Symbiotic (in)formal
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A mutual beneficial relationship involving the formal and informal city

Like in arts’ continuously sinusoids course, that is missing a state of equilibrium, peaking in strong ‘isms’ and substituted by interims of mannerism, architecture is constantly in search of its meaning. Learning from past ‘ism’, architecture currently finds itself in a ‘free-floating’ state, in exploration of a possible liberation from modernist determinism. This leads to the interpretation of the cities’ complexity, as an adaptive system which is capable of self-organizing. “‘Self-organization’ in this context is not used to mean only spontaneity, informal or non institutional character of the processes of territorial change. Rather, self organization - which often creates spaces of innovation- means above all that settlement rules (that give order to a certain set of individual tremors) are produced and shared by subjects that participate in the system itself.”

The goal is to depart from a two dimensional top down view, and move towards a model of multiplicity, and a more differentiate understanding of society’s complexity. In the book ‘USE’ which studies the territorial mutation of space through appropriation, Stefano Boeri approaches the essence of the debate in his quote; “I really think that the new themes for the architecture practice are all there: the capacity to intervene in mechanisms of individual variation, the care of new and temporary community spaces, and the attempt to use the economic power of certain building processes to produce a symbolic added value that redeems them from their egotism. But a new paradigm for interpretation of the emerging city is needed, one that can take the place of the one we have inherited from the sixties.”

Different current debates and studies plea for new concepts of design, which respond on these informal phenomena. But to avoid being trapped in formlessness, resulting in as Alejandro Zaera-Polo puts it; “committing professional suicide”, much interest lies in the understanding of the accumulations of successive decisions and circumstances, which have produced such an organization. To operate in this context a clear distinction needs to be made between the definitions formless and informal: “the informal does not comply with well established forms but operates within a well defined frame of reference. On the contrary, the formless has no parameters, or rather its form is indeterminate.”

The role of architecture, by the
acknowledgment of the importance of the informal city, gradually marginalized. Especially in areas where government is deficient in providing a functioning planned environment, the self-organization capacity of people proves itself. In an overpopulated world and increasingly built slums, the model of these cities with an interwoven formal-informal symbiotic character has to be taken in account. The case studies exemplify the context in which these forms are determined, based on changing economical factors, regulations, property structures, or social uses. This puts architecture in a seemingly contradictive position: planning the informal, and determining the indeterminable means operating in a vague area. Thus what is the range of architecture in this tension field between formal and informal processes when these paradoxes coexist on an urban scale?

Modernist determinism

The modernist project embodied enlightened thoughts, catalyzed by industrialization; the demand for master plans grew, while population density increased continuously. Expressing itself in utopian projects of a shapeable society, the modern citizen ought to be predictive. Modernism became favored because its possibility for governments to centrally plan and control urban life, form an economical and political perspective. In the late ’70 the Belgium architect Lucien Kroll broke new ground on strongly interwoven political and technological fronts: “We recognize only too well now that the idea of an artless small scale capitalism and of free enterprise are mere fairy stories, that in reality we inhabit a world of multinationals organized like warring kingdoms. Why should industrialists make beautiful objects if they believe that it is the ugly ones which sell, that it is the cheap and nasty product which earns them a living?”

Hereby he positions modernism as capable to be centrally planned and controllable, supporting political and industrial authorities. Modernism in socialist governments contributed even more to the political control and limited individual freedom, while capitalist countries enjoyed prosperity of consumerism in the machine like city.

As a modernistic city par excellence Brasilia’s general layout survived through restraining authorities. Designed by Lucio Costa, Brasilia became the icon for the modernist project.
of the modern movement, establishing principles that should be obeyed. Even after a fifty years period of maturing, the city maintained its general morphology, which compared to other Brazilian metropolitans is an oddity. Within the borders of the defined policies, the master plan adapted in time, reluctantly regulated emerging modifications. Based on the CIAM with respect to zoning, by separating general functions of infrastructure, recreation, working, and living, the city was modeled. The weekly social gathering on the road platform, which planned merely to function as an infrastructural knot, apparently disagrees with the strict orchestrated division of social functions. The ‘super squadrons’ in the central areas changed, planned to be autonomous and introvert, they were turned into inner squares to supply resident’s needs. The main infrastructural roads in the wings of the ‘pilot plan’, which supplied the shops, changed over the years. The shops replaced the back door with open shop façades, creating a conventional boulevard, initiated the process of abandon, to the now functionless inner super squadrons. These small changes within the possibilities defined by regulation gradually changed the city’s fundamental principles completely, revealing the plans naivety and vulnerability.

