

Paris Galaxy Inc.: A Conceptual Model and Holistic Strategy Toward Envisioning Urban Development

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KEYWORDS *Aesthetic intelligence, art-based innovation, art-based research, city planning, conceptual modeling, content spatialization, creative-knowledge formatting, data-deluge, information theory, intuitive mapping, urban branding, urban development*

URLs

<http://www.liid.fr>
<http://www.piims.fr>
<http://www.openpolygon.org>

ABSTRACT Paris Galaxy Inc. is an experimental art-based research project demonstrating how creative formal and conceptual reasoning can generate elements of thinking and representational solutions that address complex issues. In the example discussed the complex issue undertaken is city planning, specifically for the city of Paris. The proposition highlights various steps of reasoning that started from a photographic installation entitled Bulle Poético-Spéculative (Poetic-Speculative Bubble) that lead, ultimately, to a vast conceptual map. This map suggested a full strategy toward transforming Paris into the “Grand Paris.”

Unlike academic research that might be partitioned into disciplines based upon rigorous data analysis, the process of investigation toward Grand Paris collages elements of knowledge from different sources and disciplines, using formal analogies and unorthodox inputs, that aim for radically efficient, cross-disciplinary knowledge production and transmission. The point of sharing it in an academic publication is to establish a dialogue with related scientific communities. By using the representational aspect as a meeting point I promote the conviction that art and science have significant matters to discuss at the frontiers of the known.

The suggested visual and intellectual track will somehow echo the “Compositionist approach” recently developed by Bruno Latour or Nicolas Bourriaud’s “Relational Aesthetics,” but most of all the concept of “Aesthetic Intelligence” which is developed from the conceptual bases of Petite Industrie de l’Image Sensorielle (PIIMS) and Laboratoire d’Ingénierie d’Idées (LIID).

Among the influences that support the series of “reasoning steps” are aspects of parametrical architecture, political programs, geography, meteorology, general and specific theory, and astrophysics. These are addressed by citing artists, scientists, philosophers, and designers who are contributing to the dialog within each category cited. In parametrical architecture, for example, the Dutch architects of MVRDV and their “Datascape” concept. After such diverse disciplines are touched upon, with their representative, spokespersons, the concept is discussed in specificity to how each of these layers, through the artist composing eyes, and the theory of aesthetic intelligence can bring an enriching view to imaging and generating outcomes that integrate massive data quantity on one hand, and physical spaces on another.

PETITE INDUSTRIE DE L’IMAGE SENSORIELLE

Petite Industrie de l’Image Sensorielle (PIIMS) is an artistic research laboratory focusing on contemporary images. The lab explores photographic set-ups, collages, installations, and numeric compositions as regularly exhibited or published; the purpose is to explore the multiple facets of images. Oscillating between theoretical and fictional speculation, the objective is to report upon, represent, or otherwise participate in the understanding of the contemporary images. Of particular interest is how the “values” of such images mutate as the digital proliferation parallels the booming of information, music and knowledge.

In front of so much immateriality (in both senses of the word), PIIMS searches through visual and sensorial productions to make the underlying structures and conceptions of this new economy perceivable. Using a vast photographic image bank derived from urban environments around the world, PIIMS mirrors and relates to physical space giving form to cognitive architectures. Through “photographic sampling” and “image architecture” techniques, we shape and formalize a language, a vocabulary, and a grammar, that is structured, flexible, and open all at the same time. This places the outcomes at the crossroads of tangible and intangible spaces. Such a complex relation between material, and immaterial, is at the heart of the artistic endeavors and aesthetic questions that relate the substance to the form—the content to the container—of ideas to practices. This lab, in conjunction with Laboratoire d’Ingénierie d’Idées (LIID), together position themselves as art-based “Research and Questioning” (R&Q) thinktanks that focus on contemporary issues that converse with other disciplines and fields of practices. The objective is to proceed far beyond the territory of art in an attempt to answer deeper questions, questions that are associated with these other disciplines and fields of practices.



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FIGURE 1: “Bulle Poetico-speculative”, photographic installation (approx. 200 sq ft), by Raphaële Bidault-Waddington for PIIMS lab, Paris Project Room, 2001

BULLE POETICO-SPÉCULATIVE

Let us explore this concept of R&Q through examples of the labs endeavors. “Bulle Poetico-Spéculative” (Poetico-Speculative Bubble, see FIGURE 1) was installed at the Paris Project Room¹ in 2001. This was when the “internet bubble” exploded on global stock exchanges, this is a symptomatic work of the lab as it opens a broad spectrum of possible theoretical and poetic interpretations. These interpretations, or reasonings, were further developed by LIID in the shape of conceptual diagrams and texts. By “reverse-engineering” this work we can open the black box of the creative process.

The key idea of this artwork was the merging of several spheres of social endeavor in a visual and semantic game: stock markets and their billions of titles circulating around the globe; information and knowledge with the expanding world wide web; music being endlessly sampled and duplicated; art and images where multiple interpretations, myths and narratives are fashioned; and the urban megasphere now called “Global City.”² Here the shape of sensibly infinite and vertiginous cosmos aims to leave the

spectators pensive and perplexed, in a state of contemplative uncertainty, in front of a complexity strangely organized and impossible to embrace. 800 images were dispersed around the room based upon thematic zones (with visible families of images). This suggested the impression of a structural organization without giving clues about its logic: rather like a patchwork of composed patterns. A soundtrack varied between silence, deep tempo (fake heart beat), electronic music, abstract hip-hop and film music. This lead spectators, once more but in an audio instead of video manner, into a multiplicity of feelings and interpretations, ranging from anguish to total euphoria.

