While this is inscribed in canonical projects such as the Unite d' Habitation in Marseilles, it reaches its most articulate expression on the plateau of the Capitol at Chandigarh.

In a city largely comprised of public servants, the buildings at the Capitol in Chandigarh function as the symbolic centre of this organisational regime, constituting a highly-manufactured artistic composition. At the capitol, the vast spaces between the buildings are equally the canvas from which the facades are to be appreciated and read, constituting an important bridge between the visual observer and the architectural object. Corbusier went to great lengths to control the nature of these spaces, drawing inspiration from the monumental scale of the Himalayas, and

“externalised” buildings such as the Taj Mahal in Agra and the Red Fort in Delhi. These precedents created grand spaces from which to approach and appreciate the buildings, as well as locating them within a highly-controlled architectural composition and positioning them against a natural backdrop. The horizontal vacant spaces of Chandigarh are, in effect, not only the context for the buildings, but the frame supporting them.

The exaggerated vastness of these spaces in Chandigarh created an urban landscape where buildings sat within horizontal planes, expanding in all directions towards the horizon. Corbusier embraced the spatial expanses of India, happily dismantling the humanistic spaces of historical Europe where tightly proportioned piazzas are framed as internal rooms within the city. Charles Jencks, observing in Corbusier’s plan this complex reconfiguring of figure-ground, writes:

for the next twenty years of civic centres, space is uncontained and leaks out the edges. No foreground is set against a background; everything is foreground. The contained urban room of traditional civic space, the piazza publico, is intentionally eroded by [Le Corbusier] because it is seen as contaminated by the past and irrelevant to the future.³⁴

These “leaky” urban spaces – ill-defined and spatially ambiguous – are a by-product of Corbusier’s obsessive concern with movement at Chandigarh. A degree of complexity in urban structures is necessary to generate and facilitate human contact – a basis for city life. Louis Kahn used the metaphor of a network of streets with open spaces – found in the maze of courtyards and linked pavilions at the temple city Fatehpur Sikri – for the design of the IIM in Bangalore.³⁵ The relationship between urban connectivity and a city’s composition suggests that the degree of “life” in a city is directly tied to the complexity of visual, geometrical and path connections. In the old living Indian city clusters, there is an optimal distribution of connection lengths, but violating this distribution system removes life from the urban environment. The spaces created by Corbusier at Chandigarh are adjunct to the organisation and transport infrastructures that locate them, and in this sense are only transitory rather than residual spaces. These networks of space, the conduits of movement that traverse them and the sculpted architectural objects that punctuate them, even fifty years after their construction, still remain vacant, ambiguous and decongested. They are the static archaeology of a city constructed on movement.

Conclusion

Corbusier’s work at Chandigarh demonstrates an understanding of urban existence which is only now, with the growth of population

and increasing density, becoming recognisable. While the obsession with movement is explicit, Corbusier recognised that the city, and in particular the Indian city, should create a space of solitary retreat. A space, so vast, horizontal and infinite, that even in a city as diverse and immense as Chandigarh, the individual is placed in isolation and solitude (both in private, and in public). Corbusier's attitude, while polemic in a European sense, was geared towards the spatial decongestion of the traditional Indian city where human demands on public spaces create a profoundly urban spatial context. A new paradigm in the congested urban culture of India, the drama of Chandigarh, as a growing monumental organism, is still witnessed on the monumental plateau of the capital and the epic dramatisation of public spaces between the buildings.

If Chandigarh is to fulfil Nehru's promise of being a "temple to the new India" then it is an India of vast urban spaces and horizontal expanses within a network of regimented circulation, rational planning and technological infrastructure. A discernible resurgence of the monolithic urban spaces of Chandigarh can be read in a range of recent developments in urbanism and architecture where the relationship between buildings and the spaces between them is exaggerated. Enabling architectural form to be freed from the demands of urban space, the horizontal expanses of Chandigarh function in a sense similar to recent planning strategies in the rapidly expanding cities of Beijing and Shanghai, as well as the newly constructed urban centres along the Pacific Rim. New works in these cities seem to resonate with the monumental scale of Chandigarh creating vast, oceanic spaces which are framed by sculptural buildings, viewed from a continuous flat-plane. An emphasis on movement, public transport infrastructure and architecturally complex forms has created a landscape where built structures often sit isolated within vast urban spaces and against monumental plazas. Increasingly large buildings find themselves situated against equally large horizontal podiums where the drama of the architectural object collides with the horizontal ground-plane against which it is perceived. Facilitating a revitalisation of the sculpted architectural object, these buildings limit their contextual responses; they are insulated and inoculated by the spaces that separate them from the surrounding sites. This response to the problems of urban density and spatial complexity seems, at least as a paradigm, to resemble the artistic and urban principles of modern planning, first formulated in the 1950s and 60s.