**The informal**

“The concept of the ‘informal’ is usually defined negatively, and simplistically, as a binary opposite in relation to the ‘formal’, typical characteristics being: illegal, unauthorized, unplanned, and unregulated. [What is significant about informal institutions is that they] provide a crucially important, if officially unacknowledged, counterpoint to the formal institutional order, enabling people whose needs are not adequately served- if at all- by that order, to sustain their social existence.”[^5]

In the contemporary architectural discourse attention is drawn to the unpredictable resourceful human, adding layers to what contemporary modernist cities lack. Considering the city as a complex multilayered system and acknowledging its indispensable informal layer. Ironically, dysfunction of cities with respect to their formal structure creates possibilities for the informal city. In this way the informal city functions as compensation. Like a constant battle between the formal and informal,
the government regulates and/or prohibits emerging systems, which again creates possibilities and demand for illegality and transgression. The city operates as a dynamic adaptive system. In view of the architectural profession, curiosity lies in the relation between informal city and the spatial mutation, in context of the top down political conditions. In other terms; the ability to continuously reinvent the city with its fluctuating requirements, acts as spatial appropriation and adaptation, driven by individual opportunism, unconsciously compensating for cities deficiency. Resulting in a mutually beneficial relationship between the formal and the informal, the symbiotic character of the city becomes evident. Since the term symbiosis (Latin: sym-with, bio-living, sis-conditions) originates from biologic processes, various different examples in nature can be found. The endosymbiotic bacteria in termites’ intestines, helping the digesting process. The human microbes’ symbiotic relationship dealing with cleaning up dirt, debris, and oils. The symbiotic relationships between these informal layers present themselves on different levels, therefore a distinction has to be made. In this essay two categories are defined, the symbiosis on the macro political scale which influences from above, revealing itself on the micro category of spatial appropriation. In cases this macro scale symbiosis is a network, only visible in the collective mind. In ‘the unplanned society’ Janine R. Wedel describes Poland’s informal society during and after communism. She describes societies’ response to the Soviet repression: state rules were treated ‘less as opponents to be brought down than as obstacles to be overcome.’ Inspired by the imposed socialist structure, the Polish society worked around its rigid laws by the developing an informal ‘unplanned society’, named ‘środowisko’. The direct English translation (circle/ environment) does not meet its full meaning. This informal system derives its power from a group of people, who do not yet know another, thereby creating new opportunities. Resembling the ‘Facebook’, people where individually linked, or built whole groups, providing work opportunities, goods, connections, etc. After the communist regime was toppled, 1991, Poland became democratic, which in a different way also depends on the centralization of power. New authorities
experienced what they probably previously used against the socialist authority, the środowiska. ‘The difficulty was not to ban socialism, but the fact that they learned something from it’. 

The micro scale is categorized by the emerging public functions through adaptation of spatial conditions. Where individual actors appropriate, and change space for their own opportunistic objectives, answering to the free markets requirements. Businesses on a micro scale are able to evolve and respond to fluctuating demands, contributing to the city’s required functions. The smaller scale symbiosis emerges within the building plot, by appropriations of spatial conditions for individual dwelling purposes, but reactive to infrastructural and communal needs.

