"Nason and Nesbit have brought together a daring group of thinkers to reimagine the techniques and tools available to urban citizens, and map makers alike, in capturing the urban construct— one that unfolds in front of us as this ubiquitous field of seemingly infinite manipulations and possibilities. Within this context, *Chasing the City* gives us the unique opportunity to seriously explore the emergent urban landscape in its full capacity."

– Petra Kempf, author of *You Are the City, Observation, Organization, and Transformation of Urban Settings*

"*Chasing the City* presents a counter perspective on city making. Rather than setting out to impose a mental and physical control on the constantly shifting urban terrains and processes, this edited volume asks the audience to begin by first seeing and investigating the city with the level of rigor and intensity demanded by the rich, complex, layered, incomplete, incongruent, and even contradictory realities of the lived environment. More than looking at the city as-is, *Chasing the City* offers a critical lens for re-positioning ourselves relative to the city as a dynamic field."

– Jeffrey Hou, Professor of Landscape Architecture, University of Washington, Seattle

# CHASING THE CITY

Historically, many architects, planners, and urban designers solicit idealistic depictions of a controllable urban environment made from highly regulated geometrical organizations and systematically defined processes. Rather than working as urban "designers" who set out to control and implant external processes, we shift our approach to that of urban "detectives," who set out to chase the city.

Charged with approaching the city more responsively, we investigate what we do not know, allowing the city to direct our work. As urban detectives, we have the ability to interrogate and respond to the elaborate patterns emerging from self-generated, internalized urban interactions. *Chasing the City* asks what are the current design trends shaping how we, first, understand the cities of today to, then, produce informed decisions on the continuously undefined evolving city of tomorrow. Intentionally, the work here does not adhere to rudimentary notions of supposed singularities or rely upon past generations of idealistic utopian models. Rather, *Chasing the City* delineates current models of urban investigation that seek to respond to the nature of cities and develop heretofore-urban strategies as concurrently negotiated future urbanism.

This edited volume provides a collection of innovative design research projects based on shared notions of Chasing the City through three bodies of strategic frameworks: (1) Mapping, (2) Resource, and (3) Typology. This structure ultimately allows readers, as fellow urban detectives, access to exploratory tools and methods of detection that accumulate from our environs, both practical and projective in our chase of the city.

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# CHASING THE CITY

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# 8

# CHASING STRATEGIES FOR THE POST-CRISIS

*Emmanuelle Chiappone-Piriou*

## Crisis

Today, it appears impossible to contest the analysis that our globalized world is facing a generalized state of crisis, and so are our cities. Some may still choose to respond to the many signs of the now irreversible climate change with guilty ignorance. However, faced with the multiplication of natural disasters and the scarcity of global resources, as well as with all forms of disruption in the social, political, cultural or economic spheres, the majority will tend to agree that we are indeed living in critical times.

Our perception of the crisis is still anchored to the Marxist definition as a, at times violent, sudden burst that is the condition of possible revolution, or at least of a collective reinvention. Periods of crisis lead to the shaking and annihilation of the established systems of representations; they resonate with calls for emancipation and political imagination, and see the emergence of new idioms, considered to be best suited to describe the new state of the world and to invent ways to act upon it.

Architecture is no exception. Historically, it has progressed through a series of internal crises fostered by the rejection of established models in moments of societal, political, and ecological collapse. These crises have generated calls, in the form of manifestoes or projects, for the expansion of the field and the reinvention of architecture's uses and procedures. Avant-gardists understood the social project of emancipation as having to be an aesthetical one too, and architecture has thus had to turn into a new sensitive apparatus which draws from the cross-pollination with other disciplinary spheres to produce new experiences. In particular, post-war Europe saw the emergence of an experimental architecture as a corollary

to the combined societal shifts of the 1950s and 1960s and the terminal crisis of the "Modern." The post-war urbanism, as an impoverished, normative and homogenizing version of early modernism, clashed with the societal and political desire to account for singularity, exceptions, and margins. In its either joyful or more critical manifestations, this movement advocated for emancipation from hegemonic functionalism, articulated through the assignment of a new place to the individual, as a driving force within the city and society.

Our individual relationship to global phenomena has radically changed over recent years with the rise of what Benjamin Bratton calls "the stack"—the "accidental megastructure" composed of our multiple computational systems, including the Internet of Things, mobiles devices, and smart city systems.[1] With (almost) a smartphone in each hand, we have immediate access to processing power that surpasses the capabilities of almost any of the 1980s' supercomputers. Cloud and performance computing allow us to actively participate, in real time, in global financial and cultural exchanges, and to activate localized processes and practices—material and immaterial alike. Yet globalization is still perceived as an abstract and deterritorialized apparatus whose constitution and processes remain invisible. Only when it impacts our daily life negatively is it experienced in a very concrete manner. Its last and most extreme manifestation occurred as the 2008 financial crisis, a brutal and unexpected disruption of the autonomous and auto-engendering financial system. Its backlashes, however, were anything but abstract, made apparent on the labor market, the value of resources, and in real estate (particularly in the US) through the loss of home ownership for large populations, the increase in renting, and the rise of inequalities due to gentrification.[2]

Nevertheless, the past decade has given sufficient proof that the crisis has lost its regenerative power, or rather that the faith in said power has ceased to be operative. Indeed, the narrative of the crisis has been integrated as a ruling mechanism by the naturalized capitalist system and can be reproduced *ad libitum* to reaffirm and extend its domination.[3] The mechanism by which revolution and reinvention were produced has muted into a conservative one, which acts in the manner of a slow-course degenerative condition that would indefinitely postpone the conclusive event, the advent of a terminal crisis.

The correspondent uncertainty toward the future that pervades all the strata of our society is reflected in architecture. Unfortunately, architects appear to be ill equipped to face the challenges of an increasingly complex and fragmented world, and to operate in this crippling state of permanent crisis. All the well-known postures fail: theory is hesitating, manifestoes proclaiming yet another paradigm shift are piling up, and utopia has been replaced by short-term visions of a smart future. Tafuri wrote in 1976:

> Paradoxically, the new tasks given to architecture are something besides or beyond architecture. In recognizing this situation . . . . I am expressing no regret, but neither am I making an apocalyptic prophecy. No regret, because when the role of a discipline ceases to exist, to try to stop the course of things is only regressive utopia, and of the worst kind. No prophecy, because the process is actually taking place daily before our eyes.[4]

A superficial look at the state of the discipline today gives the illusionary impression that there are very few options left. Architecture appears to be navigating between the cynical celebration of the market and a withdrawal into historical models as the only ground left on which it can rouse itself from its impotency.

