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**INTERNATIONAL SOCIETY OF BIOURBANISM**

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## JOURNAL OF BIOURBANISM

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The **Journal of Biourbanism JBU** is a biannual peer-reviewed, interdisciplinary, international online journal. The journal takes an incisive look into the bios/life of urbanism through perspectives in architecture, planning, environmental studies, and other social sciences. The journal aims to critically review and define the notions of biourbanism. Assessing human-centered or need-based design sensibilities is a predominant concern, while attempting to address the disconnect between theory and practice in participating disciplines. The journal publishes cutting-edge research, methodologies, and innovative design approaches on biourbanism.

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# Editor's Note: The Silence of Design

**Stefano Serafini**

*Editor in Chief, International Society of Biourbanism, Italy*

## I.

Marx and Engels were among the first to denounce the ugliness of the modern city. The notes by Engels on London as an expanded capitalistic plant that breaks human relations speaks for the urban absence of beauty to be, in reality, the symptom of an anti-human society (Engels, 1969). These early observations are enough to unmask the superstructural and naïve character of the romantic nostalgia for urban aesthetics that still survives—yet on a functionalistic basis and not without valid technical observations when it comes to quality of services and social engineering—in too many members of New Urbanism. Sure enough, the same accusation fits even better to most of the Modern Movement that, willingly or not, brought models of devastation into the European suburbia, especially in Italy after the Second World War (Serafini, 2010). New Urbanism, Modern Movement, and the several “-isms” that followed, from Postmodernism to Deconstructivism (and, to get rid of every justification: if your design is co-optable it is not good design), take for granted and propagate the stylistic perspective that reduces beauty (and often function) to a matter of taste—the individualistic, subjectivist, and in the end consumerist phenomenon of aesthetics.

Now, it is impossible to sew up a lacerated social fabric by using the thread of aesthetics and buildings' external features. It is the *civitas* (the people living within the city and their relations), not the *urbs* (the body of the physical infrastructures of the city) that is the real issue, despite the way we build the *urbs* surely has an important share of responsibility in the actual political dispossession of human communities. By the way, it is noticeable that very few of the contemporary efforts to produce aesthetics have accomplished something that common people would define “beautiful”. We need to operate on the social organism so that eventually bad urbanism (and bad architecture) lose their imaginative, economic, and ideological pedestal, and good design gets instantiated (Serafini, 2011).

One may object that such a pompous proclamation should address politicians, not designers, who have other tasks to perform. The present issue of the *Journal of Biourbanism*, on the contrary, wants to show that it is up to biourbanists to set free the discipline of design from the decorative role in which modernity has caged it, and put it back in touch with the reality of life.

The acknowledgment of the effects of bad urban planning and architecture cannot be left to social scientists, academics, and political activists who often risk becoming impotent preachers and theoreticians without action. Mastering economics and biopolitics must be part of the skills of every designer. Acknowledging the actual role of power and the forces at play is one of the necessary steps for understanding and measuring the void that we have left behind in the run for a spot in the market, letting the world spoil. That void is a great space of possibilities for realizing biourbanism; it must be filled with our responsibility and a new attitude toward real action.

As a second step in the same direction, designers need to re-appropriate a knowledge that used to be theirs and that is often wrongly confused with “multidisciplinarity”.

Multidisciplinarity, in fact, is just a way of dealing with (and thus accepting) the breaking down of knowledge into disciplines, i.e. the epistemological frame of Enlightenment's encyclopedism. I am here referring to the possibility of overcoming the limits of specialization by the capability of knowing reality from inside in order to be able to design from inside, as Prof. Sergio Los puts it in his magistral contribution to this current issue. The Mediterranean priests of Apollo of the sixth century B.C. (the most famous among them being Parmenides of Elea, the founding father of European rationality) were thaumaturges, poets, and establishers of laws and cities (Kingsley, 1999; Catalano, 1965–1966, pp. 299–300). They could perform those seemingly different forms of caring for the order because they were grounded on a solid episteme that encompassed the essence of all their activities. We live in the breakdown of the ancient *henology* uttered in the *Poem on Nature* by Parmenides—and this is exactly the reason for re-discussing the hegemony of fantasms that trapped us into its ruins (Schürmann, 2003).

First of all, then, we have to go back to the fundamentals.

This present, special issue of the *Journal of Biourbanism* deals with one of these fundamentals; an important subject that most of the actual practitioners stopped considering—the epistemology of design.

Epistemology means the reflection on the principles of our knowledge. When applied to design it refers to the intentionality embodied in our building, i.e. it deals with the origin, tools, purposes, and effects of our design activity.

Built environments and objects are fruits of culture and of civilization process and carry on the dynamic legacy of their designers' intentionality. The way the designer sees, appreciates, and cares for the world—including his vision of human relations and their political, economic, and social issues—is written in the objects, buildings, urban spaces, landscapes, and even immaterial services that his hand has put into existence.

Goals, interests, rules, calculations, and ideologies may be both acknowledged and unacknowledged, conscious and unconscious; therefore, accomplished design embodies the intention of the author regardless of his awareness, within the constraints of the laws of physics and of the project's technical, economic, and sociopolitical feasibility.

Among other things this means that, once launched, a project becomes an autonomous actor of intentionality, affecting the context, the environment, and the society beyond what the designer may have consciously planned. Because of such a complex dynamic, its effectuality is an expression of the known and unknown constraints of the extended socio-physical field rather than of the sole individual mind of the author.

The project of a road that connects place A with place B passing through place C in preference of D, E, or F, once performed, will determine a coercion of traffic fluxes that in turn will inevitably influence the wholeness of the system on its multiple levels. For example, the building of the Trans-Siberian train station of Novosibirsk had produced by the end of the 19<sup>th</sup> century the economic decline, the depopulation, and eventually reinforced the role of confinement town of the nearby city of Tomsk, whose river port soon lost its commercial relevance that once supported its economy and social life. The protesting people and authorities of Tomsk were told they did not understand the economic benefit of saving a few hundred kilometers of railway (Afonin, 2015; Fadeev, 1994, ch. 8).

The unpredictability of design's effects has been the subject of discussions and studies related to the issues of complexity and democracy (Caperna, Giangrande, Mirabelli, & Mortola, 2013, pp. 7–25).

Therefore, scholars have been opposing participatory processes and tools for foreseeing the scenarios of urban changes to stylistic choices since the 60s, coming to stress the civic relevance and appropriateness of communitarian design. Sergio Los, Besim S. Hakim, and Marwa Al-Sabouni, in their contributions to the present volume, seem to agree that design cannot be an individualistic process and needs a real connection to both the civic and environmental context. But their proposals are much more radical than the ones that use the classic participatory tools.

Prof. Hakim shows how communitarian design was once the normal and substantial way cities of the Mediterranean basin grew during the last 1,500 years. In one of his most important books, for example, he explains that according to the 14<sup>th</sup> century Maliki School's urban rules the citizens of Tunis had the right to change the design of the cul-de-sac they inhabited. The only condition was that they reached a unanimous consent on change, and thus until even just one neighbor disagreed with the majority, they needed to keep discussing and coping with a solution capable of matching everyone's need (Hakim, 2008, pp. 26–27).

This is what Prof. Los means when speaking of deliberative democracy as opposed to representative democracy in his contribution to the present issue. He noticed how the ancient and beautiful Italian built environment is the result of a civic dialogue—a dialogue that at the same time makes and is the city and the landscape itself.

The subject of discussion among citizens also became a principle of distributive justice, as Prof. Hakim exemplifies with the following quote by the 14<sup>th</sup> century builder and master mason Ibn al-Rami:

Usually it is only the richer owners who speak and demand the conversion of their cul-de-sac into a Driba for purposes of general protection and security from burglary, and the poor man is usually not afraid of burglars. Another factor is that fortification (i.e., the creation of a Driba) increases the value of the house within the Driba. For the above reasons funding should be allocated on a proportional scale based on the richest to the poorest owner of each house. (Hakim, 2008, p. 27)

The historical documentation provided by Besim S. Hakim witnesses that the form of the city in the traditional Mediterranean world depended greatly on socio-organic dynamics, without the mediation of a form of political or ideological representation. The Mediterranean civilization had found the way of directly connecting urban design to the real needs, desires, and decisions of the living body of its inhabitants—the *civitas*.

Looking at the impressive results of such an inspirational urban past, one could therefore be tempted to say that organic architecture and urbanism should ideally have no author, and that the best achievements may be reached by the very community who lives in that built space.

This is partly true. Nevertheless, in the system described by Besim S. Hakim, major infrastructures and decisions on a macro level necessarily required the intervention of the state. This is also an important point advocated by Robert Neuwirth in his sharp critique of UN-Habitat, given in the following pages, where the Author of *Shadow Cities* explains what slums really need from governments, i.e. infrastructure and the guarantee of not being evicted rather than “good housing” (of which they take care of themselves).

It is the emergence of a “middle-out” cooperation between rulers and citizens who operate respectively top-down and bottom-up on different urban scales for the benefit of the latter.

Citizens' decisions were of a micro nature, with less discernible effects than the decisions of rulers, but their aggregate impact on the city was ultimately more significant, and affected the lives of most people directly. (Hakim, 2008, pp. 18–19)

The fundamental relevance of the above passage has been stressed in this issue of the *Journal of Biourbanism* by the contribution of the biologist, statistician, and complex systems' expert Alessandro Giuliani, who exemplifies in methodological terms the living logic of a working communitarian design. A designer can enforce the methodology offered by Dr. Giuliani on several layers—structural, social, aesthetic, and environmental. This introduces the reader to the problem of the substantial homology between the physical and the intentional worlds, of which we will speak further.

Prof. Hakim touches another important point when introducing his research:

This aspect of the history of the city has been ignored by most contemporary urban historians, with a devastating effect on the theory and practice of the Modern Movement of Western architecture during this century. Since World War II this negative effect has spread to other cultures in the world, including the Arab and most Islamic countries. (Hakim, 2008, p. 19)

Arch. Marwa Al-Sabouni, a first-eye witness to the worst form of destructive power of a top-down approach to urban design, convincingly discusses this subject in her contribution and shows how the focus on external features in architecture is just a parody of tradition. It leads to a design failure whose effects can be catastrophic. After denouncing the crimes of modern urban planning in Syria, Arch. Al-Sabouni shows how aesthetics is being used as a tool that has more to share with market than with beauty, and it is rather another word for ideology.

In fact, as Sergio Los wrote, quoting Konrad Fiedler's *Schriften zur Kunst* (Fiedler, 1971):

“Many prejudices hinder the evaluation of the work of art, such as the moral, the historic, and the philosophical one. The aesthetic perspective is one of them.”

The artist is said to work for the aesthetic enjoyment, for amusing people. Art is considered to be a luxury good, an extravagant activity that makes life more pleasurable—not the condition itself of life as conscience ... When architecture is at stake, discussions about statics and economy are allowed, but the aesthetic problem is consecrated to silence. It is a matter of taste. What someone likes, it may well be indifferent to another. The artist is a clown, a clerk of leisure-time. (Los, 1967, p. 11)

Besim S. Hakim, Sergio Los, and Marwa Al-Sabouni are thus offering similar suggestions, yet from different points of view and in different contexts, to the problem of which criteria we should use when designing an urban environment. Their proposals are powerful and opposed to the stylistic and ineffective perspective chosen by the majority of academics and practitioners.

The practical, common, and long-lasting wisdom of referring design to human reality without interfaces such as aesthetics, ideology, or prescriptive laws, has vanished in a few decades since the beginning of the 20<sup>th</sup> century. With a certain melancholy, we welcome therefore the pale impulses emerging here and there in the “creative” design scene to cope with the oppressive constraints of a totalitarian capitalism that has become anthropological extermination, as Pasolini (a man who was never co-optable) would say. Arch. Angelica Fortuzzi, Arch. Elina Alatalo, and Prof. Ari Jokinen present here with their distinct contributions two significant examples of attempts to reconnect



grassroots drives and design, i.e. the U.S. movement of Placemaking and the Finnish experience of Mushrooming. Both these phenomena show a genuine interest in a certain form of communitarianism, yet reflect the inevitability of a top-down approach due to the social condition in which they operate. The enthusiastic people who group around these commendable activities, in fact, can do it only after the figure of an enlightened “designer-catalyzer”. The latter can be substituted by his cybernetic creation/instantiation, like a participatory methodology with “laws” and rules, or the software of a peer-to-peer interface. Placemaking and Mushrooming “communities”, by necessity, are ephemeral such as the members of a sports club, the spectators who gather in a cinema, or a group of consumers who prefer the same brand or kind of product. This does not mean that positive human experiences will not likely emerge from Placemaking and Mushrooming; but they will not follow as intrinsic consequence of the designing action because both Placemaking and Mushrooming work within the conception of a word that is no longer shared and civic, but individualistic and commercial. It is not a primary need to push the children of Helsinki’s middle class into searching for a (precarious) job through the network of Mushrooming; nor the housewives and retired activists of the U.S. urban East Coast to make a piece of their suburbs “attractive”. In both cases forms of resourceful “squatting” are at work—of unutilized spaces and of opportunities left open by laws and regulation (Franck & Huang, 2017), and even of Facebook. Yet as their fashionable, advertise-like, and domesticated aesthetics suggests, these interfaced forms of desire for authenticity and participation stand as leisure goods for a specific form of urban anthropology as they integrate more and more into the normality of business and administration.

The contribution by Sergio Los stresses the importance of the organic continuity of city and landscape. The rural emerges as a relevant issue between ecology and anthropology. Dr. Michael R. Rosmann, a psychologist and farmer, focused on farmers’ mental health, offers important considerations on the universality and the nature of the rural via his interview by Sara Bissen. The reader should notice that the possibility of a non-urban anthropology is a matter of scandalized silence among academics. A fortiori, why should urban designers be interested in things like the “agrarian imperative”? First, because cities cannot exist without the continuous economic, human, demographic, and cultural support by the productive churn of the countryside. Second, because the dwellers of the slums of today are the citizens of tomorrow, and they are rural in origin and anthropology. Third, because they possibly bear the key for reconnecting our design to life after a human desertification that endangers the whole urban civilization. The ruralist Sara Bissen allows for understanding these points in her interviews and in the review of Robert Neuwirth’s work on slums. She notes a significant relation between the observations of Neuwirth on squatters and the research on peasantry by Teodor Shanin.

On the other hand, Antonino Galloni—one of the most brilliant economists of Italy, feared by politicians for his capability of hitting the future—explains in his contribution on the history of cities that we need to understand the perversion of the economic and ecological relation between the city and its rural context as a paradigm of the ecological imbalance of our society, which could bring our species to extinction. His proposals have a peasant-like practicality—Neuwirth would recognize them as *débrouillarde*—and are about designing the economic value anew despite and within the void left behind by the financial folly of the latter, destructive phase of capitalism (Galloni, 2015). Squatting the ultra-ruins of capitalism seems a good image of Galloni’s ideas, a possible companion to the architecture of Marco Casagrande (Casagrande, 2013).

Of course, we know that modern and contemporary cities strive to radically distinguish themselves from their rural context, both in physical and symbolic terms. The urban collective imaginary bans soil (the dirt, as soil *soils*). Poisoning land in order to kill every form of humble life such as weed and insects and covering it with concrete are the first steps of modern urbanization. Technology

aggressively looks after the sun, wind, climate, and other intruders. The neo-city, with its exalted minimalist aesthetic, its heating and cooling engines, and its skyrocketing horizontal, vertical, and hyperspatial expansion aspires to the nirvana of total independence, and its metabolism passes through a process of distancing and hiding that leads to extreme consequences the symbolically marked social divide that Norbert Elias told on the “process of civilization” (Elias, 2000). The huge quantities of materials (especially food) transported into the city by ceaseless energetic fluxes are hidden in their form and origin no less than the waste running in the sewage system and its final destination (Pachirat, 2011). Seemingly, the city hides politely and secretively the dead, the criminal, and the insane—where potentially each of us can arbitrarily and all of a sudden fall under one of these categories, and be technologically disposed of.

## II.

It does not take a profession of faith in neo-Darwinian orthodoxy to reject the idea that human beings took off in the natural world like Athena from the head of Jupiter, and to accept that most of what we call “nature” has been deeply affected by human actions, i.e. that there is no such a thing as a total divide between culture and nature. Urška Škerl offers us some reflection about this subject in her contribution *Paradise Design*.

No doubt, though, that urban processes highlight very well the effects of design for reasons of scale and complexity. Density, economy, technocratic accumulation, and velocity of the city show to the highest extent the causal power of design, because it is in the city that it assumes an almost totalitarian character. Does that make the city an opposite to the natural world? Even without a single tree in town, the answer is no. Nothing can escape the laws of forms, in the end (Bettencourt, Lobo, Helbing, Kühnert, & West, 2007), and morphogenetic order can be spotted with predictive power within several phenomena of periodicity even in human behavior (Lima-de-Faria, 2014; 2017).

Therefore, the critique of Chomsky’s Universal Grammar hypothesis by Sergio Los is about the lack of a specific, communitarian, and local roots of languages. The point of Noam Chomsky, in fact, is that linguistic behavior is universally highly structured on the basis of forms that forego and organize the process of learning any specific language (Chomsky, 1957). Nevertheless, the Universal Grammar is not a grammar but the possibility itself of any grammar; while possibility is at the same time a set of constraints, subrules, or subcodes, as we will see ahead, stemming from “meta-rules” like topology and physics. A general set of constraints then, does not mean the impossibility of locally rooted structures. What may sound odd is rather the foundation of such universality on selectionism, where forms such as the Fibonacci patterns that one can notice in language most possibly represent a phenomenon of isomorphism with the physical and mathematical morphogenetic processes that underlie it (Piattelli-Palmarini & Uriagereka, 2008, p. 210; Lima-de-Faria, 2014). I will try to show an example of it in the final section of this issue.

What counts here, though, is stressing that biourban, reality-connected design calls for a series of constraints to be acknowledged. These are natural/environmental/physical and intentional/cultural/social. These two groups of constraints always tend to fit into each other (homology) because they originate from each other.

Mediterranean urbanism studied by Besim S. Hakim and envisioned by Marwa Al-Sabouni witnesses the possibility of building urban spaces out of the *erlebniss* of people’s sociality and everyday authenticity coping with weather, landscape, and need for water and food. The marvelous towns raised around the Mediterranean Sea for ages in different styles by different peoples and cultures could experience and bring to light the purpose of society in connection with natural necessity.

With respect to weather, Sergio Los' bioclimatic design is highly performing. It can be defined as bioregional, because it adapts to place-specific life conditions exactly like local flora and fauna—in opposition to the International Style that imposes the same models and patterns in different regions irrespective of their environmental, cultural, and climatic conditions. One major example is the skyscraper, fundamentally a northern climate, light-catching structure that spreads crazily into hot deserts and tropical regions. But, such as the skyscrapers (no matter if in Dubai or Berlin) impose a feeling of estrangement to the visitor, so bioclimatic design, besides its energetic performance, puts humans in dialogue with the environment and the local culture, which with the environment is connected since the time of the first acts of farming, fishing, and breeding.

We could consider the above, after the term coined by Edward O. Wilson (Wilson, 1984; Kellert & Wilson, 1993), expressions of *biophilic design* i.e. design that matches our innate need for connection with life and life processes. Biophilia is not a matter of style but of structural connection, despite one can consider biophilic, for example, several Art Nouveau buildings for their strong, full-scale, and both internal and external bond with our perception of the space. In fact, most self-built and self-ornamented buildings all over the world, from vernacular constructions to shanty towns, exhibit such a quality. Christopher Alexander has devoted some research to test the effect of similar buildings on people with surprising results, where poor shacks turned out to be more capable of making people feel at home than celebrated works by famous designers (Alexander, 2002–2005, pp. 32–62; 64–78). The reason is that these buildings arise as concrete and fitting answers to real, specific, and experienced needs. Their design may be humble but it is based on exact local knowledge about the specific physical and cultural situation in which they have been constructed, such as living plants and animals.

Further, biophilic bioclimatic and traditional Mediterranean designs have remarkable effects on human health and well-being. Gayle Souter-Brown, in her paper *The Theoretical Basis of Well-being as a Motivation for Design*, offers a review of the related literature, referring to the thread of “salutogenesis”. I would stress the reason that makes salutogenic design work so well, to the point of being a guide for our architectural choices: it contributes to the flow of sensorial isomorphic feedback. Such a flow is normally unconscious but affects our emotional condition. Disturbance of such a flux produces stress, whose physiological effects have been the subject of much research since the classic work by Hans Selye (Selye, 1956; Rose, 1994). It is no surprise that design connected to natural and social structures reproduces nature-like and fractal features, displaying information, which is ordered economically according to algorithms that facilitate categorization (Rodermann, 1999; Parsons, 1991). We can therefore spot, in such a fundamental need for an isomorphic match between the environment and the cognitive processes, the basic principle for building according to algorithmic canons keen to the human measure and featured as proportions, scales, orders, and ornaments (Salingaros & Masden II, 2008). It is a matter of connection that feeds our neurophysiological system (Kellert, 2005; Kellert & Wilson, 1993; Orians & Heerwagen, 1992), and, e.g., entails the activation of the opioid system (Biederman & Vessel, 2006).

It has been 30 years since we have known that built environments featuring natural geometries or allowing for contemplating directly or indirectly natural sceneries contribute to the reduction of pain perception and the acceleration of healing processes in hospitals (Ulrich, 1984; Frumkin, 2001; Tse, Ng, Chung, & Wong, 2002). Interior designers have been the first ones to care for such positive effects, after the transcultural researches by Grant Hildebrand on people's architectural preferences (Hildebrand, 1999). This is where the evidence-based design (EBD) took off to focus on designing hospitals that care for the physiological and psychological effects of architecture on patients, medical staff, and visitors, showing the relevance of reproducing natural features and avoiding stress-triggering signals in the built environment (Wise & Leigh-Hazzard, 2002).

Unfortunately, these researches have been often used in a trivial and shallow way, pointing at “handbooks” of ready-made “biologically effective” forms to be applied in design. It should therefore be clear that biourbanism is not what has been called “biologically inspired design” (Dong, 2010); an attempt to give scientific justification to a superficial style, is not much different, in principle, from the fashion of adding as many green plants as possible on top of buildings (De Chant, 2013). Biourbanism has been born as a critique of the actual, unsatisfactory situation of urban design, where polluted and congested market-driven cities of loneliness hinder human health, and substitute human communication, freedom, political activity, and citizenship with their simulacra.

Biophilic design is therefore just a “subcode” of true biourbanism. Not by chance biophilia is already referred to as a tool for enhancing productivity in workplaces (Terrapin Bright Green, 2012, a publication recognized with the Environmental Design Research Association 2014 Achievement Award), and thus for the sake of companies’ revenue rather than human happiness. Building according to “the criterion of real human being”, hence, may easily turn into a slogan that follows the mainstream discourse, which loudly and constantly spreads a vision of human beings as consuming/producing parts of a meaningless “system of signs” whose only goal is persisting and accelerating.

We cannot have a criterion disjointed by human purpose in design; geometric disconnection is a consequence of social disconnection.

Of course, not only designers, but the whole Western and Westernized culture is in need of a criterion because it has lost its *telos* (Husserl, 1954, pp. 3–9; 15–17). Why are we living and designing, and on the basis of what? Where are our life and design heading? Are we meant to give up and accept the role of “decorators”, “clerks”, and “priests” that not only the job market but the entire current economic system propose to us—and “have a party”, as a famous archistar wittily and honestly had to say a few years ago? Or should we accept the challenge that Edmund Husserl left as a heritage for the “European sciences”, the challenge for the purpose, and rediscover the meaning of humanity in the built world? Should we ourselves, in other words, come back to inhabit design before expecting others to inhabit the objects that we design?

The dissolution of the purpose of design, as one can egregiously notice in the effects of urban and architectural works on the social body, is a blatant form of nihilism that spans from the physical destruction of the environment to the substitution of the world with signs—an ideologically-mediated form of Baudrillardian hyperreality (Serafini, 2011b). Noise, fullness, utterances, and unending reality are all specific features of the urban (Marra, 2016). The consequent confusion (*spaesamento*) is a metropolitan character that makes people uprooted, separated, and incapable of seeing what matters. The city steals from us silence, void, sleep, darkness, and space where the mind can rest and meditate. In the city, we focus on things, events, and facts so that we miss the wholeness, the meaning, and the purpose. This is as true on the existential scale as on the cognitive level (Levitin, 2014).

Despite this was evident only in the most advanced Western metropolises until a few decades ago, the universal semiological meaninglessness rages with its mechanical repetition all over the planet nowadays, unleashing an iconoclastic self-reproductive fury. The advent of alienating artificial forms on global scale that characterized the last 70 years has given birth to a second, post-industrial urbanization, i.e. the deepening of a qualitative separation between man and his natural environment, his culture, his fellow humans, and himself, with its symptoms of social and health issues from criminality to psychoses (Rose, 1994; Galea & Vlahov, 2005; Riley, Fitzmaurice, & Spackman, 1981).

Reconnecting sign and meaning, form and content—the *meaning of signing* to the meaning itself—is a task that passes through re-experiencing the fullness of life beyond any bias, including individualism and collectivism.

Husserl taught us that everything has a historical character, because everything has an internal structure of meaning, which implies the past and the future, a dynamic direction. Unfolding such direction is a task of design. Structuralism was aware of the sense of history as many architects are in front of their subject; but like structuralism, they cannot see—and in fact deny—that the present has a meaning and thus an intrinsic, never-ending novelty to be discovered.

From an epistemological point of view, this historical character of things speaks for the unity of everything with the meaning of life. It calls for the knowledge of the whole, i.e. the capability of reading the intentionality of things, their vectoriality, or the dynamic structure that tends toward an often invisible and to-be-created (in the sense of bringing to the light of consciousness) purpose, which involves meaning and thus cannot be arbitrary. This scope necessarily goes beyond technosciences and the mere sum of disciplines, and requires a leap into a wisdom that can make because it knows how to find causes and goals. It is the *telos* only that can structure the “multidisciplinarity” and avoid it to crumble in a methodological farce that is both a failure and a forgery. The science of intentionality—of which a bio-designer has to be master—can really use biology, engineering, poetry, and politics, as shown by two cross-disciplinary designers such as Melissa Sterry and Rachel Armstrong in their insightful writings. Words and things must be seen through, and bring us to the real *Logos* (the meaning, the vectoriality of the action of the word) that often expresses itself in void and silence.

The Israeli poet Michaela Lamdan proposes to the *Journal of Biourbanism* her poems and a reflection on the value of void as cradle of the meaning and purpose of every poetic architecture. We know that in a building and in an urban space it is the void that holds sense, it is the void to host life, as silence does in music. “Bios” is the lived experience of human beings listening to the word of that specific piece of world they are called to bring to life by unfolding its space and possibilities, the voice of the people that speaks silently and thus cannot be turned into a fake interpretation. Design is born from *lebenswelt*.

This form of active, fertile silence may well meet the meaning of the energetic invitation to “stop designing by Arch. Urška Škerl on the edge of nature and culture in her note, and the bittersweet universe of paradoxes offered by the paper *From Hell to Babel: Creating Value in the Ecocene*, where Prof. Arch. Rachel Armstrong envisions the upside-down underground of urban design by seeping into a special kind of void—the fullness of matter with which we build and separate the relations of space. The synchronicity that I experienced editing Prof. Arch. Armstrong’s proposal of a self-building bio-brick seems to me in line with the message of the present issue, as on the same day Prof. Marie D. Jackson and colleagues disclosed the forgotten secret of the cement used by the ancient Romans for building ports that has lasted millennia—a design that relies on a principle of self-organization of the matter (Jackson, Mulcahy, Chen, Li, Li, Cappelletti, & Wenk, 2017).

### III.

Space is always performative, because its organization determines modes and times of bodies’ interaction. The urban space, however, has a political connotation because it stems from and feeds back on a concentrated and connected community, which, in principle, can change and even subvert the social field. Hence the modern obsession for the urbanism of control and public order, from



Hausmann's boulevards to the spread of CCTV cameras as brilliantly discussed by important authors (Foucault, 1975; Agamben, 1995).

Active control through design has always been an urban phenomenon par excellence. Nowadays it deals with the infosphere that has become our a-dimensional, global "city"; but it still reminds us of the spectacle machines of the Latin *urbs*. The places of circus, gladiators, and horse races, usually built immediately next to the palaces of power survived the decline of the *forum* (where politics used to take place) in their control of the energies of crowds at least until the fall of Constantinople. Never completely gone, they surge today as newspapers, radio, cinema, TV, and finally Internet, i.e. the media that modulate the capitalist totalitarianism of social relations—the "spectacle" according to Guy Debord (1967), transcended by the following "abolition of the spectacular" when "the confusion of the medium and the message" took place (Baudrillard, 2016, p. 30)—that is the end of the material dimension of the city space.

Smart cities represent the latest step of this transformation/dematerialization of the political and economic relations based on globalization, a representation of the hyperfinancial, collateralized way undertaken by the actual phase of capitalism (Galloni, 2015, pp. 81–85). Globalization has given birth to both the phenomena of urban financialization and gigantism since the early 90s. Cracks opened wide into such a gigantism are the answer to the diffused, resulting periphery where humankind has been thrown (Caperna & Serafini, 2014). Urbanized Chinese and Indian peasants who smash the asphalt to grow their food under the shadow of huge concrete buildings and eviction threats (Casagrande, 2013); Syrian and Kurdish refugees who revive the abandoned historical guts of Istanbul despite the huge, financial-led urban renovation carried out by the State (Morvan & Logie, 2014; Bilgici, 2016); even the socio-cultural ferment occurring in the abandoned ancient towns of Italy (Serafini, 2013), and the phenomenon of California's working homeless (Har, 2017)—stealth urbanism of what Robert Neuwirth calls "shadow cities" seems to be the most important, actual, and efficient paradigm architects should study. Outsiders of what the dematerialized *polis* has become, the squatters of the world do not protest—they build and inhabit. Their political silence sounds like the best answer to the absence of power that is nowadays substantiating the anarchy in charge of urban design, planning, and policies where even a UN official document proposes to bring bike lanes and fashionable practices of placemaking into shantytowns without latrines, as outlined by Neuwirth interviewed by Sara Bissen.

The deterioration of all power is irresistibly pursued: it is not so much the "revolutionary forces" that accelerate this process (often it is quite the opposite), it is the system itself that deploys against its own structures this violence that annuls all substance and all finality. One must not resist this process by trying to confront the system and destroy it, because the system that is dying from being dispossessed of its death expects nothing but that from us: that we give the system back its death, that we revive it through the negative. End of the revolutionary praxis, end of the dialectic. (Baudrillard, 2016, p. 24)

Such a blessed, active weakness of design reaches out to the chances left for the non-strategy of life to weedy squat the casemates of power (Gramsci, 1996). Ruralization of the urban (Bissen, 2014, p. 43), which Marx did not consider possible at the time of the first industrialization (Marx, 1973, p. 479) is the way biourbanism is inhabiting the rubble of industrial urbanism.