Operating on the micro level, the informal city of Caracas experienced an enormous growth due to the peoples’ migration from nearby countries. The capital in 1950 contained 1 million inhabitants, with only a fraction inhabiting the hillsides. By opening the door to emigrants, the city grew in 1958 to 6 million, from which 4 millions built their informal houses in the hills and riverbeds. Dwellings were composed of materials, which the close environment provided them; logs of wood for construction, and a mixture of soil and cement to construct walls. And if provided, second hand, more durable materials such as ceramic bricks and steel plates were used. Automatically, recycling of building materials makes these slums highly self-sufficient, generating little waste. The location in the hills near riverbeds provides these slums with water and natural sewage, while power supply is hijacked from the formal electricity network. Every actor in the informal city builds within his needs and budget, creating small and efficient shelters on the muddy earth of the hill. These shelters are badly constructed and endlessly stacked, in an earthquake-zone, unfortunately resulting their collapsing. Also the high crime rate, due to the confusing city layout, makes Caracas the most dangerous of the continent. Although these cities should be avoided as they are built on poverty, their ability to self-organize themselves, yields unknown possibilities. As a city on its own, the slum functions parallel to the clearly separated formal area of Caracas. Serving and profiting from each other, Cara-
cas’ indispensable informal city creates stability. In these class divided cities, the poor inhabitants of the slums provide cheap labor for the formal city. Distinction between these classes is especially apparent on the Tijuana and San Diego Border. Tijuana evolved from a temporary city, with small settlements built by Mexicans migrating into America, later became permanent. The informal city gained structure and permanency, providing cheap labor to San Diego; America allowed Mexican workers to daily trespass the border.

By analyzing cities’ crucial requirements with respect to function, and placing merely small frameworks for individual appropriation, these self-organizing entities can be, by architects, better exploited. Teddy Cruz in Tijuana, and Alfredo Brillembourg and Hubert Klumpner of Urban Think Tank in Caracas, work within this field where top-down and bottom-up meet. In Caracas the architects proposed merely structures, providing basic construction and installation, expecting people to appropriate the space for dwelling by creating a vertical slum. In Tijuana by acknowledging the informal value, authorities provide power supply by placing power masts in slum-suitable areas, expecting people to hijack and distribute the power amongst them. By understanding the larger scale symbiosis of the city, the smaller scale mutation of the space through appropriation can be unraveled. Like an underlying ‘rhyzomatic’ structure the evident informalities have a common logic, balancing with the top down policies.

Havana case study
The spatially adapted informal city generally functions parallel to the formal outline, as in the cases mentioned above. Formal and informal are divided by a border. Such as the geo-political border in Tijuana, and the highway in Caracas. Informal networks and small scale economies tend to be more borderless, engaged in areas where any profit is possible. Due to the circumstances of the political, social, natural and financial context, the spatial adaptation of the informal city within Havana has contributed to a new typology. The formal city is shortly defined as the centrally planned environment, influenced by top down factors such as political and economical circumstances. In communist countries, based on Karl Marx’s principles, the whole
society can be top down shaped, since all market and property is collectively owned under control of the state. A Fundamental principle of a socialist system proposes a classless society, the collective ‘owns’ material goods, and prevents every form of free-market. In case of the Cuban socialism, the state possesses all property, restricting speculation on real estate by controlling it. The collapse of the Soviet Union in 1991 dragged the already cordoned Cuba into further demise. Disconnected from the global system, the dysfunction of Cuba created a population of ingenuity, in a desperate attempt to survive. Missing its major trading ally, Castro prioritized non-material affairs as health and education. As a consequence, finance lacks to maintain Havana’s material goods and catalyzed by the yearly hurricane season, buildings no longer endure the gravity, and collapse. Frequently collapsing buildings constantly change the city, creating new possibilities for individual opportunism to reinterpret the city.

Answering society’s micro scale needs, collapsed plots are appropriated and exploited, leading to an exceptional condition of the built environment in Havana. This distinctive appropriation of the collapsed plots emerges within the block. Due to the statically determined hierarchy in primary, secondary, and tertiary elements, the horizontal elements such as floors, stairs, roof, collapse in an earlier stage. The remains after the building partly collapses are the vertical construction elements such as façades, columns, and separation walls; these offer numerous possibilities for transformation and reuse, resulting in a hybrid combination of colonial artifacts and newly inserted elements. Actors/users obtain space for their individual needs in balanced with the communal space requirements. The common type evolves within internal streets, accessible from main streets, to a high level of density, complexity, efficiency, and functional variation. Havana’s spatial reinterpretation of functions due to continuous construction, collapsing leads to a spatial reconstruction incorporating the informal layer. This results in a typology of city slum fragments spread throughout the central areas as: Veija, Centro, Vedado, etc, without full exposure to the streets, due to the often longer enduring facade. As a borderless internal expansion of the informal
city, the self appropriated space redefines the building block. The informal city on all scales is literally interwoven with the formal city, resulting into an urban built symbiosis. The self organized informal space is mostly situated within the formal city block, regularly masked behind remnants of facades from the colonial period. Coinciding with the static laws, and governmental policies, the city maintains its appearance for the tourist market. Major influence for the government’s master plan for Havana, and thus the fundamental characteristic for the formal city, is tourism. The Cuban governmental imposed policy, utilizing Marx’s principles, contradicts because the significant financial dependence on the capitalist character of mass tourism. By tolerating tourism the capitalist principles such as exclusiveness and segregation are introduced, with which Cubans’ main source of income is provided. Havana evolved into a city with extreme opposites, economical apartheid, between the tourists and locals, however for both mutually beneficial. In a sort of Tourism propaganda, joint ventured companies sell Havana to its tourists, showing the retouched city’s imperfections into a colorful collective image. Driven by a yearly two billion dollar income, the government delivers this image by prioritizing the tourist area’s renovation. These areas create a sort of route through the city, which, when one stays within this ‘route’, creates this perfected representation of Havana. The orchestrated tourist areas meander through city of Havana, presenting the city in its dignified form, masking the genuine indispensable informal city. This (partly) coincidental masked slum typology which is spread throughout the touristic central area creates an interesting tension field.