One well-known example of this is Rem Koolhaas's CCTV Tower in Beijing, currently under construction, where, despite the often cold, windy and unpleasant climate of the city, it creates a vast, slightly raised horizontal podium at ground level where the architectural object and its urban audience are united. Equally at odds with the dense, urban streets of traditional Beijing, the scale, proportion and programmatic diversity of these spaces



betray a fascination with the modernist city, and the increasing demands that urban density places at the ground level. These vast human platforms acknowledge a changing role for the crowd in the contemporary city, creating the modernist landscape through which the architectural object and the growing urban population intersect. Where several decades earlier Koolhaas had argued for the importance of ‘congestion’, the monumental podium created in Beijing can only be read as a strategy of decongestion, geared towards the geographic displacement of the individual in space. Without edges or boundaries, the tilted plane functions alternatively as an aesthetic platform for appreciating the building, a vast stage for orchestrating public spectacle or a plane for pedestrian transit across the city. It is not a space for gathering, collective experience or, in the sense of Koolhaas’s own term, congestion.

That these spatial strategies of decongestion are being revisited in the accelerated urbanism of China is evidence of their undeniable relevance to cities of high-density and the architectural freedom that they enable. However the integration and tolerance of spatial ‘congestion’ in the modern city is critical not only for preventing the rampant horizontal sprawling of cities, but also for ensuring their heterogeneity and vitality. It is predicted that by 2020 the city of Mumbai will have up to 30 million people. Dealing with this will require powerful urban strategies at a scale not yet explored. The relationship between the inherent congestion of cities with populations of this size, and the need for sustainable models of transportation and connectivity creates an opportunity for these

two models of urbanism to be better integrated. Denser cities, as well as the technological requirements and transit strategies needed to support them, also need to provide residual dynamic, bounded spaces where the urban life of the city can occur. To this degree, as the antithesis of congestion, the orchestrated emptiness of Chandigarh could be seen as a poetic, but somehow flawed, spatial model for the increasingly consumptive demands of a congested urban population in an accelerating Indian economy.

Notes

1. Jawaharlal Nehru quoted in William J. R. Curtis, *Modern Architecture since 1900*, London: Phaidon, 1996, p. 433.
2. Jawaharlal Nehru, quoted in Norma Evanson, *Chandigarh*, Berkeley: University of California Press, 1966, p. 6.
3. In this regard, the earlier exchange of letters between Gandhi and Nehru is significant: In Gandhi's idealistic proposal for an 'autonomous self-sufficient series of village units' we can find an early idea of sustainable development principles: the village that only produces for its own consumption, based on the concept of reduced consumption and non-possession. This ideal expressed the counterpoint to Nehru's 'Project for Modernity', which was a bold, rational push towards industrialisation. Nehru was keen to build public buildings that would express the impetus towards a modern India, but strangely maintained the 'British Style' for the buildings.
4. Corbusier, upon completion of the Capitol, announced that "the seed of Chandigarh is well sown. It is for the citizens to see that the tree flourishes." The words are incorporated in the edict of Chandigarh laid down by Corbusier as the future guidelines for the city. See: http://chandigarh.nic.in/knowchd_edict.htm.
5. Despite the strong development of India's economy (India's GDP growth for 2005 and 2006 was around eight per cent), and the recent building boom, it has to be questioned how this trend is transformed into a sustainable development of India's growing cities. In Delhi, for instance, almost half of the 14 million inhabitants live in unauthorised settlements and more than a third of those in illegal slums.
6. This data is taken from IPCC, the Intergovernmental Panel on Climate Change. See <http://www.ipcc-data.org>.
7. Corbusier inherited the commission for Chandigarh in 1951 (via the English duo of Maxwell Fry and Jane Drew) after Matthew Nowicki's untimely death led Albert Mayer, the commissioned planner to pull out. Despite the recommendation, Corbusier originally refused, on the basis that he would not relocate to India, later deciding that the majority of the work could be undertaken from his Paris atelier, with only a few visits to India and the help of his partner Pierre Jeaneret. Instead, Le