It seems to me that this is how biourbanism words are oozing out across the world, through the cracks of urban activity and academia's conservatism ("cities are living organisms", "a city without trust is a walking cadaver", et cetera). We need to let it happen what the Authors of the Urban Emergence Manifesto say in the final section of this issue: "A city is an infrastructure for love", and beyond—a body of life; of episteme.

*Biourbanism—and the Journal of Biourbanism with it—has come of age. I am very grateful to everyone who has supported this process and walked together along a common path, first of all my fellow International Society of Biourbanism co-founder, Prof. Arch. Antonio Caperna, president, who shared with me the pains and joys of a project becoming reality. Great thanks to the first editor of the journal who managed it with resiliency for four years since its very foundation, Prof. Arch. Eleni Tracada. Our honorary president, Prof. Nikos Salingaros, who has supported us with ideas, open spirit, positivity, and generosity. Our vice-president, Prof. Arch. Marco Casagrande, and relevant authors and friends such as Dr. Alessandro Giuliani, Prof. Arch. Jaap Dawson, Prof. Arch. Sinan Logie, and the several other collaborators and authors who cooperated with the Journal during these years represent an authentic treasure. My most deep gratefulness, though, goes to Sara Bissen, ruralist, for her constant, energetic, competent, and thorough support for the last three issues of the JBU. Without her wonderful support, the history of the Journal would have been much more troubled and much less valuable. My wish is that the present issue may represent a useful landmark for new steps forward into a design that is able to make our common life more meaningful, just, and peaceful.*

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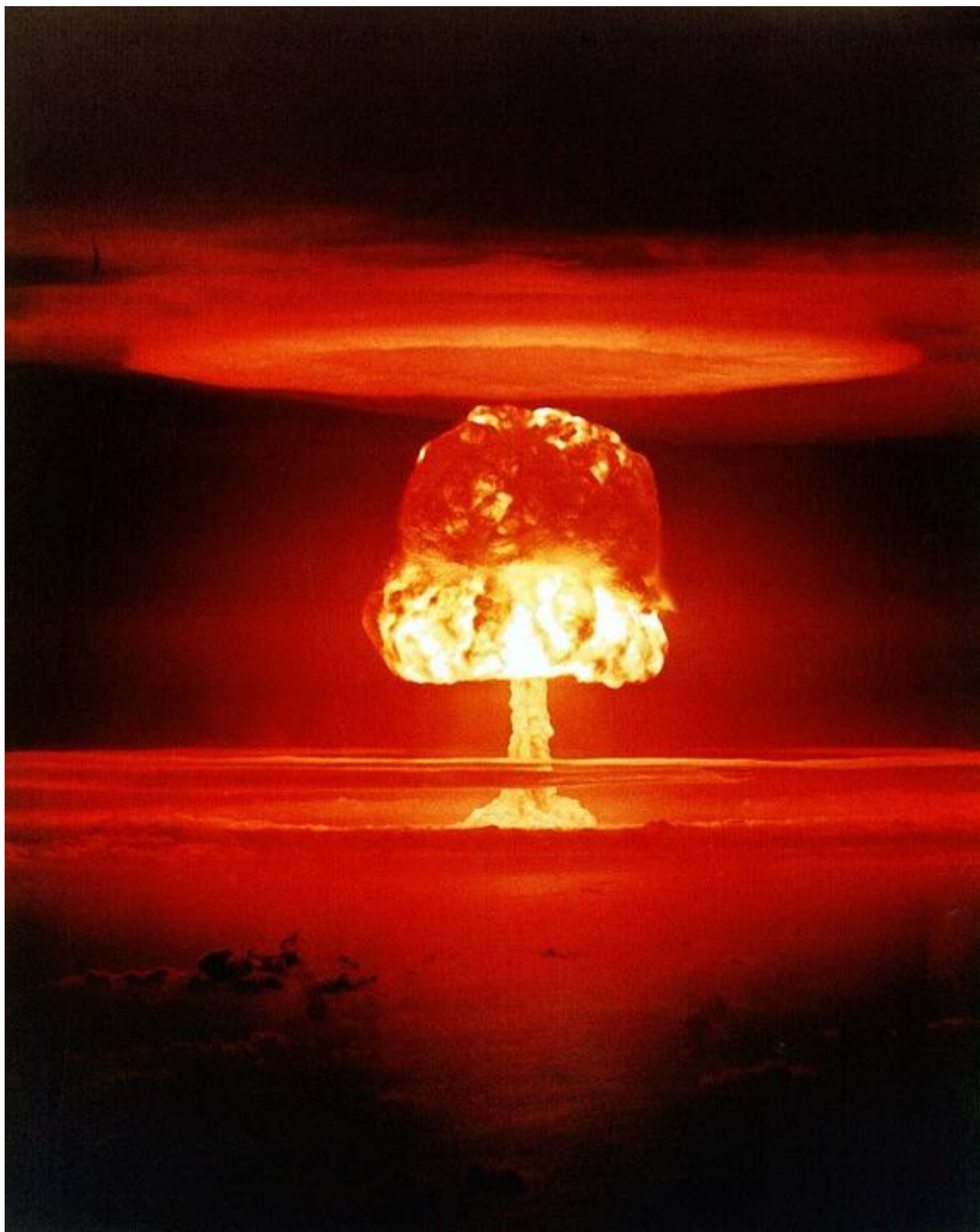
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*The balance of terror is the terror of balance.*  
—Jean Baudrillard

# Cities and Landscapes as Symbolic Systems

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## ABSTRACT

This paper proposes a dialogue on *Civic Architecture*, assuming it as an operant symbolic system. According to Nelson Goodman, there is a world for each different way of composing, combining, and constructing symbolic systems. We find that the various forms of life—shared by the *Symbolic Communities*—are the ones more involved in constructing the Symbolic Systems which communities use to pursue their own survival in a given territory or landscape.

Cities have concentrated this human faculty of creating worlds through the sharing of common communicative systems, but the civic communities have been removed by the great modern transformation. Languages belong to linguistic communities or *Symbolic Communities* and not to individuals. Yet the modern Enlightenment did replace symbolic communities with universal individuals who are losing their communicative capabilities to discuss and are substituting the previous discursive negotiations with a current transmitting attitude—shoves.

*Civic Communities* are incompatible with the totalitarian logocentric ideology of these universal tele-metropolises that rule and engineer the contemporary landscape. Such ideology is unable to control the global market and its random construction of a unique and uniform world, claiming it to be the only one that is really real. The future of this globalized world without a driver is inherently unpredictable because it depends upon who is going to win the current race. This game has already disconnected cities and landscapes and produced ecological, social, and economic disasters, heading toward the sixth extinction.

Understanding in order to act with the aim of stopping this *process of the destroyers* is a relevant task for biourbanism.

**Keywords:** civic architecture, landscape, symbolic systems, *appaesare*, Italian towns, deliberative democracy, biourbanism



love is a place  
 & through this place of  
 love move  
 (with brightness of peace)  
 all places

yes is a world  
 & in this world of  
 yes live  
 (skillfully curled)  
 all worlds

—E. E. Cummings

## INTRODUCTION IN THE FORM OF A DIALOGUE

### Civic communities and communicative symbolic systems

*I have two questions—what should the perspective of the Journal of Biourbanism be in your opinion, and in what sense does your text exemplify this perspective?*

The present paper intends to argue that the city emerges as a sort of language to make its inhabitants communicate by participating in its self-construction, which transforms them into a linguistic citizens' community. Equipped with such composite language, the citizens become able to deliberate by discussing to make their city an intelligent, responsible symbolic system. What I mean is not simply a verbal discussion but a more comprehensive practice of "behavior settings", always taking place in the form of discussion. A complex, symbolic system that would integrate words, figurative constructions (houses and cities), and behaviors (Latin: *mores*) into a permanent civic comedy would be very close to what I mean. A usage-based perspective on that complex civic language, developed through a discussion that is the matrix of *Civcity*, enlightens *the difference which makes the difference* about many ancient Italian cities.

Since biourbanism intends to highlight the biological properties of human settlements, in this text I would like to adopt a *biosemiotic* approach, emphasizing its literal use, in order to avoid the recurrent use of organic metaphors. For *biosemiotics*, biological processes start from the living being, not only from human culture.

I will explain throughout my work how this could open the way toward deliberative democracy. In fact, the symbolic systems would become the medium of those civic communications which would then make the cities self-built and self-governed. Biourbanism is fundamentally political, and my paper is a political act for building a civic community, which could begin through this dialogue. I obviously do not expect approbation, as I am not looking for representativeness; and a symbolic world built through communicating cannot be based on individuals. Making a symbolic world means dealing with comedies and tragedies which—unlike modern spectacle—are both meaningful. To ensure the existence of a civic language, the civic community ought to use it daily. Yet this is not the language used by professionals in their technical documents nor the rhetorical language occurring in participatory meetings that promise an impossible involvement.

The extension of megacities should be seen as a practical means for avoiding participatory democracy by outdistancing the participating stakeholders. The only real policy is the one discussed and agreed upon together through a multi-logue rhetoric by various people, a way of multi-personal thinking. A role for the *Journal of Biourbanism* would then be to become a political body helping the formation of civic communities for sustainable citizenships and resilient cities. For this reason, here I would like to adopt a format reminiscent of a dialogue rather than a technical paper in order to operate as the seed of a potential city, exemplifying my message through a discussion complemented by some pictures.

*The Journal of Biourbanism is deeply concerned about the difficult cultural and socio-economic situation we are currently experiencing. The MUSE museum in Trento recently organized an exhibition focusing on what Kolbert (2014) defined as the “sixth extinction” (Estinzioni, storie di catastrofi e altre opportunità—Extinctions, histories of catastrophes and other chances). It is meaningful that the exhibition has been organized by techno-scientific public institutions, not by ecologists. I know that you have been dealing with these issues for years, and I would be interested in hearing your reflections.*

## 1. CHECKING THE ORIGIN OR THE DESTINATION OF KNOWLEDGE

### **From the shove to the sign**

Although the causes are obvious, the one presented is an extinction orphaned by its maker. Now that the responsibilities of modern mercantile capitalism are finally evident to everyone, an enigmatic silence accompanies the disasters of our planet. Acting as if the world were made of material things leads to very different results compared to acting as if it were made of signs and meanings. The beliefs of techno-scientists undergo extensive testing at their origin; the merits of materialism and methodological individualism seem indisputable, but we should worry much more about the results than the origins of publicly available knowledge. The destination, the fate of the action, is essential to measure the truth of what we do, much more than the origin. We want to be sure to start from an unquestionable reality; I would rather be convinced to achieve a reality that has been agreed upon. The problem of techno-sciences lies in their failure to verify the consequences induced by the application of their knowledge. Even when the origins of knowledge are certain, the consequences of the application of that knowledge are not at all certain. This is how we have arrived to the current state of the planet.

I believe that the commitment of biourbanism is valid in order to oppose a culture that seems to operate much more in a world of material, physical, and chemical causes rather than in a world of life and signs; this has important consequences. To believe that we are dealing with shoves, energy, material things, eruptions, and earthquakes, means to behave according to answers of the same kind, and the machines celebrated by our daily rituals seem appropriate responses. Yet the results do not confirm these beliefs. If I send you a message, I assume that you are free to agree with it and act accordingly, or to reject it and not abide by my instructions. If the message I give you is a shove, which causes your shift, then I am sure of its effect because your shift is a certainty while your freedom is not. The shove treats you like a child or a stranger whose situation requires my action. This view reminds me of the terrifying world of the Romanticism of continental Europe, so different from the Romance culture of Mediterranean Europe in which, on the other hand, people believed to be living in a world of gentle signs to be interpreted.

*You should be careful with your literary and philosophical foreword. First of all, scientific papers should begin with an abstract where you explain in a few words what you did, the problems you solved, and the methods used so that others may utilize the same solutions and develop them.*

You see, this is not a well-defined problem for which I can give you a solution. You can see how this techno-scientific schema is a constraint to the actions leading to a solution. It may help defining the problematic situation, but it does not solve the problem. If I thought that the mistake is believing to be in a world of physical and chemical causes rather than signs, following the rituals you have mentioned, then I should just give up verifying my hypothesis and consider it an impossible task. I prefer, therefore, to continue this conversation, imagining that the emergence of the city consists precisely of agreeing on common actions to pursue shared goals.

*If someone has already carried out experiments to test your hypothesis and shown that it is actually impossible, then it would help you not to waste your time redoing something that others have already done.*

## **2. BIOSEMIOTIC BIOURBANISM IMPLIES A THEORY OF SYMBOLIC SYSTEMS**

It always depends on where you start. I consider a starting point the being in a community of humans to which the world also belongs; then I consider it a world of signs. But if the starting point consists of having a pre-existing material world made of causes and effects (instead of messages to be decoded) and my relationships with it, then I do not encounter living beings but harsh energetic menaces and physical, chemical matters. Also, humans appear belonging to this world of aggressive machines from which I need to defend myself, not with words but with other more powerful machines. As Nelson Goodman says: “We can have words without a world but no world without words or other symbols” (Goodman, 1978, p. 6).

According to Goodman, there is a world for each different way of composing, combining, and constructing symbolic systems. The forms of life shared by symbolic communities are involved in constructing the symbolic systems they use for their own survival in a given territory. Cities have concentrated this human faculty of creating worlds by sharing common communicative systems. Nelson Goodman disenchanted his readers when he published *The Structure of Appearance* (Goodman, 1977), where two authoritative members of the *Center for the Philosophy and History of Science*, Boston University, wrote in the editorial preface:

One may say of Nelson Goodman that his bite is worse than his bark. Behind what appears as a cool and methodical analysis of the conditions of the construction of systems, there lurks a radical and disturbing thesis: that the world is, in itself, no more one way than another, nor are we. It depends on the ways in which we take it, *and on what we do*. What we do, as human beings, is talk and think, make, act and interact. In effect, we construct our worlds by construing them, this way or that. The conditions on the construction of symbol systems are, by extension and interpretation, conditions on our construction of worlds, and of ourselves as part of the ways “the world” is. (Cohen & Wartofsky, 1977, p. vii)

The development of modal logic made the discussion about possible worlds widespread among analytical philosophers of the time. In such contexts, however, the emphasis was on the multiplicity of possible, alternative worlds that the present world could have been in; no one ever questioned

that the present world was only one. On the contrary, Goodman's pluralism did not speak of multiple alternatives to a single actual world, but of multiple present worlds.

The modern idea of a physical and material universe with linear causes and effects advocates for a world that exists prior to humans and is independent from them. However, such a conception stems from an ideal project, not from a discovery. It is a construction essential to the current techno-scientific management of power relations. One should note though, that imposing a unique, uniform world built by a single "community" of individuals, and a unique form of life articulated into a single network of a global uniform megalopolis, is extremely dangerous. If this factual world (proposed as the only possible reality) collapses, then not just one of the cultures but the entire human culture would collapse.

*Well, this is the Journal of Biourbanism so even if I do not deny that biourbanism deals with philosophy, you should still take it back to biourbanism.*

Indeed by adopting a biosemiotic approach to biology (Hoffmeyer, 2008)<sup>1</sup> biourbanism could function as an artistic practice—different from aesthetics, as we will see later—and consequently as a Symbolic System, adopting more effective procedures for cities and landscapes to prevent the sixth extinction. It is my conviction that adopting this perspective could radically alter the life forms involved in both cities and landscapes. I would like to add that in considering the urban system of *lebenswelt* (Husserl, 1954), as biourbanists should programmatically do, we should operate from within the city. Conversely, the techno-scientific procedures that are bound to act from the outside due to their epistemological articulation—are obliged to consider such cities as complex material apparatuses, *res extensae* where the *res cogitans* is implicitly external.

*I think others have posed this problem and offered solutions, so I expect you to refer to them throughout your paper. Unless you consider the artistic practices proposed for urban planning to work according to individual freedom and to be operating scopes that do not require reasoning and asking. In that case, the journal might disagree.*

### 3. GOVERNING BIOURBANISTICALLY AS A TECHNO-ARTISTIC PRACTICE

I would disagree as well. I would not accept these creative-like attitudes even for their aesthetic endeavors. I consider these outlooks to be elusive procedures, far from proper use of referential images. This could represent a field of great interest for cities that have always founded many civic communicative practices based on exemplifying activities. Art must abandon the role of entertainer that its aesthetic appearance is taking on just about anywhere. It must exit this Enlightenment-inspired marginalization and go back to the roles it has always had and that modernity has removed.

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<sup>1</sup> Biosemiotics emerges from the researches of Thomas Sebeok and Johann von Uexküll, then Jesper Hoffmeyer, Kalevi Kull, Marcello Barbieri, Claus Hemmeche, Guenther Witzany, Donald Favareau and many others. It is a discipline derived from semiotics and based on the assumption that semiosis does not only exist in cultural phenomena and processes but also in natural phenomena and processes. As far as plant life is concerned, we talk about phytosemiotics, while animals' cellular and environmental levels call for zoosemiotics, cytosemiotics, and ecosemiotics. For the processes of semiosis and symbolization, the most quoted reference is that of Charles S. Peirce to which I would add that of Nelson Goodman. In Italy the discipline was practiced by semiologist Augusto Ponzio, then through the research of biologist Marcello Barbieri, ecologist Almo Farina, and semiologist Massimo Leone, to name a few. In order to understand the biosemiotic potential, I suggest reading Marcello Barbieri (1985; 2002).

*So in your opinion, what is contemporary would be aesthetics, not art. Nowadays aesthetics and art are considered almost synonymous, so it is essential to avoid confusion. Biourbanism is concerned with something that has nothing to do with the so-called art world, which you call aesthetics.*

This matter is similar to the epistemological proposal that Feyerabend (1984) did for the world of techno-sciences. This proposal could be a very interesting subject for the sociological, economic, and urban fields that do not require absolute certainty. Further ahead, I hope that many doubts disappear. Regardless, your comments are very useful for me to clarify any ambiguity that might arise.

I have always thought that architecture and agriculture are alike. Architecture is a way of elaborating the landscape as opposed to adding something to the landscape, or worse, imposing a human dominion on it. I do not think that the lust for overbearing the landscape, which is so common these days, is a human attitude. It is part of a culture of dominion, which I consider responsible for the likely sixth extinction.

#### **4. FARMING BY ANTICIPATING ARCHITECTURES BETWEEN NOMADIC AND SETTLED PEOPLE**

My first feelings of fondness toward architecture, which is what led me to study at the IUAV University of Venice, began with a few images of Frank Lloyd Wright's buildings. It seemed to me that they were very appropriately expressing the longing for a way of building intended as "*farming a house*"—where one *plants* something and then *takes care* of it, accepting that much will *depend on favorable weather* and on the good luck of not incurring in barely controllable natural adversities. The person who wants to collaborate with Earth instead of dominating it—persuading instead of imposing—treats the fields as living beings: plants, animals, and humans share a coexistence based on symbolic communication, not on causal and physical interactions. Therefore, that person must learn how to interpret signs, the same way as any other being, to anticipate any potential permutations. One will then try to *anticipate* any potential encounter, reading into the clues carved into our memory by experience. The intention of *anticipating* allows us to distinguish events from the clues that anticipate them, projecting such clues into the future. This is what builds the future and establishes a relationship between present and future with the inclusion of design. I think that *correlating anticipation to symbols and design* is an important task because it makes us aware of the circular nature of time.

*I have two issues to bring up. One concerns the interpretation of the place that is shared by those who builds and those who farms, and the other issue involves symbolic circular time. Reading presumes there is a code to decode the signs, implying that the language of the earth can be learned. Symbolic time also seems to imply decoding temporality.*

That is right. Those who live the environment as a symbolic space-time system assume to be part of the land, to live in a kind society of friends and relatives. This is something similar to what happens with spoken language, which emerges from the daily co-existence of people sharing a common destiny. It is the settling characteristic, through the city, which gives effectiveness to the communicative potential of lasting proximity within settled cultures. To share space-time means to co-exist just long enough to bring out a structure of symbolic systems, including words, architecture, ethics, images, landscapes, seasons, and calendars consisting of multiple encodings in

civic communities. Flowing between the two polarities of settled and nomadic people, we can notice an increase in the symbolic scope of communication and a decrease in the transmission for what concerns the settled cultures. On the other hand, we can see an increase in causal transmission and a decrease in symbolic communication in regard to nomadism. If you want to live together, you cannot exercise the violence that you can only enforce onto strangers. This attitude requires a nomadic, placeless culture without stability—a society that Bauman would call “liquid”—while also being cosmopolitan from an Enlightenment point of view. There are both *intra-fed* and *extra-fed* cultures. The nomadic cultures of hunter-gatherers were all extra-fed by necessity, while the settled ones that founded cities and started agriculture are the beginning of intra-fed cultures, made vulnerable by the co-existence of persistent colonizing cultures. We live in a thermo-industrial civilization of nomadic colonizers who transport everything they find from one place to another because they come from extra-fed cultures. They lost the distinction between proximity and distance.

It is our societies of competing individuals, strangers to one another, who believe to have the power and the right to dominate the entire living planet and to challenge humans to duels that allow them to enslave the losers. They believe they do not have to anticipate the future, they are intolerant of any “final cause”, “teleology”, or project. The predator feels less engaged in anticipation than his prey, even if he searches for it.

*So you mean that the symbolic space-time would also concern the origin of the universe, relativity, black holes, and dark matter? I find it intelligent to speculate about a symbolic, cultural space-time, but I do not want to confuse anthropology with physics.*

## 5. THE LANDSCAPE AS A SYMBOL TO BE INTERPRETED

### Reification supports destruction

Even though I do not intend to discuss anthropological issues, Latour points out that our modern anthropology is asymmetric (Latour, 1991), and I think that this depends on anthropology adopting the same methodology of physics, as we will see later.

Emulating Wright, my “*liebe meister*”, I used to contemplate the landscape that matches the human need for settling in certain places, not only for inhabiting but also for subsisting on them. Let me clarify such a subject in depth. When I hear people speaking up to protect the environment, I notice that they often believe to be dealing with the preservation of an aesthetic object—a panorama, a natural scenery, possibly at the sunset (“...*l'ora che volge il disio...*”), in which the melancholy of not feeling at home and the desire to go back home inspire the passersby.<sup>2</sup> These people consider the landscape as a thing—a thing larger than life that is worth preserving for its symbolic character, capable of eliciting human emotions. As long as tourists also want to feel the emotions that our landscapes can bring about—and they are prepared to pay for it—the landscape starts to have an economic value that can produce a profit. It thus becomes a consumer good, a commodity you can sell and buy.

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<sup>2</sup> “*Era già l'ora che volge il disio | ai navicanti e 'ntenerisce il core | lo di c'han detto ai dolci amici addio; | e che lo novo peregrin d'amore | punge, se ode squilla di lontano | che paia il giorno pianger che si more*” (“It was now the hour that turns back the longing of seafarers and melts their heart the day they have bidden dear friends farewell and pierces the new traveller with love if he hears in the distance the bell that seems to mourn the dying day”)—from Dante’s *Divine Comedy*, Purgatory, 8<sup>th</sup> Canto, Lines 1–6 (Sinclair, 1939). Dante understands the uncomfortable feeling towards a foreign landscape very well. This is actually what many people feel nowadays when aesthetically perceiving even their own home landscape—the Italian landscape.

*So, even speculators could read the landscape, considering it a sign to be decoded as a commodity, and they could agree with you. Then why do they make so many mistakes when they get involved in cities?*

First, they do not consider it an interpretation, which could be corrected with another more relevant interpretation. They consider it, in an objective, material manner, a commodity legitimized by an economic techno-science that would be better defined as “*monetology*” (Keynes, 1936) rather than economics. The commodity translates the qualitative image of a place or space-time into a price that quantifies its exchange value into a set kind of currency after it has been reified. Semiotics will argue that every perception is inferential and adopts an interpretant to decode the perceived thing. An individual is not enough to make the interpretant operational (the interpretation of a thing as a commodity would have no effect on the exchange). What is needed is a community within which the interpretant is valid to its members. To hide the community that makes that interpretant operative, they resort to an alleged universal coding, as if the market was valid when referring to a universal society. This ensures the operational effectiveness of the interpretant who implies specific actions.

The first issue that I would like to address is this distorted interpretation of the landscape. Looking at the landscape as if it were a thing—even an important thing to be saved and valorized—is the first step toward its destruction. The Italian word for landscape is “*paesaggio*”. It originates from a verb, just like the word “*lavaggio*” (wash) refers to the verb “*lavare*” (to wash). The term “*paesaggio*” refers to the verb “*paesare*” or better “*appaesare*” that eventually lost the preposition “*ap-*” to let it be a verb that Italians mostly—if not exclusively—use in its negative form “*spaesare*”. That is, we feel the lack of “*paesare*” as “*spaesare*” (to disorientate), and the lack of “*paesato*” as “*spaesato*” (disorientated). To feel “*spaesato*” means to feel like we do not belong, just like being in someone else’s home. Thus “*paesaggio*” (landscape) is the thing that we—using a periphrasis in order to translate the Italian verb “*appaesare*” into English—make our own with the aim of feeling at home. We must do something to be able to feel at home. Our ancestors have been great in creating such a feeling of identity; they were masters of “*appaesare*”. This is why, as everybody says, Italians enjoy some of the most beautiful landscapes in the world—where one feels at home and welcomed. This means that our ancestors were among the most skillful in the art of “*appaesare*”. The meaning of “*paese*”—making or town-building, originates from the word “*paese*” (village, town) itself, making a land inhabitable, keeping its villagers alive and well. In this way, we move on from an aesthetic issue, which is necessary for trading, to a fundamentally economic aim.

*Your “country-making” evokes an old-fashioned, provincial, and long gone image that no longer has a course. We may have nostalgia for it, perhaps think it to be better than the present, but we cannot get it back. It belongs to the past, it is gone.*

## 6. CHRONOLOGICAL TIME VERSUS EVOLUTIONARY TIME

### From temporalized space to spatialized time

To me, you seem as though you are sitting on a running train, looking out the window to tell me that a certain station has already passed or that a bottle of milk has expired. This is the typical, chronological time of modernity, which sounds realistically irrefutable.

Yet I would now like to give you another concept of time. Organic evolutionary time, which is cumulative and works in a dissimilar way. Cities and languages, like everything that lives, follow

this non-chronological time. We are all that continues to be valuable regardless of when it appeared, such as cities that are made up of buildings and streets that have emerged in different times but are still present and operating. Modern people “restore” houses and do everything possible to push them back into the past, making them look like the past, something “expired”. Even if the market does not like it—sure enough, with commodities, the market behaves as if time were chronological—we live in a present that preserves all that keeps on working. Languages, architecture, cities, animals, plants, et cetera, follow evolutionary time. This contradicts its meaning, its commodifying interpretation, but the masochist in us continues to believe in this mercantile religion, even risking the sixth extinction.

“*Appaesare*” is so similar to playing and dancing—you cannot stop, stock, nor sell it. It cannot be done once and for all. And how could we sell the dancing or the singing? It is true that somebody can be satisfied in seeing others dance, and be happy for them; however, it is always a great melancholy to look at someone who settles for the happiness of others, for the other’s love, their dancing, and their appearance. This is where modern idiotism intervenes, considering the art of “*appaesare*” as something that people used to do, trying to convince us that machines will replace us in several activities, even in dancing, singing, making love, et cetera. The other important thing—but it was already clear with the dancing and singing—is that making a place one’s own home must be done together. No one can make his own land feel like home on his own, however large it may be. The beauty of “*appaesare*” (just think of going to harvest grapes) is that it is a common good. We cannot enjoy the beautiful scenery designed by some landscape architect from outside the fence, designed just like a thing, but embellished. Last, making a landscape our own, though sometimes tiresome, makes us happy, makes us primarily aware and responsible. We would not know anything without the experience of contributing to “*appaesare*”.

## 7. ART AS COMMUNICATION THAT MAKES US CONSCIOUS AND RESPONSIBLE

### Aesthetics as embellishment of things

Here, we need the support of a fundamental yet not widespread distinction between art and aesthetics, a subject that many art philosophers have dealt with. I will refer to the one that influenced me (Fiedler, 1994). Art is a form of knowledge, while aesthetics is a form of entertainment offering aesthetic feelings, a way of embellishing something that otherwise would not be beautiful, appreciable. Modern products seem to require an aesthetic embellishment as if they were generally ugly, strange, or unrefined by default. It is important to distinguish between an item that is efficient even though not beautiful and, on the other hand, its embellishment. Such embellishment is enticing and marketing is there to seduce. It is a matter of separating a useful but ugly product from its cultural embellishment. Such an embellishment is distinct from the item itself and belongs to the domain of leisure. As if brute animals could build a functional shelter, but it would take a human being to make it beautiful. Now, I do not think that it is the need for beauty to drive humans, nor that such a need could differentiate us from animals, also since animals’ shelters are very beautiful.

Better, art used to give—and should keep giving—humans awareness and responsibility for their own actions. By operating artistically, i.e. symbolically, human beings acquire awareness about the consequences of their own actions—and vice versa, humans operate artistically only when they become aware of their own actions and of their consequences by *doing*. This happens because such an awareness dwells within the act of communicating. For this reason, before modern times, *beautiful* and *good* went hand in hand. Works of art—and landscapes alike—come to life and become communicative through a conversation of man with others and with himself, using the same



communicative language unfolded by the symbolic community where the artist belongs. Both humans and animals share the instinctive action of seeing that helps us dodge an obstacle or recognize a prey. Only humans *see* the act of seeing, i.e. see themselves seeing—almost like secondhand sight. Now, this happens when we show someone else what we have seen with a drawing. We see what has been seen only through communication, not on our own. The landscape we are so aware of—rather than what we merely see—belongs to the symbolic-figurative system of the symbolic community to which we also belong and share with other members.

*Usually, conscience is a topic that supports individualism. Cartesian “cogito” exemplifies such a philosophical position. By attributing conscience to language and symbolic systems, you refer to the linguistic and symbolic community, which as such overthrows that position, making it appear like a contingent belief. The landscape would assume an economic facet, thus providing survival. In that case, according to a particular life form, its inhabitants, as well as the products and services of that community, are parts of a symbolic system that allow it to communicate. The commodification performed on such a system has been nothing but destructive with its “monetology”, as you call it.*

## 8. FIRST-ORDER AND SECOND-ORDER DESIRES

Our awareness of the landscape, *what we see ourselves see*, is also guided by artistic illustrations that exemplify what we see ourselves see, the same way we describe the landscape we see to someone else. Without art, we would not consciously see what we see. This, in making us specifically human—i.e. conscious and responsible—is also the distinction proposed by the article *Freedom of the Will and the Concept of a Person* (Frankfurt, 1971), between “first-order” and “second-order desires”. According to Frankfurt, a “second-degree desire” consists of “desiring what I desire”, the feeling of awareness and responsibility of our own desires, and not simply of obeying our desire by satisfying them. It is as if aesthetics downgraded to a first-order emotion, a pure feeling, rather than the awareness of an experience and its accountability.