The idea of creating analogies between systems and regimes of signs or spaces was echoing a repertoire of conceptual influences that inspired the artwork. These influences came from multiple disciplines, on the stock-exchange side, was Jean-Joseph Goux,³ who that same year published “Frivolité de la Valeur” (Frivolity of the Value). This work highlighted the aesthetic dimension of the financial sphere, its underlying scheme of belief, and its numerous interpretative spaces (sometimes verging on

fashion trends). The cosmos of stock markets and of images vibrating and swirling with the “air of the time”⁴ (like climatic uncertainty and volatile⁵ variations where the “butterfly effect”⁶ makes so much sense), also coincided with an emerging vision of the information sphere as a “gaseous state” due to its numeric explosion. This metaphorical theory, which apparently remained in the obscure zone of geekplanet since it is impossible to recall its authors, intended to show that information had reached a new state-set to become as immaterial as air, and thus required new access and management modes to explore. If the “liquid state of information” had given birth to the “information highways” and its various navigation networks and tools (as emerged in the 1990’s), it was now necessary to imagine that information would occupy the whole atmosphere, and required portals to filter and sort the trillions of informational particles.⁷

In order to complete the manifold spheres mentioned in the “Bulle Poético-Spéculative”, issues concerning the infinite landscape of information can as well be found in architectural practices that explore new modes of conceptualization of the complex urban equation. In 1999, the Dutch architects MVRDV⁸ imagined, for example, *Metacity/Datatown*, a prospective vision of Dutch cities, consisting of a great amount of statistical data henceforth available, and composed in a “Datascap.” Evoking the simple fantasy or utopian desire of the architect to design a comprehensive model, the fragile and imaginary *Bulle Poético-Spéculative* was also explicitly inspired by the principle of psycho-geography, introduced by the situationist Guy Debord since 1955. In the course of his urban expeditions, he tried to capture the ambiance and the hidden spirit behind the visible: to map the city’s psychological footprints with a collage technique such as the *Bulle Poético-Spéculative*’s intuitive assembling of urban images—which were, by the way, likewise collected during urban rambles.

EXTRAPOLATING THE VALUE-IMAGE

While a work such as the *Bulle Poético-Spéculative* nourishes and transports the vast mental cloud we just highlighted, the principle of the labs are to use this intuitive basis to extrapolate, speculate, and finally produce “theoretic-poetic” knowledge. This knowledge, in turn, should be capable of enriching the research of various (other) disciplines.

We could venture to stroll in the fields of music, or information theory, but it’s in the domain of conceptual urban models that we shall continue, integrating theoretical elements into the reasoning following a multi-faceted approach. (to which we will get back to in the conclusion).

PARAMETRICAL ARCHITECTURE

Datascaping, the computerized procedure of MVRDV (FIGURE 2), is now part of a new strand of architectural and urban research called “parametrics,” with various strategies of use as explained by Kathryn Stutts⁹ in a *Tales Magazine* review. If these powerful means of informatics calculation and modeling make the technical realization of a new generation¹⁰ of architectural works possible, they also open the way to new conceptual schemata and modeling formats of the city in its entirety. However, due to their technical constraints and the immensity of data they require to account properly for the actual, built context, those modeling tools remain profoundly utopian. When rendered in closed and mastered systems they often take on dreamland shapes. This is highly visible in the work of architects and researchers Yusuke Obuchi and Theo Syropoulos, directors of (Architecture Association Design Research Lab (AADRL), London, particularly in the *Mangal City*, the *Chimera* project, and even in the new city project they were commissioned to do for the city of Shanghai.¹¹

Without denying that parametrical urban models are truly innovative for being able to integrate quantities of modifiable data, we have to admit that they keep a highly formal and dangerously totalizing character. Even though they are inspired by live and evolutionary ecosystems, the absence of social, economical, cultural, and political visions (representation as much as understanding) is a manifest issue.