**Architectures position**
The emerged informal counterpart of the city is a result of the dysfunction city, and has a significant role in the total city. Acknowledgements of these phenomena seem to marginalize the role of the architect. In the slums of Caracas the architects of Urban Think Tank proposed merely a structure, providing only construction and basic installations, expecting people to appropriate the space for dwelling, creating a vertical slum. This project represents an approach of a solution to the increasing slum as
a social project, and has to be purely functional. How can an ‘informal project’ exceed from a purely social project, to the level of an entirely planned architectural project, with some economical creditability, and create this analyzed local symbiotic relationship? Like Stefano Boeri stated in his mentioned quote, pleading for a new paradigm which cope with these new element of the architectonic practice. Without diminishing indeterminate formlessness, for which Alejandro Zeara-Polo warns. In pursuit of a design concept where top down planning can collide with bottom up processes. By the use of economic power to elevate from the social project, to a symbiotic relation, where informal and formal program both profit. A project which approaches an answer to the questions mentioned above and (re)positioning architecture in this debate. Informal program cannot be predicted, nor planned, but creating a framework of possibilities for this bottom up to emerge is within the range of architecture. “The professional practice of architects, urban planners and planners of the territory must, in the face of the contradictory totality of phenomena adopt a twofold attitude...The inherent rule in a design project must aim at constructing itself in relation to the dynamics already operating in the territory, which are not all necessarily controllable via centralized planning practices.”

By understanding local bottom up processes, they can be utilized in top down planning, creating possibilities for this symbiosis to emerge. The goal is to develop a generic knowledge which reaches specificity in a project in Havana, which can also be considered a case study. Studying the urban situation which generates this symbiosis yields generic qualities, which have to be distilled for a design method. The rules within the field of architecture which are apparently at present have to be derived in order to understand the methods for design. In this way the project elevates itself from the mere narrative process-level to, an architectonic project, where the derived methods can be put into architectonic practice. The urban condition of Havana exemplifies an evolved symbiotic relation between formal and informal, where aesthetics plays a significant role. The described masking phenomena are creating a city where the informal city is hidden behind remnants of the facades. This phe-

11 Stefano Boeri USE Uncertain States of Europe: a Trip through a Changing Europe. Multiplicity (Firm), Susan Wise, Stefano Boeri, Michigan University, published by Skira 2003
nomenon is imposed by the governments in the touristic areas of Havana in the pseudo priority to maintain historical heritage. But it also became the authentic inheritance, by the static laws which the facades endure the inner block construction, creating possibilities to reuse and reinvent the space to meet the cities’ constant fluctuating requirements. This masking phenomenon (un)deliberately results in a ‘disneyfication’ of Havana and uphold its collective image, thus able to attract mass tourism. In this perspective the informal city of Havana yields another possibility, where an aesthetic quality can fundamentally contribute to the mutual benefit. Ironically ‘disneyfying’ the informal, above defined as an (in)authentic Havana typology. The architects in Caracas proposed only the simple construction and installation; and are not in control of aesthetics, which could contribute to urban quality. To provoke the symbiotic relationship between formal and informal, instead of neglecting the increasing presence of the informal city which is increasingly absorbed in current economies, searching for a way to integrate these processes in planneable projects.