- Corbusier visited India in 1951, 1952 and 1954 for several weeks to work on the Chandigarh project.
8. Norma Evenson, *Chandigarh*. Berkeley: University of California Press, 1966, p. 29.
 9. See: Paul Virilio, *Speed and Politics: An Essay on Dromology*, trans. Mark Polizzotti, New York: Semiotext(e), 1986; Paul Virilio, *The Lost Dimension*, New York: Autonomedia, 1991.
 10. Rem Koolhaas, *Delirious New York: A Retroactive Manifesto for Manhattan*. New York: The Monacelli Press, 1994.
 11. Gabrielle Esperdy, 'Defying the Grid: A Retroactive Manifesto for the Culture of Decongestion' *Perspecta* 30 (1999): 10–33.
 12. A central theme in Koolhaas's writing on Manhattan, he uses the term 'spatial lobotomy' to describe the process whereby the skin of the building is freed from its internal programming. See: Rem Koolhaas, *Delirious New York: A Retroactive Manifesto for Manhattan*. New York: The Monacelli Press, 1994, p. 100–101.
 13. Gabrielle Esperdy, 'Defying the Grid: A Retroactive Manifesto for the Culture of Decongestion' *Perspecta* 30 (1999): 10–33.
 14. Reyner Banham, *Los Angeles: The Architecture of Four Ecologies*, Berkeley: The University of California Press, 2001: 195–196 [Originally published in 1971].
 15. The trip, to document the signification at work on a strip in Las Vegas was originally undertaken in the late 60s, and first published in 1972. The authors demonstrated a new schema of space in the American city which was oriented towards the speed and spatial trajectory of a car. See: Robert Venturi, Denise Scott Brown and Steven Izenour, *Learning from Las Vegas: The Forgotten Symbolism of Architectural Form*, Cambridge, Massachusetts: The MIT Press, 1977.
 16. James Steele, *The Contemporary Condition: Los Angeles Architecture*, London: Phaidon, 1993, p. 196.
 17. The construction of Brasilia, the much-maligned capital city of Brazil, represents an important and cathartic moment in the history of Modern architecture and the International Style. Costa's plan for the city was hinged around the intersection of two monumental axes, marking Brasilia as the symbolic and geographic centre of Brazil. The characteristic arrangement houses the three branches of government – legislative, executive and judicial – along a lineal central axis which Costa calls the Plaza of the Three Powers. From here two wings radiate in either direction housing the ministry buildings and embassies giving the plan a diagrammatic relationship to a modern aircraft. This cruciform plan was an important symbol aligning the new capital not only with more traditional Catholic typology but also with the pervasive imagery of modernism, progress and flight. Unlike the congested streets of Brazil's coastal metropolises, the new capital was serviced

by broad, expansive highways that celebrated automation and the technological convenience of the modern age. The language of Niemeyer's grandiose structures betrayed a profound allegiance to Le Corbusier and in particular his work at Chandigarh.