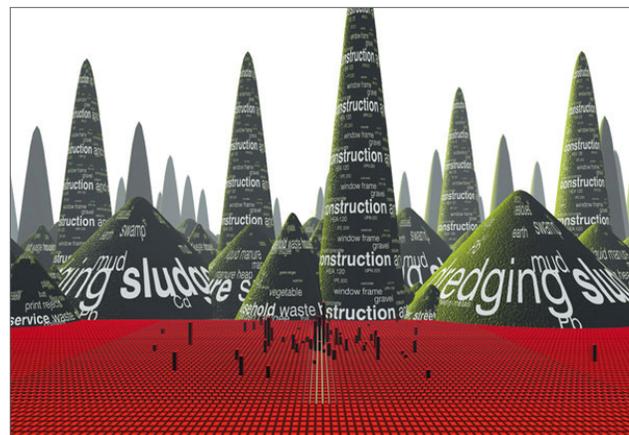


FIGURE 2: *MetaCity/Datatown* project, MVRDV, 1999

IMAGE SOURCE: WWW.MLCSTUDIO.CO.UK

ON POLITICAL PROGRAMS

Moving from architecture to aspects of political theory, we could look to the concept of “Political Design” preached by Henk Ovink,¹² head of Spatial Planning at the Dutch Ministry of Infrastructures and Environment. Ovink considers that the physical planning is a materialization of the political vision. But this approach, although again truly innovative in terms of sustainable development, is more a way for politicians to deal with the environmental issue than it is a complete conceptual model toward envisioning cities (especially when their economy has turned immaterial). In a post-Fordist era, urban economy depends on its “Intellectual Capital” and its “Creative Class,”¹³ rather than on its natural resources, infrastructures, and production capacities. Urban development programs may now rely on concepts such as “Knowledge Cities,”¹⁴ “Intelligent Cities,” “Smart Cities” and “Creative Cities.”¹⁵ These approaches, emerging from various disciplines (mostly economics, social and political sciences and information systems and technologies), implicitly define conceptual and semantic frames for cities, however, they unfortunately have no representational tools to envision the model. Oscillating between political programs, innovation programs, and urban branding, “knowledge-based urban development” is still a very blurry approach that is stuck on three formal issues: the lack (or the booming) of conceptual schemata to define a standard; the difficulty to implement it with concrete anchoring; and management tools due to its very immateriality. The dramatic omission of the environmental issue that requires a new management of material resources is a shortcoming that only the Creative City sensibly tackles. So, instead of true realization, this translates, in the end, to superficial imagery, a visual discourse of the innovative city. This can be seen in the Shanghai World Expo “Better City Better Life”, and in tune with a now banal and familiar virtual reality.

RESPECTING GEOGRAPHY

This immaterial vision is still highly relevant for taking into account the virtual dimension of cities, as opposed to tangible and cartographic approaches, whether they are parametrical or geographical because the physical ground still serves as the main reference point. The city is seen from a zenithal perspective, flattened, and geographical mapping software precisely tries to merge and crush the multiple rasters on a single surface, even though it may have a 3D topography. Economical and networks geography do bring interesting insights but remain very functionalist and do not manage to finely represent the urban complexity and richness such as its human, cultural, historical, intellectual, and imaginary capitals. This brings

us back to the Situationists’ psychogeography—a very interesting poetic conceptual approach¹⁶, notably with its collage and rotating patches mapping method (FIGURE 3) which enables a multi-dimensional and dynamic representation of the city.

Between theory and fiction, another interesting input

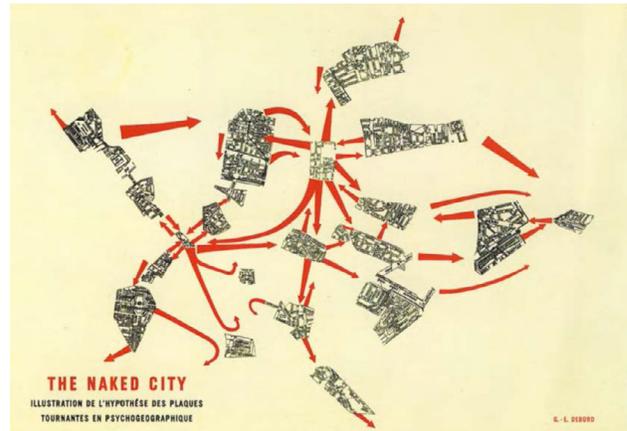


FIGURE 3: “The Naked City: Illustration of the rotating patches hypothesis in psychogeography” as reproduced in “Le Jeu de Cartes Situationistes” by professor Thierry Paquot in CFC Bulletin #204, 2010

comes from Sebastien Marot’s concepts of “Sub-Urbanism”¹⁷ or “Palimpsestuous City”, these restore the existence and the values of the invisible spatial and the temporal layers of the city. In the city’s virtual undergrounds lay its history, narratives, imagination and knowledge, as the sedimentation of precious immaterial fossils. These two approaches are, however, very marginal if not exotic in the field of practical and theoretical geography and urbanism.

CONCERNING METEOROLOGY

If we are to search for a multi-dimensional and spatial representation of the city as a complex “milieu,” it makes sense to look at climatic and meteorological representations as well, these considerations are also going through important transformation, thanks to geo-localization techniques and computer capacities. This new theoretical path somehow resonates better with the immaterial approach of cities and the Bulle Poetico-Speculative’s prefiguration. Always a pioneer, the Swiss architect Philippe Rahm tries to model architecture in its, or as a, climate,¹⁸ and soon to be realized at the scale of a vast park in Taiwan.¹⁹ Yet this hypothetical meteorological urban model remains very experimental, again missing clear conceptual tools and failing on the quantitative data management issue. In fact, it is quite amusing to notice that reciprocally, the current debate about data exponential growth (availability, storage

and processing) brings analysts to use climatic metaphors! The Web has thus become a “data cloud” (with the “cloud computing” concept) quite far from its original image (the White Electronic Board), while the “Data Deluge” evokes the image of an endless rain of bytes flooding the world. If *The Economist*²⁰ sees the Data Deluge as an extraordinary potential for the (immaterial) economy, *Forbes*²¹ thinks that Smart Cities will become smarter, while *Wired*,²² playing its visionary oracle role, augurs the end of scientific method and theory. These three points of view bring us back to the heart of our research on urban conceptual models through a theoretical and poetic reflection where art and knowledge interact!