Human language emerges in order to achieve this awareness. This language includes the act of “*appaesare*”, as well as the way the landscape works. In short, when “*appaesare*” takes place between members of the same linguistic and symbolic community, where architecture and landscape also belong, then the joint and coordinated effort that makes cities also makes those extraordinary landscapes that enliven the entire Italian territory.

Nowadays, we cannot even recall the origins of the landscape, because there are *no longer cooperating co-citizens* who work on its construction. They have been substituted by *competing strangers*. The landscape becomes obsolete and degraded, invisible due to strategic motives. In a chess game, everything is based on the chance that the opponent does not see the game on the chessboard and does not foresee future moves. That game cannot be played by a deliberative democracy, where the opponents openly discuss the best moves for each side. This also applies to the *monetological* real estate games of cities, which also try to make space-time invisible while in plain sight of the citizen. It is useless to talk about transparency and political participation while the game that opposes antagonists is still on. It is either the game or the plan: you cannot have both of them; they cannot be together. We are the makers of those landscapes, the communicated expression of our disorientation (*spaesamento*), proud to no longer be rooted, stationary; but instead being cosmopolitan nomads. Precisely for this reason, while the *monetological* game/war lasts, no law can preserve those landscapes. Rather, we need landscapes to produce pacified (and not antagonistic) citizens who find happiness and survival in the landscapes.

As we will not be able to have monuments in our cities without the people who take care of their upkeep, we also will not have landscapes without the farmers who cultivate them. This cultural, civic, and contextual quality can never be competitive with that of an international *free market* because it cannot offer a quality that can find educated consumers willing to pay for it far from its context. This quality can only be preserved if set free from the mythologies of the market. We must protect it if we want to preserve it, but then we also have to update it, revealing its abysmal difference from all of the weird idolatrous machines that are invading the universal and international market.

*Are there still artisans? What would we preserve today of their culture? This topic may be heartbreaking for a responsible person, but I do not see what I can actively do to pursue it. I know that this is passive support of the current power system. We all know how unsustainable this system is, but we do not know how to get rid of it, how to free the planet from this plague that is now evident, but that no one has expected.*

The preservation of landscapes and monuments is the main political issue of Italy. It requires an intentional, shared economic support that cannot arise from the market rhetoric. The market's rhetoric will never be able to build our landscapes. It can produce weapons, sell slaves, and plot wars—the same things it has always done. Even if it were true that the market could improve our landscapes, then we should feel ashamed to be waiting for such a mechanical and mercantile external drive because that would show that we are not aware of wanting our landscape with its cities. What makes it what it is, just like when we fall in love, it is our (second-order) desire that makes the landscape what it is—not the market. The rhetoric of the market has produced modernity, and its effects lie in front of us. Let us focus on Italy where, perhaps, such a topic could be used again, for various reasons.

## 9. TODAY THE OBJECTIVE OF THE LANDSCAPE IS OUTSIDE THE LANDSCAPE

**Today we ask the landscape how much money can we produce through it**

*I agree that the landscape has nowadays become a tool for yielding money, not growing crops. It is comparable to any other business that does not care about what it deals with—weapons, prostitutes, fields, drugs, migrants, labor force, real estate, et cetera—in order to produce revenue.*

*with usura  
seeth no man Gonzaga his heirs or concubines  
no picture is made to endure nor to live with  
but it is made to sell and sell quickly*

*said Ezra Pound in his Cantos (Pound, 1996). Once I heard a friend who had lost his father say: "We were unaware of how happy we were". The same applies to our landscape. How can we have people understand the landscape?*

We need to meditate about the landscape, especially now that it is so often missing. We used to ignore how it was essential to our life. If we look at cities such as Marostica, Bassano, even Venice, Vicenza, or Verona, we realize that they are gorgeous cities beyond their monuments. They have

been built according to voluntarily shared customs, not obeying the professional advices encoded in the urban planning regulations. These towns were built following “elective codes” as recorded in the making of the buildings, by imitating and understanding the meaning of the buildings next door. Citizens of these towns used to build according to the actual *mores* of their time. They all were controlling the morals and learned how to behave ethically from each other, imitating the way of life of their own neighbors, along with the language.

Morals have been encouraged by the very benefits that come from their use. Do not we all speak a language because it improves our life? Similarly, the language of these cities used to improve people’s communal life. The moral system is a language belonging to a moral community, which shares a specific form of life. The Enlightenment stated that morals are universal, but they are not. Even Universal Grammar is nonsense despite being conceived and proposed by a great linguist, Noam Chomsky. It is the cultural community that develops language and grammar through use. Luckily, despite widespread social networks, there has not been a revival of Esperanto, and I hope there never will be. *Globish*, the global English, is picking up increasingly, but it should only be used when strictly necessary. According to the view that I am presenting here, the landscape is a symbolic system, i.e. a sort of language. Despite modernization’s continuous pressure, we definitely need to protect the landscape from becoming international.

*It will not be easy with the daily impulses of modernization. But how can we not be modern?*

I think a good reason would precisely be this impossibility of not being modern; the mandatory and totalitarian aspect of its imposition. It is the modern culture that is colonizing us with all its enchanting rituals, the extra-fed mercantile culture with its world of trades, with its international market that is completing its invasion/subjugation of cultures with their local economies, to destroy them definitively. Italy remains the country where this long-lasting civic culture could endure. It would be a crime to lose the memory as well. The currency exchange between city markets is transmission, never communication. This is why money does not build awareness or responsibility. Therefore, we need to resist any form of modernization.

*This radical way of counteracting modernity, apart from its attainability, is a dramatic issue. We could agree with another modernity, but it is difficult to give up the benefits it has brought us.*

I do not intend to question the benefits, but I do want to challenge the computation of costs and their distribution. In fact, some people benefit from advantages but others pay for it. The greatest damage of global warming does not affect those who have produced it but those who have not even contributed to it. Moreover, this cultural system, which I have called extra-fed, pursues a development that by its technological characteristics is inversely proportional to the development of living systems, such as plants, animals, and the humans who have lived as *Homo sapiens* for at least 150,000 years. For this reason, reducing the environmental impact would merely delay the sixth extinction, and this is not enough. It is necessary to sacrifice modernization to save the planet.

*Can you say more about the distinctive feature of what you call intra-fed or civic cultures?*

I think we have modern reason of individual minds who see one material world that is pre-existent and independent from them, with which they engage causally, mechanically, and transmissively. On the other hand, there is the reason of the intra-fed civic cultures, of the community that builds worlds through symbolic systems and languages, operating through communicative interactions.

## 10. MORALITY AS A SYMBOLIC SYSTEM FREE FROM MODERN PROFESSIONALISM

*Mores* are comprehensive symbolic systems. A while ago, we used to call them our *upbringing*. They include verbal expressions, behaviors, buildings, and much more. *Mores* were valued according to the reciprocal upbringing of each other—and this used to also have to do with identity and recognition, not only with morals. No one would have dared to behave in a disagreeable or unfriendly way toward neighbors who shared the same *mores*. Furthermore, eventual mistakes would have been very difficult to amend because of the durability of the buildings at the time. How could people have lived together if such hostile conditions had arisen? We can understand that they were getting along together rather well by looking at their houses. If not, the fabric of the historic center of Verona, for example, would show different characteristics than what we see now. I do not mean that these people lived in an ideal world. They were living in a world that made sense, sometimes even tragic but always meaningful.

When referring to cities I also include the rural environments that feed them, and the landscapes subject to progressive deterioration because of bad decisions. This is true also because these are living environments. If we neglect them, they do not “switch off” waiting for our decisions but rather usually start working against us.

*I would like to check if my interpretation of what you said is correct. You claim that the fabric of historic cities, such as Verona, which you mentioned, are an exemplification of a communitarian reason that should be alternative to the individualistic rationality of modernity. This seems to me the central issue for this discussion.*

## 11. METHODOLOGICAL INDIVIDUALISM AND THE TECHNO-SCIENCES

### **An epistemological question: do only individual minds have rationality?**

I often hear people trying to explain the beauty of the historical fabric of Italian towns and landscapes by referring to hypothetical city rules and implying a rational government. Such rules would have brought uniformity along with the habit of following the customs, the *mores*, and emulate ideal models with less individual freedom and creativity. Such limitation of individual liberty would explain the prevalent homogeneity of urban fabric made out of houses more similar to each other than modern ones. Nevertheless, knowing how disoriented and misunderstood we can feel when using different words, we do not feel less free when sharing a vocabulary. If we mess it up, we would be unable to understand each other, and we would feel out of place, alienated. The same is true for houses that used to feed our freedom by making us feel at home.

Furthermore, a form of rational government implies an individual mind, a chief who rules a subordinated community that complies with orders. Even bees must be governed by a queen bee who manages the assignment of duties.

Such a simplistic thought reflects the ideology of *methodological individualism*—a widespread belief in the field of techno-sciences, despite the lack of any experiments in support of it. Rather it is supported by beliefs, clear and distinct ideas, which just like faith, do not seek any experimental validation for they are self-evident. We can postulate that techno-sciences seek truths that are antecedent and independent from the trust people place in them. If this is the case, and if a lie detector could definitively support such beliefs, then an epistemological theory could interpret itself as a perfect procedural position (Elgin, 1996, pp. 21–59). Trust in the foundational nature that techno-sciences claim to possess would thus involve definitive ground for a “perfect procedural epistemology”. Yet in order to provide a foundation to techno-sciences, we should believe in some form of dualism. We should be able to identify from the outside the entities that are antecedent and independent from the knower. On the contrary, if we aim at knowing entities from inside, we shall forgo foundationalism and embrace some kind of knowledge enforced through consensus, which is a form of conventionalism that works via symbolic systems. I refer here to the very need for anticipating that pushes us to rely on circumstantial evidence. Anticipating clues may even be false, but if we disregard them and they turn out to be true, then the consequences could be very severe and not amendable. Conditions of uncertainty require that external help be fundamental since others may have been through analogous experiences and know what to do. They may know what we still do not know. We would then have an “imperfect procedural epistemology”. Now, this way of acting within a community that shares experiences is analogous to linguistic communication. It is a way of acting from the inside. We speak a language, and we communicate through it. We do not study a shared language from the outside—we operate within it.

*You attribute the planning of today’s major cities to this practice of operating from without characteristic of the rationality of disciplinary and professional individual minds. These minds are active in universities and both public and private administrations. According to you, they are replaceable with different tools that operate from within and are based on the community reason at work inside language. Communities should resume those multiple-code symbolic systems, including figurative and architectural languages. This should be used by the members of those communities, i.e. the citizens who live in those cities.*

*An objection that has surely been brought up, though, concerns the complexity of the decisions to be taken. Citizens lack the necessary competence for them, and must therefore hand this task over to professionals. These people, in order to use the techno-scientific tools needed to make those decisions, must work from the outside. So, for the tools to be valid, they should work from the outside, and they must be assigned to professionals who are familiar with them.*

## **12. OPERATING IN THE CITIES FROM WITHOUT OR FROM WITHIN**

What you are placing here is a key question. If we accept the tools of techno-sciences, then cities should be studied and ruled from the outside, not from the inside. Otherwise, as I said before, there would be no room for foundationalism. This is a substantial issue. Do the benefits of foundationalism compensate for the losses that it gives operating from the outside? Do the benefits of techno-scientific certainty cover the loss of civic and symbolic communities? In the end, foundationalism runs mostly with the aim of easing the process of convincing people, and it is a form of rhetoric based on authority rather than on rationality. If not, why would the techno-sciences ever need foundationalism?

There are several interesting tools for planning from outside. They describe how an urban system works through mathematical model simulations, anticipating the effects of potential decisions. They

could become technical, legitimate consultations for people in charge of managing cities, actions, plans, and strategies. Michael Batty's recent books, *The New Science of Cities* and *Fractal Cities*, offer very interesting simulation tools, though upholding a "representational approach" to urban studies (Batty, 2013; Batty & Longley, 1994).

Likewise, one of John Holland's latest books on "complex adaptive systems" with a very innovative approach based on genetic algorithms suggests even more relevant and effective tools for administrators (Holland, 2012). However, these proposals presume that the *means are independent from the ends*, where facts are distinct and independent from values, and techniques are neutral and can be enforced for whatever political goal. Thus, politicians can choose the goals and consultants can suggest the adequate techniques to achieve them. However, what if—as many philosophers have already shown—such an independence was not real and techniques interfered somehow with the goals? Then delegating the choice of techniques and enforcing plans from the outside would become impossible. Furthermore, such an *external-driven* knowledge would not just distress the role of governing bodies' technical consultants. It would also affect the very concept of *representative democracy* based on delegations that, in turn, entail the aforementioned dualism between ends and means. Moreover, it is evident that when a civic community must turn to consult external specialists to solve its problems, it loses the ability to elaborate solutions, and thus of learning. Therefore, it turns out to be more and more dependent on knowledge that it cannot produce by itself.

*The problem you raised did not emerge during the last century. Techno-sciences have been involved in this philosophical and political discussion for many years. Your arguments are supported by the current situation that reveals the inadequacy of their contradictions. The fact that techno-sciences are independent from politics makes them more objective; however, they also face fewer feedback loops correcting them after their findings have been implemented. Their use of safe bases comes from their inability to go through the outcomes of practices carried out by other operators, that is politicians, by applying their directions.*

Such a dualism between mind and the external world began with Galileo and proliferated after Descartes. It establishes the individual and the *internalism* that justifies the individual's autonomy. If elaboration only happens within *one body's braincase*, then reason belongs to the individual alone. The individual thus becomes the only subject of rational thinking. On the other hand, awareness originates from language, from the presence of the other; so it belongs to the shared symbolic community. In spite of this, awareness is nowadays attributed to the individual, thus legitimizing the methodological individualism of techno-sciences.<sup>3</sup>

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<sup>3</sup> Dualism that legitimizes the distinction between means and ends, and techno-sciences and politics, stems from the wider 17<sup>th</sup> century discussion on the nature of the qualities of bodies. Such a debate led to distinguishing "primary" qualities inherent to the nature of the object and inseparable from it, and "secondary" qualities that arise from the relation between the object and the subject of perception. Such a relation produces a distinction between objectivity and subjectivity that makes us consider the natural, objective world as real, antecedent, and independent from the subject experiencing it. The aforementioned dualism, also known as "Galileo's gap", distinguishes the phenomenal qualities that we experience from quantities measured by physics. Qualities include colors, sounds, feelings of pleasure and pain, touch, taste, and smell. Physical quantities comprise matter, its figure, size, and space-time coordinates—still or moving, in touch or not with other bodies, singular or plural. One can process all these characteristics mathematically. Galileo's proposal of considering primary and secondary properties led to two domains of reality. These domains seem to be incommensurate and not connected to one another.

As far as I am concerned, I do not believe in the foundationalism of techno-sciences, and I prefer the approach of “knowledge through consensus” (Elgin, 1996). So, I would deal with all the human (and not just urban) problematic situations from the inside. I believe that many of these difficulties emerge from that dualism of Cartesian origin, which requires us to consider the object of our cognitive research as antecedent to and independent from such research. This constraint divides the sensory system from the motor system. Knowledge, instead of being motivated by actions and put into functional, retroactive feedback loops, delays or even avoids them, making them ineffective and irrelevant at best. Global warming is a dramatic case of this lack of effective feedback control. Over 20 years have gone by in order to come to a decision that is historic only because it has taken a long time, not because of its significance.

### 13. STABILITY OF CITIES BASED ON ARTISTIC LANGUAGE AND MOBILITY OF CITIES BASED ON AESTHETIC EVENTS

Let us go back to the initial subject of cities built without planners or government officials—cities with a kind of rationality other than the one of individual’s mind. Imagine that the rules governing the action of building were based on customs, similar to the rules that govern the action of speaking. Likewise, many conversations produce narrations that contribute to a literature, which in turn feeds the language itself. In the same way, many buildings may come together to generate parts of the city that contribute a form of *architecting* able to feed—by incorporating it—the symbolic system that generates cities. The age-old hegemony of verbal, printed language produced the actual *logocentrism* that affects our culture. The cities I am talking about, however, had “multiple-code systems” (Bucci, 1999). Several, entrenched symbolic systems inclusive of architecture and urbanism were together at work there. Therefore, the best system of feedback control in human communities has always been their faceted symbolic communication system. The institutional framework of cities included several teachings aimed at developing the different and complementary activities required for the survival of cities (Los & Pulitzer, 1977).

*You describe the city as if it represented an important stage of cultural evolution that modernity, as replacing the multi-logic, or dia-logic, multi-personal, community reason with the uni-personal, mono-logical, individual reason, would not understand. According to you, the former would go through the complexity of linguistic conversational exchange that originates from cities along with other multiple-coding systems similar to languages. How do you picture this form of life, which you say to be widespread in the tradition of human culture?*

Just as no one ever needed grammar books and dictionaries in order to speak, no one ever needed any professional plans, technical department checks, and Civil Codes in order to build. These are undoubtedly necessary for the functioning of the individual mind, but not for the communication efforts of the community. Such a civic expression was led by something that we do not even want to try to understand nor challenge as an issue, and as a paradox, in front of our rational superiority. Cities were undoubtedly better, more civic and humane, yet less automated and maybe less functional. Current designs prove our moral and political alphabetism and our unsuitability to co-exist, rather than our “progress”. Progress is elsewhere. Where did this incapability to build coherent urban fabrics come from?

#### 14. THE DISCURSIVE REASON OF CIVIC COMMUNITY ARCHITECTURAL LANGUAGE

Let us think of nature, the evolution process, or even God Almighty, who every year deals with the problem of making birds migrate for their survival. This situation is not so different from the construction of our cities. The migration of a flock (a birds' community) is much less troublesome than that of an *individual* bird. The flock is made of birds who have already completed the journey several times; birds who fly for the first time in their life; and other birds who have a limited experience.

Some are more used to the weather and know what to do in case of meteorological emergencies. There are families taking care of younger birds, and those who need to be fed. Giving every individual bird a journey map, along with simulation models to predict any consequences of problematic situations that the sensory system needs to pick up to activate the motor system accordingly, is vastly more complicated than designing a flock. The flock is an eu-social and multi-animal system—a way of joining together components less rigid than a multi-cellular organism. It behaves like an organized swarm when it is about feeding, nesting, moving, et cetera. It is a structured colony based on social intelligence, i.e. a *social brain* (Cozolino, 2008; Gazzaniga, 1989).

Every bird flies where the flock flies, guided by the flock's reason/intelligence; that is, the intelligence of a system driven by feedback that controls not so much the individual bird but rather the behavior of the whole flock of which each bird is a component with set positions and roles. I could simply say that an attempt was made to let individual birds migrate, but they did not survive enough for reproduction. In the concept of the "extended mind", the joint intentionality of flock components, based on adapting their behavior to the flock, is as conceivable as the one referred to the individual behavior controlled by maps within the brain (Amoretti, 2011; Di Francesco & Piredda, 2012).

Even the construction of a city can be guided by the reason/intelligence of the *civic community*. Its feedback control comes not from the individual who intends to build his own home, but from the behavior of the whole community in which each individual citizen is a member with a defined institutional role. This allows for the survival of the city itself. Instead of tending to his or her own individual building, each citizen checks the effect that his or her own building has produced on the whole city. What is the impact of the new building on the whole settlement? What are the advantages and disadvantages of this constructive act? Such an event occurs continuously. The reason/intelligence of the civic community has already faced it many times, accumulating experience. Of course, such an urban culture can only emerge from the relative stability of a civic community that settled after millennia of nomadic culture. Cultural evolution regards the city as the highest human acquisition, compared to the current return of nomadism that represents a regression.

*I think I now understand what you are going after. Of course, I have many questions to ask, but I find your method feasible. It requires political consensus, but at this point, I suppose you take this for granted. Now it is also clear to me that it is impossible to keep the sensory system separated from the motor one in order to make observations more objective. Both producing knowledge without responding to their applications, not being able to control them, and applying knowledge developed by others in contexts other than our own, to make the individual mind work, lead to the paradoxical situations we witness daily. Goodman might say that conception without perception is simply empty, but perception without conception is blind, i.e. entirely inoperative (Goodman, 1978, p. 6). If the conception belongs to language and language belongs to the linguistic community, then the linguistic communities will be responsible for conceptualizing the experience.*



## 15. CIVIC SEMANTICS AND ARCHITECTURE

### Deliberative democracy versus representative democracy

If I am correct in thinking of urban activities as speech acts, and in considering cities as made of architectural literature that incorporate different languages, then it follows that those activities produce a meaning exactly as speech does. Therefore, an urban (or civic) semantics must exist with a complementary role, analogous to speech semantics. Such civic semantics would consist of meanings of houses, streets, and squares—understood as the compositional elements of the civic compositional system, or civic language—conferred by the citizens of a community to the city they inhabit. This civic language has existed for a long time, at least in Italy. For this reason, I believe that it could be reactivated by reusing its codes and by realizing situations that, by making them operant in the common use, could make them restart. Civic communities would strengthen around these civic languages, exactly the way it happens with verbal languages.

The cities, by increasing their scale, are pushed to modify the institutions of participation, or *deliberative democracy*, into institutions of delegation, or *representative democracy*. So their citizens change from co-operators to customers of the public-sector, and the elections can be money driven. In Italy, marketing techniques have been long enforced through the Internet to measure how potential voters consider the candidates. The goal is to influence them. Many people mistake such marketing techniques with direct democracy because of the speed of response that it allows.<sup>4</sup>

Deliberative democracy should also be able to speak the architectural language that is shared and present in cities and landscapes. This would make it possible to discuss different actions through conversations in architectonics mediated by the communication of projects. Results would surely be much closer to the aforementioned historic cities than urban design actually is.

*At this point, since we are talking about deliberative democracy, I cannot evade the specifically political issue of your discourse. So, what political training could, or should, coherently support this government plan? Let us start with the Italian situation and its problems within Europe.*

Of course, such a matter would occupy the entire paper, or even more. Yet I do not intend to get out of giving you an answer. No political education in Italy matches my program, but I believe that the program of “communitarianism” (Taylor, 1995, pp. 181–203) could solve both the liberal and the communist question. They first put the North against the South, given the “French” way in which the Piedmontese made the unity of Italy by imposing an untimely bourgeois model. The second question opposed the Catholics to the communists for the secular, multi-cultural, multi-religious

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<sup>4</sup> Deliberative democracy (also named dialogical-deliberative or participatory democracy) is a democratic process where people discuss issues of their interest in order to converge on a common action through negotiation. People in their own cities perform directly what elected politicians representing them in the Parliament should do. Such a local enforcement of deliberative politics is not only useful to make decisions but also to understand each other, i.e. to do real politics and to become fellow citizens—nowadays, an urgent need. Parliaments of representative democracies almost never reach an agreement after discussion. They rather take majoritarian decisions because they do not believe convergence can happen. If the incapability of convergence becomes chronic, though, a political and territorial separation could happen, allowing for different parts to pursue common actions concordantly. It is appropriate here to remember that the verb “to deliberate” means: “to make a decision”. The Latin root of such verb is the word “*libra*” that means scale. The Latin verb “*de-liberare*” literally means “to fully weigh”, i.e. to make a decision about a matter that has been fully discussed and examined by a careful “weighing out” of pros and cons for every possible course of action, including consequences, constraints, opportunities, values, and the competing interests and the possible trade-offs, costs, and benefits at stake. See also (Floridia, 2013).

and therefore liberal way. This is why the “historic compromise” proposed by Berlinguer failed. I would now like to take up the question of cities and landscapes.

## 16. THE COMMON LANGUAGE OF CITIES AND RURAL LANDSCAPES

We should reject the global market for it separates the city from both its landscape and its agriculture, making them a multinational thermo-industrial system. High transportation costs, in fact, rather suggest developing more of a local agriculture, aimed at providing for the nearby city. Notice that for cost of transportation, I do not mean the mere incidence of shipping as recorded by the market price of goods but rather the waste that transportation produces—a waste that involves an almost tenfold increase in production to serve the same number of people.

What we said about cities could then be true about landscape too. On the contrary, the global, market-oriented farming we have nowadays is totally detached from its nearby cities. It is like a landscape-based industry that aims at changing that very landscape according to foreign, faraway laws. Indeed, the city shows the same problematic situation of obsolescence and decay that is evidenced by the landscape, along with an awful and barbaric consumption of land.

The Ancient Greeks used to call strangers who spoke other languages “barbarians”. Thus, what is barbaric are the landscapes and the cities deteriorated by outside languages distant from the tradition that had made them so beautiful. Of course, we cannot send the military to protect our landscape from its current unfortunate and uneconomical use. Likewise, we did not send them to preserve our cities and historic towns so badly affected by the modernization of the suburbs. Landscape rehabilitation begins by reconstructing cities—not our current metropolises that produce customers/consumers but rather civic communities that produce fellow citizens capable of self-government. My thesis here is about considering landscapes and cities as symbolic systems. Fellow citizens use such systems in order to communicate and discuss the projects of the cities that they inhabit from the inside.

*You have talked about cities, landscapes, philosophy, and politics, but we have not seen any pictures or city images. We would like to have an idea of how to change the city we see and live in every day.*

## 17. COLLECTIVE UNCONSCIOUS AS CIVIC SEMANTICS EMBEDDED WITHIN ARCHITECTURE

The following picture (Figure 1) represents a city as a *mandala*. It was published in *The Red Book* by Jung (2009). According to Jung, a mandala is the archetype of inner order. It expresses the existence of a ruling center and a periphery that longs to embrace the wholeness. It is the symbol of totality. The word “mandala” literally means, “containing (*la*) the essence (*manda*)”—a symbolic terminology of Vedic culture contained in the *Rig Veda* books. The picture interprets the city as an archetype that communicates in a performative, non-descriptive way, a shared order able to improve people by making them belong to the city and thus become fellow citizens. I think that reconstructing a city like this one is the practice that can transform a degraded and obsolete landscape into an action of *appaesare* or making a place our own home. Such an action brings together the members of a civic community. Thus, they recognize themselves by rediscovering and re-enlivening the latent project embodied by our Italic landscape into the language/symbolic system. The *external memory* still present in our historic centers is there for those who can read it.

## mandala archetipo città



**Figure 1.** Mandala as an archetypal city (Image sourced by the Author).

Valeggio sul Mincio (Figure 2) shows how city and landscape used to integrate when farming was meant for local use. Local production for local consumption led the city to be relatively autonomous and capable of surviving independently from international trade. This empowered the city to negotiate on issues indirectly related to its subsistence (Morin & Scola Gagliardi, 2009). Therefore, its life form allowed for self-government and consequently self-learning. Its civic community could enjoy the awareness and responsibility coming from the local symbolic systems, enforced by the actions of deliberative democracy that were at work in the self-constructing of the city.





**Figure 2.** *Ap-paesaggio* of Valeggio sul Mincio (Image sourced by the Author).

*How can you link these simple images to the questions you have raised about the city project from within versus the project from without?*

## **18. INTERNALIST AND EXTERNALIST CONCEPTIONS OF THE CIVIC SYMBOLIC SYSTEM**

To answer your question, let me introduce various concepts of the civic symbolic system (or civic language) that we can group around two opposing polarities, calling them internalist and externalist. Since we have seen that there is no awareness and responsibility without a language—and on this, we can find a broad understanding—we must also argue that there is no language without a linguistic community (or symbolic community). This makes the various concepts of civic language very problematic.

One of these polarity concepts is the well-known generative grammar of Noam Chomsky, which mainly focuses on the study of syntax. It considers grammar a system of rules generating the combinations of words to form grammatical sentences in a given language. According to this concept, many of the properties of generative linguistics arise from a universal grammar innate to the human brain rather than being learned from the environment. Each individual mind is supposedly born with the linguistic ability to create grammatical sentences consisting of a syntactic frame in which various vocabularies of different languages can be placed: it is used more for thinking than communicating. Only later does it assume the particular aspects typical of different cultures.

The other polarity concepts, called cognitivist or functionalist, interpret language in terms of concepts sometimes specific to a particular regional culture, sometimes universal, which underlie its forms. Cognitive linguists who argue that language is both embodied and situated in a specific environment include among others William Croft, George Lakoff, Vyvyan Evans, and Ronald Langacker (Croft & Alan Cruse, 2004). For them, the primary function of language is communication, and thought itself emerges from the communicative relationship with other components of the symbolic-linguistic community. Focusing mainly on the semantic aspect of language, this cognitive concept denies the existence of an autonomous linguistic faculty in the mind, understanding grammar in terms of conceptualization and claiming that the knowledge and transformation of languages arise from the linguistic usage within its regional and cultural community.

We can interpret the Chomskyian model as logocentric, *internalist*, individualistic, and politically liberal, and the cognitivist model as multiple-code, *externalist*, founded on the social brain of an extended mind, and politically communitarian (different from communist). In this second conception, which is the oldest, verbal language integrates with other symbolic languages and systems. The city, here, has a crucial role in the development of languages because it is a symbolic system itself, as well as a support for various linguistic acts. Through its offer of proximity, the city integrates different symbolic systems, including multi-scale architecture and architectural acts.

To use the potential communication skill of civic conversations and discussions, we should use a complex of symbolic systems, a shared multiple-code system. However, we cannot share nor use such a complex system without a mature symbolic community, and there is no mature symbolic community without a city. It is in the civic proximity that communication is formed as well as language. Communication and languages grow where there is civic proximity. Within the horizon of such a concept of language, I consider the city a stage for cultural evolution that goes beyond individual *H. sapiens*. It is the form of institutionalized community that makes its components aware and responsible for the actions correlated to the community they belong to, as well as their own actions. The city is a kind of “community *sapiens*”—*sapiens* is the community, not the individual.

The origin of humans consists in their augmented capability, thanks to language, of operating as a community far beyond the way many animal species operate in social groups, flocks, herds, et cetera. Are the cities of today improving this communitarian evolution usually considered as individualistic? To understand what I mean, we should make a fundamental distinction between *communication* and *transmission* in our relationships. It is easy to recognize how much communication has become transmission in the networks of urban space (*civic architecture*) within our cities when they have become the thermo-industrial megalopolises of modernity. A transition from the life forms based on techno-arts to those based on techno-sciences has gradually transformed our vision of the world, which nowadays consists of a progressive reduction of communicative relationships in the face of an increase in transmissive relationships. If the issue I have raised in this paper is valid, then the transition that has shrunk the functioning of communicative languages causes the reduction of awareness and responsibility within our symbolic communities: a reduction that can be recognized at first sight.