In this context, architects are tempted to cling onto attitudes that reposition it as an active part of the "forces trying to arrive at new social and urban structures." Fifty years ahead, the 1960s remain associated with the heroic figure of the architect, who proclaimed the expansion of his authority on the totality of the environment ("Alles ist Architekur," as Hans Hollein wrote) and took on the "revolutionary" role Bernard Tschumi describes.[5] Romantically, these moments are identified with the clear expression of political desire, and the last attempts to redefine the collective before the post-modern withdrawal into autonomy. This revolutionary attitude is an assertion of the societal, cultural, and political ambitions of architecture, all of which are currently disappearing under the conjugated actions of the mutually dependent non-architectural, and supposedly abstract forces among which are the market, the normative apparatus, or computation. Contemporary architects thus recall a historical moment in which, as Banham wrote in his 1976 recollection of the "megastuctural" moment, architecture was still relevant and "architectural design could get into the act somehow, could help resolve 'the insoluble problem of the modern city.'"[6]

## Beyond the City

Our contemporary territories are forged by highly complex and volatile mechanisms: they are the result as much of local dynamics as of the set of institutions and processes that constitute the global. The ascendance of information technologies over the last decades and the mobility and liquidity of capital characteristics of the market have reached a stage at which they almost entirely organize our geographies, across multiple scales. "The big city is the place of contact of all acting elements in the world," wrote Le Corbusier in 1924.[7] The transnational infrastructures have drawn a world map whose dominant structure is constituted by global cities,[8] or

such infrastructures integrate into the emergence of mega-cities.[9] As sites of high density, as well as the embodiment of our cultures, cities are the epicenter of complex phenomena shaping the world through connectivity. In this context of global integration, they are simultaneously responsible for, and suffering from, the consequences of global financial or ecological mutations. To an extent, their sustainability, rise, or decay, as well as their internal evolutions, are dependent on systems of transaction and on the competition that follows as a corollary, as not all cities benefit equally from the transnational networks.

This analysis, however, provides only a metonymic description of the urban phenomenon. Global cities do indeed stand out as single entities within a global network of interactions, both symbolically and materially, through their marketed image of supposedly unique cultural and financial hubs and their imprint, first and foremost ecological. Yet even this observation needs to be balanced. Data collection reveals inner variations within the urban fabric that blur the distinction between the city and its exterior, thus revealing a less differentiated landscape.[10] As Archizoom's *No-stop City* (1967–1971) anticipated, cities have indeed long ceased to be unified and stable realities. Instead, cities have been dissolved in an extensive urban realm that has long swallowed the rural and blurred all distinctions with the natural. Our contemporary condition is one in which the natural and the built have fully merged and innovative connections have emerged between various domains—the material and the digital, the public and the private, the human and the non-human. The *Utopia della quantità*, of which big data marks the advent, draws an informational and infrastructural map of a flat world, mainly produced by non-architectural forces.[11]

This infrastructural nature of our urban realm can nowhere be as clearly observed as in smart cities. One of the most advanced smart cities in the world, Songdo, South Korea, is branded as a city of "perfect balance" between sustainability and high-technology. Its master plan is said to be "designed around the people who live and work there."[12] However, in smart cities such as this, it is not the master plan that creates and organizes urban life. The power apparatus is not articulated through space, but through the thousands of interfaces and sensors collecting data. Not all smart cities are newly planned cities, and this apparatus appears to be merging with existing urban fabrics. No matter how traditional they may appear, our historical cities too are gradually being filled with computation, allowing for the integrated control of almost all aspects of urban life. In the face of rising inequalities and the rarefaction of resources, largely due to the urge to put a stop to the accelerating degradation of our environment, it appears difficult to contest the pragmatic or techno-utopian imperative for change. To varying degrees, according to geographical and social situations, most of us are encouraged to abide by more efficient,

better-controlled urban models that regulate all aspects of daily urban life, from transmission to home automation programs.

The generic and optimized smart city could be considered the latest avatar of the top-down urban models that have been implemented since the early 20th century which, devised by the Congrès internationaux d'architecture moderne as of 1928 and theorized in the *Charte d'Athènes* (1933), continue to inform our contemporary making of the city. The "fetishization of data" that is at the heart of their functioning implies a form of reductionism:

> The smart city constructs an urban subject active only to the extent that he or she shoulders responsibilities the public sector has withdrawn from, and is otherwise fundamentally passive. The primary role imagined for such subjects is the generation of data for analysis and construction of projective models.[13]

Left to private interests, the smart city is a perfectly operating machine that, along with Facebook's optimization algorithm and other automatic systems of profiling and social modeling, is a step taken towards "algorithmic governance," articulating an "a-normative objectivity" in which the collective becomes a lure.[14]

Is architecture still fit to propose models to accommodate the complexity of the city, an entity that, embedded into multi-scalar dynamics, has ceased to be highly stable and unified? To put it as Michel Ragon did: can the architect design a "life-like" macro-structure in advance? If life is "rightly made of aleatory and unpredictability," isn't capturing its image stopping its growth and "to some extent to capture life itself"?

What role can the architect play in the emergence of urbanity when non-architectural forces are primarily responsible for shaping the city? How can architecture operate within an infrastructural world that is almost, if not completely, run by computation? Should it still strive to produce qualitative change in an era of pure quantity in which everything "from organisms to machines, from cities to ecosystems, is decomposed in discreet elements which interactions and collective behaviours are analyzed," automated, and predicted? How could it do so when, despite the extreme rationalization that characterizes our computational infrastructure, our world seems increasingly ungovernable? How can architecture implement ideas of connectivity, radical rationality, and emergence—all inherent to computation—to redefine commons and renew citizenship?

In order to address these questions, we propose to revisit two historical architectural discourses on democratization which appear to have particular resonance in today's context: Yona Friedman's *Ville Spatiale* (1959–1960) and Constant's *New Babylon* (1956–1973), both of which

contested the then-dominant power structures. This return does not suggest perfect continuity between programs and the current reflections on the how to tackle the complexity of the city. Nonetheless, along with other historical experiments such as Fumihiko Maki's research into Group Form, and Huth and Domenig's exploration of architecture as the "basic vocabulary for all societal and political debates on this evolving humanism," Friedman and Constant's visions carry lessons on how to rethink the city as system, through relationality rather form, and through active processes of choice and aggregation, in opposition to static, linear, and abstracting practices.[15]

We will thus proceed to a cross-reading of both projects, highlighting the concepts and mechanisms that bear potential for the contemporary debate. However, no matter how much resonance they appear to have with issues facing our world, both these attitudes have become fundamentally inoperative at a time when social and ecological pressures impose a redefinition of the scalar hierarchies that structure the world, as well as shift towards materiality and distributive agency.

## Democratization: Against the Average Man

"Far from producing urbanity, humanists urban functionalism has dismantled the commons and undermined urban democracy."[16] Dating from 2017, this comment has a sense of *déjà vu* and highlights how the question of democratization of our cities is still addressed in terms of the emancipation from those hegemonic models. Indeed, today's situation holds a striking resemblance with the "crisis of the city" highlighted by the prospective architects of the 1950s and 1960s, the so-called "futurologists." In a time of rapid and radical socio-cultural and political evolution, the neo-avant-garde condemned the profound inadequacy of the existing urban environment to address the demographic explosion, as well as the insufficiency of the hegemonic models being implemented at the time. Inherited from the pre-war modernism, these ideals had evolved into an impoverished and homogenizing functionalism, operating in ways that conserved and reproduced established realities.