CONCERNING THEORY

We now evoke the analysis of “sciences anthropologist” Bruno Latour in his essay “Atmosphere Atmosphere.”²³ Latour parallels the way German philosopher Peter Sloterdijk and Icelandic artist Olafur Eliasson introduce meteorology in philosophy and art, emancipating themselves from the frame of their disciplines. This issue of the limit of conceptual frames is a matter of fact (and a “matter of concern” to keep a Latourian vocabulary) in all disciplines, it gives a new shine to liberal arts for their ability to research fresh formats and angles of vision as a way to read the world. Bruno Latour “makes no mistake about it” when he organizes exhibitions at the ZKM art center in Karlsruhe as a way to produce knowledge, or when he invites artists into his research programs. The *Bulle Poético-Spéculative* could have been inspired by, or stand as a formal abstraction of these points of view, and even of Peter Sloterdijk’s work on spherical figures (*Globes, Bubbles and Foam*) which Latour often refers to, if it had not been produced much earlier than both of these theories. This, however, encourages us to go back to the art work and explore what it can deliver and say, and how it gives rise to ideas to extrapolate. Perhaps in the way art critic Boris Groys, in his fascinating essay “Politics of Installation”²⁴ invites us to see art installations as chances to rethink or re-invent the very organization of the social sphere with new experimental prototypes. So, if we allow ourselves to look carefully at the *Bulle Poético-Spéculative* and investigate how it expresses a vision of cities as a possible base for an holistic-urban conceptual model, it is clear that beyond its psycho-geography collage aspect, it can bring the idea of an urban galaxy, with all its lights and shades as a complex composite; a composite that is sensorial and abstract at the same time, totalizing, though impossible to fully embrace.

CONCERNING ASTROPHYSICS

This idea of the “urban galaxy” becomes a new facet of exploration in our panorama of approaches, and invites us to look at astrophysics models to analyze the cosmos, which is in fact just a “zoom out” from the previous meteorological perspective. At this scale, the scale of the immensely large, landmarks take another shape and become temporal. Visual closeness doesn’t mean physical closeness and induces the possibility of multiple distances; all objects are in movement, have a life and die; a large part remains invisible (sometimes called the dark matter) still existing and producing powerful force fields. Galaxies always have a central polarity serving as a pivot for celestial objects to rotate around and are combined with one another to form clusters of galaxies. These may be said to resemble strange folded fabrics with their full variety of patterns and twists. Simple image research with Google enables us to see and apprehend this incredible spectrum of strange and poetic figures, most of them resulting from the extra-atmospheric Hubble telescope. An image (FIGURE 4) taken and analyzed at Caltech by astrophysicists Kneib and Ellis in 2007, opens an interesting perspective showing the system of layers used to understand cosmic phenomena.

In opposition to geography that brings us back to the ground plan, or of “parametrics” that creates totalized (and only) 3D models, this superposition of multiple and rather

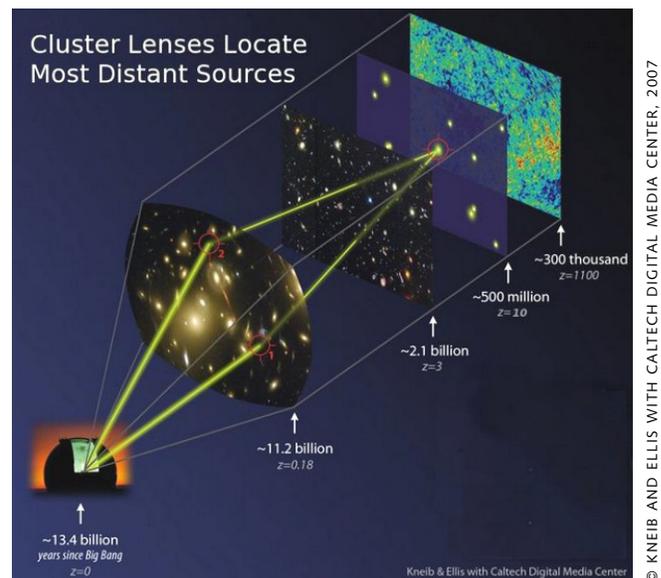


FIGURE 4: Astrophysics techniques to locate and understand galaxies (See press release and source: <http://www.insu.cnrs.fr/co/univers/extragalactique-et-univers/une-nouvelle-population-de-galaxies-au-fin-fond-de-l-univers>)

freely interrelated layers, seems quite a clever method to visualize the urban multiple dimensions—material and immaterial—as a series of many possible pictures.

**APPLIED METHODOLOGICAL PROTOTYPES:
THE CHOICE OF PARIS THE CITY OF LIGHTS**

As a prototype toward the application of the research, a diagrammatic application involves taking Kneib & Ellis’ image as a fundamental organization tool for a multiple vision of the city and combining this with the idea of a composite patchwork of patterns as perceived in the Bulle Poético-Speculative and in galaxy cluster images.

There could be more, but here I will discuss four representative layers, as this seems sufficient to gather multiple typologies of urban realities and representations. The background image becomes the urban planning level from where the spatial strategy can be inferred. The second stratum can be dedicated to the governance scheme, as a true but invisible core architecture of the city, changing at the slow rhythm as massive infrastructures do. The third layer of the diagram will show the program highlighting

the ecosystem of urban uses: where economy, culture, education, social affairs and well-being are intertwined and form various types of a composite “milieu,” (replacing the now exhausted functional zoning of modernist urban visions with a composite of urban mixes and “thematic patterns”).