*These topics on language, or on the plexus of symbolic systems as you call it, seem clear to me even though I do not intend to confirm all of your statements which are very specific and therefore require a complex reflection and critical thought. I will save it for a later time. We have not yet discussed urbanism, or if you prefer, multi-scale architecture. You have distrusted the architects*

*who use modern aesthetics, but we have not seen your building proposal should you teach in a school of architecture.*

## 19. RELATIONSHIPS AMONG THREE CONCEPTS OF CITY-MAKING

### Related symbolic systems and languages

The two aforementioned concepts, the *internalist*, individualist, and liberal, and the *externalist*, symbolic-communicative, and communitarian, are based on two different life forms expressed precisely by the different way in which the language is conceived and used. At this point, I could refer to three city-making concepts proposed by my friend, architect Douglas Kelbaugh, which follow a multi-scale approach that also includes architecture (Kelbaugh, 2001). Of course, I would like to consider these three concepts in regard to their way of conceiving language, to interact with the issues we have discussed so far (Figure 3).

The first concept, which Kelbaugh calls “Post Urbanism”, is the modern and techno-scientific one (including Rem Koolhaas, Frank Gehry, Renzo Piano, and Norman Foster). According to this concept, architecture is not a language, it is a combination of aesthetics and engineering, something between entertainment and a performance tool. Chomsky would agree; only verbal language operates as an effective language.

The second concept is the post-modern one, called “New Urbanism” by Kelbaugh (including Robert Venturi, Leon Krier, Aldo Rossi, Christopher Alexander, et cetera). Here the languages of the past are used but are always considered international, therefore they are stylistic: their shapes lack any reference or are self-referred and their performances are independently checked by engineers. I would associate to this post-modern set the work by Alexander for his separation between formal language (the 15 Gestalt rules which could be interpreted as the syntactic aspect) and pattern language (which could be interpreted as content or semantic patterns) (Alexander, Ishikawa, & Silverstein, 1977). I would also include the shape grammars by Lionel March and George Stiny (1981, pp. 245–255) because their grammar deals with the treatment of shapes (a syntactic aspect that follows the mathematics of Emil Leon Post (1897–1954) also used by Chomsky), leaving open the performance or the reference aspects that would be dealt with otherwise (March, 2011, pp. 5–13).

The third concept is that of “Ordinary Urbanism” (daily, poor, participatory, temporary, soft, and focused as deliberative democracies) where I would include the fabrics of small and big historical cities such as Siena, Venice, Marostica, et cetera, which Kelbaugh calls “Everyday Urbanism”. Its main characteristic consists of operating without professional designers through the performance of civic communities’ language. According to this interpretation of the architectural composition, I have developed various bioclimatic projects available at [synergiaprogetti.com](http://synergiaprogetti.com), such as the *Fo Autonomous Solar Ecovillage in Umbria, Italy* and a *Competition Project for the Regeneration of Shacks Village in Cape Town, South Africa* (2008–2014) (Figure 7).

For this theoretical interpretation, I have developed a “typological grammar” that has been published in various books (Los, 2013) as a tool to clarify the languages built within the architecture of cities relating to their urban fabric. Such grammar connects a syntactic compositional system with a semantic-typological set of contents. Architectural symbolic systems for different cultural regions have been developed on the basis of this kind of “language” and realized in actual projects. I am presently experimenting with these issues and a few works have already been completed. These projects use the typological grammar to make explicit the languages developed from historical ones, related to the climatic cultural regions and the life forms that those



language features have constructed. It is a concept that presupposes more or less formalized symbolic systems already present in the construction of cities, particularly in Italy, where image languages were at work for a millennium during the culture of Roman Catholic cities. It is a multi-scale, non-modern regionalism based on civic architecture. My colleagues and I paid special attention to avoid stylistic regionalism, i.e. a repertoire of stylistic formalisms that mimic the past by disguising the pre-existing historical buildings, giving referents and tangible contents to the figures.



**Figure 3.** Three systems of civic architecture: New Urbanism, Ordinary, and Modern (Image by the Author).

Considering the three concepts of city making, the first two concepts—"Post-Urbanism" and "New-Urbanism"—remain within an international context. They are a byproduct of Enlightenment's universality, detached from those symbolic communities that are the referents and sources of "languages". As only symbolic communities might give rise to some kind of language, these modern settlements are involved in non-communicative, mainly transmissive practices. The performances transmitted by either the so-conceived cities as by their architectural works, not belonging to the world of signs, move into the field of aesthetics, and their morphologies are therefore stylistic.

The third concept, "Ordinary Urbanism", deals with the construction of urban tissues and civic architecture that I described above (see section 8) as an expression of a civic conversation by the community inhabiting it. We could refer to this form of symbolic system in order to examine urbanism as both an artistic practice and as a form of knowledge. As a form of knowledge, it can also read the languages of societies that deny its presence. The bioclimatic sensitivity of architects, different from the sensitivity of critics who do not operate in a designerly way is quite evident, considering their correct interpretation of several architectural choices which exemplify local climatic or luminist referents.

*Now I can see the architecture that could animate the cities you envision, but you are grouping together architects in a curious way that contradicts many critical and historical studies. This requires clarifications. For example, I do not find it acceptable to group Foster with Gehry, or Venturi with Rossi, and definitely, Alexander with Krier. How can you associate them with these unusual groups?*

Part of the confusion is not mine, although it still requires explanation. Another part concerns me directly and on this, I owe you some clarifications. The first problem lies in the distinction between language and style. The architectural culture reverses the meaning found in literature. In architecture, the compositional system common to several architects is called style: Gothic, Renaissance, Baroque, et cetera. The Baroque style is common to Francesco Borromini, Gian Lorenzo Bernini, Kilian Ignaz Dientzenhofer, Pietro da Cortona, and many others; while on the other hand, we talk about the Borrominian language, Berninian language, and so on. In literature, a language is shared by many authors, for example, Italian, French, English, et cetera; while the style separates various ancient and contemporary writers such as Giovanni Boccaccio, Giacomo Leopardi, Italo Calvino, Alberto Moravia, Luigi Meneghello, et cetera.

The few cases where current architecture is considered a language are mere uses of a metaphor by critics and historians who talk about architecture with criteria and methods borrowed from verbal language. When an architect designs or creates a project, he or she uses drawn referential figures. I am referring to those figures, not to the topics of critics and historians. Now, what is the symbolic grammar of those referential figures?

The stories and theories of modern architecture study buildings according to criteria that are other than symbolic, and if I put together Gehry and Foster, it is because regardless of their great individual differences they both belong to the same modernity that does not want to use a symbolic interpretation of architecture. Generally speaking, modern architecture is not discussed in terms of language, and when it comes to style, the idea is that modernity has overcome styles. Since modernity, the prevailing opinion reduces art to aesthetics, making it—just like engineering—international, although styles are not named. Much of contemporary and modern architecture is evidently stylistic. We can therefore consider Minimalism, Postmodern, Deconstructivism, High-Tech, et cetera, as modern styles. This is also proven by the eclectic way in which they are taught in architectural design schools. Teachers must respect the “language” of each individual student, which is considered congenial, autobiographical, and individual.

*I am starting to correlate the various areas of interest that we have crossed to give meaning to your interpretation of architecture as a language. The steps are clear to me, but when envisioning the daily conversation of the city that you call “civic acts”, I cannot see how these practices might operate and how a city going through these transformations might emerge. Verbal language remains somewhat too self-defined to open up to the complex symbolic systems in support of your thesis. How can we overcome this gap that seems to me truly insurmountable?*

The many difficulties encountered by those who undertake the study of architecture and cities interpreted as symbolic systems come from the contrast between cognitive linguistics and Noam Chomsky’s generative grammar. The former highlights the essential role played by semantics in correlating the human cognitive faculty and its linguistic ability. This applies to the various languages that men have developed. In Chomsky’s modernist conception of language we regress to a cosmopolitan, post-civic, neo-nomadic individualistic stage, where communities are disconnected



and make verbal language become mainly transmissive. This is when the press was invented, making our language mental, mono-logical, silent, and introverted—in one word: individual. The Protestant Reformation institutionalized the *universal individual*, which helped the establishment of nations, and the progressive destruction of cities and their symbolic-linguistic communities. It is in this situation that Chomskyan, representational, Cartesian, and internalist linguistics were influenced by techno-sciences and their *methodological individualism*. From this conception, political liberalism also emerged, which is the current belief dividing techno-scientific progress from moral progress. Chomsky's universal grammar is nothing more than the antechamber of Esperanto, which is now active as the *Globish*, the global English diffused everywhere.

The adoption of a regional civic architecture means carrying out a political action. It means convincing people to pursue unified actions to create local subsistence, which in turn requires a division of labor with its correlated institutions that make up a micro-city. In this sense, we can infer that today the construction of a city is the leverage point allowing us to unplug ourselves, at least partially, from the global network. This also applies nationally. If I adopt *communitarianism*, then the survival of the life form of a civic community or of an organized group of civic communities becomes the way to verify that the operant pieces of knowledge within that community are actually real.

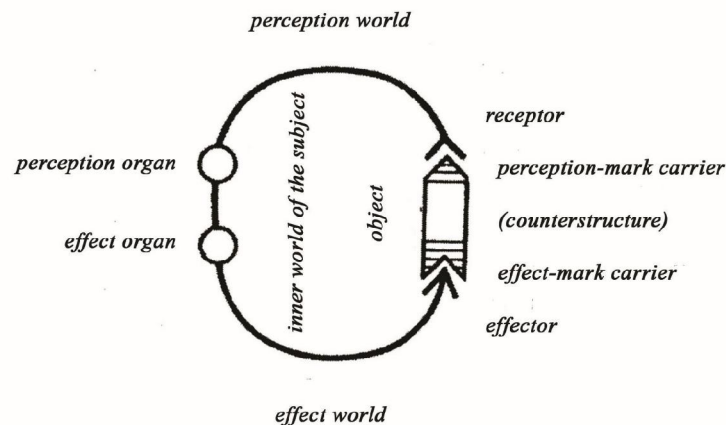
## 20. *UMWELT* AND COGNITIVE LANDSCAPE

The concept of “cognitive landscape” formulated by Almo Farina (2009) seems to me the most appropriate for developing both the proposed integration with the city and the operability of a language, of a civic symbolic system. The cognitive landscape belongs to a complex of researches based on a symbolic or semiotic interpretation of ecology and biology called *Biosemiotics*. The aim of biosemiotics is to reformulate biology in order to appropriately interpret many phenomena otherwise unexplainable. Biosemiotics considers the environment as a sort of “*umwelt*”, according to the concept of Jakob von Uexküll (2013) where organisms exchange specific messages that allow them to survive. It is the ability to fit, which measures the appropriateness of their sensory-motor correlation, between the experience of the environment and the actions taken in response to that experience.

In this sense, we can imagine as operant a functional cycle of organisms which receive through their receptor organs (correlated with the effector organs) all the signaled modifications of the surrounding world. For them, they are significant differences that make the difference—and thus they activate appropriately, pertinently, and effectively the effector organs involved in the “*umwelt*”, i.e. in the surrounding environment. Such “*umwelt*” includes other organisms among which there are symbolic/functional interactions as well. Humans have developed the correlation between motor and sensory through a complex of symbolic systems, making human communities far more communicative than animals. Of course, every animal species, as every human culture, develops correlated cycles of receptor and effector processes, which should preserve them in the best possible condition for pursuing the system improvement of such functional cycles.

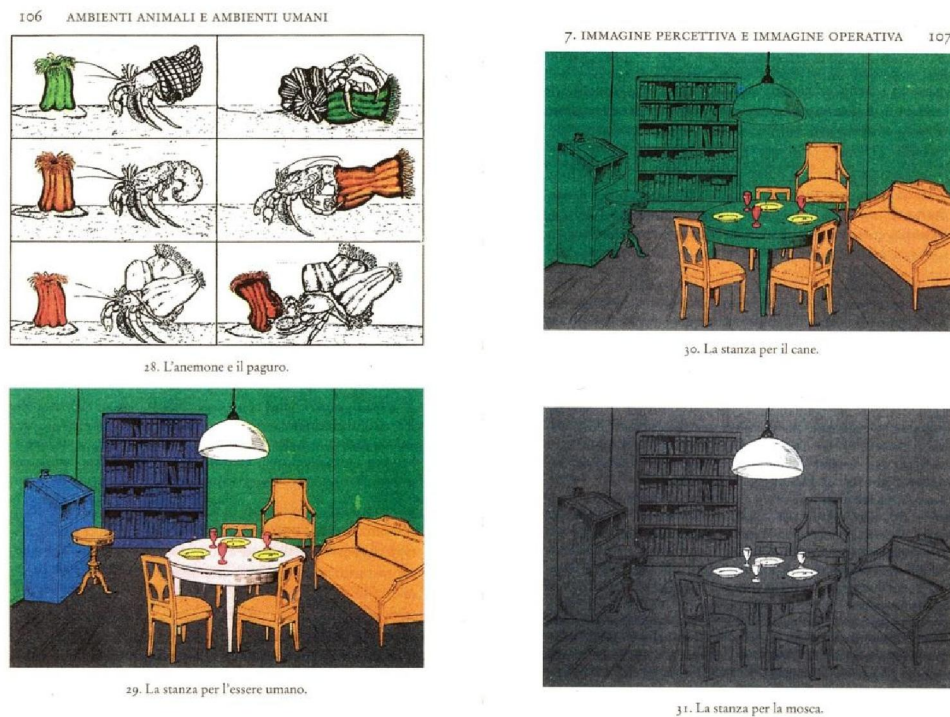
The picture at the bottom right corner (Figure 5) shows the *umwelt* of a fly. One can notice the objects that make a difference for the fly, i.e. the figures that stand out from the background for the fly. The top right picture shows the *umwelt* of a dog, and the bottom left picture shows the much more complex and articulated *umwelt* of humans.

## ciruito funzionale dell'umwelt di Jakob von Uexküll



**Figure 4.** Functional cycle of Jakob von Uexküll's *umwelt* (after von Uexküll, 2013). This figure shows how different forms of life can similarly pursue the different correlations between the world of receptors and effects by experimenting with the different signs of the environment. This “functional cycle” can be interpreted as a feedback loop that governs the intelligent life of the system.

## umwelt, mondi diversi di umani, cani e mosche

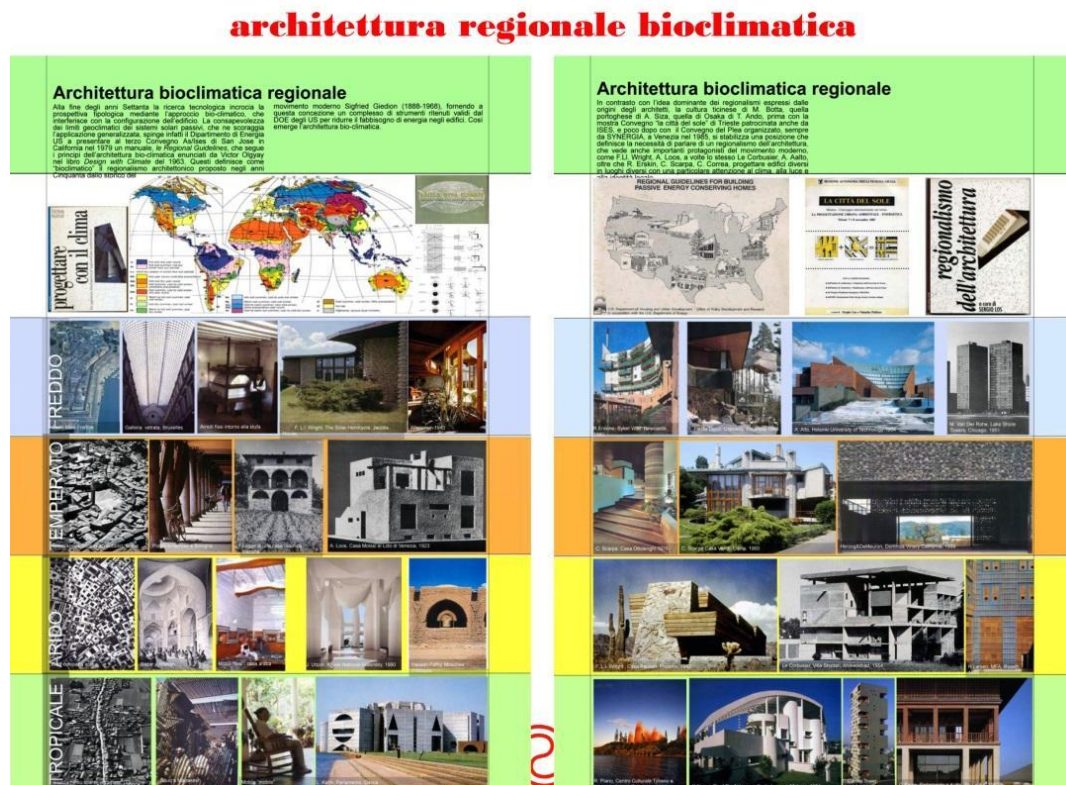


**Figure 5.** *Umwelt*: different worlds of humans, dogs, and flies (after von Uexküll, 2013) (Image sourced by the Author).

*The umwelt concept that you introduce to exemplify space-time as a symbolic system or an integrated language clarifies with its functional cycles the symbolic interactions between humans and the surrounding environment in terms of biosemiotics. It would be interesting to articulate the same concept in terms of multi-scale architecture.*

## 21. GEOGRAPHY OF ARCHITECTURE AS BIOCLIMATIC ANTHROPOLOGY

The bioclimatic architecture, being implicitly regional, is designed for adapting to the local site and climate, in the sense of the ability to design and build architectural envelopes with natural climatizing and lighting. Doing so, the bioclimatic project minimizes energy requirements, thus drastically improving fuel consumption and environmental pollution, replacing the waste of fuel and money with the architectural knowledge of tradition embedded within language, i.e. in the architectural composition system. The concept of *umwelt* as a “cognitive landscape” seems to me well correlated with bioclimatic architecture that we have learned to elaborate at different typological levels. Bioclimatic projects pursue the well-being of humans and the scope of flora and fauna, either in the open landscape or in cities, especially in their historical fabric. Prior to the advent of air conditioning system technology, builders paid great attention not only to protection from environmental disturbances but also to efficient use of locally available resources. Figure 6 comes from an exhibition I organized in 2006 for the Science Festival in Genoa (Los, 2006), comparing some important exemplars of multi-scale architecture responses to various climatic cultural regions. Usually such characterization cannot be found in the theories or histories of architecture books, but it is available in *Geography of Architecture* that I compiled precisely to fill this gap in the teaching of architectural composition (Los, 2013).



**Figure 6.** Two panels from the Genoa exhibition, comparing at different typological levels (city fabric, civic architecture, building and room) some exemplars of historic (left) and contemporary (right) regional architecture in different climatic regions (top, down) (Image by the Author, 2006).

If it was possible to apply, perhaps in a charter city, the capability we have to build regional bioclimatic cities as multi-scale architecture, then we could greatly reduce fuel consumption and environmental pollution. It should be a charter city since the current urban planning laws tend to hinder interventions such as those that would require bioclimatic planning. Bioclimatic architecture could replace the usual masses of individual building objects, disconnected from each other and from the context, by building relational projects generated by urban space networks that make up articulation of civic architecture. By orienting the bioclimatic design rules to such civic architecture, thus making cities that are appropriate to the local climate and therefore regional and non-international, we can also make the relational space that is civic architecture better naturally-climatized and lighted for gently pushing people to a better, convivial communitarian life.

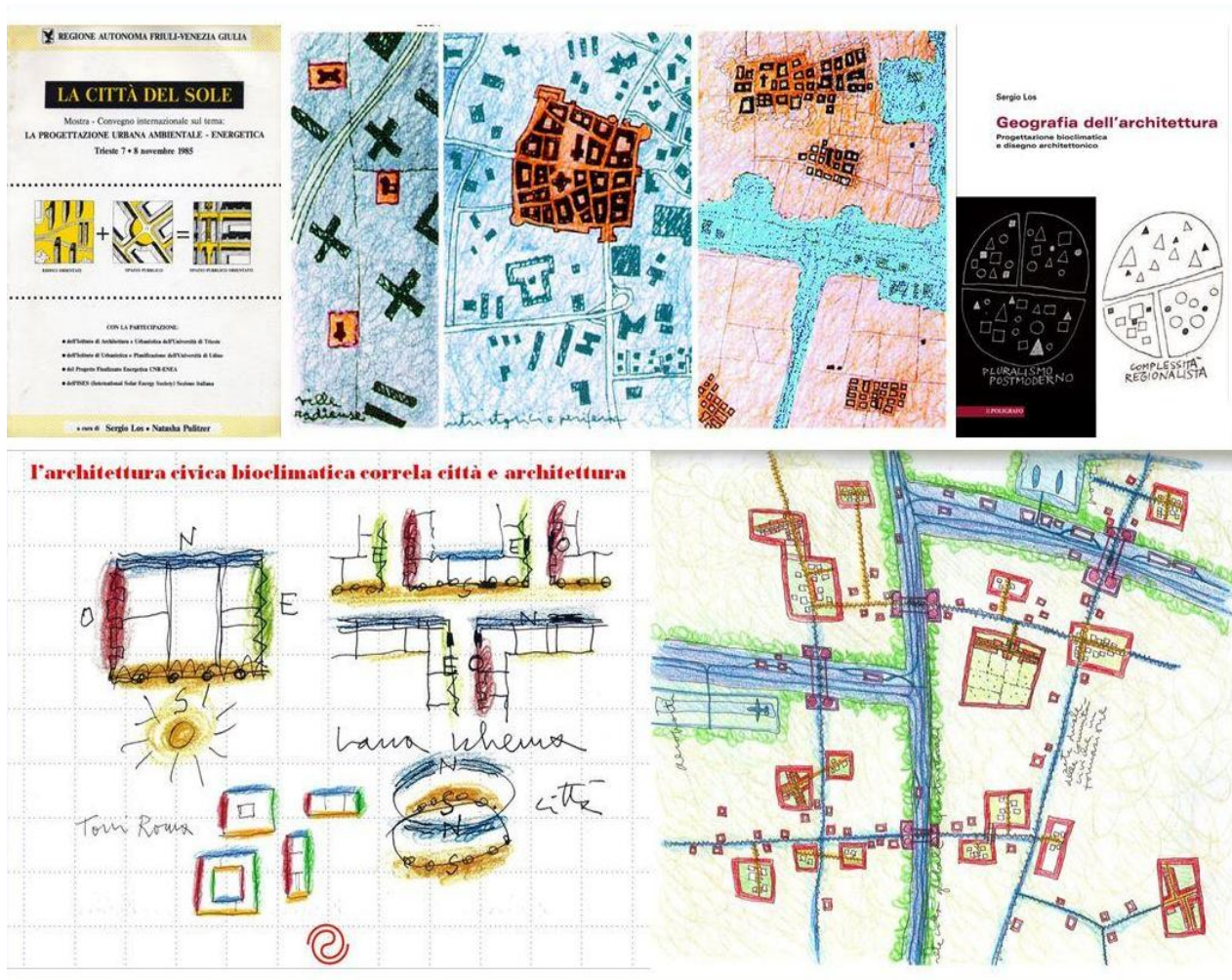
Following this strategy, the appearance of cities would be radically different from that of the present modern architecture, which instead resorts to building structures indifferent to climate with powerful, corrective measures. Locally, resources would be spared, and an intelligent design could use them to improve housing quality and reduce environmental impact. Modern internationalism makes buildings look the same all over the planet. Therefore, they are wrong everywhere. It is not just buildings that should rely on local resources and be therefore regional: agriculture should do it too. Nowadays, farming does not respect the local climate potentialities because of the push to produce international merchandise, according to the requirements of multi-national corporations, which ship their movable products everywhere. In doing so, these corporations waste an impressive amount of food estimated around 40% of production and beyond. This means that the 7.5 billion people living on this planet need a production for 12.5 billion, while we are not even able to feed the current population. Local and transport-free farming could instead produce much less but perform better. This would benefit cities because they could survive by placing their subsistence supplies locally, breaking free from the blackmail of multinational corporations. Accordingly, a wise plan could postpone the supply of less relevant and urgent goods during times of crisis.

*This approach focuses on a multipolar planet, structured in many regional cities with completely diversified cultures. Not only are they different, but they are also capable of differentiating themselves to pursue life forms more suited to various cultures, climates, resources, and landscapes. This is far from global megalopolises anticipated by modernity, pursued by global corporations, uncontrollable, and with a high environmental impact. The proposed confederation of subsisting micro-cities should represent a viable alternative to the current world order. Do you think that these settlements could also have better economic reasons to survive than those developed via the current globalization?*

The images (Figure 7) show schemes of urban fabric that point to the transition from a modern urban fabric, made up of isolated building objects, to another fabric articulated around a network of regional civic architecture oriented toward a bioclimatic design. The transition starts with the modern architecture pattern, through the crisis called “Postmodern”, involving so many different experiences, to reach the urban fabric that we call “regional civic architecture”, and that for the sake of being bioclimatic, cannot be international. Upper left, we pass from the “*ville radieuse*” with buildings oriented independently from the streets, through the IBA in Berlin where the buildings are oriented according to the road network, to our “ordinary urbanism” where the buildings are oriented by the bioclimatic network of civic architecture. The central image shows our proposal presented at the IBA in Barcelona in 1996, where “ordinary urbanism” envisages the same treatment of historic centers as well as in the surrounding countryside, confining industrial settlements within a territorial network related to transportation infrastructures, highways, railways, airports and ports, bordered by trees to reduce pollution. The cover of *Geografia dell’Architettura* (Los, 2013) recalls that these



patterns of fabric will be related to the various climatic cultural regions of the planet. The diagram, below left, shows how the variation of façades compared to solar orientation is also reflected in the civic architecture network.



**Figure 7.** Evolution of urban fabric patterns. *The Sun City* is civic architecture (Image by the Author, 2013).

## 22. TWO MICRO-CITY ECONOMIES RELATED TO INTERNAL AND EXTERNAL SUPPLIES

A criterion to discriminate daily-needed from postponable goods allows for enforcing a productive system where supplies are split into two sets. The first set includes subsistence supplies. These should be local, i.e. *plesio-procurements*. The second set comprehends deferrable goods that can be imported, i.e. *tele-procurements* that originate from far away. Natasha Pulitzer and I are researching such issues in several design contexts. Our aim is to test how a settlement could work when provided with enough land for food independence. Given a number of citizens, we can foresee the necessary ground to feed them and establish where their homes are going to be located within the common city in order to avoid dividing farmers from other workers. This is opposed to what modern multinational functionalism does when moving the city away from the countryside. To make the activity of the farmers equal, from the civic point of view to the one of the other

producers, we should have the cultivated land near the settlement with the rural houses located between the fields and the most central dwellings of the city.

*I would be curious to know how these searches fit into very different situations. On your Web site I noticed that projects are organized by climatic areas and institutions, therefore we can test in what way architecture can make understandable how institutions work on site. The works often evoke theoretical texts also developed in the field of research, not for educational purposes only. In this sense, we could specifically talk of “research” that is motivated by a particular problematic situation and therefore takes responsibilities for its applications and continuously corrects itself within a process defined as “research action”. Such a process does characterize the techno-arts, where knowledge acts differently from the techno-sciences.*

## **23. REGENERATING MODERN SUBURBS AND LANDSCAPES**

I would like to answer your questions by arguing some projects that I have developed in the Synergia studio that I share with Natasha Pulitzer. They should make it clear how they fit into the specific issues of the cultural, climatic regional places. I propose to group them into two categories: A) suburb regeneration projects, and B) open landscape regeneration projects.

### **A. Suburb regeneration**

#### **A.1. The Cape Town project**

We developed this project for regenerating a Shacks Village in Cape Town, South Africa for the international context “Better Living Challenges” (2014). We have proposed an agricultural area capable of feeding the community that lives in the designed suburbs, a micro-city proposal. This has a civic architecture with a central square and various types of houses that look over it. Farmers’ houses are located at no more than a mile from the fields where they work, so farmers can reach them by walking (Figure 8). The houses are very small, naturally climatized and lighted by solar energy. As cultivated fields are very close, the buildings’ courtyards can be used as rooms without a ceiling, not just as flower and vegetable gardens (Figure 11). Civic architecture is composed of two dual networks for distinguishing the pedestrian flux from the vehicular one in order to preserve the complexity of interpersonal interactions characteristic of their civic culture.

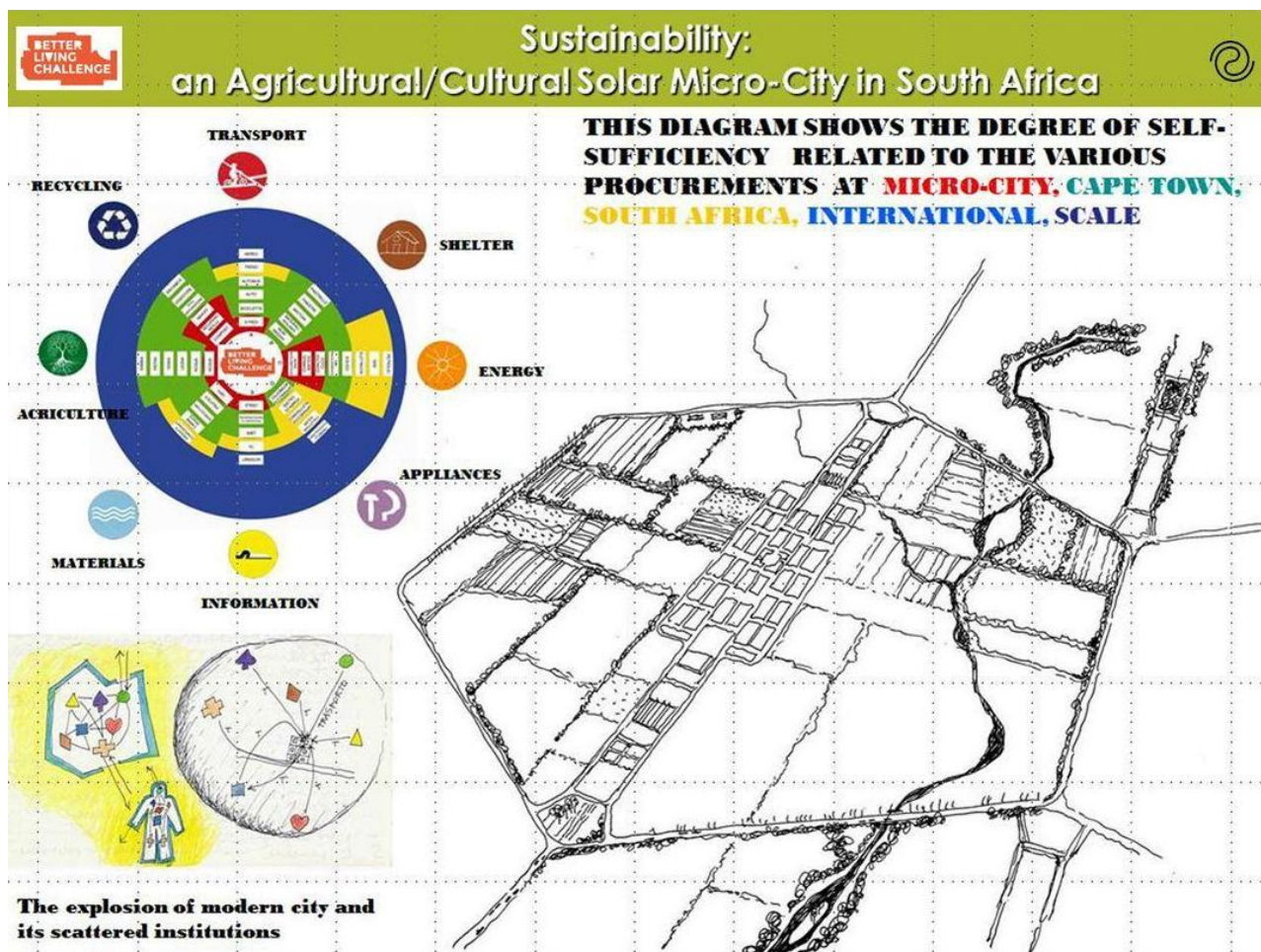
This community counts 3,000 people distributed into 800 family homes. Approximately 1,800 are workers, 600 are elders, and 600 are children. Besides farmers, there are houses for artisans, small factories, and commercial-facility buildings. Main roads lead to workshops and factories and then encircle the town connecting to other villages.