On the one hand, Friedman, who has been rediscovered by architects and artists alike at the turn of the 21st century, was one of the first to promote the notions of mobility and unpredictability against the static post-war city. Constant's *New Babylon*, on the other hand, remains the primary example of the Situationist intellectual program of a "unitary urbanism" that rejected functionalism and efficiency in favor of a spontaneous, individual definition of the urban realm. In this perspective, *New Babylon* was designed as a "qualitatively superior" social model in the form of a "built situation."

In the footsteps of the first objections raised against the modernist ambition of a "total architecture," Yona Friedman criticized, as early as 1958, the inertia of the architectural discipline and its unresponsiveness to societal and technical evolutions, while outlining the disaggregation of cities as their necessary corollary.[17] In his turn, Michel Ragon—the architectural critic and instigator of such groups as the GIAP (the International Group of Prospective Architecture, of which Yona Friedman, Guy Rottier, and Pascal Häusermann, among others, were members)—criticized architecture for being "50 years late." "How to build a city that can adapt to the unknown data of near future?"[18] The unpredictability of social phenomena was at the heart of Yona Friedman's project. As a result, he radically rejected the normativity of an urbanism that he criticized as being integrally based on statistics, and thus hermetic to adaptability. In Friedman's view, architecture had to provide models capable of accommodating both the rapid technification of society and the resultant changes in human relations. To an extent, Friedman's *Spatial City* matches the megastructural ambition to "make sense of an architecturally incomprehensible condition in the world's cities," as Reyner Banham wrote, and "to resolve the conflict between design and spontaneity, the large and the small, the permanent and the transient."[19]

Friedman shared Constant's interest in Eerhard Huyzinga's definition of the *Homo ludens* which set the foundation for the *New Babylon* project: "The liberation of the ludic potential of Man is directly linked to its liberation as a social being."[20] Man, liberated from work by automation, would be able to develop the creative modality of his being as a result of the disentanglement of labor from productive force. The corollary atomization of society and the dissolution of any institution (state and community alike) were celebrated as the condition of the liberation of the full ludic potential of the un-alienated individual. Both architects built upon notions of democratization and "human relations" to critique the modernist city; their urbanity was to be the fruit of the collective actions of numerous individuals. This framework is central to the contemporary rationale of social connectivity and access, and resonates with preoccupations about how urban analysis and planning can become relational. It connects with current investigations in how computational, interactive, hyper-local processes can reshape self-governance and democratization, along with the corresponding ideas of open source, implemented practically or referred to as a metaphor for participative architectural processes.[21]

The question of how urbanity generates subjectivities, and how these aggregate to form a common condition, is central to contemporary agendas—as it was in Friedman's *Spatial Urbanism* and Constant's "spatial sociality." In particular, contemporary urban activists recall the Situationists' *unitary urbanism*, seeking similar strategies of resistance to

the logic of efficiency and utilitarianism by re-inscribing the emancipated and desiring individuality within a larger socio-political project.[22] The contemporary promise of a full automation of the labor force also sheds new light on these hypotheses, as they hint at the possibility of a society of idleness.

In a striking parallel with our contemporary situation, Friedman analyzed the quantitative changes that architecture was faced with in a time of urban growth: architects had to work for "the many." Yet, Friedman noted, architects should resist the temptation to produce and work with a fiction: that of the "average user." Based on preconceptions, this idea implied abstraction and reduction of what the "client" or inhabitant is. Instead, Friedman claimed, "The architect loses his importance (or should lose it) to give more initiative to the inhabitants. Architects should not make houses for the average man, because such man does not exist."[23] Both historic projects tackled the difficult conceptual problem of housing the unpredictable subjectivities of the citizens while providing them with means to materialize their total freedom of movement and expression without altering it. These architectures were not only to be completed through individual action, but also fully co-designed by the empowered inhabitant. To maximize individual expression while minimizing the impact of designers, who "follow and help, as technicians, the general development," both projects offered an infrastructural response that was "non-determined and non-determinant," or as Friedman wrote, a system considered neutral because it is purely technical.[24] The urban structure was defined as a "vast network of collective services" which included water systems, power grid, sewers, and the necessary structures to allow for the individual industrialized units to be freely plugged-in and/or removed.[25]

## *Systems*

The proto-computational nature of the *Ville Spatiale* anticipated the import of general system theory and cybernetics in social sciences in the 1950s, and the subsequent adoption of a systemic perspective in architecture.[26] This trend inspired the cybernetician Gordon Pask to declare, in the September 1969 issue of *Architectural Design*: "architects are first and foremost system designers."[27] Breaking with centuries of architectural tradition, this new understanding of the city as a general system organized through interaction and feedback, rather than a physically and aesthetically organized structure, has prevailed ever since. Not only is the analogy still easily made between cybernetic models and physical and social systems, but we now witness the implementation of cybernetics in urban governance, as discussed regarding smart cities. In the very first paragraphs of *L'architecture mobile*, Friedman briefly outlined what he would later

develop in *Pour l'architecture scientifique* (1971), a protocomputational management of the urban.[28]

What he described in 1958 as the "technocracy" to come would be the guarantee of a real democratic regime—the full, impersonal, and errorless coordination of the governing mechanism by a supercomputer (*computateur*). All aspects of the collective existence were concerned: the administration first, for which the computer would elaborate and implement new legislation; secondly, the distribution of property and resources, which would be managed through a rigorous and apolitical calculation; and finally, industrial production, which would be fully automated.

That apparatus was also to act as an enabler for individual action, mobility, and expressivity, which could be manifested in unlimited fashion at the scale of the single unit. Friedman pursued and amplified this idea with the "FLATWRITER," a machine described in *Toward a Scientific Architecture* which would allow the inhabitants first to choose the configuration of their dwelling units and then to place them in the infrastructure.

The cybernetic idea of the urban system (as a set of distinct elements interacting dynamically within a coherent whole in order to produce differentiating patterns) is fully operating in Friedman's program. Against top-down centralized models, the auto-planning processes proposed in *L'architecture mobile* relied on a decentralized system that did not imply, nor produce, hierarchy. It broke with historical, vertical and unidirectional regimes of control, by associating it with communicative feedback loops. In Friedman's *Ville Spatiale*, the city was intentionally designed to be constrained to a regular, three-dimensional space-grid, only determined by a 50% occupation rate; the dwellings were to be inserted and moved at the inhabitants' will, provided the choices made respected the city's balance.