Although once again initiated earlier, LIID’s research on the city galaxy model (which started in 2008), echoes Bruno Latour’s “compositionist” approach²⁵ which offered an alternative to the current dilemma between a vision of global scraggy networks (Actors-Network theory), and of protected local spheres of life securing diversity.²⁶ The palette of colors suggested on the third layer (FIGURE 6) should help determine the composition of each neighborhood’s specific urban pattern, eventually with one specific color value serving as a pivot for the organization.

To the contrary of “urban agglomeration,” which dilutes or squashes singularities in a vast urban magma (see the “generic city” concept develop by Rem Koolhaas²⁷), the composite patchwork and patterns model enables the creation of a pluralistic ensemble. The principle of patterns

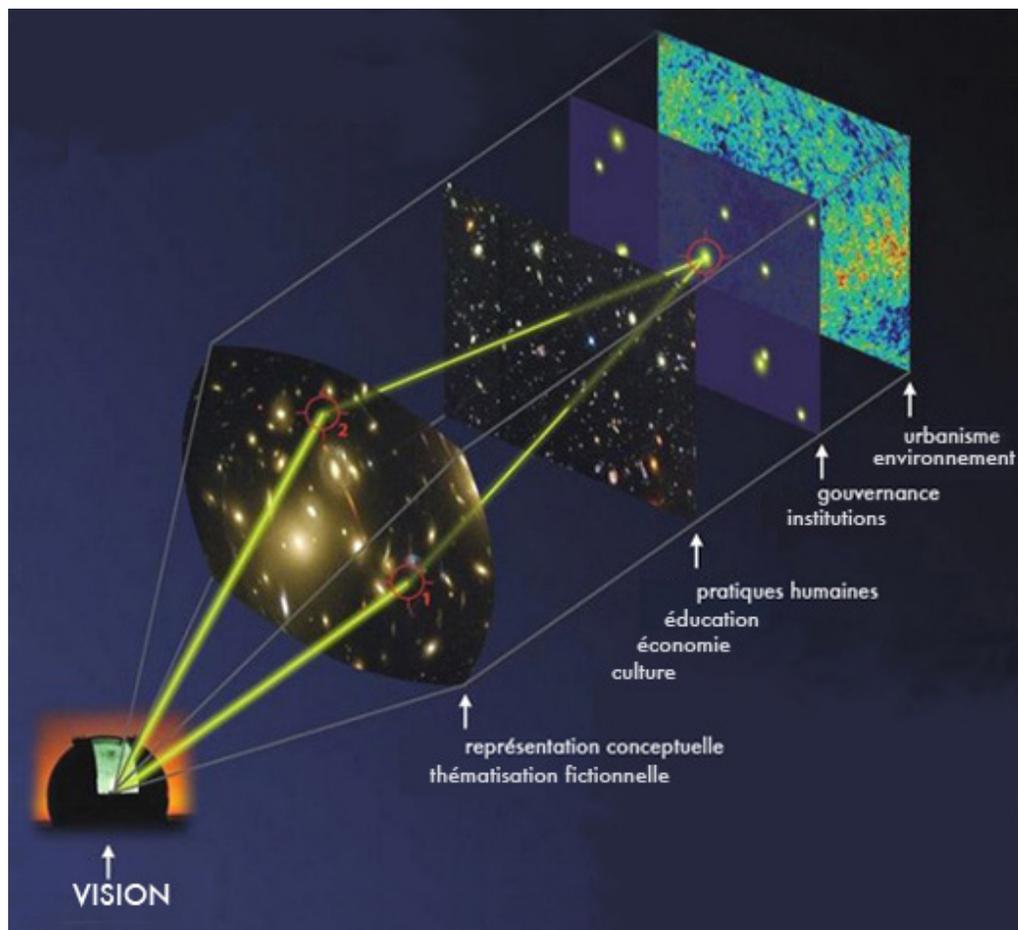
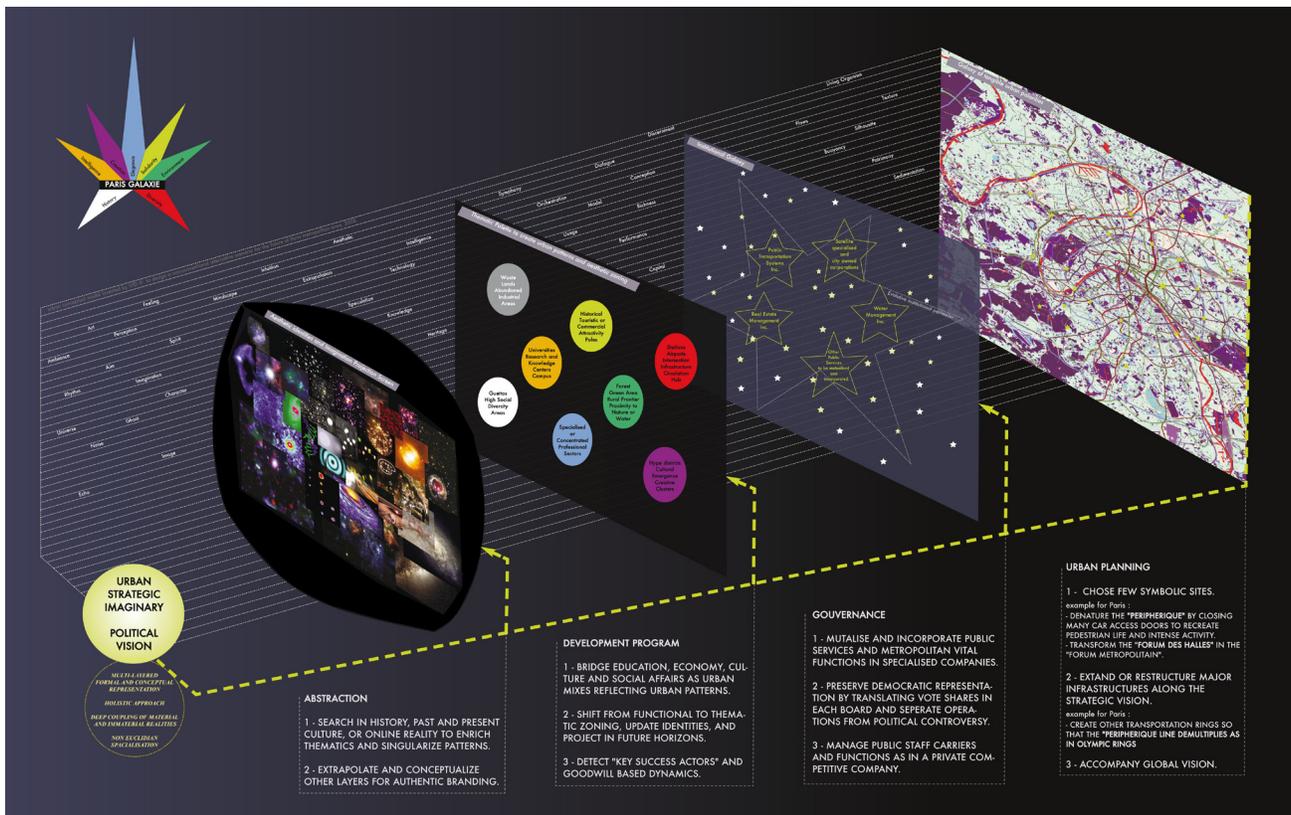