Of course, if this town expands, it would take up more land for buildings and providing food, using the land that less dynamic cities would have left available. What matters is planning growth reasonably. Here we have *eight components* (Los & Pulitzer, 1977) and a degree of possible autonomy from the earth. People can achieve some things locally, while some other things must come from outside. We can understand what is at stake here if we consider the eight groups of institutions I am about to describe. Let us imagine such a land system as a human body. Bodies are autonomous because under the skin there are organs allowing the body to breathe, have a blood stream, and eat to receive energy for the body to perform actions, et cetera. The body is equipped with all the organs needed to choose what to do during different situations that may happen and to perform whatever guarantees its survival. As in other living beings, each organism is supported by the intelligence of the group it belongs to.

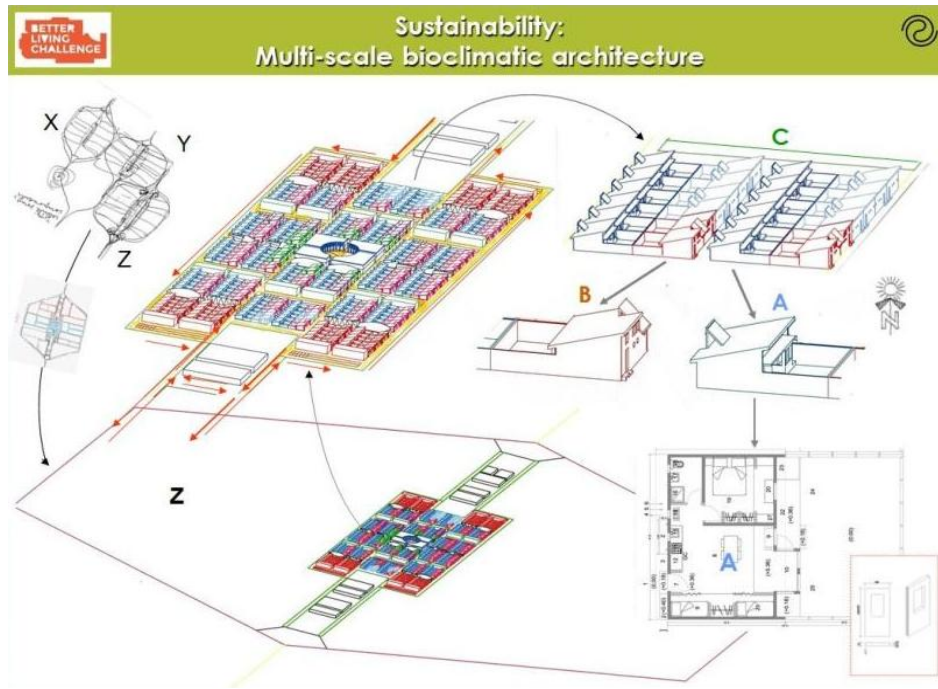


The roles it enacts within such a group during different life stages rule personal choices and behaviors. It is always the group who unfolds shared practices, and who selects those tested by social experience through time—a cognitive heritage of species and human culture.

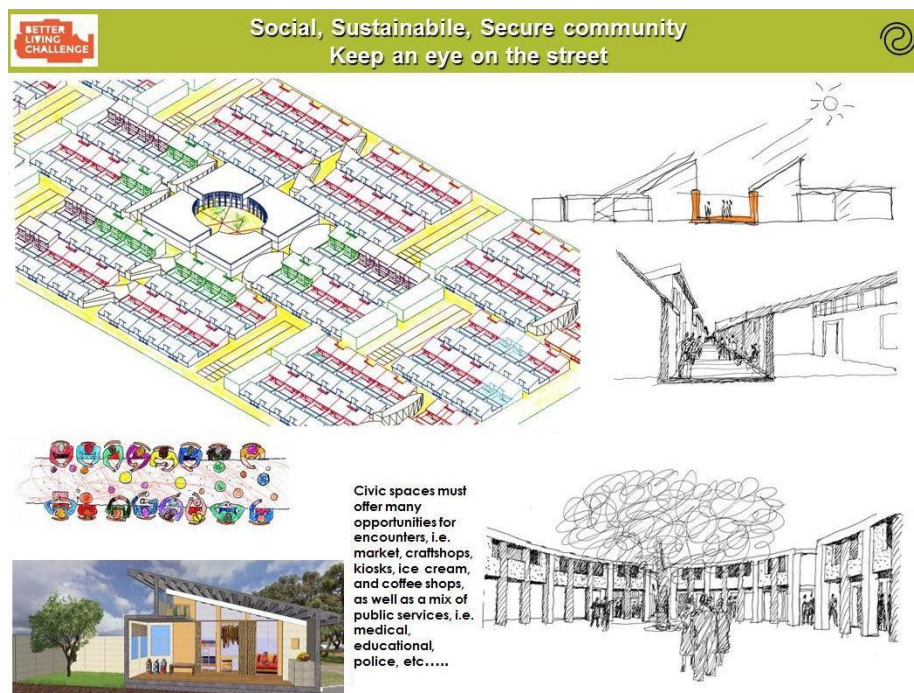
I can show how the referential architectures explained above communicate the meaning of the various institutions operating in different cultural and climatic sites when dealing with some defined problematic situations. By formulating a question through the requirements of a design program that entails a response, the project should be able to offer a solution that does not shift the consequences of the missing or partial way out to institutions at a higher or lower level. I can distinguish two main problematic situations: those of urban regeneration, both of the peripheries and the historic city, and those of landscape regeneration, of “*re-appaesare*” an unstable “*paesaggio*”.



**Figure 8.** A sustainable agricultural micro-city for South Africa. The diagrams (left) show the degree of self-sufficiency of a system made subsistent through eight components/institutions (organs) (above, see also section 24) and their organic model (below) (Image by Synergia Studio, 2014).

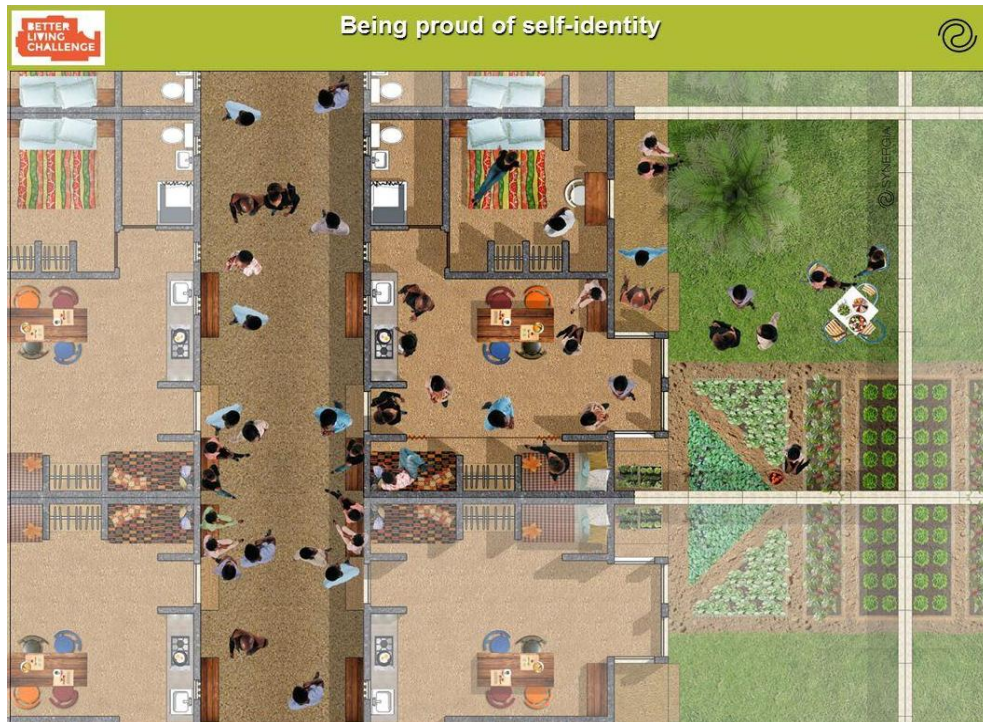


**Figure 9.** Sustainable design: a multi-scale bioclimatic architecture. X, Y, and Z are three possible boroughs. On a different scale, the image shows the terraced houses (C), their façade types, and the plan layout types of two houses (A and B) facing north and south along the east-west road. The types are different because of solar orientation, so in this civic architecture the road's south façade is sunny while the north is shadowed and windy; the opposite of what happens in Europe for we are in the Austral hemisphere (Image by Synergia Studio, 2014).



**Figure 10.** Civic architecture is a self-controlled urban space where the community is social, sustainable, and secure. It keeps an eye on the street where civic spaces offer many opportunities for encounters, i.e. market, craftshops, kiosks, ice cream, and coffee places as well as a mix of public services, i.e. medical, educational, security, et cetera (Image by Synergia Studio, 2014).





**Figure 11.** Interaction between family privacy at home and public community life in the civic outdoor spaces that is civic architecture. From inside, one can check what happens outside, i.e. children playing in the street but not vice versa (Image by Synergia Studio, 2014).

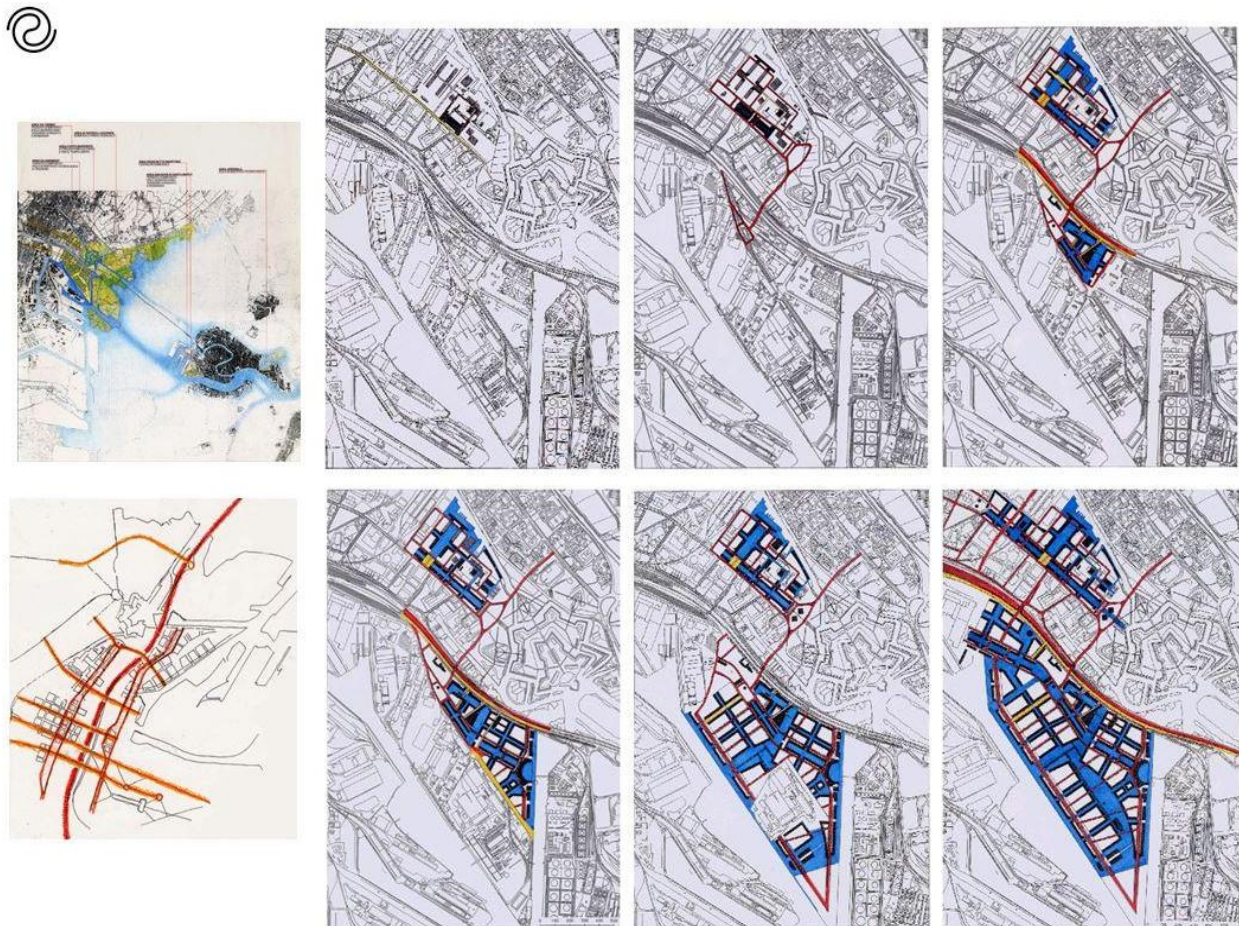


**Figure 12.** This house is small, flexible, and self-constructed by recycling energy-efficient material. The images show the double asymmetry of these buildings: one asymmetry is about the orientation toward north and south exposure and the other is about community, i.e. public outdoor space and private interior space (Image by Synergia Studio, 2014).



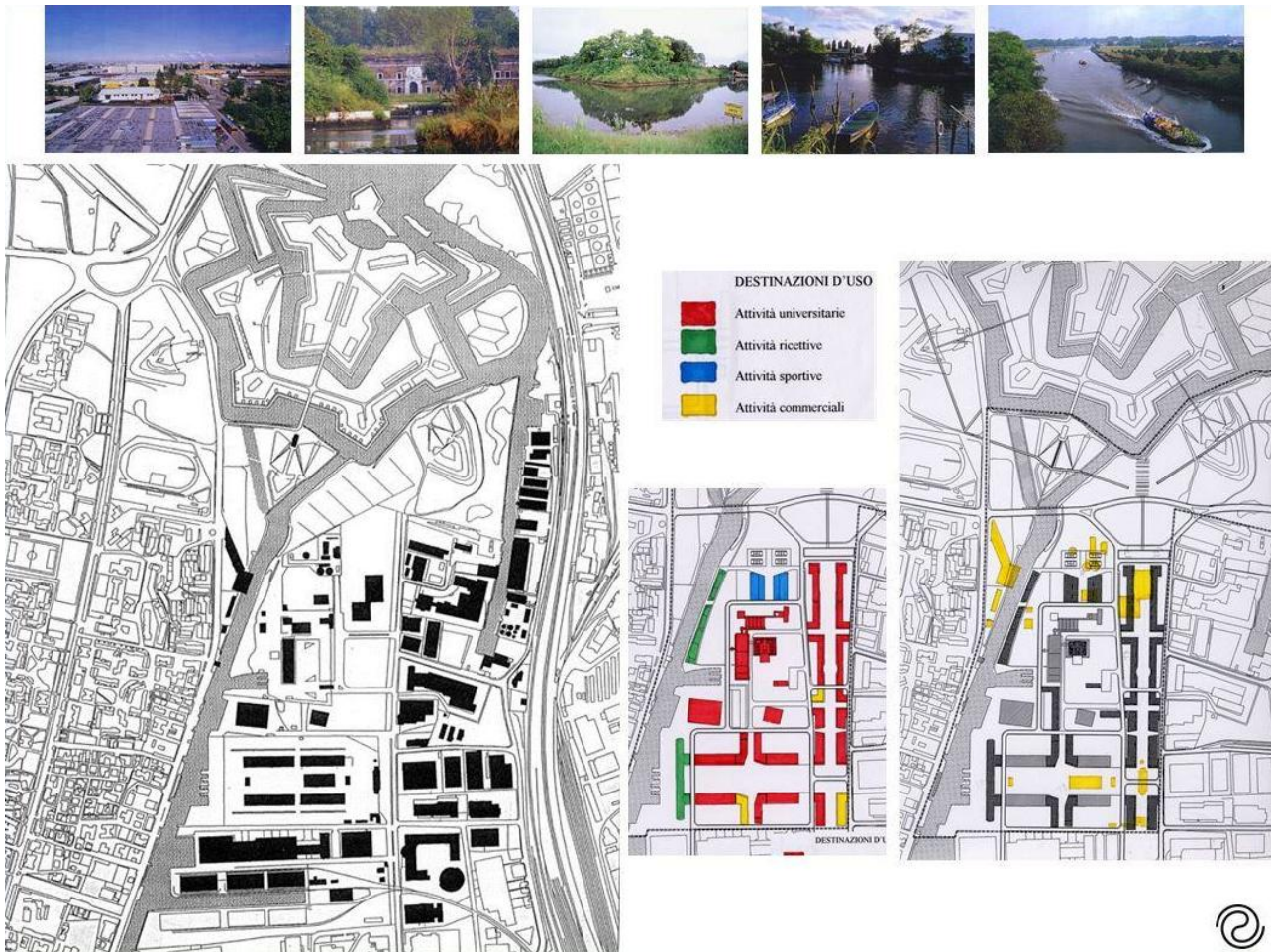
## A.2. The Via Torino project in Venice

I would like to take as example another project in a different situation, both for context and location: the redevelopment of Via Torino, a peripheral site in Venice, Mestre quarters, Veneto region, 45°29' north latitude, coastal temperate climate. We developed it after being invited by IUAV and Cà Foscari Universities in Venice to a competition for new university establishments (Los, 1996; Ruano, 1999, pp. 172–173). The project proposes to take the opportunity of the new constructions to replace the existing scattered urban fabric by enforcing our “ordinary urbanism” through the modern “post-urbanism” city-making process. Through small gradual interventions, we propose some replacements, additions, and demolitions of places and existing building objects (in yellow) with new contiguous civic types (in red). These were designed to form a continuous network of “civic architecture”. In this way a progressive transformation of the peripheral settlement takes room, characterized by large objects separated by voids in a compact urban fabric, supported by a dual network of urban pedestrian (in blue) and vehicular (in red) spaces that form the new “civic architecture”.



**Figure 13.** From homeostasis to homeorhesis, we show the trajectory to be followed in order to reach the correct final state: the constructed phenotype of the projected genotype (Image by Synergia Studio, 1996).



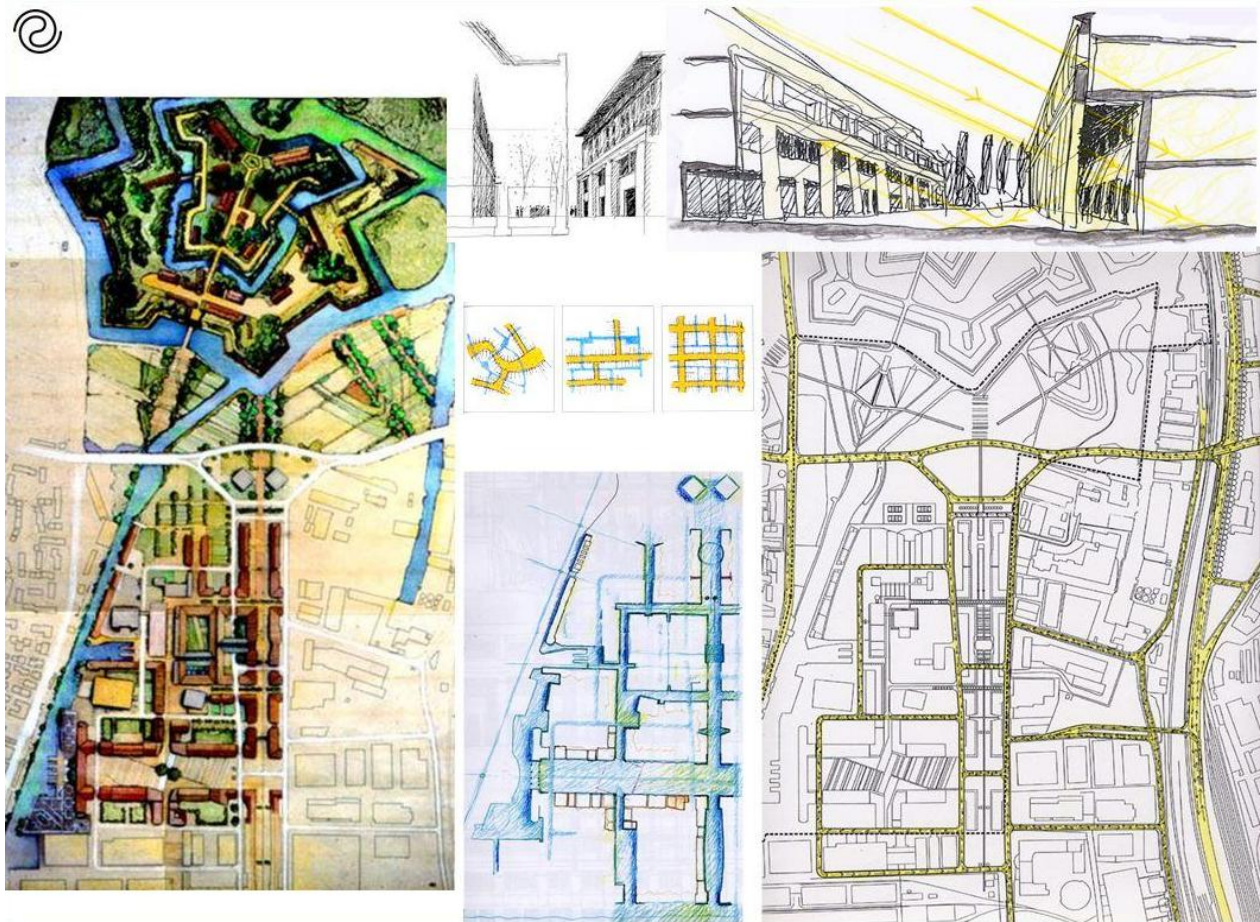


**Figure 14.** The gradual transition from a peripheral tissue to a compact micro-city, obtained through a gradual process of demolition, replacement, and integration of the new buildings (in yellow). The small intervention modules (central image) show the small-steps development process that allows corrective feedback loops following a process of action-research. The economic size of interventions allows for a continuous regeneration without blocking part of the city during the works (Image by Synergia Studio, 1996).

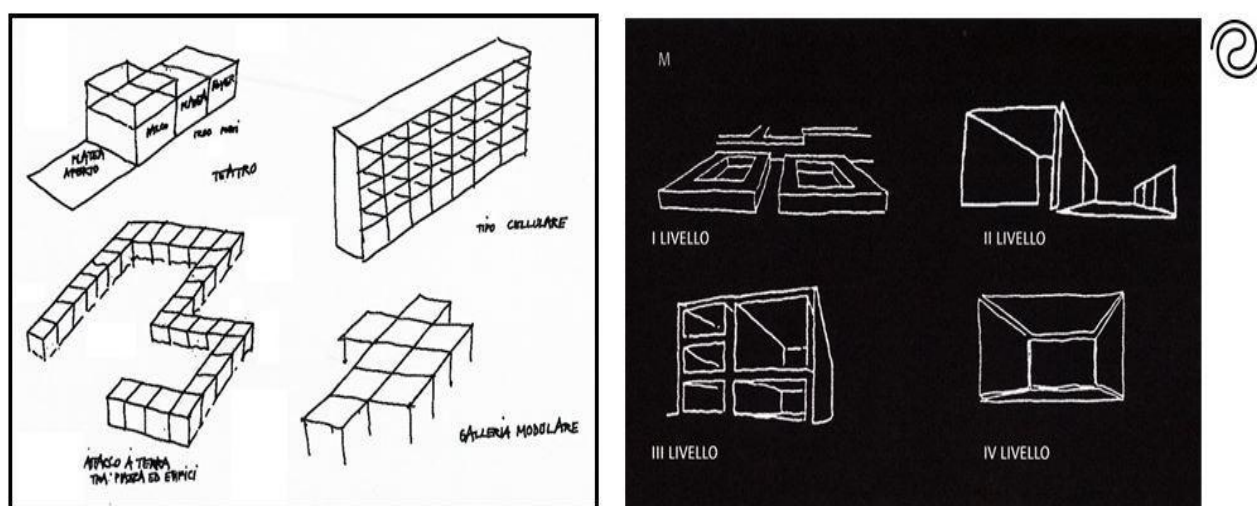
Grounded on both previous experiences and searches on the regeneration of the urban fabric, we have considered three “settlement types” consisting of: 1) multi-room types (dwellings, offices, schools, hospitals, et cetera); 2) mono-room types (theater, auditorium, church, cinema, gymnasium, et cetera), and 3) extended room types (“earthscrapers”, supermarkets, factories, et cetera). The development of these typological models, considered as generally flexible types, allows for easier future conversions (Steadman, 1994).

We consider these civic types as genotypes, leaving to the epigenetic processes of phenotypes’ morphogenesis the specific definition of their final use, which might also be changed within the buildings’ life cycles, as components of their civic architecture. Following this concept, we defined some intermediated phases of such an epigenetic process, knowing that without modeling its system’s homeorhesis, or its epigenetic landscape (Waddington, 1957, p. 32), the final state project, its genotype, would have been insufficient to reach it. Despite many trajectories are possible, we know that only some of these trajectories lead to the desired civic architecture’s state.

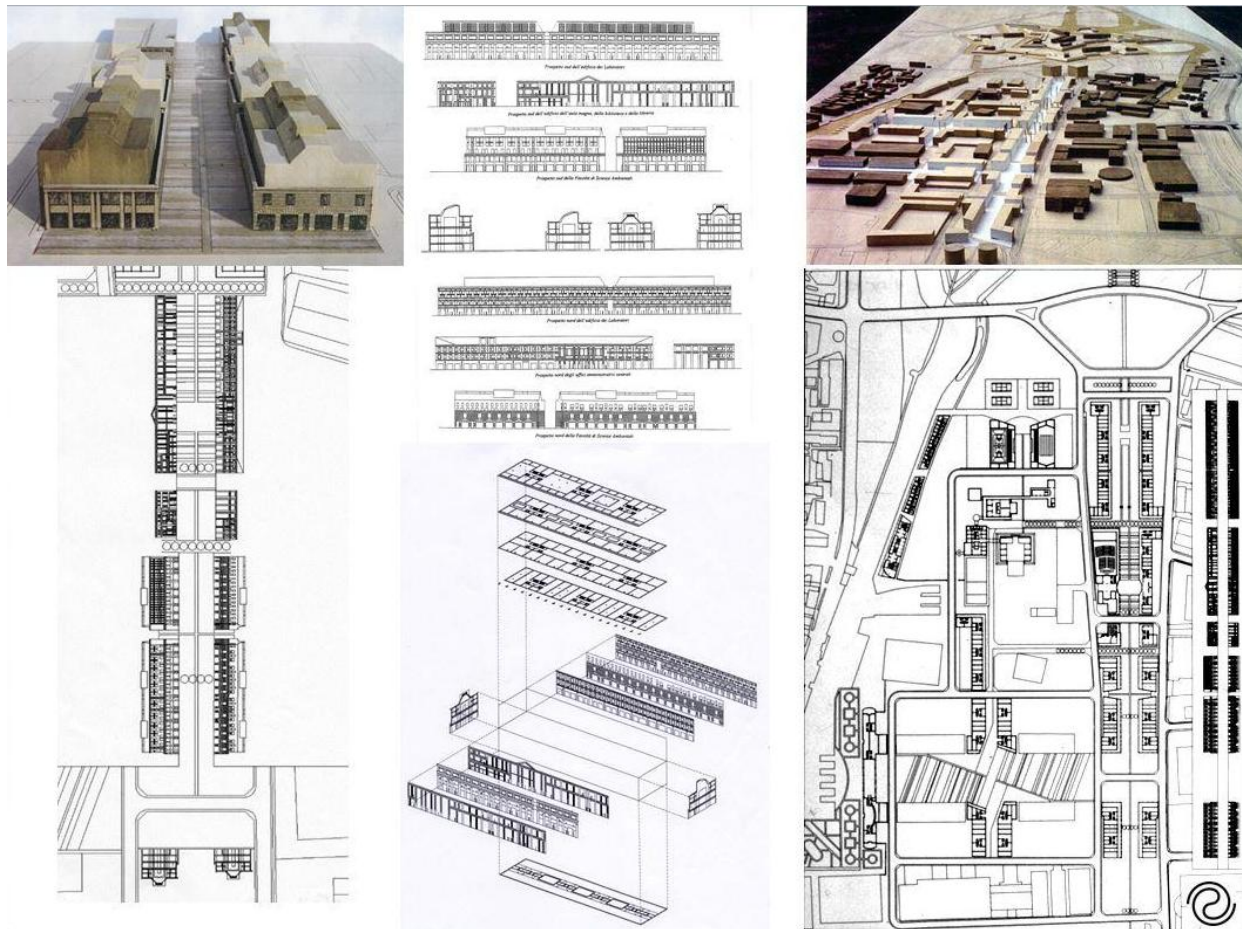




**Figure 15.** By adopting a dual urban network that distinguishes vehicular and pedestrian paths—the civic architecture network’s segments—it is possible to recompose a compact urban fabric to include green areas and urban gardens (Image by Synergia Studio, 1996).



**Figure 16.** Settlement types: multi-room, mono-room, extended room (Image by Synergia Studio, 1996).



**Figure 17.** The drawings, as a notational system of the architectural symbolic system, show the variation of plan layout, façade, and section types in relation to the orientation toward the sun and to the civic character of the streets. The operations are governed by the typological grammar and through a typological repertoire made explicit by processing the Venetian architectural language (Image by Synergia Studio, 1996).