## *Libertarian?*

It is precisely within Friedman's systemic understanding that lies the inoperability of the project for the contemporary city. The *Ville Spatiale* relies on unifying preconceptions: first and foremost that of society as a whole, of which the architect is the instigator and the guarantor. Its indefinitely extensible system would allow for, and systemize, a restrained type of individual expression strictly compatible with the system. Michel Ragon himself, in 1980, blamed the utopian urbanism of architects for its synthetic and collectivistic aspect.[29] In his *Architecture des humeurs* speculative urbanism project (2010), R&Sie(n) (François Roche) pushed Friedman's original intentions to the breaking point so as to reveal their inherent and eventual ambiguity. In the retro-futurist, nostalgic video that accompanied the project, Roche pictured an aged architect who blames the

inhabitants for the abandon, and subsequent decay, of his experimental urban iterative project.[30]

Forty years prior, Peter Hall criticized such megastructures, stating that their "auto-destruction" (by either chaotic action or abandonment) had to be addressed as a necessary consequence of the "auto-construction."[31] François Roche similarly noted that Friedman's work held on to a "schizophrenic" premise: the incompatible coexistence of a constructive, rational, and achievable infrastructure juxtaposed to the possibility of its collective "colonization." Indeed, Roche notes, this colonization stagnates as a mere "political fiction" deprived of its true vitality in order to be assimilated in an objective system, sustained by proto-computation.[32]

This system stems from the logic and objective method that Friedman later detailed in *Toward a Scientific Architecture*, in which he advocated systematic thinking, in contrast with traditional architectural empiricism and purely quantitative methods. Friedman's program can be said to share a common intellectual substratum with the epistemological Structuralist discourses. He advocated for a linguistic approach (that describes individual action as combinatorial operations taking place onto the objective infrastructure—or variation within invariance) and the use of a mathematical qualitative apparatus to mediate the individual intention without distortion.[33]

Friedman's ambition was to design a system that eliminated information short-circuits by eliminating the intermediary that is the architect. In a cybernetic vein, he described the architectural process as an "information process"—the building as "hardware" and the user as the "transmitting session." In this perspective, the architect—the expert—could be replaced by the FLATWRITER in the process of managing the information. The architect rather intervenes upstream, by designing the repertoire of configurations that is submitted to the user by means of a "universal language." The user's needs and values, termed "the message," are received and processed by the building through the graph, which is able to respond to them through "feedback."

The designed combinatorial process integrates the user's preferences and evaluates the implications for the community of each decision made by the user. When considered satisfactory, the decision, based on objective metrics and reconfigurable *ad libitum*, is implemented in the objective and stable infrastructure.[34] The modes of expression and implementation of the individual—and interaction within the community—are thus necessarily mediated by an "objective" mathematical model: a graph that allows for "the performance of calculations, the extraction of metrics, the description of rules and axioms, the examination of scenarios."

Friedman states: "Any system that does not give the right of choice to those who must bear the consequences of a bad choice is an immoral

system."[35] On the contrary, here the inhabitant, having been made aware of the implications of his choices, is conceived of as being empowered and thus fully responsible. The scientific framework's formalized yet flexible logic was devised to allow for individual expression while ensuring coexistence and cooperation within the set that is the society.[36]

The graph implies a one-to-one correspondence between the mathematical apparatus and the physical spatial structure. The fact that the *Ville Spatiale* is capable of accommodating the full range of possible combinations implies that the initial system encapsulates—a priori—all the future choices that all citizens could make. The modular, open, standardized grid is thus nothing more than the physical equivalent of the graph in its form best suited to accept all possible combinatorial configurations. This reading allows one to ignore the physical characteristics of the *Ville Spatiale*'s new, spatial, urbanism (an aerial city that would overlook existing ones), and instead analyze the project as a spatial embodiment of a cybernetic system that articulates the individual to the collective within a closed whole.

Mastered by the combinatorial process implemented by the graph, change occurs by means of internal relations only. Despite the possibility of a permanent evolution through individual action, and the understanding of society as a set of relations among individuals,[37] the system is thus maintained in its unity and global equilibrium; it appears that the very possibility of entropy or dissolution is being evacuated. The *Ville Spatiale* is therefore total and autonomous, and determined only by internal changes and dynamics.

Friedman's system was still based on the premises of post-war cybernetics: described in its totality, it was designed as to be homeostatic and self-regulating. It is now largely agreed that our contemporary cities can no longer be described nor contained by such closed, stable models. Their highly hybridized and complex nature, as well as the technological evolution to planetary-scale computation and the epistemological shifts it implies, are better described and regulated through models that, drawing from the theories of chaos and complexity, embrace the non-linear character of systemic change and account for the emergent properties of large-scale environments—that is, the city.

Despite the romantic understanding of Friedman's project that now prevails—as one that reinvented the collective by unfolding the potential of individual action—the architect's system implies a direct, individual relation between the single element and the system. In the final analysis, the *Ville Spatiale* maintains the modernist assumption that only two levels exist: that of the individual, or the *micro*, and that of the collective, or the *macro*. While it does not morphologically determine the nature of the relationship between the two levels, it articulates the macro as a relatively coherent and ordered collection and organization of the micro.[38]

It can be argued, following Manuel De Landa, that the reason why the problem of the *linkages* between the micro and the macro has resisted solution is because it has been framed in reductionist terms:

> Posing the problem correctly involves, first of all, getting rid of the idea that social processes occur at only two levels, the micro- and the macro-levels, particularly when these levels are conceived in terms of reified generalities like "the individual" and "society as a whole." . . . [T]he "micro" and the "macro" should not be associated with two fixed levels of scale but used to denote the concrete parts and the resulting emergent whole at any given spatial scale.[39]

The contemporary city necessitates models that account for collective intelligence phenomena, meaning that all intelligence is considered: human and non-human alike, material and digital, and most importantly, embodied.

Breaking with the syntactic understanding of the real, which underlies Structuralism as well as first-order cybernetics, it is thus necessary to conceptualize cities in terms of emergent phenomena—as highly disaggregated, decentralized, dynamic, and multi-scalar wholes—instead of through a synthetic model such as the *Ville Spatiale*. These models need to account for change, not happening internally and smoothly in ways that keep the system on equilibrium, but rather multiple, non-linear, and at times chaotic.

Contrary to Friedman, Constant conceived a truly topological and decentralized system that could accommodate chaotic behaviors and their resulting patterns. *New Babylon* disentangled the urban condition from the traditional urban density of form and was conceived as an indefinitely extended network, limited only by the globe's dimensions.

### *The Injunction to Action*

The planetary city of *New Babylon* was envisioned by Constant to be in a permanent state of change, triggered by the individual constant movements and desires: "Just like the painter, who with a mere handful of colors creates an infinite variety of forms, contrasts and styles, the New Babylonians can endlessly vary their environment, renew and vary it by using their technical implements."[40] These included various technical tools, including audio volume, light intensity, olfactory ambiance, temperature, etc.

*New Babylon* indeed broke from the traditional static and nuclear model of dwelling, which was substituted with a dynamic model of aggregation of the living units along the paths taken and drawn by the inhabitants. The units, connected to one another, formed potentially infinite chains, extensible in any direction. *New Babylon* does not stop, and all places are accessible to each and everyone.

As it has been discussed above, the functioning of the *Ville Spatiale* was underpinned by the idea that the individual definition of the environment is isolated, in that it is systematically mediated by the operator that is the computer. Yet shaping a society that is freed from any form of reductionism implies, as argued by Friedman, the refusal not only of the "average man" and of a reductionist understanding of his properties, but also the consideration of the individual's capacities and agency. Comparing his fictitious inhabitant with a painter, Constant wrote that for him, "the creative action is also a social action: direct intervention in the social, it calls for immediate answer." The creative activity is public: taking place in a shared environment, it elicits spontaneous reactions from other inhabitants. Hence, the process escapes one's control and engages in a permanent, non-linear, collective transformation of the real. The drawings of the internal ambiances of the sectors, filled with vivid colors and what appear to be light, centripetal structures, do indeed convey the impression of a chaotic and ephemeral environment.