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Symbiotic (in)formal
Mapping method and design concept

As described in the theory, the local characteristics within the field of architecture have to be understood in order to distillate generics for a methodology. To understand the local characteristics, the Havana condition is mapped and analyzed. These methods are considered as two different levels, the urban (macro) and the plot scale (micro). From the urban level, the local characteristics are derived, which provide an design approach. The symbiosis in Havana between, the ‘spread and masked’ informal slum, in combination with formal is the starting point. On plot scale the symbiosis appears in generic systems, which are mapped and analyzed, to help understand the city on micro scale. Due to collapse, the inner plot and block mutation reach a level of complexity, where sight is constantly attracted to different points, and holes in floors and walls provide interesting visual connections. By appropriation of the space for individual needs, the plot is reinvented every time. Unfolding the slum complexity, needed is to pass through this mask of the façade. The mapping sequences which came out of these visits are based on the fascination for the emerged complexity.
The spatial mutation through appropriation created interesting spatial forms. The mapping method starts by recomposing the space of the plot out of pictures. The documented photos are reinterpreted in a multiple perspective/cubistic model, of the most significant pictures. By placing these pictures next to each other, more perspectives emerge, which in a way represents the eclectic mental recollection of the space. From there all the other pictures are put in the model as directional lines, pointing at the pictures most interesting object.
This mapping sequence shows the same method, but in a more precise way. First the documentation, followed by recomposing the plot to a model of multiple perspectives, the insertion of the pictures and the interpretation. The two pictures on the right show the first route, connected to the pictures. As mentioned before my attention in these spaces was attracted to focus points, instead of
the pictures general planar covering. These points are connected with the route, and height, and creates new formal expression of the space. All the sightlines are connected and form a plane.
This mapping shows the second route in the same plot. The vertical hatch shows the route and the angled lines the direction of the sight, derived from the taken pictures. The triangles in the mapping on the right show position, connected to height and the focus point.

fig. 24 Route connected attraction point and height

Combined with the multiple perspectives it shows the angle of sight. The planes which emerge when the three points are connected, which create a 3d form, and shows the needed void in order to perceive the complex spatial quality.

fig. 25 Planar representation of routes and sight
fig. 26 Recomposition
fig. 27 Perspective points
fig. 28 Abstraction
fig. 29 Routing in perspective
fig. 30 Planar representation of routes and sight
The developed methods of both scales provide the guidelines for the location and program choice, and the design method. To work within the tension field between formal and informal, the program choice resulted on the urban scale analysis. The formal program contains a program which demands highly precise planning, but also an approached economical creditability. It has to contain functions which can absorb local informal processes. The design method is derived from the plot scale mapping and should enable to develop a tool which generates this characteristic symbiosis on plot scale. The plot mappings created a design method which converts the reality to a personal interpretation, started with a fascination for the mapped plots complexity. The mental recollection of the space therefore is presented into a multiple-perspective model, a recomposed cubist like, spatial expression. In these models the different glimpses on a route to this space stand central. Through the mixture of appropriated space and remnants which is used as constructive configuration, result in these complex spaces. The main ingredients for the design method are; the remnants which create inspiration for the sight model, the current routing concept, and the route I walked on site, combined with the reading of its important sightlines, on city and inter-plot scale.
The used mapping method of the plots, functions as a starting point. The multiple perspective models, which results from the mapping, can be used as design underlayment for different positions on the route. Connecting the urban-, the plot-, and the new situations-reference points through sightlines. These position points can be connected to form a route; and the 3D form which emerges will be the functions actual form. Designed as a void, which is based on the sightlines combined with the route, generate an anti-mass. This anti-mass is formed by the formal and informal required route, and it belonging visual connections with the plot and on larger scale; the city. This anti-mass refers to the mapping method, which actually only documented the courtyards, and thus voids. The designed void which is entirely formed by the mapping method is intersected from the informal program. The paradoxal program has to be connected to each other, but also needs a level of separation. Both functions contain their own degree of private program. But also a public program is needed to approach connection between the two functions. Both programs require their own routing structure, which via the mapping method, is connected through sight. The objective is to merge the formal program with a informal to provoke a symbiotic relationship.