### A.3 Lana Village

We learned the regional “architectural language” of the place for developing the project of a demonstrative bioclimatic residential village in Lana, Merano (1984–1988)—a good example of what we call “ordinary urbanism” (Cappellato & Pulitzer, 1989). In fact, this project exemplifies a regionalism of the place, not our individual architects’ design style. It adopts a theory that considers the city formed by three important compositional elements: civic reticulate architecture; *res publica* or centers of institutions (constructors); and *res privata* or the fields of influence of institutions (users). The priority given by the project to civic architecture is recognizable since the *contrada* Lana exemplifies a segment of the local net as a communication system. The east-west orientation of this segment involves a differentiation of the architectural types on the north side compared to those on the south side of the road. This presupposes an asymmetry of the common public space opposed to the asymmetry of the building. Multi-scale bioclimatic architecture therefore includes not only buildings but also open spaces, which also require attention to natural climatization and lighting.

We have applied these typological differences to the various civic architecture segments involved in an urban fabric for quadrangular blocks. We have therefore identified eight different architectural types to formulate a bioclimatic urban block. An account of the anisotropy of the bioclimatic civic space leads to a contradiction between the geometric requirements of solar orientation aimed at



improving bioclimatic efficiency and the geometric requirements of social conviviality, which require different morphologies of the urban fabric. A good network of civic architecture needs a synergy of these requirements that will make them collaborate.

All that concerns a particular climatic region must take into account the cultural community that interprets its characteristics. We know that different cultures build different languages and life forms that in turn build different worlds, even if climatic factors are physically and materially the same. It is architecture that, understood as “language”, interprets the climate world, the *umwelt*, which through its “functional cycle” produces those forms that respond to the characteristics of the surrounding environment. Yet architecture is not limited to achieving proper performance with respect to the site, it must do so by communicating meanings that make the involved people aware and responsible for them and able to intervene to modify them. The roofs, beyond protecting, must communicate the sense of protection and make visible such protection to the members of the concerned cultural community.

The settlement system of Lana was developed through a very intensive and articulated collaboration of the inhabitants. The resulting design solution was partly carried out with a cooperative and partly with a real estate investment by the construction company. The intervention was also monitored by PFE 2 within the International Energy Agency (IEA), both in buildings and in urban space. It is in fact a research project on the climatization of urban space, i.e. of civic architecture.

At the end, three relatively autonomous architectural themes emerge that distinguish the multi-scale character of Lana’s project: the urban space defined and climatized; the buildings characterized by a compositional system sensitive to the cultural identity of the local architectural tradition, and the interiors that are highly personalized and handled directly by their inhabitants.

The pictures actualize other complexities of the urban project in the built design: the one concerning the solar orientation and the other related to the convivial orientation in the civic space. The protective façade of the building on the north side of the square toward a vehicular road is very different from the protective façade of the building on the south side overlooking the square. Even the south façade open to the public space of the building on the north side of the square is quite different from the south façade open to the private space of the building on its south side. These exemplificative inferences lead to the decision to change the typologies built on both sides, south and north, of a segment of civic architecture in the east-west direction. We designed a type of terraced houses to the south; a type of houses in line to the north. These distinctions lead to the definition of eight architectural types in a bioclimatic urban plot.

To the left: the anisotropy of the central urban space manifests through the perspective of the buildings that prospect to it. On the north side are the in-line houses facing south with the wooden columns and the raised courts protected by a parapet to avoid introspections; on the south side, terraced houses face north with protected entrances.

To the right: views of the civic space with a different pavement for sunny and shady parts, a way for storing solar heat during colder months. Note the equipment and instruments for monitoring the microclimate in the square.

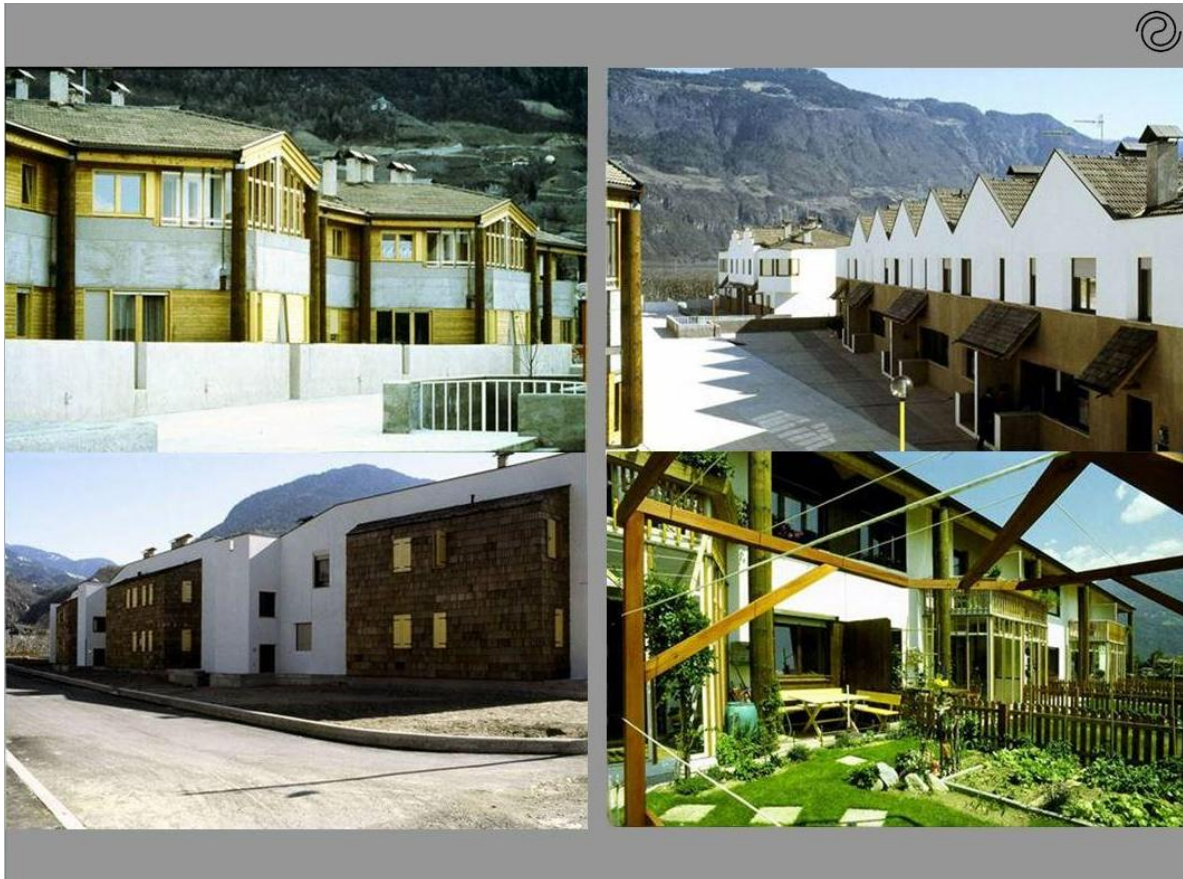


**Figure 18.** To understand how thinking by image can produce interesting inferences, we can observe the schematic drawing at the center where we recognize the double asymmetry of the square and the building; the first inverted compared to the second. In the buildings, a façade opens into the sun with a portico on the south side, and a façade with a wall protects from wind on the north side. Vice versa, the square, as a room without ceiling, has a north façade open to the sun and a south one that is protected. Thus, the façades do not merely perform but rather make communicable the sense of opening and protection using “architectural words”. This case gives us the opportunity to show how exemplificative inference works. In fact, it fulfills the double task of instantiating a built form while, at the same time, highlighting some of its properties. The iterated use of such a selection, related to the life form of a symbolic community, makes it permanent. Therefore—as it happens in language—it is a selection made by the community, not by an individual. This happens with color and cloth in the samples as conventional association of the cloth sample (the swatch) with the cloth of a dress.

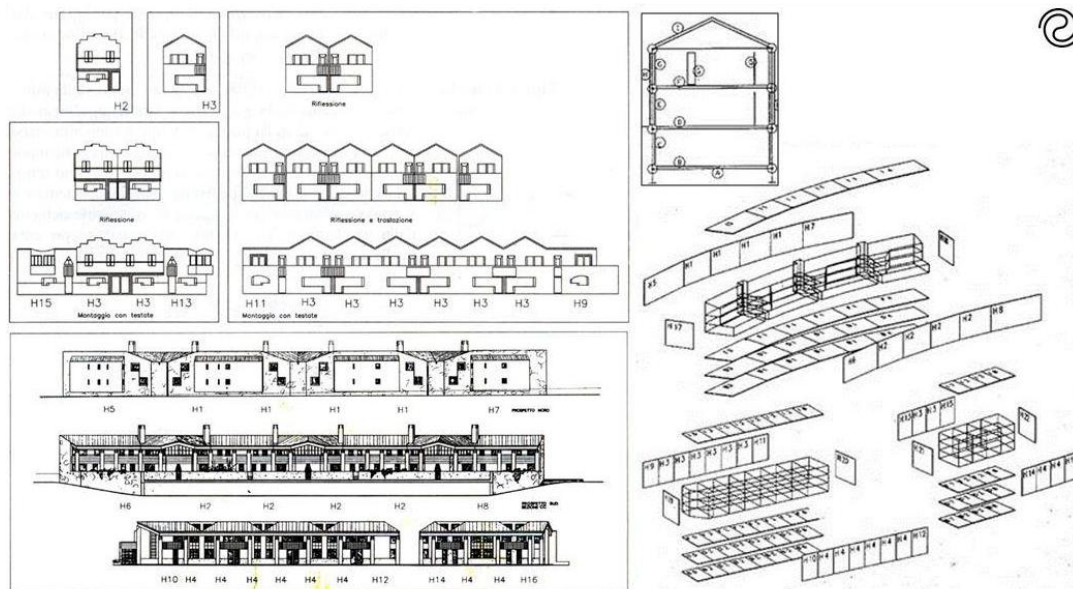
This correlation between something that presents itself as a reality in the experiential image, and its symbolic exemplification, can be made understandable by considering how various cultural communities, pursuing diverse life forms to realize different ways of subsistence, need to highlight different properties in their reality experience.

Our world, made discrete by repeated perceptions that distinguish some forms as wholes on a background, makes understandable how any image designates a contour equipped with particular properties. Any experience of the world, not just its representations, presents an exemplification of referents—symbolizes those referents. Forbidding (as the modern iconoclastic ideology does) the referentiality of the images makes it very difficult to escape the mental representationalism and its psychological explanations (Image by Synergia Studio, 1988).





**Figure 19.** Elevation asymmetry. Houses facing south; northern elevations (left). Terraced houses; northern and southern elevations (right). (Image by Synergia Studio, 1988).



**Figure 20.** The drawings show how the design process works using the typological grammar and its multi-scale repertoire through various compositional rules. Before one can use such typological grammar and select its typological repertoire, one needs to make it explicit according to the local architecture. This is similar to what Christopher Alexander made for the Lima international competition (Image by Synergia Studio, 1988).

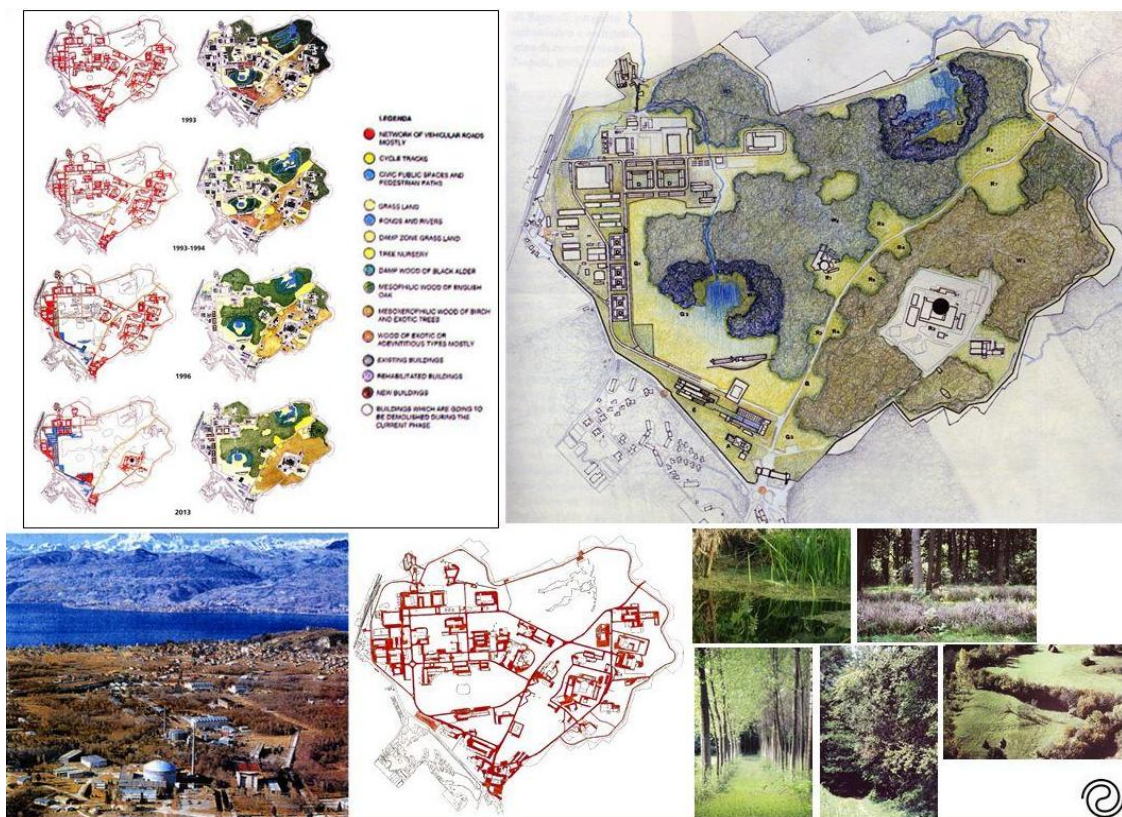


## B. LANDSCAPES REGENERATION

### B.1. The Ispra project

In 1993 we participated with our project “Ispra EcoCenter Masterplan, Lombardy” in another International contest on invitation, facing a different problem: how to regenerate a landscape destroyed by the presence of a large number of research labs scattered across a green area to the point of destroying it (Ruano, 1999, pp. 150–151).

The program consisted of the transformation of the European Centre for Nuclear Research in Ispra, Lombardy, Italy into an Environmental Research Centre. Even in this case, the reconstruction of buildings through an appropriate articulation of “civic architecture” groups them into a compact urban center on the northeastern side of the land. This process allowed to free up three kilometers of road networks and to recover the landscape identity of the place. The project, developed with a team of experts, has identified a number of “landscape types” that follow the original nature of the terrain, making it finally stable with proper maintenance. The process aimed at stopping the progressive degeneration caused by eluding the form of life present in the landscape. This was the beginning of a process of *ap-paesaggio* that the environmental experts must then keep up. The landscape also becomes the field of experimentation of the research envisaged by the new program.



**Figure 21.** Ispra, near Lago Maggiore, Italy. We adopted our “ordinary urbanism” approach to this project too. We imagined the environmental research experts getting involved in the maintenance regeneration of their land through a form of “*ap-paesaggio*”, enforcing a set of small, gradual interventions: some displacements, replacements, additions, and demolitions of places and existing building objects with new contiguous civic types. Above: these interventions were designed to form a continuous network of “civic architecture”. The progressive transformation takes place by transforming the peripheral settlement once characterized by mega objects separated by large voids into a compact urban fabric. The new civic center exemplifies the characteristic type of ancient Italian universities such as Padua, Pisa, et cetera. Below: the land project as seen by the sun during the different seasons (Image by Synergia Studio, 1993).

## B.2. The Tenerife project

This project won second place in an international competition and led to the executive design and work direction of the “Caminito Autonomous House”, built in the experimental area of the *Instituto Tecnológico y de Energías Renovables* (ITER) in Tenerife, Spain, 28°46’ north latitude (2000–2002). The design was carried out during a Master course promoted by the Council of Architects of Treviso and was presented at the international contest “25 Viviendas Bioclimáticas” in 1996 (Ruano, 1999, pp. 64–65).

The program demanded an allotment plan with different building blocks, but the north-south valley targeted by the project was sitting along the east-west seafront of Tenerife. Thus, we rather imagined a project coherent with the landscape type that leads to the sea. A pedestrian street with walls that protect from wind runs at the bottom of the valley. The whole village (“civic architecture”) therefore gains access to the various houses on both sides. Located in the middle of the path there is a building for common activities, which faces a square. The houses follow the altimetry variations. Their typological model is bioclimatic, meant to make every building and the settlement systems adaptable to the particular orography and orientation of the site, i.e. consistent with the climate of the southeast coast of Tenerife Island. The constant, strong wind blowing from the east explains why settlements are absent in this area. The typological model that we found can be interpreted as the genotype of the project, which becomes a phenotype through minute variations following the differences of orientation and orography in the various sites that form the settlement system.

As seen in Figure 22, the multi-scale character of such a bioclimatic architecture allows for extending the control of the microclimate, which is usually limited within the building, to the whole lot and even the common pedestrian space. This constitutes the civic architecture of the entire village and responds to the dual task of interpreting the identity of the place and using the local sources of renewable energy such as wind, sun, desalination of marine water, climatic characteristics, et cetera.

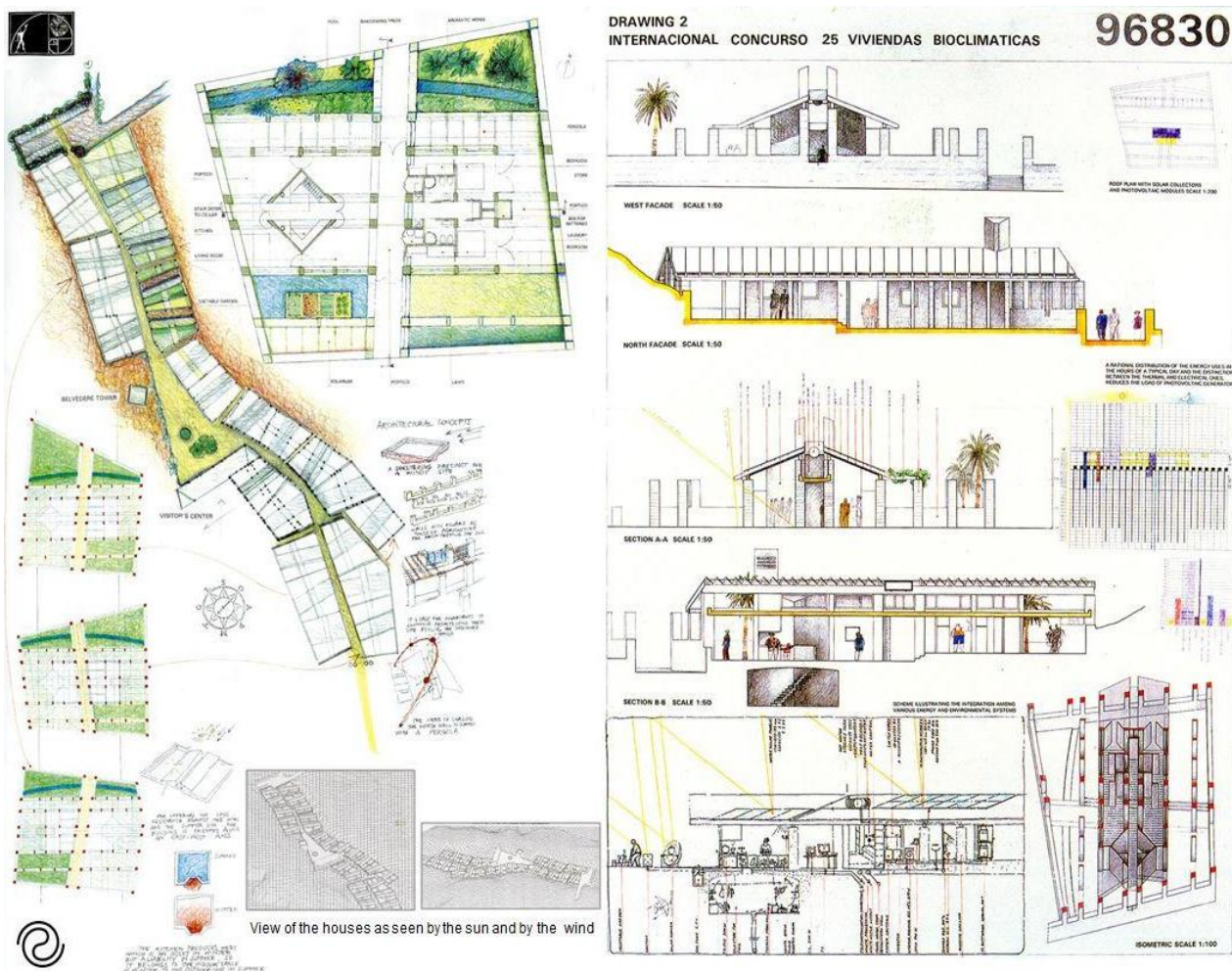
The recurring compositional element of the plan-layout is a crenellated wall with pillars affecting the whole lot to support various types of screens that protect both the interior and the exterior from wind and sun. This crenellated wall exemplifies the type of pergolas and lemon arbors present in various windy landscapes, for example in Limone near Lake Garda, Italy. This architectural element marks the landscape and is a share of both agriculture and architecture. Its two roof pitches are separated by a channel, which allows for illuminating the central spaces and, crossed by the wind blowing in the same direction, produces a Venturi effect, i.e. a depression that extracts stale air from bathrooms and kitchens. Extended from one side to the other of the lot, the roof defines a set of intermediate spaces sheltered from sun and wind, aimed to offer a sense of gradual interaction between open and closed space.

One of the requirements of the project was to exemplify a self-sufficient settlement system. Our project describes with a chart the various levels of autonomy that each of the eight constitutive components of the system can reach inside the house, within ITER, and on the island.

By optimizing the user profile and its requirements, we have selected devices corresponding to the various components. A schematic section shows their location and the required technical spaces for monitoring (Figures 22 and 23). Thermal and photovoltaic solar collectors sit on the roof pitches with a storage tank under the roof. They supply thermal utilities (e.g. sanitary water) and charge batteries located on the north side of the house. The expected domestic consumption of electricity is 500 watts per day. In case of more demand, it is possible to use the energy provided by the ITER wind turbines. Water is partly recycled in sanitary ware and partly used for gardening, along with



organic waste. To reduce the consumption of electricity needed for powering refrigerators (the most-consuming equipment) we designed a cellar, also useful for other purposes.

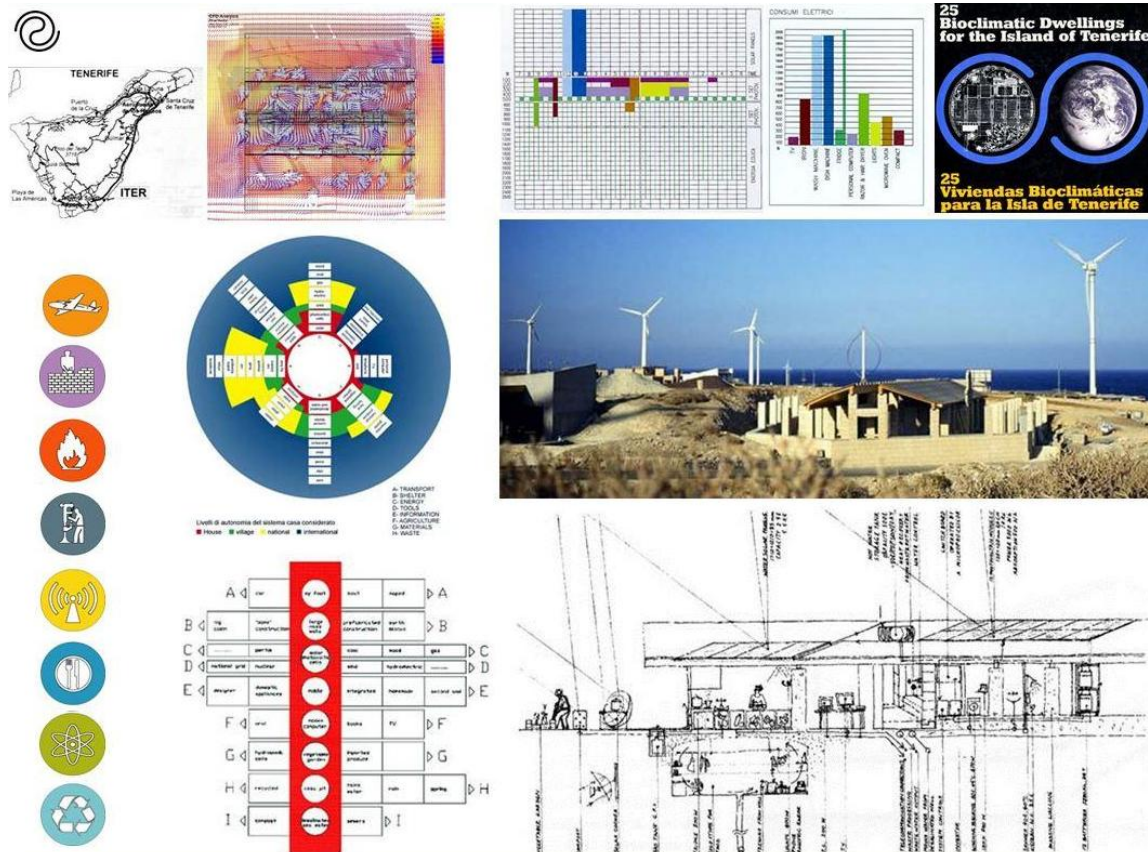


**Figure 22.** This is how the Author summarizes the program of the competition project: “An architect must not just make sure that a building possesses some properties, for example an efficient roof to face a strong wind. Instead, the roof should also communicate a sense of shelter since it is meant for human beings seeking protection, not for things. It is not the roof, which protects the humans, it is the architect who protects them through the roof. Architecture is a gift” (Image by Synergia Studio, 1996).

**Opposite page, Figure 23.** The graphs represent the level of self-sufficiency that each of the eight components of the system can reach after optimizing the profiles of the users. The project focuses on the following issues: multi-scale architecture; situated building; sustainable and resilient design, and civic architecture (Image by Synergia Studio, 1996).

### B.3. The Alcatraz project

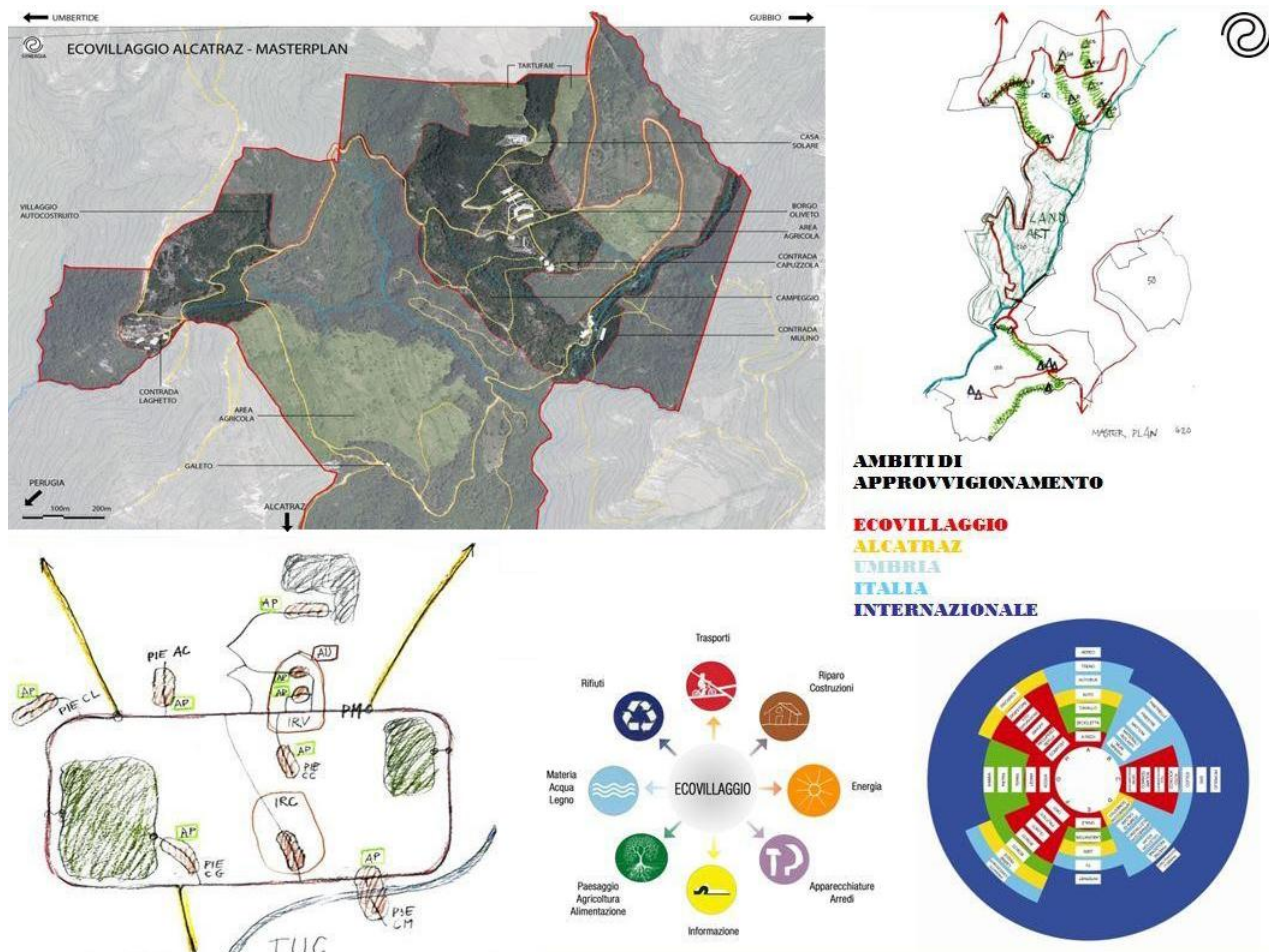
The “Alcatraz Solar Ecovillage” is a self-sustaining hill settlement system designed for Mr. Jacopo Fo in Santa Cristina, Italy on a very large plot of land located between the municipalities of Perugia and Gubbio, Umbria. Climate is warm/temperate with altitude between 450–600 meters above sea level, 43°31’ north latitude (2008–2014).



The initial project evolved into a program for a micro-city with considerable potential for self-sufficiency. This gradual transformation of the masterplan, which reflected the original program, took place over a number of years through a continuous negotiation between the client and his consultants, on the one hand, and the administrators of the Perugia and Gubbio municipalities, the district of Perugia, and the Umbria region, on the other hand. The new program aims to develop a demonstrative project that could be valid for so many Italian hamlets almost abandoned during the urbanization that disorderly took place between the 60s and 80s in an attempt to make Italy an industrial, competitive, and international country. This attempt, which is still present in our political scene, betrays a millennial civic tradition for replacing it with the unrealistic illusions of a global merchant market, which is already showing its true financial and military face (Khanna, 2017).