*New Babylon* was designed to be a qualitatively superior social mode, a built situation in permanent mutation, generated by the daily experiences of the inhabitants:

> To us, social space really is the concrete space of encounters, of contacts amongst people. Spatiality is social. In *New Babylon,* the social space is social spatiality. Nothing allows separating space as a psychic dimension (abstract space) from the space of action (concrete space).[41]

The dissolution of the existing social relations Constant considered to be constraining (those formalized by such institutions as marriage and family) was to give rise to a fluctuant society, composed through fortuitous and ephemeral meetings and discontinuous change. The final materiality and structure of *New Babylon* was to be integrally generated by the individual actions over time—not the result of a computational, objective, mediation, as in Friedman, but that of direct negotiations among the individuals themselves.

This account for how space is conceived in *New Babylon* strongly resonates with contemporary models that account for contingency, complexity and unpredictability. Breaking from the classical definition of space as an a priori category of experience, Bruno Latour defines it as "*one* of the many connections made by objects and subjects," one that is engendered by entities.[42] Social ontology, political theory, philosophy, and science studies have operated a reshuffling of space (and time) through the relocalization of the practices and structural features that produce it, and have traded the idea of a nested scalar hierarchy (in which the world could be

grasped through a long travelling from the local to the global as in the Eames' *Powers of Ten*) for operative multi-scalar, dynamic, models best suited to describe and articulate the post-anthroposcenic world:

> The construction of a situation is the edification of a transient micro-ambience and of the play of events for a unique moment in the lives of several persons. Within unitary urbanism, it is inseparable from the construction of a general, relatively more lasting ambience.[43]

This proto-topological definition of space we find in Constant's work appears to resonate with the new perspectives taken in urban studies. In *New Babylon*, space is indeed engendered by social mobility, hence by the individuals "as they trudge along." The city's form is thus inherently dependent on their existence as much as their interactions:

> Under these conditions, social mobility suggests the image of a kaleidoscopic whole, accentuating sudden unexpected changes—an image that no longer bears any similarity to the structures of a community life ruled by the principle of utility, whose models of behaviour are always the same.

*New Babylon* does not exist without displacements, and all displacements generate transformations, hence specificity and heterogeneity. However, the project still deploys a

> meta-narrative of structural change for an explanation of urban life," and can be said to fall into "the trap of fetishism, in the Marxian sense of taking for real and ontologically autonomous what is rather an attribute of particular actor-networks and urban site.[44]

To address that point, we should borrow Jacques Rancière's analysis of "social critique" and Antoinette Rouvroy's account of subjectivation in algorithmic governmentality.

Following Rancière's reading, *New Babylon* appears as the ultimate emancipative apparatus, one that induces a break of the correspondence between an "occupation" and a "capacity" and the related development of new sensible and intellectual equipment. Through their individual agency, New Babylonians indeed conquer other spaces and times than those to which they were assigned by society, and thus break with established ways of feeling, acting, and enunciating. For Rancière, "solidarity of the social and the aesthetic" has historically been at the heart of working-class emancipation, of the discovery of individuality, and the parallel project of a free collectivity, and so it appears to be in *New Babylon*.

The "individually expressive humanity" proposed by Constant necessarily implies that the collective is a hybrid ensemble, aggregated through the spontaneous individual expressions as much as through the conflicts that may arise and the negotiations and compromises that may settle them. It follows that the collective is never the pure addition of individual expressions, but the emergent result of their interactions across scales and of the assemblage they produce.

In *New Babylon*, the individual expression resulted in the dynamiting of the institutions that traditionally ensured collective links. This may find some resonance in today's hyper-individualist society, in which the commons tend to narrow. While it is not our intention to sympathize with those who regret the "harmonious fabric of community" that may be lost in the process,[45] and while we believe *New Babylon* remains a fundamental project in thinking about what emancipation is, we should question the logics and narrative of hyper-individuation, and the fragmentation that comes as a corollary, in our smart environment.

Indeed, as Antoinette Rouvroy states, the new capacities of aggregation, analysis, and statistical correlation in our data-driven reality gives us the illusion that we can "grasp social reality *as such*" and emancipate ourselves from our socially imposed norms. The *a-normative* quality of algorithmic governmentality, she states, relies on "data behaviorism," the "new way of producing knowledge about future preferences attitudes, behaviours or events without considering the subject's psychological motivations, speeches or narratives, but rather relying on data."[46] This governmentality, based on purely inductive statistics coupled with profiling purposes, tends to "disregard the reflexive and discursive capabilities (as well as their 'moral capabilities') of human agents, in favour of computational, pre-emptive, context- and behaviour-sensitive management of risks and opportunities."[47]

The point here is that if smart cities (and not only the new ones) are considered as the embodiment of such a governing apparatus—that has flattened epistemology, ontology and politics—then the understanding of urbanization as a set of evolving, adaptable, localized, and complex processes needs to be scrutinized. As discussed above, second-order cybernetics and algorithmic governance have fully embraced non-linearity and self-organization as ruling mechanisms. Control is thus enacted at the infra-individual level and reproduced through those mechanisms.

The data obtained through the real-time analysis of the inhabitants' behaviors, habits, and desires is understood to produce knowledge about the reality of the city, establishing a supposed objectivity of the system. Within the narrative of crisis, the capacity to anticipate behavioral patterns and regulate them upstream is justified by the imperatives of urgent control, of detection and prevention, of immediate operationality, and of

flexible adaptation to changing circumstances. In its more extreme form, urbanization conflates with risk management and optimization, it "exhibits a new strategy of uncertainty management consisting in minimizing the uncertainty associated to human agency."[48] This is relying on "data behaviorism," its predictive capacities and ubiquitous injunctions to—regulated—action.

While in *New Babylon* subjectivation was conceived as a process of individual expression of potentialities and desires contingently evolving into collective creativity, in the algorithmic governmentality subjectivation is prevented by hyper-individuation. In a sort of reversal, it is now regulation that is enforced at the very scale at which autonomization took place in *New Babylon*. While the New Babylonian was free to explore the potential dimensions of his existence, and spontaneously express full agency, the smart city inhabitant is restrained: he is required to *respond* and adapt to a series of environmental changes and stimuli that anticipate his intentions and actions. Affected in his potentiality, the subject mutates into the "user" of applications, into an agent of a computational simulation, into yet another profile in databases.