FIGURE 5:
Translation into urban multidimensional representation model

© RAPHAËLE BIDAULT-WADDINGTON AT LABORATOIRE D'IDÉES (LIID), 2008



© RAPHAËLE BIDAULT-WADDINGTON AT LABORATOIRE D'IDÉES (LIID), 2010

FIGURE 6: “Paris Galaxy, an alternative and non-conventional future scenario for the Grand Paris”.

serves as a mark of singularity, it is also displaceable and replicable, introducing the possibility of being localized and delocalized at the same time. In this manner it creates both a contextual and conceptual vision. The urban pattern can eventually serve as a smart framework to elaborate an original urban development and branding “strategic mix.”

The fourth layer, whose screen shape proves very emblematic, becomes the space to represent the immaterial dimension of the city. Here we can find the flow of narratives, imagination, knowledge, networks, invisible dynamics, and virtual life. Just as in the cosmos, this powerful invisible matter animates and swirls the various patterns around their symbolic pivot that is anchored on the ground.

Finally, the simultaneous perception of all the layers behind one another gives birth to a possible complete but still flexible and evolutionary city vision, thus offering a real diagrammatic and visual solution to the difficulty of constructing a holistic vision of the city (and keeping in mind the actual size of the diagram). After all, the research and development of an efficient conceptual model to represent cities is meant to produce discernment and support decision-making. It need not be specific to any

single individual but speaks to all, whether it is a citizen, a politician, an urban planner, or any other decision-maker. In that regard, one of the advantages of the diagrammatic language is the possibility to easily exhibit and share the visual representation and to create a space for discussion.

RECOMMENDATION FOR THE GRAND PARIS

Paris the City of Lights, with a big central star, its vast suburbia and satellite poles, now challenged to become the Grand Paris, appears as a relevant case study to apply the city-galaxy conceptual model as both a representation and a prospective strategy tool.

It should be noted here that this work is still an incomplete experiment, a work-in-progress that requires further development, but where LIID takes advantage of its artistic research freedom to dare to make a certain amount of unorthodox recommendations to be also further discussed.

LAYER 1: THE GROUND MAP

From a spatial point of view, the main obstacle to the formation of the Grand Paris is the physical and psychological barrier of Boulevard Périphérique, this boulevard imprisons Parisians inside the old Paris with an almost

500m wide corridor while keeping suburban citizens in the grey zone. So the *Periphérique* should go through a metamorphosis, develop polarities at as many as possible of its doors, to become identifiable crossroads where urban life can bloom and where the urban patchwork is sewn up. Closing some car exits could be a solution to restore pedestrian life. Another solution would be to further the research done by the *TK28* architecture firm who re-designed many of the portals to the city.

On another hand, the Forum des Halles currently going through a full mutation, can stand as the central “eye” of the Grand Paris Galaxy since so many metro and RER train lines cross. The population gravitating around this incredible transportation hub complemented with a huge commercial Center and ranked as the first European station (about 800,000 passengers per day), is already a radical representation of the Grand Paris, a mini-Grand Paris, where Nike and Hip-Hop cohabit with Saint Eustache parish! It is evident that the Forum des Halles could be revisited as a natural Forum of the Grand Paris, also potentially a solution to the meaningless and disappointing remodeling process it has undergone since 2003. Beyond these two highly symbolic sites, the analysis carried on the layers 3 and 4 will be the path to design and organize the spatial multi-polarity of the Grand Paris urban area, so that the immaterial approach crosses the material one.