The project concerns not only a new *urbs* (walls, buildings, roads, et cetera), but also a new *civitas*, i.e. the political community, which needs to argue the reasons of the proposal. In fact, the proposal is new only with respect to the internationalist attitudes of industrial societies. The evolution of the project derives from a progressive modification of its program after the encountered contexts and unfoldment of an appropriate architectural language. The procedures proposed in the course of this project are those of the “action-research” functional cycles. These entail practices along with future citizens through shared learning processes that are based on interventions, evaluations, corrections, thematic acquired knowledge, and new interventions. Processes belong to the category of Soft-System Methods (SSM), which involve the interaction of people working from within, rather than computer simulations worked out from without (Checkland, 2006). All this is made possible by the experience shared over the years with a group of local and international professionals and academics about enacting interventions of adaptation to very diverse geographical and social situations. The result is a micro-city with high levels of potential autonomy because of technological, energetic, material, and social innovations.

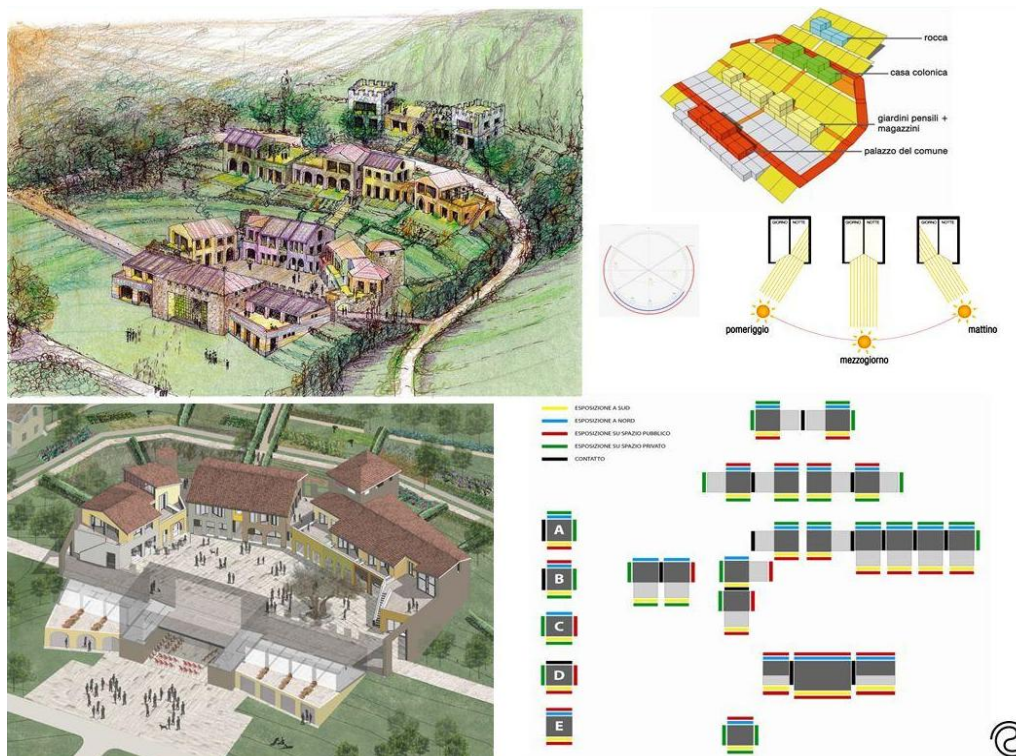




**Figure 24.** The map and the diagram represent a matrix path. Such a path becomes the “civic architecture” of the settlement system and connects the ruined buildings to regenerated *contrade*. These surround a borough with two squares, one for internal and one for external relations, as in the tradition of the medieval cities. The two diagrams refer to the eight components that group the related institutions. They sketch the procurement system of the different territorial levels, both the plesio-procurements and the tele-procurements (Image by Synergia Studio, 2014).



**Figure 25.** Borgo Oliveto with its *contrade*: Contrada Capuzzola, Contrada Mulini, Contrada Laghetto, and Contrada Casa Solare (Image by Synergia Studio, 2014).



**Figure 26.** The Common Hall connecting two squares in Borgo and Contrada Oliveto (left). The typology scheme of the destinations (above right). The typological grammar of various room modules, the morning/afternoon bioclimatic asymmetry, and the morphology of buildings according to orientation and orography (below right). Solar and convivial orientation are integrated (Image by Synergia Studio, 2014).

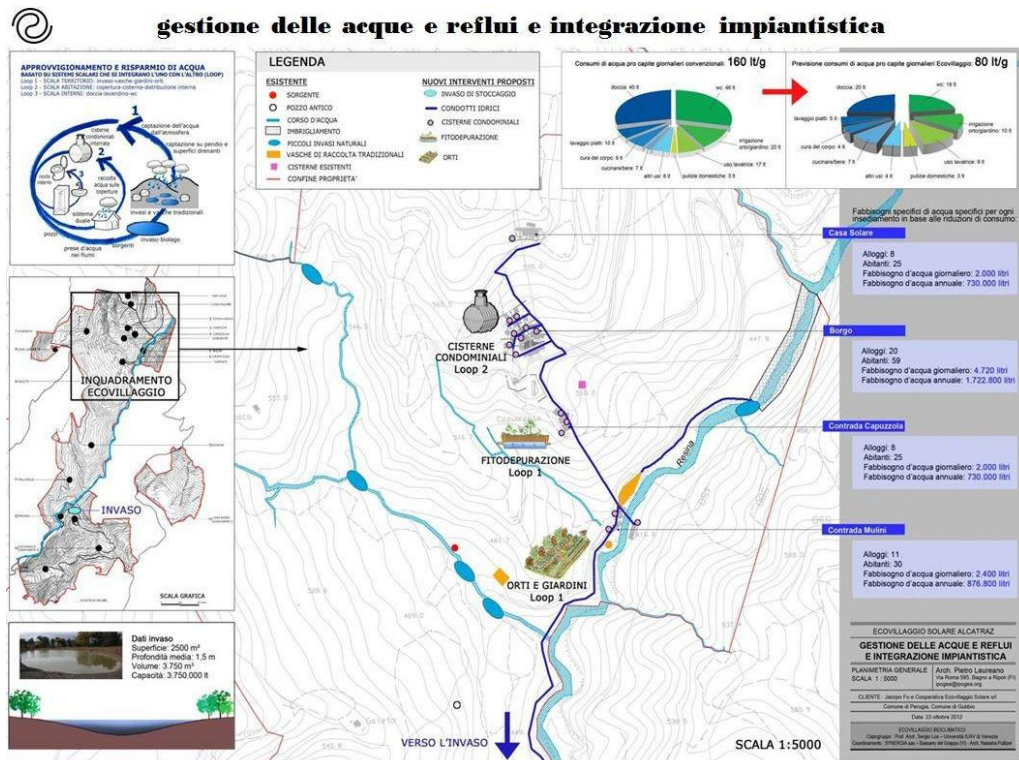




**Figure 27.** Simulations of Borgo Oliveto and Contrada Capuzzola in winter and summer (Image by Synergia Studio, 2014).



**Figure 28.** The integrated system of primary urbanization works and infrastructure (Image by Synergia Studio, 2014).



**Figure 29.** Water and wastewater management and network plant integration (Image by Synergia Studio, 2014).

## 23. WITHIN THE CIVIC ARCHITECTURE WEB

### Externalism builds connections analogous and complementary to neurons

A flock in which there are bodies of different ages and genders possesses the intelligence necessary to migrate, nourish, defend, and rest during the journey. Such flock's bodies can learn all this from those who by age are more experienced; much better than from any individual component. It would be much more difficult and less effective to equip every flock's individual components at birth with the knowledge required to face every situation, some of which are sometimes difficult. We can think of the connections between the various components of the flock, which make the various components capable of interacting appropriately, like the neural connections within the brains of each individual organism. Such external flock's connections should be much more articulate and flexible when facing a complex mutable surrounding environment, directly accessible to the multiple sensorium correlated to the motor system. We should otherwise imagine such a complex environment constantly represented in the brain of each individual component, equipped with a gigantic repertoire of correlations between receptors and effectors. The social intelligence available to every component of the flock, who on its base behaves appropriately in every situation, finds in the morality of every human cultural community the most accordant and direct expression.

Because of language, human communities are much more effective to mutually correlate in comparison to animal flocks. Human communities are constantly developing their language through its usage. Therefore, the language in its complex and multiple codification is the matrix of that intelligence in which the community is equipped. Such intelligence enacts the community components to use it by communicating through the various shared symbolic systems. By constructing cities, the symbolic communities have made such community intelligence also shared through cities. These are, within the context of their different cultures, the most important



exemplars of the evolution of civic communities. Such as the body of each multi-cellular body has organs that allow it to behave autonomously, so the multi-personal organism that is the city has organs (the eight mentioned components or groups of institutions) that allow for a specific political autonomy.

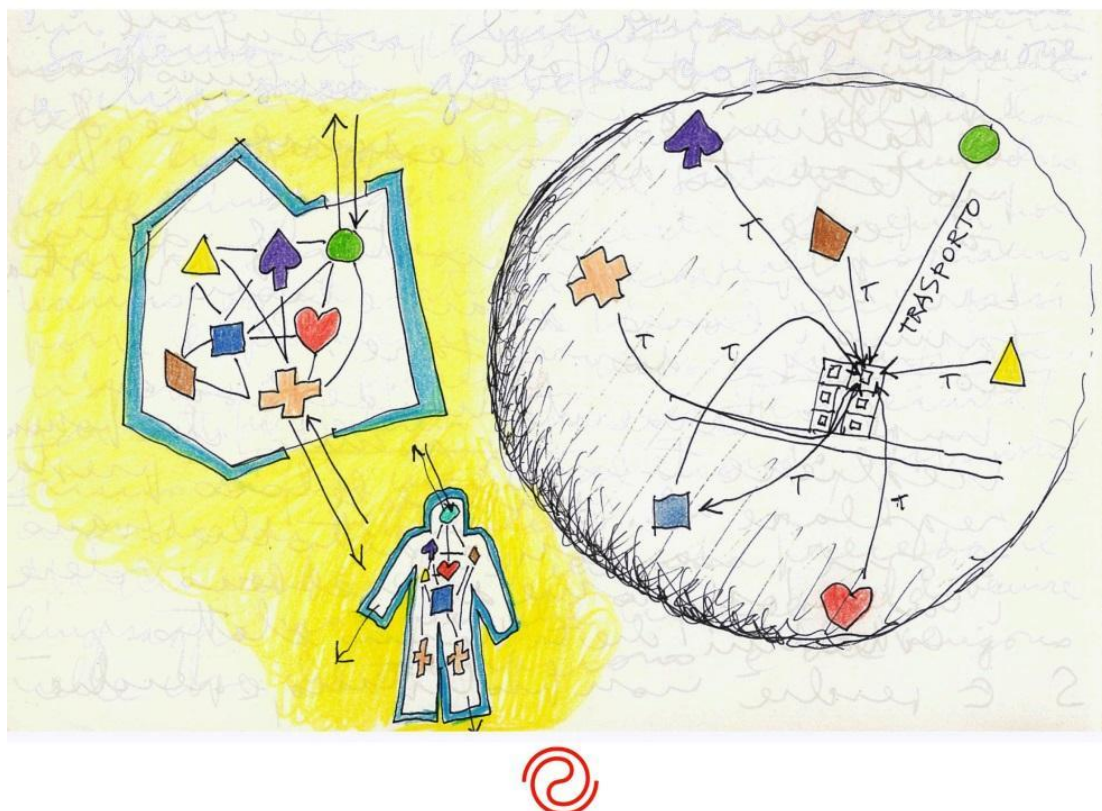
*How can these micro-cities based on local economies survive? Is there a pattern that allows you to prefigure a typical structure of these local settlements with high-level autonomy?*

#### 24. EIGHT INSTITUTIONAL SETS FOR THE AUTONOMY OF A RESILIENT MICRO-CITY

The eight sets of institutions gave civic communities the political autonomy that allowed them to become aware and responsible through communicative interactions, characteristic of that deliberative democracy which made common choices problematic and subject to discussion.

The advent of the thermo-industrial revolution caused the modern urban explosion, when the various organs of cities, their civic institutions, pushed by the global market, flew into an international territory, taking away their political autonomy now transferred to universal individuals and nations (Figure 30). Citizens—once people who impersonate roles in local community institutions—become individuals who are clients of a financial market that wants to replace the discussions of human symbolic intelligence in civic communities with the abstract monetary mechanisms of the world market.

#### **carattere organico del sistema insediativo**



**Figure 30.** Organic character of the settlement system (Image by the Author).

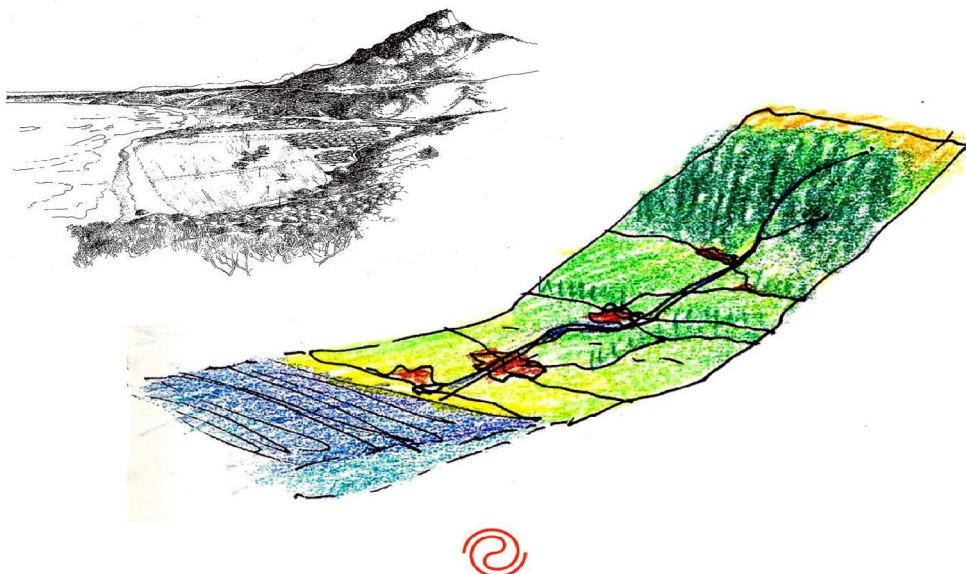
When such a civic body, which also has a territorial definition, meets the market, it is as if its internal organs “explode” around the planet, i.e. they are not local anymore but rather global. It seems as though they now must belong to a homogenous global megalopolis ruled by individual, multi-national business institutions, which in turn are just vaguely controlled by national laws. A few years ago, we helped our friends from the University of Kentucky, Lexington study the civic communities among some Medieval Italian towns. We could re-construct the activities and the various levels of relative autonomy of these communities with historical methodology.

## 25. TERRITORIAL POTENTIALS MADE RECOGNIZABLE BY A PROJECT DESIRING THEM

In order to discover local resources and potential subsistence we must have a project. Such as the understanding of the experience of a situation that is revealed by the action it yields, the research of the required resources is driven by a project of future actions.

Figures 31 and 32 show a special kind of imagination. I considered the Almighty calling me as a consultant for resilient cities. He asked: “If I were to create a land, what do you think I should do to enable its sustainability, since you have worked so much on this subject?” I answered that an area should be close to the sea, partly flat but enlivened by some hills. Behind the hills, I would put some mountains with farmable slopes and forest for providing timber. I would then establish some rocks up higher, so to have snowy peaks. That way, water can constantly evaporate from the sea thanks to the sun, become clouds that the winds push toward the mountains, fall back down as rain and snow, and then follow creeks and rivers toward the sea again. Several ecology books expose the water cycle, and there are even simulation models that allow reliable forecasts. Such a cycle runs autonomously. It is a natural machine that has always worked on its own, and it is smart to take advantage of it. Such a natural machine fueled by the sun produces mechanical energy that, harvested by humans through wind and water mills, can have several beneficial uses. Timber from the woods—if collected in harmony with the growth of trees—could also allow for the construction of plant-based cities that would be much more persistent than those built in concrete and steel because they can last as long as the sun.

### **come fare un territorio resiliente**



**Figure 31.** How to make a resilient territory (Image by the Author, 2017).

Up to the first decades of the 20<sup>th</sup> century, small hydroelectric plants along the whole territory used to produce 80% of Italy's energy. Different heights and inclinations can offer many chances to farm several types of products, which, along with fish, can feed the local population. This is the ideal land for a resilient network of sustainable cities. We can clearly see that our extraordinary country is just a composition of these landscape pieces.

### **l'Italia esemplifica un paese potenzialmente resiliente**



**Figure 32.** Italy is an example of a potentially resilient and sustainable country—cities made of humans, wood, and soil (Image by the Author, 2017).

Unfortunately, our political leaders did not aim at such a model because they have been fascinated by the idolatry for industrial machinery. Instead of landscapes to farm, they have envisioned underground mines to extract fuel and metals, which will not last and will contribute to weakening the self-reproducing living systems. Rather, we should care for these landscapes: agricultural civilizations can last as long as the sun. Replacing them with industrial societies that cannot last but a few centuries—a fleeting moment in world history—is just absurd. It is difficult to imagine a more irrational civilization than the present one, based on machines that consume resources and pollute, and that forces us to reproduce by consuming other non-renewable resources. Our complex planet has so many life forms based on geographical, cultural, and climatic differences. These differences exist and can co-exist by trading a bit less than we are doing nowadays, reducing unnecessary import, and trying to better use local resources aimed at producing locally for local consumption. Then, finally, the landscape would not be degraded nor become obsolete and, especially in Italy, it would go back to the splendor that it used to have during a luminous past.



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### ***The Morning After***

*The next morning  
an imitation of a poem is written  
without waiting for words  
its language giving tone to letters,  
treasuring syllables  
deep in their beginning.  
She who follows  
buries her head in lower case.  
The end deduces the beginning—  
all the syllables are a treasure  
all the treasures are hidden  
all the syllables are stored  
each breath disrupts thought  
each combination entering the world  
is the next one*

### **בבוקר הבא**

בבוקר הבא  
שיר חקוי נכתב.  
כלי לחכות למלים  
שפתו מצלילה את האותיות  
וטומנת את התבות  
עמק בראשיתן.  
כל המתחקה אחר הראשית  
טומן ראשו בתבה  
סופו מקיש לראשיתו-  
כל התבות הן אוצר  
כל האצרות טמונים  
כל התבות אצורות  
כל נשימה פורעת מחשבה  
כל צרוף  
הבא לעולם  
הבא הוא

# Architecture with Identity Crisis: The Lost Heritage of the Middle East

**Marwa Al-Sabouni**

*Architect, Syria*

## ABSTRACT

We live in a world that suffers from conflicts, wars, and political discords all over its parts. We are told that nations' sovereignty is in threat. And that what has been the world's urgent quest for achieving prosperity all along the past decades, namely, globalization and modernity, needs now to be seriously reconsidered as the main reason for the very opposite. Much of what has been taken for granted is renegotiated again; free markets, open borders, even human rights. This should not come as a surprise—we must admit that we have collectively misused and overused so much of what the age of modernity has brought us. However, there is one notion that sits in common at the core of all our fearful world of today—identity. Looking closely, we can see that the havoc and instability in so many parts of our world today have proved a common feature, i.e. that when identity is threatened, existence is what becomes at stake. It is sure that debate on the concept of identity is needed more than ever before. Nevertheless, I would like to suggest that the best place to embark on such a debate is the built environment. Our built environment is the most evident record of our existence, and it plays an important role in who we are and what we do. In the following pages, I shall consider the case of the crisis of identity in the Middle East—a region where I come from, and one that struggles to find its own identity on many levels—especially that of the built environment. Middle East architectural approaches and their disconnection from the Islamic past exhibit such an identity crisis. To prove this, I analyze what has defined the architecture of the past in order to shed light on the kind of error committed in choosing the way forward.

**Keywords:** identity, home, place, Islamic architecture, traditional architecture, value, pleasure, accomplishment, *Zeitgeist*



## INTRODUCTION: THE IMPORTANCE OF IDENTITY

In his book *Place and Placelessness*, Edward Relph points out the importance of what he calls “points of departure” from which people can orient themselves toward the world they live in, and without which they “are lost and without identity” (Relph, 1976). Naturally, our built environment is where “place” can happen or not. There is an ascending global awareness toward the importance of what is now called “placemaking”. But how do we make a place? Places are naturally “there”—what else can one add to a place for it to become a place? The very long discussion about this subject, in my opinion, can be narrowed down to a main thought, namely identity. If we can identify ourselves with what is in a place, then we can simply call it *our place*. The importance of this can be summarized in a simple fact: when people feel belonging to a place, they are more likely to preserve and maintain it. We see the kind of destruction spread over vast areas of conflict in the Middle East today. We cannot oversimplify things by claiming that the loss of identity and sense of place is the only cause of instability in the region, yet we can surely consider it as a main factor (Al-Sabouni, 2016). In the following pages, I will try to show what kind of identity loss has occurred in the Middle East and how this feature affects architecture and built forms. The comprehension of this loss is meant to produce a needed “diagnosis” about reality, from which one can later set off toward possible solutions.

## A BRIEF OVERVIEW OF ARCHITECTURAL DISCOURSE IN THE MIDDLE EAST

The quest for “identity” has dominated architectural research in the Middle East, both academically and practically. Most of the region’s architectural discourse has been concerned with it. It is interesting that there is a serious lack of genuine architectural critique or theory, where most academic discussions indulge in a long-lasting search for a “lost identity”. Terms like “originality”, “locality”, “globalism”, and “Arabic architecture” versus “Western architecture” dominate the architectural literature, conferences, and academia. This has led to no conclusions and accomplished nothing other than either celebrating the adulated “past” or despising it in order to glorify the modernized West.

Clearly, people admit the existence of a crisis—an identity crisis. And this crisis needs to be dealt with. The debate is over *how* this should be done. First, a state of polarization has dominated architectural approaches; those who admit the crisis (the ones who are “for”) proclaim the “defeat”. They see that their region is no longer capable of *producing*, and that they must seek the “ready-made production” available thanks to the “advanced countries”. Identity for them should not be a burden, although a settlement with the idea can be made when it is confined as a pasted layer over imported architectural forms, which will be discussed more thoroughly later on.

People who belong to the other party define themselves as being “against”. They resist the trend of what globalization has brought to their doorsteps and rather see in it a threat to their existence—an identity threat, to be fought. How have they chosen to fight? As traditional conservatives would do, i.e. by holding on to their inheritance. However, they seem to hold only on the surface, leaving any investigation into the values that have produced the built forms out of consideration.

Hence, their invention of hybrid styles is an approach that does not differ much from that of the contradicting party. I therefore will try to prove the fragility of any attitude that refuses a serious process of questioning.

## STYLIZING IDENTITY: BREAKING DOWN THE TERMINOLOGY

The countries of the Middle East have many different cultures that have historically belonged to different kingdoms and civilizations. They have not been unified until Islamic rule. However, it should be noted that Islamic rule in itself has stretched over different eras with different characteristics. Islam has brought Arabic language to different places, too. Some of them have already been familiar with it, and some not. After the fall of the Ottoman Empire—the last grand Islamic rule—the Sykes-Picot Agreement (1916) had produced the borders of separate countries known to the world as the Middle East. However, the people of these areas, despite all the foreign effects, have maintained a sense of affiliation toward their shared beliefs, language, and history. This sense has been strongly attacked and further damaged. Moreover, the world is witnessing the vandalism of Islamic conceptions and the consequent sufferance by terror made in its name. This has resulted in a deepening of the crisis of identity we are discussing. Consequently, we see invented architectural styles that have avoided the “Islamic charge” by resorting to the so-called “Arabic Style”. The Arabic Style is defined by certain elements like patios, arcades, vaults, and geometric patterns. These elements, though, can be detected in many other architectures, such as Gothic or Islamic. This leads to the question: is this a kind of pseudo-architecture by which we are seeking to pacify our instinctual need for expression? And what is it that makes it unreal or ungrounded?

Our identity crisis was the main leitmotif of the entire architectural scene in the Arabic region. Obviously, we were not able to produce a style of our own without paying tribute to the Islamic tradition. And this tradition, in turn, was the subject of highly polemical expositions. I think that these expositions overlooked some imperative aspects of their subject. Islamic Architecture has stimulated the curiosity of scholars, historians, and architectural critics both regionally and in the West. Westerners especially have presented very informative works documenting, analyzing, and categorizing what has remained of this architectural tradition, disputing how to study and evaluate it, and even how to give it a name. However, it seemed to me that most of those works had something in common: they overlooked the *architectural experience*.

The centrality of experience seemed to have been lost between two scholarly fantasies. On the one hand, Orientalism tended to view Islamic architecture as mere decorated surfaces associated with the desert and nomadism (architecture as a temporary relief from carpets, so to speak)—even though much of it was accomplished in flourishing urban centers. On the other hand, Sufism had gone overboard in its search for poetic and symbolic messages without any supporting grounds in the physical reality.

Researchers from Arabic-speaking regions have tended to focus on passive design and local construction techniques, using certain architectural elements with a “copy and paste” approach, hoping that way to “generate identity”. However, such a quest for “generation” is in itself problematic as it does not make sense to use some torn up pieces of physical forms in order to attain a result that can be described in retrospect, but never prescribed in advance. While examining the Arabic regions’ architectural language, the mainstream “prescription” for identity has been “to be original and contemporary”. That resulted in an arbitrary combination of certain “authentic” elements and of modern design approaches without relation to the practices and principles that created those elements. From my perspective, those two terms carried an ontological contradiction from the beginning: what is “original” and not “contemporary” or “contemporary” and not “original”? And why do we need either of these phenomena if one does not have the other contained within? The application is questionable too, because it takes randomly chosen elements from old Islamic architecture and sticks them on new buildings without any attempt for integrated structure.

Major problems are the following. First, we do not achieve identity by burdening architecture with a prescribed mission—an idea that has been refuted by the work of philosophers and writers such as Roger Scruton and Michael Mitias, while discussing meaning in architecture. Second, in this way, we do not achieve the pleasure and value that inheres in the architectural experience itself.

Before examining the work of those two writers, it may be useful to explore the prevailing misconceptions about Islamic architecture. In order to reconcile differences between scholars and to “achieve identity”, several Middle East architects have kept following the “Arabic Style” path and the spirit of its alleged *Zeitgeist*. “Modernized Arabic Style” was the conformist result, using a typical Islamic house design from the Ottoman, Ayyubid, or Mamluk periods, of course without discerning them. For instance, putting a patio at the center of a rectangular or square building, surrounding it with arcades, and puncturing it with a water fountain in the middle. Then, adding clichés such as the *mashrabiya* (screened oriole window) or vaulted rooms with wall niches and arches, all without forgetting to top a few spaces with small domes or to divide summer from winter sections. Further “secrets” for modernizing such a mixture consist of inserting a curvature somewhere in the plan or tilting the upper floor so it forms an angle with respect to the lower one. Similar approaches can be seen both in the work of local architects and in the academy.

This is a sad show of ignorance about the history of Islamic architecture and of a complete disorientation in respect to what should be done. The values expressed through traditional elements are overlooked. The architectural experience that once studied to complement them is wasted. Further, such a way of seeking identity as a prescribed quest exhibits a stereotypical “group think”: in-group versus out-group, Arabic versus Western, et cetera, where everything is conceived in a context of threats to identity and the need for self-assertion. My argument is that the Arabic speaking region has defined itself as an in-group through architecture, and that it sought to compensate for its lost identity by binding the channels of expression with stereotypes. Hence, “Western” architectural accomplishments are to either be imitated or contradicted, regardless of artistic or social requirement.

Confusion goes beyond the terms “Arabic” and “Islamic”. “Traditional” is another adjective that shares the same ambiguous relationship with “Islamic”. In reality, the traditional—sometimes called “local” or “vernacular”—is something quite distinct from the Islamic—and not only because much of it has been built by people who were neither Muslim nor aspiring to be Muslim. True Islamic architecture has a distinctive and distinguished architectural style that experts recognize easily. Moreover, Islamic architectural forms have expressed an artistic intention that constrains conscious choices of the architect. The traditional, on the other hand, denotes an unreflecting norm. It can be defined as the architecture of the local context, the “instinctive” forms suggested by need and function. Even when it includes aesthetic choices, they reflect the surrounding context. Confusion between “Islamic” and “traditional” can be explained by the simple fact that Islamic architecture has formed part of that context for almost 10 centuries. Besides, the distinction is not black and white. The two terms overlap and interact: the traditional forming the background from which the Islamic style has emerged as something consciously devoted to an idea and opposed to the “simplicity” of traditional forms.

Well-known contemporary Arabic architects such as Hassan Fathy, Mohammed Saleh Makkia, Abd Alwahed Al-Wakil, Refaa Jadeji, and Rasem Badran have been experimenting with traditional style. Despite the peculiarity of each of their architectural experiments, they all have had something in common, which is the adoption of vernacular elements as well as the acknowledgement that these exist and endure because they are adapted to context and climate. Even though their works might look as if they intertwine with the forms of Islamic architecture, their characteristics are

fundamentally far from the truth. The true Islamic architecture, in fact, is rather animated by Islamic moral choices, Islamic thought, and a consequent aesthetic.

Literature produced by those architects and their like-minded followers makes this fact even more obvious. Fathy, for instance, never claimed any affinity with Islamic architecture, rather being inspired by vernacular mud buildings as well as the ancient Sasanian architecture of Egypt (where the Sassanid dome with the octagonal neck was adapted to indigenous Nubian patterns). Even when he employs elements that were used in the Islamic tradition, such as domes and *mashrabiya*, he always considered them passive design solutions to climate and economic issues. Fathy's design approach provides more evidence—be it his focus on constructional aspects, outward openness, or dependence on the plan as starting point. Finally, and more importantly, the austerity of Fathy's architectural experience is very different from the multi-layered response typical of the true Islamic way of building, where an idea of God and the work of creation are expressed in every detail.

Notwithstanding, even academic circles confuse the work of Fathy with Islamic architecture. From my view, his work can be described as the product of a village doctor who wears the hat of a scientist but never that of a creative artist, and whose concern is to raise his society from poverty and ignorance through practical measures. Fathy had used architecture as a means, not an end. Hence, his product should be judged in terms of its efficiency, not of its meaning. The same thought can be applied to the works of all the prominent practicing architects mentioned above.

In the end, it is the very name, "Islamic architecture", that is controversial. In fact, "Islamic", "Moorish", "Mohammedan", et cetera, represent notably different nuances of a wider concept. Yet stronger tension arises between the two adjectives, "Islamic" and "Arabic", because it spurs straight on the aforementioned identity crisis.