Against the supposed objectivity on which relies the smart management of the urban—of regulation of traffic, housing, use of public space, resource management, access to public services, etc.—it may be useful to turn to Jacques Rancière again and embrace his call for dissensus and a redistribution of the sensible:

> What "dissensus" means is an organization of the sensible where there is neither a reality concealed behind appearances nor a single regime of presentation and interpretation of the given imposing its obviousness on all. It means that every situation can be cracked open from the inside, reconfigured in a different regime of perception and signification. To reconfigure the landscape of what can be seen and what can be thought is to alter the field of the possible and the distribution of capacities and incapacities. . . . This is what a process of political subjectivation consist in: in the action of uncounted capacities that crack open the unity of the given and the obviousness of the visible in order to sketch a new topography of the possible.[49]

How can architecture continue to conceptualize and produce a common condition, which revives neither the traditional categories of domination nor its own binary categories: society/individual? How can it still be political today without reviving models and attitudes that are operationally inadequate to counter the hegemonic discourses and systems that, in their contemporary manifestation, pervade all levels of human life? How can architects still produce a critique and drag themselves out of the state of

doubt and incapacity that the obsolescence and inoperability of traditional modes of regeneration—the crisis—has induced?

## Scale Down, Perform, Aggregate (Repeat)

Through Friedman and Constant's readings, we have highlighted how our urban condition calls for models capable of accounting for its open, non-linear, and informal character. Contemporary architects, struggling with the heritage of functionalism and the inoperability of critique, have to reclaim a space for politics within which to question our traditional categorizations (nature/culture, human/non-human, living/inert), the modalities of subjectivation and of the constitution of the commons.

They may start by accounting for what does not appear to stem from any a priori political intention. The less politicized artifact—a purely functional urban planning or a building deprived of qualities—just like many mobile technological devices and the networks to which they connect us, are indeed political. They have become technical and financial human constructs and the outcomes of concrete negotiated and localized processes. To be political would thus mean to understand architecture not as a closed entity, but as a construct that, in its turn, enters into processes of assemblage, produces effects, and articulates realities across different scales and spheres. In the manner of Mel Bochner's call to render concrete the non-visual,[50] a political architecture could thus consist in revealing the mechanisms, the articulations, connections, and processes that produce our daily, and collective, environment. Against the operationality and real-time character of smart urbanism, it would consist in reintroducing delay and distance in the making of the city. It would not mean re-injecting politics into our urban, environmental, and technological environment, but rather revealing that the political has never really disappeared.

It means, as Andrés Jaque experiments with his Office for Political Innovation, disentangling the fictional discourses that pervade our society and are embodied materially and spatially, and revealing and allowing experimenting with the realities they obscure and the modalities of subjectivities they deploy. The *Cosmo* installation was designed to accommodate the 2015 summer parties at MoMA PS1. A pop infrastructure, *Cosmo* was integrally constituted with some of the technical apparatuses necessary for the water treatment process; by making them visible, it unveiled the complex mechanisms of water de-pollution that are essential to New York City's sustainability, but that, as they are delocalized our of the State of New York, remain perfectly invisible to the inhabitants. Tubes, pools, and algae culture systems gave a material (and party-like) reality to these vital and unknown processes.

To some extent, the project follows up on Yona Friedman's intuition that society not only contains people, but objects too, and that there exists a system of influences among them.[51] Moving further, *Cosmo* accounts for the vitality of matter and of objects, and more broadly, it enmeshes human relations, technology, and the built environment to a much higher degree than Friedman did. In an Actor-Network perspective, it unfolds the water treatment system in opposite directions, treating it as an assemblage constituted by many interactions, between human and non-human agents alike, as well as an actual entity that enters other discontinuous processes of a higher order. In *Cosmo*, the architectural gesture lay in the operation of rematerializing these invisible processes, which it did by scaling them down. *Cosmo* thus acted as an indicator, in the heart of New York, of the territorial inequalities that these water de-pollution processes enact and sustain, hence participating in the emergence of a new (aesthetic) sensibility.

This same process of revelation of the infrastructural nature of our world underpins *Domesticated Mountain* (2012) by artist Andreas Angelidakis. The project reflects on the absolute condition of suburbia that is the Internet, and on the changing nature of dwelling within it. The fundamental expression of individuality that is the home is redefined in terms of accumulation, as the materialization of the purchasing activities we have online. The views of the house show mountains of boxes that have been moved to the site by a delivery van; over time, the house continues to develop by means of the compulsive acquisition of more goods via the Internet and the accumulation of the correspondent delivery boxes. As such, the home becomes the material manifestation of our direct participation in the supposedly abstract and deterritorialized processes of the global market.[52]

Being political, however, does not simply consist in opposing an illusionary transparency to the computational flattening of our world. It is rather a question of operating redistribution of the sensible, but also of knowledge, and of opening up the black boxes of the mechanisms that organize and unify the political, the social, and the financial regimes.[53]

The *Block'Hood* game designed by architect Jose Sanchez (Plethora project) does exactly that. "Is a neighborhood alive? Pulsating with life? Can it learn? Or adapt? Can a city be an ecosystem?" enquires the game teaser. The player is invited to build a neighborhood where "communities and species coexist," and to ensure its sustainability and the conditions of coexistence within it. *Block'Hood* reveals the systemic and infrastructural nature of the models according to which our environments are produced, organized, and managed: the player builds a neighborhood block by block, through aggregation (a block can be a housing unit, a store, a tree, a wind turbine, etc.), each of which has inputs and outputs and enters into an interdependent relation with the others in order to constitute a productive network. The player thus has to define and connect blocks in such a way

as to avoid the entropy and decay that would be generated by abandonment or a lack of interrelation of the blocks, thus ensuring sustainability and generating growth. The game has an educational purpose, and allows players to learn not only about the ecological challenges that face our cities, but also the interrelational mechanisms that sustain them. Here, the gamer—the citizen—is addressed through reflexive abilities, desires and capacities for decision, and not merely as a "user" or a "profile." The notion of community is present both within the game and in the processes through which it is constituted, as the players are able to alter and repurpose the game.

The game consists in the "third term" invoked by Rancière, capable of establishing a common object of discovery and appropriation for the architect and the inhabitant alike, faced with which no specific form of expertise or knowledge would prevail over another. It breaks with the "a priori distribution of the positions and capacities or incapacities attached to these positions."[54] Specifically, the discrete combinatorial ontology of computer games allows the gamer to develop a contingent assemblage, unexpected to the developer. The establishment of such a term—in the form of a parliament, an (archi)scene or a platform, digital and/or physical—could lift architecture from the impasse it has talked itself into, one stuck between the inability to act in which the necessary failures of universalist programs has led it and the promotion of the utopias of the "rear-guard,"[55] whose innovative attires operate as an anesthetic that suppresses any possible consequence of the said system. This third manner "proposes to conceive (architecture) as a new scene of equality where heterogeneous performances are translated into one another."[56] This term could allow for unpredictability and contingency to hatch, and be the core around which the agency of the inhabitant as much as that of the architect could reform.

## Conclusion

This chapter has stated the urgency of revising the models through which our contemporary urban condition is being analyzed, and acted upon, in what is believed to be a time of permanent crisis. It has insisted on rejecting, once and for all, the purely top-down models that have shaped cities through simpler times and still persist today.