LAYER 2: GOVERNANCE

It is often said that the Grand Paris area’s current governance takes the shape of an “institutional mille-feuille,” (many-layered bureaucracies) almost impossible to modify due to its complexity and sad ongoing political blockages of all kinds. Thousands of Communes, dozens of Community of Commune and Cantons, seven Departments, one Île-de-France Region and finally the French State, each with their boards and panels of representatives, are making the decisions resulting in a manifest level of inefficiency and redundancy. The true challenge to achieve the Grand Paris rests in the remodeling of its governance organization more than anything. But while the institutional architecture is somehow “untouchable,” the galaxy model inspires the idea of “satellite” structures of another nature without compromising the democratic equity. As an example, mutual companies’ models are interesting for the way they allow incorporating and sharing equitably the means among shareholders, they have a flexible status and perimeter and thus the possibility to include new stakeholders according to the future urban evolution. Another concern, the fear of a loss of political control, which hides behind the complexity, can be tempered by

a multiple and thematic/specialized approach that will not dispossess the adherents. Beneficially, the creation of a series of mutual societies for specific domains (transport, social housing, economic development, culture, research, social affairs, etc.) at the scale of the Grand Paris appears as a credible solution. In certain cases, it could be a natural evolution and transformation of existing syndicates or agencies, some of them already well performing (e.g. waste management).

LAYER 3 AND 4:

THE PROGRAM AND THE IMMATERIAL REALITY

These two parts have yet to be fully developed and deserve to be addressed in a future article. For now, the focus is to highlight the creative reasoning that formed the galaxy urban conceptual model; the application on the Grand Paris case serves to bridge it to a specific material reality.

The third layer (as noted previously) will articulate the urban program: where economy, culture, education, research, and social affairs are composed into a strategic mix. The fourth layer will display the immaterial and virtual urban reality. In the present case, a logo, taking the shape of an Eiffel Tower split as a star, helps to complete and synthesize the panoramic vision... A story to be continued...

As stated, only several layers are addressed here, but in actual application of the methods innumerable layers can be integrated, each supplying insight from the representative field; all filtered through aspects of aesthetic intelligence.

ASPECTS OF THE “ARTIST VIEW”

Even though the prototyping phase is not complete, the research presented here aims to show the intellectual path to create an intuitive mapping in a semi-artistic, semi-theoretical process, a process where formal and conceptual reasoning converse and converge. Among the operations involved in this process are: the deconstruction of an artwork (reverse-engineering), the juxtaposition of conceptual models from various disciplines, methodological displacements, and analogies and mental image games. This last category may generate ideas to be taken as shapes, perspectives, and projections that will lead to new visualizations. The LIID uses the term Aesthetic Intelligence as a means to convey and characterize this kind of thought processing in which forms and concepts, sensitive perceptions, rationalized knowledge and subjective intuition are intertwined, ultimately to produce meaning.

From a contemporary art theory perspective, the concept of Relational Aesthetics,²⁹ although it was enhancing the diversity of links open by and around artworks, failed to reveal this unique way of thinking and relating,

which is so fundamental in artistic practices (without being exclusive to them). Another bias taken by LIID consists in spatializing thoughts, not only in the diagram form, but with an explicitly multi-faceted or “polygonal”³⁰ approach that allows us to perceive, grasp, and comprehend ideas as mental figures. The Galaxy Urban Model being a good example. Architects and urban planners are accustomed to 3D representational techniques in order to facilitate their work and communicate the intended realization. In such manner their projects, and their “artist views” can be translated from their conceptual and developmental levels for a non-specialist audience: including politicians, citizens, and urban decision makers. In like manner, the artistic diagrammatic language can thus be seen as another form of “artist view” to give access and represent the other dimensions of the city as explored in the Paris Galaxy work in progress.

Research on information and content mapping (whether artistic, technological or scientific) at the crossroad of disciplines, languages, and points of view, forms a still emerging innovation lab to tackle as much the Data Deluge. Perhaps this will bridge art and science to such a degree that they will no longer be thought of, as they often are, as opposites. The intuitive artistic research methods, so often different from scientific and academic methods due to the need to resolve issues where data availability and exactitude are not always available, brings to the matter another form of discernment and potential of developing hypotheses toward better outcomes.

BIOGRAPHY

Raphaële Bidault-Waddington, a French artist with an economic background, created Petite Industrie de l’Image Sensorielle (PIIMS), an image lab in 2000. Additionally, she created an idea lab, Laboratoire d’Ingénierie d’Idées (LIID) in order to bring an artistic methods of thinking into organizations’ strategies. Between these two labs, she creates image architectures, intuitive diagrams, and conceptual tools to address complex issues through highlighting the non-conventional formal and conceptual reasoning processes.

NOTES

1 An artist run-space in Paris: <http://parisprojectroom.free.fr>

2 Saskia Sassen, *The Global City: New York, London, Tokyo* (Princeton University Press, 1991).

3 Jean-Joseph Goux, philosopher, professor at Rice University, Texas; see also his other publications such “Economics and Symbolic” or “les Monnayeurs de Langage” from the 70’s.

4 “Air du Temps” is a French expression impossible to translate but meaning “what’s in the air” as much as “what’s fashionable.”