18. Norma Evenson, *Chandigarh*. Berkeley: University of California Press, 1966, p. 28.
19. Norma Evenson writes "by and large, however, the economic class of a neighbourhood was determined by its distance from the upper edge of the city, giving the city a somewhat hierarchic pattern and also compelling the poorest government employees to travel the longest distance to work each day." Evenson, Norma. *Chandigarh*. Berkeley: University of California Press, 1966, p. 35.
20. Examples of Simmel's writing on crowds and the city include: Georg Simmel, *On Individuality and Social Forms: Selected Writings*, Donald N. Levine ed. Chicago, The University of Chicago Press, 1971.
21. Benjamin's 'Arcades' project is replete with images of the crowd and the flaneur. See, in particular Walter Benjamin, 'Some Motifs on Baudelaire' in Benjamin, *Illuminations*, trans. Harry Zohn, New York: Schocken Books, 1968, pp. 155–200; Walter Benjamin, 'The Return of the Flaneur' in *Selected Writings, Vol. II*, Cambridge: Harvard, 1992: 262–267.
22. Gustave Le Bon, *The Crowd: A Study of the Popular Mind*, Mineola: Dover Publications, 1962 [orig. 1895].
23. Le Bon has an understanding of crowd behaviour that is, in its most fundamental nature, *antispacial*, in the sense that it is not the close proximity of individuals in space that enables a crowd psychology to emerge, but rather a more arbitrary social networking. This allows Le Bon to include, in his definition of crowds, groups such as the church, the army, juries, sects, classes and even races. Whilst such institutions represent complex social groupings, they are rarely influenced by the dense concentration of individuals in space and as a result have little impact on the function of urban space or the city. Equally historians of the crowd, such as the English scholar George Rudé betray the urban characteristics of crowds by focussing primarily on the violent behaviour of crowds in historical events such as riots. Despite rejecting Le Bon's categorisations in favour of an analysis of "face to face" crowds, Rudé fails to address the urban nature of crowds, their relationships to the city and the intensely spatial phenomenon which accompanies the formation of a crowd. See: Gustave Le Bon, *The Crowd: A Study of the Popular Mind*, Mineola: Dover Publications, 1962 [orig. 1895]; George Rudé, *The Crowd in History: A Study of Popular Disturbances in France and England 1730–1848*, New York: John Wiley and Sons, 1964.

24. J. S. McClelland, *The Crowd and the Mob: From Plato to Canetti*, New York: Unwin and Hyman, 1989, p. 294.
25. Elias Canetti, *Crowds and Power*, trans. Carol Stewart, Phoenix, London, 2000. [Orig. 1962].
26. For Canetti the fourfold attributes that constitute a crowd are: a desire for continual growth; absolute equality within the crowd (the dissolution of perceived differences imposed by race, gender, religion, etc.); density (the close spatial proximity of human bodies); and direction (established either through leadership or a united purpose). Each of these attributes can be directly related to the availability and configuration of urban space. Elias Canetti, *Crowds and Power*, Phoenix, London, 2000, p. 3.
27. Canetti, 'The Conscience of Words' quoted in Serge Moscovici, 'Social Collectivities' in *Essays in Honour of Elias Canetti*, trans. Michael Hulse, New York: Farrar, Straus and Giroux, 1987, p. 147.
28. Canetti, *Crowds and Power*, p. 19–20. [Destructiveness].
29. Edgar Piel, 'Putting an End to Power: Canetti's Archetypal Images and New Myth' in *Essays in Honour of Elias Canetti*, Michael Hulse, trans. (New York: Farrar, Straus and Giroux, 1987): p. 151. Gendered language in original.
30. Canetti writes: "The most striking natural instrument of power in [humans] and in many animals is the teeth. The way they are arranged in rows and their shining smoothness are quite different from anything else belonging to the body. One feels tempted to call them the very first manifestation of order and one so striking that it almost shouts for recognition." See: Canetti, *Crowds and Power*, p. 207. [Siezing and Incorporation].
31. This position has been formulated by a number of writers, and is central to Emil Durkheim's concept of "collective effervescence". See: Emile Durkheim, *The Elementary Forms of Religious Life*. Joseph Ward Swain, trans. (London: Allen and Unwin, 1971.)
32. The monumental entrance canopy of the Assembly is, As Frampton and others have observed, a widely held reference to the traditional "parasol" concept of Fatehpur Sikri.
33. James Holston, *The Modernist City: Brasilia*, Chicago: University of Chicago Press, 1980.
34. Charles Jencks, *Le Corbusier and the Continual Revolution in Architecture*, New York: The Monacelli Press, 2000, p. 247.
35. As Christopher Alexander has pointed out: the "city is not a tree; it should not be designed as a system." Christopher Alexander, *A City is not a Tree*, Berkeley: Berkeley Press, 1965.