We have unfolded two historical projects that were designed as alternatives to the crisis of the modernist city, and which still carry lessons for the current post-crisis situation. Friedman's *Ville Spatiale* and Constant's *New Babylon* both embodied the political, social, and theoretical claim for a re-evaluation of what the collective is, in opposition to the organic classical structuring of reality as well as of the city. They advocated mobility

against the static city, individual emancipation against an extensive and homogenizing definition of society, and democratization against control.

Yet, as we have seen, it is necessary to distinguish between the manners in which each project manifested and actualized its original ambition. Through the study of the scientific axiom on which it is based, the *Ville Spatiale*, on the one hand, appears to have relied on the understanding of society as a homeostatic whole, sustained in equilibrium by a technocratic proto-computational system. *New Babylon*, on the other hand, presented us with a truly non-linear and spontaneous form of urbanization occurring through individual action. Yet we have argued that the computational turn has reversed the mechanisms of control that now operate at the very scale of the individual.

While each critique may seem to unfold in opposite directions, celebrating complexity on the one side and warning against fragmentation on the other, we would like to stress the necessity of maintaining this complex position if we want to address our current post-crisis situation: sustaining locally emerging, non-linear, self-organizing processes as modes of resistance against top-down systems, while at the same time scrutinizing those very processes as having been absorbed by the ruling apparatuses of the smart city. We need to oppose the extensive, top-down, anthropocentric organizing of the real that has led to the present ecological crisis as much as we need to resist the narrative of the crisis and the imperatives of urgency, efficiency, permanent evolution, and adaptation that come as a corollary within the new environmental regime of *smart* control.[57]

In the manner of Tristan Garcia in his twofold analysis of the disintegration of the "we,"[58] we maintain that the nostalgia for a stable and apprehensible urbanity and the urge for one that can accommodate our contemporary complexity may not be reconciled easily, or at least not immediately: none appears sufficient, yet none marks the end of the city. As Garcia states, what remains lively, and operational, is the narrative: the narrative of how our cities come to be and operate, the revealing of their infrastructural nature and transversal dynamics, as well as of the many agents and assemblages that constitute it, hyper-locally, and the tentative description of how the commons can be reinvented. To paraphrase Garcia: "Our aim is to watch, everywhere around us, for the image of the city that will form in the years to come."

## Notes

1 Benjamin H. Bratton, *The Stack: On Software and Sovereignty* (Cambridge, MA: MIT Press, 2016).
2 Mark Uh, "From Home to Rent: Who Lost the American Dream?" *Trulia*, February 11, 2016, https://www.trulia.com/blog/trends/own-to-rent/ (accessed June 29, 2018).

3 Comité invisible, *A nos amis* (Paris: La fabrique éditions, 2014); see also Naomi Klein, *The Shock Doctrine: The Rise of Disaster Capitalism* (New York: Metropolitan Books, 2008). As underlined by Klein, Milton Friedman's capitalist doctrine is funded on the narrative of crisis, real or perceived:

> Only a crisis—actual or perceived—produces real change. When that crisis occurs, the actions that are taken depend on the ideas that are lying around. That, I believe, is our basic function: to develop alternatives to existing policies, to keep them alive and available until the politically impossible becomes the politically inevitable.

https://bfi.uchicago.edu/news/post/milton-friedman-his-own-words (accessed June 29, 2018).

4 Manfredo Tafuri, "Preface," in *Architecture and Utopia: Design and Capitalist Development* (Cambridge, MA: MIT Press, 1976), pp. ix–x.

5

> Either we could become conservative, that is, we would "conserve" our historical role as translators of, and form-givers to, the political and economic priorities of existing society. Or we could function as critics and commentators, acting as intellectuals who reveal the contradictions of society through writings or other forms of practice . . . . Finally, we could act as revolutionaries by using our . . . understanding of cities and the mechanisms of architecture . . . in order to be part of professional forces trying to arrive at new social and urban structures.

Bernard Tschumi, *Architecture and Disjunction* (Cambridge, MA: MIT Press, 1996), p. 9.

6 Reyner Banham, *Megastructures: Urban Futures of the Recent Past* (London: Thames and Hudson, 1976). p. 32. The revolutionary attitude is also, finally, the affirmation that, to regain its agency in a contemporary world characterized by a growing complexity and fragmentation, when urbanity emerges at the conjunction of the material and the digital, architecture needs to redefine its own limits, once again opening up to other disciplines, and incorporating other forms of knowledge and skills.

7 Le Corbusier, *Urbanisme*, cited in Jacques Lucan, *Le Corbusier, une encyclopédie* (Paris: Editions du Centre Pompidou, 1987), p. 169 (my translation).

8 Saskia Sassen, *The Global City: New York, London, Tokyo* (Oxford: Princeton University Press, 2001).

9 Parag Khanna, *Connectography: Mapping the Future of Global Civilization* (New York: Random House, 2016).

10 Matthew Gandy, "Where Does the City End?" *Architectural Design* 82(1) (2012): 128–133.

11 Andrea Branzi and Archizoom Associati, "City, Assembly Line of Social Issues/ Ideology and Theory of the Metropolis," in *No-stop City, Archizoom Associati*, Casabella nos. 350–351, July–August 1970 (Orléans, France: Editions HYX, 2006).

12 Songdo International Business District, "Masterplan," http://songdoibd.com/about/ (accessed June 29, 2018).

13 Adam Greenfield, "Practices of the Minimum Viable Utopia," in *4D Hyperlocal: A Cultural Tool Kit for the Open Source City*, ed. Lucy Bullivant (London: Wiley, 2017), pp. 16–25.

14 Antoinette Rouvroy and Thomas Bern, "Gouvernementalité algorithmique et perspectives d'émancipation: le disparate comme condition d'individuation par la relation?" *Réseaux* 2013/1(177) (2013): 163–96.