5 The exhibition was called “Volatil-Volatile-Volatility,” a furtive exhibition appearing in three location: Paris Project Room, Colette fashion shop window, and Magazine*. See: www.piims.fr

6 The “Butterfly effect” is a concept invented by American mathematician and meteorologist Edward Lorenz, a pioneer of the Chaos Theory, in order to show that a weak phenomenon such as a butterfly wing fluttering can provoke catastrophes such as a hurricane through chain reactions. In that regard, the flyer of the Volatile-Volatile-Volatility exhibition had a butterfly image (taken in an old shop window), that was also referring to the furtive temporality of images but this would require another full chapter...

7 This metaphoric theory was announcing the arrival of search engines and portals such as Google and the principle of “cloud computing” that didn’t exist in 2001.

8 Several buildings of MVRDV were discreetly detectable on the image panorama of the Bulle Poético-Spéculative.

9 Kathryn Stutts is American architect (Yale University) who worked on the design of the highly complex dome of the Louvre in Abu Dhabi at Jean Nouvel architecture firm. See her article on www.ales-magazine.fr/style-harmony-life-vision/living_architecture#

10 For instance, the Guggenheim Museum in Bilbao designed by Franck Gehry whose firm provides parametrical modeling services and tools to other architecture and urban engineering firms.

11 For an introduction to their work: www.metropoles.centrepompidou.fr/intervenant.php?id=13

12 *Design and Politics* (010 Publishing).

13 Richard Florida, *Cities and the Creative Class* (Routledge Publishing, 2005).

14 Francisco Javier Carrillo, *Knowledge Cities: Approaches, Experiences and Perspectives* (Butterworth-Heinemann publishing, 2006).

15 Charles Landry, *Creative city: A Toolkit for Urban Innovators* (Earthscan publishing, 2000).

16 Thierry Paquot, "Le Jeu de Cartes Situationnistes" (CFC Bulletin #204, 2010).

17 Sébastien Marot, *Sub-urbanism and the Art of Memory* (Architecture Association in London, 2003).

18 See his statement "Toward a Meteorological Architecture" www.philipperahm.com/data/rahm-office.pdf

19 www.straitstimes.com/BreakingNews/Asia/Story/STIStory_727364.html

20 www.economist.com/node/15579717

21 <http://www.forbes.com/sites/williampentland/2011/12/07/data-deluge-makes-smart-cities-smarter/>

22 www.wired.com/science/discoveries/magazine/16-07/pb_theory

23 An entry for the catalog of Olafur Eliasson The Weather Project, New Tate Gallery, 2003.

24 Boris Groys, "Politics of Installation" *e-flux journal* #2 (2009), www.e-flux.com/journal/view/31

25 See "Step toward the writing of a Compositionist Manifesto" (www.bruno-latour.fr/node/140) first written on the occasion of the reception of the Kulturpreis presented by the University of Munich on February 9, 2010.

26 "Some Experiments in Art and Politics" *e-flux journal* #23 (March 2011).

27 Rem Koolhaas, Bruce Mau and Hans Werlemann, "Generic City" *S, M, L, XL* (New York, Monacelli Press, 1995).

28 www.tvk.fr

29 Nicolas Bourriaud, *Relational Aesthetics* (Les Presses du Réel publishing, 1998).

30 See the "Polygon Project" developed by LIID: www.openpolygon.org

BIBLIOGRAPHY

Anderson, Chris. "The End of Theory: The Data Deluge Makes the Scientific Method Obsolete," *Wired Magazine*. 2008 www.wired.com/science/discoveries/magazine/16-07/pb_theory

Bourriaud, Nicolas. *Relational Aesthetics*. Les Presses du Réel publishing, 1998.

The Economist. "The Data Deluge: Businesses, Governments and Society Are Only Starting To Tap Its Vast Potential," February 2011 www.economist.com/node/15579717.

Florida, Richard. *Cities and the Creative Class*. Routledge Publishing, 2005.

Goux, Jean-Joseph. *Symbolic Economies: After Marx and Freud*. Cornell University Press, 1990.

———. *Frivolité de la valeur: Essai sur l'imaginaire du capitalisme*. Blusson, 2000.

Groys, Boris. "Politics of Installation," *e-flux journal* #2. 2009. www.e-flux.com/journal/view/31

Javier Carrillo, Francisco. *Knowledge Cities: Approaches, Experiences and Perspectives*. Edited by Francisco Javier Carrillo, Butterworth-Heinemann Publishing, 2005.

Landry, Charles. *Creative city: A Toolkit for Urban Innovators*. Earthscan publishing, 2000.

Latour, Bruno. "Atmosphère Atmosphère", *The Catalog of Olafur Eliasson The Weather Project*. New Tate Gallery, 2003.

Marot, Sébastien. *Sub-Urbanism and the Art of Memory*. London: Architecture Association, 2003.

Paquot, Thierry. "Le Jeu de Cartes Situationistes," CFC Bulletin #204, 2010.

Pentland, William. "Data Deluge Makes Smart Cities Smarter," *Forbes Magazine*. July 2011. <http://www.forbes.com/sites/williampentland/2011/12/07/data-deluge-makes-smart-cities-smarter/>

Rahm, Philippe. "Toward a Meteorological Architecture," www.philipperahm.com/data/rahm-office.pdf

Sassen, Saskia. *The Global City: New York, London, Tokyo*. Princeton University Press, 1991.

Stutts, Kathryn. "Living Architecture," *Tales Magazine* #7, 2011 www.tales-magazine.com.

010 Publishing, *Design and Politics*. www.010.com.