15 We choose to specifically analyze the similarities between the programs, leaving the many fundamental differences aside for the clarity of the argument developed in the text.
16 Alejandro Zaera-Polo, "The Posthuman City: Imminent Urban Commons," in *4D Hyperlocal: A Cultural Tool Kit for the Open Source City*, ed. Lucy Bullivant (London: Wiley, 2017), pp. 26–35.
17 Yona Friedman, *L'architecture mobile* (1962). The first version was typed and distributed by Friedman in 1958.
18 Ibid.
19 Banham, *Megastructures*.
20 Constant Nieuwenhuys, *New Babylon: art et utopie*, ed. Jean-Clarence Lambert (Paris: Cercle d'art, 1997), p. 51.
21 Lucy Bullivant, ed., *4D Hyperlocal: A Cultural Tool Kit for the Open Source City* (London: Wiley, 2017).
22 Lara Schrijver, "Utopia and/or Spectacle? Rethinking Urban Interventions through the Legacy of Modernism and the Situationist City," *Architectural Theory Review* 16(3) (2011): 245–258.
23 Friedman, *L'architecture mobile*; my translation.
24 Ibid.
25 Nieuwenhuys, *New Babylon*.
26 For the relevance of Friedman's work for today's do-it-yourself and user-centric culture, computation and online connectivity, see Theodora Vardouli, *Design-for-Empowerment-for-Design: Computational Structures for Design Democratization* (Cambridge, MA: MIT Press, 2012).
27 Gordon Pask, "The Architectural Relevance of Cybernetics," *Architectural Design* (September 1969): 494–496.
28 Yona Friedman, *Toward a Scientific Architecture* (Cambridge, MA: MIT Press, 1975).
29 Michel Ragon, "Urbanisme prospectif et/ou urbanisme utopique," *Espaces et sociétés: revue critique internationale de l'aménagement, de l'architecture et de l'urbanisation urbanisme et utopie* 32–33 (1980): 15–42.
30 The *Architecture des humeurs* consists in a bio-political, non-reductionist process of urban aggregation in which the urban structure and organization is subject to the individual conscious and unconscious desires and intentions. A series of computational, mathematical and machinist procedures are designed to articulate the link between the collective and the individual by means of "improbable and uncertain successive indeterminations, aggregations and layouts." These protocols are developed on the basis of the collection of both physiological data (based on neurological secretions) and desires expressed by the inhabitant. The project reverses Friedman's principle of a pre-determined global structure housing the living units, to propose that the "layout of the residential units and the structural trajectories are conceived and developed here as posterior to the morphologies that support social life and not as an a priori." The algorithmic treatment and the incremental and recursive structural optimization protocols developed thus allow for the architectural form to emerge and adapt. The scenario included a robot capable of 3D-printing the structure through time, according to the data gathered.
31 Peter Hall, "Monumental Folly," *New Society*, October 24, 1968, cited in Banham, *Megastructures*.
32 François Roche and Camille Lacadée, "Yona Friedman®," *new-territories*, February 25, 2014, www.new-territories.com/blog/?p=1347 (accessed June 29, 2018).
33 Vardouli, *Design-for-Empowerment-for-Design*. Friedman himself never directly referred to Structuralism.

34 See Friedman, *Toward a Scientific Architecture*.
35 Ibid., p. 13.
36 "I call society a set of individuals in which there exists some sort of 'relation' between any two individuals belonging to the set." Friedman, "Appendix (1972): Society = Environment," in *Toward a Scientific Architecture*, p. 143. In his drawings, not only did Friedman schematize the relationships between the individuals (represented as points connected by lines), but also the influences amongst them. Friedman's view of the city was one in which everyone person was linked to any other by intermediaries.
37 Both propositions were to replace the existing urban fabric, not by contaminating it but, more radically, by ending it useless and archaic. The *Ville Spatiale* was to rise on piles above the existing city, agricultural and natural zones alike; little is said about the existing city, apart from the fact that it would be intensified by the new urbanism. Constant imagined the progressive replacement of the existing agglomerations, slowly disaggregated by the evolution of the lifestyle and rendered obsolete by the attractiveness of the newly built, better adapted, sectors of *New Babylon*, up to the point that the full network is connected.
38 R&Sie(n)'s partly unconscious *Architecture des humeurs* replaced a synthetic top-down system with an equally synthetic purely emergent one. That explains, we believe, that it presented the same (fictional) risks of failure.
39 Manuel DeLanda, *A New Philosophy of Society: Assemblage Theory and Social Complexity* (London: Continuum, 2006), p. 32.
40 Constant Nieuwenhuys, "New Babylon: Outline of a Culture" (original in Dutch, "New Babylon, een schets voor een kultuur"), rewrite of a chapter from an unpublished manuscript written in German between 1960 and 1965, published in *New Babylon*, trans. by Paul Hammond (The Hague: Haags Gemeentemuseum, 1974), pp. 49–62. Reproduced in Mark Wigley, *Constant's New Babylon: The Hyper-architecture of Desire* (Rotterdam: Witte de With Center for Contemporary Art/010 Publishers, 1998), p. 162.
41 Nieuwenhuys, *New Babylon*, p. 51.
42 Bruno Latour, "Spheres and Networks: Two Ways to Reinterpret Globalization," *Harvard Design Magazine* 30 (2009): 142.
43 Constant Nieuwenhuys and Guy. Debord, *Amsterdam Declaration*, trans. by Paul Hammond (original in French, *La déclaration d'Amsterdam*, written in Amsterdam, November 10, 1958), *Internationale Situationniste* 2 (1958): 31–32. Reproduced in Mark Wigley, *Constant's New Babylon: The Hyper-Architecture of Desire* (Rotterdam: Witte de With Center for Contemporary Art/010 Publishers, 1998), p. 87.
44 Ignacio Farìas, in *Urban Assemblages: How Actor-Network Theory Changes Urban Studies*, ed. Ignacio Farìas and Thomas Bender (New York: Routledge, 2010).
45 In *The Emancipated Spectator*, Jacques Rancière describes the nostalgia for a "harmoniously weaved community," one in which everyone was assigned to its rank and function, as the pivotal node of the "post-critique, embodied both by a "right-wing frenzy" and a "left-wing melancholy." "Right-wing frenzy," he writes, matches the denunciation of the market, medias and spectacle with the denunciation of the democratic individual, considered to be only preoccupied by the satisfaction of his desires. In doing so, the right-wing frenzy correlates the dissolution of the traditional institutions that defined the human society with the triumph of the market. On the other hand, the "left-wing melancholy," in its post-Situationist form in which "the truth is but a moment of the false," hankers for the "lost social link," broken by modernity. The melancholy stems from the belief that, in the inverted logic of the spectacle, every dissenting

attempt is only nurturing the system it opposes and every expression of collective intelligence is being swallowed.

46 Antoinette Rouvroy, "The End(s) of Critique: Data-behaviourism vs. Due-process," in *Privacy, Due Process and the Computational Turn: Philosophers of Law Meet Philosophers of Technology*, ed. Mireille Hildebrandt and Ekatarina De Vries (London: Routledge, 2012).
47 Ibid.
48 Ibid.
49 Jacques Rancière, *The Emancipated Spectator*, trans. by Gregory Elliot (London: Verso, 2009), pp. 48–49.
50 See Mel Bochner, "Primary Structures," *Arts Magazine* (June 1966): 32–35.
51 See Friedman, "Appendix (1972): Society = Environment," p. 151.
52 This project resonates with Georges Perec's *Les Choses*, in which the happiness of the young couple is fully dependant on the things they buy and thus ineluctably delayed, as much as it does with Waled Beashty's *FedEx* sculpture series, in which the sculptures physically bare the consequences of their shipping modes, through FedEx boxes.
53 Philippe Morel, "A Few Remarks on the Politics of 'Radical Computation,'" in *Paradigms in Computing, Making, Machines, and Models for Design Agency in Architecture*, ed. David Jason Gerber and Mariana Ibanez (Los Angeles, CA: eVolo Press, 2014), pp. 123–40.
54 Rancière, The *Emancipated Spectator*, p. 12.
55 Tafuri, "Preface."
56 Rancière, The *Emancipated Spectator*, p. 22.
57 Maroš Krivý, "Towards a Critique of Cybernetic Urbanism: The Smart City and the Society of Control," *Planning Theory* 17(1) (2016): 1–23.
58 Tristan Garcia, *Nous* (Paris: Editions Grasset & Fasquelles, 2017).