The struggle between Arabism and Islam is a modern phenomenon. It came after Michel 'Aflaq (Beriont, 2017), founder of the Ba'ath party, promoted an Arabic identity in place of the Islamic one. However, of course, not all Arabs are Muslims, just as not all Muslims are Arabs. 'Aflaq, for example, was an Orthodox Christian and conceived the idea of an "Arab" identity while studying in Paris. Christian architects and builders, on the other hand, made a notable contribution to the history of Islamic Architecture. Naturally, given that other religions became minorities in the Arabic-speaking world after the Muslim conquests, it is inevitable that the most significant buildings in that world were by Muslims. Nevertheless, we should not ignore facts, such that the architect of the Ibn Tulun mosque in Cairo was Christian (Nasser, 2006), or the important contributions given under the Ottomans by architects and artisans of Armenian or Greek origin. Mimar Sinan, responsible for 300 of the most important buildings in the great period of Ottoman architecture during the 16<sup>th</sup> century, and designer of the standard Islamic school or *madrasah*, was from a Christian Orthodox family and rose through the ranks of the largely Christian Janissaries to become the leading architect of his time.

Titus Burckhardt in *Art of Islam* discusses the validity of such a term as "Arabic architecture", confronting the two aspects of Islam and Arabism. Although Islam—in Burckhardt's terms—is an "open invitation" to everyone and not a "racial phenomenon", the Arabic language, however, represents a critical faith element. For every Muslim, whether Arab or not, the language of the Qur'an is essential, both for praying and for reading the Holy Book. A language is not only a spoken tongue but also a mode of thinking. Thus, Burckhardt writes, "Arabic determined to a greater or lesser degree the 'style of thinking' of all Muslim people" (Burckhardt, 1976, p. 39), which was reflected in all their other forms of expression, including architecture and art. Nevertheless, despite this marriage between religion and language, there is no reason to regard the two as equivalent: "It would, indeed, be impossible to confine the manifestations of Islam to

Arabism; on the contrary, it is Arabism that was expanded and, as it were, transfigured by Islam” (Burckhardt, 1976, p. 39). According to Burckhardt, what Islam gave to Arabism cannot be compared to what Arabism gave back to it.

This brings us to an idea that is important for understanding identity—“accomplishment”. We tend to belong to what makes us proud when we identify ourselves in it. Likewise, we all like to cheer for the winning team (Al-Sabouni, 2016, pp. 129–136). Now, no Arabist accomplishment can even remotely compare to the real Islamic accomplishment. The Arabic language itself has been preserved and *developed* by the Qur’an. If not for the Holy Book, this now widely spread language would have disappeared long ago. The best proof of that is the way in which the myriad dialects of the region have been unified through the text that they share.

Further, describing our region’s architecture as “Arabic” excludes from the equation those who enriched Islamic architecture, namely Persians, Seljuks, Moguls, and Ottomans. Islamic architecture reached the peak of its glory under what architectural historians call the three Empires: Safavid, Ottoman, and Indian Mogul. Hence, the term “Islamic” is validated by the fact, as Burckhardt states, that this architecture is the outward manifestation and expression of a civilization and a faith (Burckhardt, 1976, p. i).

However, even the expression “Islamic architecture” has caused confusion and led to stereotyping when understood as the *architecture of Islam*. The architecture that was produced from the eighth until the late 17<sup>th</sup> century—from the tail end of Umayyad rule until the decline of the Ottoman Empire—which spread from Mogul India to Morocco and Andalusia, was not an architecture of religion but the effect of that religion on people who believed and lived through it. So although it has manifested Islamic conceptions by the people who produced it, such architecture stands out as a fruit of *their* understanding and interaction and should not be understood as based on Islamic law or anything like it.

Such loose terms as “traditional”, “original”, “Arabic”, and so on, incorporated into stereotypes, produce a mere labeling rather than analytical understanding. By this labeling, certain randomly chosen elements fall detached from the attempt to understand the architectural experience. Architecture becomes just a means to reach the unjustified end of a so-called “identity”. Architectural criticism is thereby rejected in favor of identity politics. The surprising thing is that this entire labeling process is done *collectively*, through a group behavior directed at maintaining an ideological orthodoxy.

The result is an inability to produce any new architecture while remaining in a closed circle, searching for the lost self and misunderstanding, misusing, and distorting our once great architectural history. This endless pursuit of one’s own tail deprives architects of the freedom of aesthetic choice and design invention, pushing them toward one of two practices: either blindly imitating the self-accomplished “Western” architecture or entering the dead-end of pastiche and collage. Two questions are raised by this discussion: what are the elements that define our architecture, and how are they used in local practice? And what is the “right” architectural experience and how can it be achieved?

## ELEMENTS OF STEREOTYPED ARCHITECTURE

The inspection of the architectural product of the region suggests that the label “Islamic” is confined to the following basic elements: dome, patio, *mashrabiya*, *muqarnas* (i.e. honeycomb vaulting), minaret, geometric patterns, and Arabic calligraphy. Although all of those elements were

to be found in old Islamic buildings, each of them has a different use, timeline, and source—a fact that is altogether ignored or misused in current practice. Old Islamic architecture benefited from the context in which it arose. It did not begin from a *tabula rasa* but made use of an existing heritage, reproducing, reinventing, and imposing its individual stamp until connection with the original source became almost undetectable.

The issue at stake has nothing to do with the benefit of re-using existing elements. The problem here is the way those elements have been exploited. Rarely the elements are read in terms of their history. Thus the dome, which has become a cliché to be included in every building that seeks to have an “Islamic” character—whether a mosque or a public building, whether built by a Western or an Arabic practitioner, whether perceived or merely imagined. The dome, originally found in Mesopotamia, dates back to 4000 BC and was favored for its structural properties. Use of the dome was less frequent in old Islamic architecture and also underwent long and distant interruptions. Its use in mosques originates from the Dome of the Rock in Jerusalem, which had adopted the Byzantine style before Islam had developed its own architectural language; likewise with the cupola of the Umayyad Great Mosque in Damascus (706–715 AD). The dome as an element was not regarded as essential until the Seljuks embraced its use in the 11<sup>th</sup> century. It was later fully developed by Mimar Sinan as the central space of the mosque, inspired in this case by the Byzantine architecture of Hagia Sofia in Istanbul. However, although Sinan had been charmed by Hagia Sofia’s dome space, he had dedicated his work to experiment, so as to develop a dome-style of his own—almost certainly studying Michelangelo’s plans for Saint Peter’s in Rome.

Therefore, it is surprising that today the dome is a required element in every mosque building; and all the more, it is shameful that it is often put on top of the finished structure like a hat.

The same story is about the element most dear to identity seekers: the *mashrabiah*, or screened oriel window. Its use reached its peak in residential Ottoman architecture as a solution to the problem of reconciling privacy with the need to peer out over the privacy of others—the perfect gossip-feeding device. Nowadays, its employment for the sake of “dressing identity” is not any better than a stereotype without any real architectural sense.

The same critique can be made of all the mentioned elements, well studied by historians. It is enough to know that none of those elements were used with the veneration and adulation that is bestowed on them today. They were regarded not as central ideas but rather as decorative byproducts of the architectural process, and most definitely, none of them were tools for achieving any separate goal or loaded agenda.

## CORE VALUES IN ISLAMIC ARCHITECTURE: LANGUAGE AND UNITY

In his book *Art of Islam: Language and Meaning*, Titus Burckhardt has presented an insightful perspective into Islamic architecture. Although he did not sum up the matter in the order I present, he identified the basic tenets of Islamic style, conferring unity across vast geographical spread and long centuries of use. By acknowledging these tenets, we can grasp the enormity of misuse in the name of “inspiration” and “identity”. Such understanding would enable us to take more *pleasure* from the aforementioned works—through a process that I shall explain—and more importantly, help us make connections with the past according to a rational choice rather than a mere, distorted copy. Of course, those tenets do not exist in written laws, historic documents, nor memoirs of old architects. However, they establish a common thread that many scholars noticed and verified, even if they are still “readings” and not to be counted as certainties.

Arabic language and monotheism are the two most essential tenets. They are like the thread of a rosary, whose different beads of various sizes and colors are the multi-cultural expressions of these two commanding principles. Burckhardt distinguishes the different effects of languages on periods of Islamic architecture, starting with the “imaginative intuition” of Arabic in contrast to the “auditive intuition” of Latin languages (Burckhardt, 1976, p. 42).

About Arabic, he focuses on the dynamic aspect generated by the “tree of verbal forms” and the static one represented in the nominal sentence, in which nouns stand side by side. The tree of verbal forms is a distinctive feature of Arabic. Each verb consists of:

three invariable constants, something like an aural ideogram, from which are derived as many as twelve different verbal modes—simple, causative, intensive, reciprocal and so on—and each of these modes produces in its turn a plethora of nouns and adjectives whose first meaning is always linked, in more or less ways, to that of the fundamental action depicted by the trilateral root of the verbal “tree”. (Burckhardt, 1976, p. 42)

Thus, the tree has the dynamic ability to produce an infinity of new expressions from a single root idea.

The static aspect of Arabic, according to Burckhardt, is represented in the nominal sentence, which juxtaposes nouns regardless of time. The intertwining of those two aspects can be read in the devices of Islamic art such as the Arabesque, in which rhythm and order are fully expressed and intertwined, while breaking the monotony of repetition with “rhythmic alternation” and “qualitative perfection of each element”. Contrasting the “incisive and dynamic” Arabic with the “all-embracing and circumspect” Turkish, Burckhardt displays those differences as corresponding to distinct “mental types” and resulting in distinct art forms. “(The Turk’s) works always proceed out of an all-enveloping concept; they are as if hewn from a single block” (Burckhardt, 1976, p. 45). Conversely, the Persian’s “inner melody” and “hierarchical gradations” result in architectural harmony and articulation. Nonetheless, the architectural manifestations of the Arabic language’s mental type derive from the higher source of this language—the Qur’an where style is developed to such a perfection that challenges everyone and anyone to come up with even one verse of similar level. Hence, the conclusion reached by Burckhardt himself that “there’s no such thing as Quranic style which can simply be transposed into art, but there does exist a state of soul which is sustained by the recitation of the Quran and which favors certain formal manifestations while precluding others” (Burckhardt, 1976, p. 46).

This intertwining of dynamics and statics, creating tensions and resolving them, is therefore also manifested in architectural forms. This effect is described by Burckhardt and other scholars as Divine Unity, or the unity of existence, which is assimilated to *tawhid*, the oneness of God. This is the essential notion of Islam and the key message of the Qur’an: “There is no God but the one and only God”. These scholars have read the principle of “Unity in multiplicity, and multiplicity in unity” in each layer of the many layers that compose the old Islamic works, both in the elements of space and in the decoration that is used to enhance it.

Most old Islamic buildings lack a central space, being composed of sequenced and juxtaposed parts. Some critics have condemned this idiom because the building grows unreadable from a single vantage point, as opposed to the traditions of composition in the West. Old Islamic architecture concentrated on the interior, so that it is the exterior rather than the interior that is “hidden”. This quality is very well described by Ernst J. Grube:



This disregard for the outside appearance of structure is often developed to the extreme whereby even the monumental structure, such as a congregational mosque, is completely hidden by being totally surrounded by secondary adjacent buildings (for instance a bazar). This “hiding” of major monuments goes hand in hand with a total lack of exterior indications of the shape, size, function, or meaning of a building. (Grube, 1978, p. 10)

The reason for this kind of composition is that succeeding rulers had inherited the job of continuing buildings that had yet to be completed, adding new parts organically and without reference to a master plan. This is exactly what provoked the French mandate in Damascus and other Syrian cities to enforce its “correcting” clearances around key monuments. In fact, the sequenced approach and openness to horizontal growth pervaded the whole architectural work down to the smallest interior details and resulted, on the outside, in a humane urbanization of the surroundings and a lived experience of deep settlement. We are talking here of the way in which a building that prays and invites the Almighty into the city, also extends its gentle hands around its neighborhood to create a peaceful settlement.

Burckhardt interestingly compares the conceptions of interior space in the church and in the mosque. The church is oriented from west to east, directing the perceiver along a single main axis to focus on what is most important and sacred. This effect is enhanced by the fact that all the motion and descending light converge on the altar. By contrast, the space of a mosque is dominated by unity on every level. There is no differentiation between one person and another, nor veneration of any subject. Hence, the order of the space is open and united, and the eye can rest calmly in equilibrium without turning toward a specific direction. Burckhardt considers the Umayyad Great Mosque in Damascus, which was rebuilt through a “synthesis of pre-existing elements” to combine layers of older architectures, as is the case of many Syrian monuments. This mosque has been likened by some observers to contemporary Christian churches on account of the evident influence of the Roman basilica. However, Burckhardt shows the key difference in the organization of the space: the mosque exhibits openness toward the courtyard in contrast to the introverted space of the Roman churches. The mosque’s internal space expresses an “undifferentiated plenitude” manifested by the “synthesis of stability and abundance” in the repeated rows of sweeping two-level columns and arcades. This *intended* design aims to create peacefulness in the soul, resting the eye through lightness and stability and soothing the worshipper in the presence of the Holy.

Many of the space elements that were used in Islamic architecture were also used in Christian architecture, such as vaults and cupolas. However, Islamic architecture managed to reproduce them in a completely different way, from the point of view of both meaning and technique. For instance, the Persian rib-vault was entirely different from its Christian counterpart. The ribs of the Persian vault, Burckhardt writes,

do not support it like a timber framework, but they strengthen it and, as it were, stretch it out by means of brick arches which are apparent only at the extrados; at the intrados, the ribs are barely perceptible, so that the different segments of the vault are presented as facets of a single concave surface. At the same time, the ribs do not at all come together in the crown of the vault; they are interlaced like basket-work, leaving the central crown of the vault or cupola free. (Burckhardt, 1976, p. 74)

In contrast, the Gothic vault reveals a reversed direction of the converging powers, which seem to be ascending from the supporting columns upwards to the joint at the crown. In this regard, as Burckhardt suggests, the architectural differences correspond to spiritual differences between the two religions, although they are not differences of essence so much as differences of *emphasis*. Thus the “union with God”, which is a central theme in Christianity, corresponds to the upward

striving of its architecture. By contrast, the dropping down embracing unity of the Islamic work can be read as an “existing *a priori*”: a unity that comprehends us, regardless of our search. It is an inherent unity, from which the “component elements” are deduced and which is not produced from those elements by any upward visual dynamic.

Within the same frame of reference, Burckhardt discusses the differences of static order between the Classical European architecture and Islamic architecture. The first adulated the human body as an image of God, and this was reflected in weight distribution and building statics, proportioning the building to its support. The building must, in the end, stand as we do. In the Islamic context, where adulation is permitted only toward the creating divinity, to whose name all the universe offers praise, the logic becomes “objectively static but never anthropomorphic” (Burckhardt, 1976, p. 127). The mosque does not stand as we do but brings down upon us the blessings of the Most High, which needs no support from earthly things.

Unity is also expressed through decoration which, contrary to the mainstream Western view of it as an overly used two-dimensional excess, has been another manifestation of the inherited spiritual and moral vision of the faith. Through decoration, unity was expressed by blurring and dissolving the limits, so that nothing becomes truly individual save the One who is All. Decoration was not only used as a surface covering. Rather, it was used to “transform space”, according to Dalu Jones, by covering the structural elements and “dissolving the barriers” between the load bearing and ornamental parts, thereby achieving fluidity, smoothing transitions, and dissolving tensions. “Like water itself, which plays such a unique role in Islamic architecture, the decoration continually reflects and multiplies patterns to provide a “cool” refuge for the eye and the mind, creating an art that is dynamic yet unchanging” (Jones, 1995, p. 162). Moreover, decoration also functions so as to confuse the eye through creating a game of interchangeability between the various elements and their original functions:

There is, too, an inherent ambivalence in Islamic designs. An abstract curving shape can be read as a bird; calligraphy is decorative as well as being a message conveying a precise meaning. The lines in a primary grid of a façade, as in certain arabesques or in Abbasid woodcarving, transform a decorative element into the contour of form. The same designs are reproduced side by side in different materials and for different purposes. (Ibidem)

These primary grids that Jones writes about are also a contributing factor in creating unity, order, and harmony, and play a key role for making the architectural experience pleasant. Islamic decoration had certain design principles, one of which was obedience to overall controlling grids. In the words of Jones, these “indicate the principle elements of the decorative scheme”—such as the calligraphic bands, arches, niches, et cetera, by which the surface is subdivided and the elements of the façade held visually together. Additional secondary grids “control the patterning within each of the elements of the primary grid” (Ibidem), and they are usually not apparent as contours; existing as underlying matrixes of squares, triangles, octagons, or hexagons.

Of course, this is only a small fragment of what has been studied and which still needs to be further studied in the great history of Islamic architecture. But the above remarks give a general idea of what is being missed out by the modern approach, in which shadows and fragments of the past are pasted together without any conception of their meaning as parts of a whole.

It should be noted here that I am not in favor of mystical interpretations, something that can be detected in the writings of such scholars as Burckhardt himself. Despite his profoundly valuable contribution to the understanding of the experience of Islamic art and architecture, he sometimes seems to invoke a Sufi spirit that prefers poetic projections to concrete perceptions. Whether valid

or not in themselves, these correspond to no physical details in the built form and more importantly cannot add to or take away from the architectural experience.

Now, the question is whether what has been described above about the aesthetics and spirit of Islamic architecture corresponds, however remotely, to what is being practiced in the Arabic and Islamic regions today. It is enough to take a look at the project briefs and “promotions” by well-known Western architects who have been practicing in the Arabic regions (mostly the Gulf), such as Lord Norman Foster and Hanning Larsen. On every possible occasion, they claim to be “taking inspiration from traditional Islamic architecture” or “communicating with traditional elements” and so on. Modern architects, for some reason, seem obliged to sell their product as having some special connection with history, generally, and specifically, with the history of the place that they are about to desecrate. Maybe this happens because they are aware of the radical break with the history of mankind performed by their way of building and are hoping, in this way, to purchase by their words the approval that they can never win by their deeds.

The only problem is that they are attributing wrong labels to architectural history, confusing the traditional with the Islamic. Moreover, they are thereby claiming historical justification to build in one place using forms that belong to another—something particularly noticeable in the Gulf, whose architectural heritage is so limited and sparse, because the area was largely desert with no developed urban centers before the discovery of petroleum beneath the sands. Yet the most intrusive thing is the way these so-called affinities are exploited in an architecture that has been dropped into the desert from outer space, or at any rate from cyber space, since it is for the most part designed on a computer.

Architects know that they ought to achieve identity according to the place in which they are building, otherwise their architecture would look less like a city and more like a shelf of perfume bottles, as in Dubai. But, as I have argued, identity cannot be achieved as a prescribed recipe. It is not an independent goal of design but a byproduct of designing meaningfully and beautifully, according to the spirit of the place.

We should ask ourselves whether Western architects practicing in the Arabic regions are the only ones to blame for the meaningless buildings that we see there, and if they take the blame only for spraying “traditional inspiration” around or brushing strokes of “traditional” elements and not for the rest of what they do. What language should an architect use in his work? And how come the architectural scene in those countries has become dominated by architects who are foreign to their intimate understanding of life and of the universe? If those places were “filled” with such an understanding, then empty architectural gestures would have no place. Hence, the desperate clinging to “fillers” from the past in order to disguise the Swiss cheese structure of our communities and their built environment. Why is the history of Islamic architecture emptied of every meaning and aesthetic sense? Those questions merge directly with the following questions: what determines the right architectural experience? How can it have a meaning? How can it be judged? In response, I will try to summarize the philosophical conclusions of two authors who have offered profound analysis of these critical subjects, namely Roger Scruton in *The Aesthetics of Architecture* (1979) and Michael Mitias in *Expression in Architecture* (1994a).

## CONCEIVING ARCHITECTURAL FORM AND VALUE

Roger Scruton writes:

The fulfilment of a rational agent—what the Greeks called *eudaimonia* and we happiness—comes only when the agent has that which he values, as opposed to that which he merely desires. And perhaps the most striking feature of the “architecture of human need” is that it seems so often to conceive the world as a world in which there are no values, but only animal needs—fresh air, health, exercise, food. (Scruton, 1979, p. 31)

The architecture of sustainability sells its product in terms of how much energy it conserves and what ecological impact it has, so adding another scale of need to the one mentioned by Scruton. Sure, needs have a fundamental part to play in the design process. But we have to consider their *location* in this process and how they have become both the center that controls the architect’s choices and the standard whereby those choices must be judged. Our sense of value, as Scruton explains it, can be educated through rational discussion, and is rooted in our wider moral and spiritual concerns. It is not reducible to the “functional” goals of the building (using the term “functional” to refer to all that a building can achieve as architecture, not just in the narrow sense of a functional program). Through discussion and comparison, values become the foundation on which “bridges of logic” can be constructed from one taste to another. And from here what is central to the architectural experience can be recaptured: “We must then search for that core of experience, for the ‘surplus’ in which we find ourselves reflected, not as creatures of the moment, consumed in the present activity, but as rational beings, with a past, a present and a future” (Scruton, 1979, p. 36).

Following this thread of thought, one could conclude that value determines what is right and what is appropriate, but that in turn it can be adjusted and changed through logical discussions controlled by that very value. Thus, the stability of the value does not mean the unchangeability of the result. Rather, such stability makes its continuous adaptation and controlled development possible according to the value’s standard. The latter is a producing factor of identity (or style): “Our preference means something more to us than mere pleasure or satisfaction. It is the outcome of thought and education; it is expressive of moral, religious and political feelings, of an entire *Weltanschauung*, with which our identity is mingled” (Scruton, 1979, p. 105).

Yet around what will the logical discussion, by which architectural experience can be adjusted and improved, revolve? According to Scruton, the matter can be addressed in two aspects, visual pleasure and moral values:

[My argument] seemed to suggest that criticism involves a search for the “correct” or “balanced” perception, the perception in which ambiguities are resolved and harmonies established, allowing the kind of pervasive visual satisfaction which I hinted at. But that cannot be all. The conceptions which influence our experience of architecture are as far-reaching as the conceptions which govern our lives. How else is it possible for an architect like Pugin to think that it was incumbent upon him as a Christian to explore the intricacies of finials, pinnacles and tracery? (Scruton, 1979, pp. 119–120)

Now, before going any further, it should be noted that what has been stressed by both Scruton and Mitias is that this aesthetic understanding cannot be reached *in advance* of the architectural experience, derived from a set of rules or a *prescribed* form of knowledge; rather it is the result of an intuitive engagement in the experience offered by the building. This engagement happens, according to Scruton, on two levels of perception: the primitive and the rational. The primitive level is the first impression that inclines the perceiver to describe his experiment with words such as serene, sad, or hostile. On this level the visual pleasure results from what the building offers the eye and how and where it makes the eye move. On the rational level pleasure results from understanding what has been perceived as appropriate and right through an engaged “process of contemplation and comparing”. This engaged form of contemplation can be understood through the

question “why”, according to Scruton. Why does a thing look a certain way? Why does this detail make me experience a certain feeling? Why did the architect/designer choose to do things this way rather than another?

True aesthetic way, according to Scruton, is a distillation of practical reason in its own right. It resists the “deliberate infusion of matter with demands of our moral life” and with the burden of a message; rather the perceiver should be able to feel what Scruton calls “the inward resonance of an idea or a way of life”. This could only be reached through experiencing the embodiment of the moral life in every detail of the building and in its manner of production. Not an imposed or stuck moral lesson, but an inwardness with the moral sympathies of the observer: “The experience of Chartres is the apprehension of a divine light penetrating all things, of matter made permeable to Soul, of a universal harmony which transforms every stone from its material roughness into a minute symbol of the intellectual love of God” (Scruton, 1979, p. 204).

Only in this way does the perceiver enter the inner world of the building—“One does not learn about medieval theology from Chartres: but one does learn what it is like to believe in it, what it is like to see and feel the world as the people of Chartres once saw and felt it” (Scruton, 1979, p. 205).

However, as in the earlier distinction (and connection) between the primitive and rational perceptions, the perceiver has a key role in the architectural experience. This is what Michael Mitias meant by saying that aesthetic characteristics exist potentially in the building, to become activated by the perceiver through what Scruton has called “imaginative perception”. What has been articulated by the architect is imagined in the mind of the perceiver, in the way that a sequence of steps gives the impression of ascendance, or a series of columns the impression of an infinite path. Again, this happens not only primitively, where the perceiver has no control over what he perceives, but also on a deeper level rationally, when the perceiver chooses to be more engaged in the architectural experience.

While the perceiver has the role of distinguishing what is to be felt and observed in the building, how is the architect to coordinate this experience of meaning? Mitias explains Rudolf Arnheim’s view in *The Dynamics of Architectural Form* in which he uses the term “dynamic structure” to explain how a building corresponds to the perceiver through its formal order, by which it shares a “dynamic structure” with the feelings of the observer. Besides Alberti’s “correspondence of one part with the other, and each part with the whole” in order to achieve harmony and balance, the building has to correspond with the perceiver in terms of what Mitias has called “universal structures”. The first impression (Scruton’s “imaginative perception” or Arnheim’s “perceptual act”) corresponds to what is around me in the universe, within a net of interconnected relations of “being and behaving”. The latter gains their specific meaning for the perceiver through “recalling and illustrating the kind of qualities which inhere in this organization” (Mitias, 1994b, p. 134).

This can be explained through the example of the willow tree given by Arnheim and Mitias. *Why* is a willow tree perceived as sad? The answer, they suggest, is that it looks sad because of the way it dangles its branches downwards (formal organization) seems (imaginatively) like what we perceive in a sad person: there is an isomorphism between the built form and the structure of a feeling (Mitias, 1994b, p. 134).

Similarly, Mitias argues that when a door is seen it is perceived first as a door before any conscious perception of its size or color or other formal characteristics; its “door-ness” is the result of what is known collectively about things of this kind. Hence, the formal structure of the willow tree or the door regenerates the kind of feelings associated and logically consistent with that specific structure. Accordingly, Mitias reaches the conclusion that there are basic “universal structures”, which



correspond to what Susan Langer called the “virtual structure” or “logical form”. The virtual structure is something that we perceive and realize imaginatively, bringing to it our past experience, our background knowledge, our degree of intelligence, and other psychological, social, and cultural factors. In this regard, there is inter-reliance between the perceiver’s background and the universal structures.

However, I would suggest that there is a slight difference between the willow and the door examples presented by Mitias. The universal structure of the first is inescapable, being part of a world that humans had no hand in creating and which belongs to the unchangeable background of our thought. The “door-ness” described by Mitias, though, is a human creation. Although it has not been radically changed since it was created, and although it corresponds in one way or another with other natural “doors” (such as cave openings and tree holes), its universal structure is not unchangeable as is that of the willow tree. As an architect or designer I can ask myself questions such as: why do I need this “door”? What is the function (in the wide sense of the word) of a door?

Such questions can alter the universal structure of the door by creating different versions of it. Door-ness is not perceived as a natural essence, unlike the willow-ness of the willow tree. Of course, I will not be able to escape the universal structure entirely because man cannot create *ab initio*—he merely reassembles what occurs around him. If I want to defy the universal structure for a door, I might research doors around me, such as the “doors” of the human body—even on the cellular level, or in a volcano or a river. My point is that the universal structures of human products are less resilient than those of any natural object since we ourselves had a part in shaping them. In contrast with the created universe, what we humans have made is always questionable and we always face the problem of its appropriateness or rightness. With any tool or device that we make, we strive, as Scruton explains, to “give a sense of what it means, by filling in the background of expectations, customs and attitudes against which it is deployed” (Scruton, 1979, p. 227).

As in daily life, Scruton stresses that, when aiming at what is appropriate we do not adopt a “problem-solving” formula as though searching for the means to some given end. What is appropriate is explored both before and after the action is performed. As in the field of morals a person may not know what he is doing until he has done it: “the art of manners is the art of seeing what is apt before knowing exactly what success will consist in” (Scruton, 1979, p. 229). And what is true of manners in life is true of manners in architecture. In both cases, we are seeking to fit our acts and products to a context, to adapt to something that has meaning not only for me, here and now, but for all who encounter it, both now and as long as it lasts.

Hence, the connection between aesthetic characteristics and the moral life, according to Scruton, arises through the cultivation of our sense of the appropriate. We try to understand why “is it nicer this way or more beautiful that way”—by answering the question “why?” in front of each detail. We want to know what hangs on to the way we do things, whether it is an architectural choice or a simple social act such as holding a fork. Everything we do raises the question of its acceptability to others. And that means it raises the question of its moral acceptability.

Scruton’s fork example is important here. He explains that holding a fork in a certain way can be judged aesthetically in terms of what it implies about jaw movement. Jaws that open too wide suggest the idea of greed, which is socially unacceptable. I wish to take this discussion further by asking what Scruton has not, which is why greed is not socially acceptable. The answer could be that we associate greedy behavior with the stretching jaws of predator animals. Or it could be that our aversion is more rationally based, either in a secular morality or in some kind of universal law.

Scruton considers the moral sense to derive from our response to each other as social creatures, joined to an order greater than each person's individual ego. This moral sense can seem radically different, from place to place and culture to culture, especially in its application to the things that we make: an object can speak with welcoming accents to one person, while being repellent to another. However, as Scruton rightly emphasizes, everything we do raises the question of its acceptability to others, and this is as true of architecture as it is of all our words and deeds. It belongs to human nature to pursue agreement in things that matter and to reconcile our interests through a system of rights and duties. Hence, we humans stand in need of a foundation, a system of law, through addressing each other and to which we can appeal in our conflicts. This is what is provided, we Muslims believe, by the Islamic Law deriving from the Qur'an and the *hadiths*. This system of law is not, as so many Westerners seem to believe, and as so many so-called Muslims seem to want them to believe, a set of absolutist edicts that extinguish freedom and discussion. On the contrary, as beautifully explained by the late Prof. Al-Bouti in his book, *The Regulation of Interest in Islamic Law* (Al-Bouti, 2010), it is an instrument of reconciliation by which interests are sifted and rights assigned, in order to resolve the conflicts that are inherent in every human community.

At this point, the pursuit of the deep question of universal law, with all its philosophical and theological ramifications, does not belong to the core of the discussion. The matter is rather that, with or without a universal law, human beings need rational arguments and must cultivate a sense of what is right and appropriate if they are to really know what they are doing. This is true of architecture as it is true of everyday behavior. When the sense of the appropriate orders our experience, and we witness Alberti's "correspondence of part with part and the part with the whole", pleasure of the eye and its movement within a frame of visual validity is guaranteed. The "moral life", as Scruton writes, "ennobles our choices", and the beautiful work of architecture shows "an accumulation of moral character, it wears a sympathetic expression... and inhabits the same world as the man who passes it" (Scruton, 1979, p. 232).

On the other hand, an object or a building can become alien to humans when it fails to invite the perceiver to understand and to relate to it as a neighbor and fellow citizen. Buildings that do not "bear the imprint of what is appropriate", in Scruton's words, stand in an alienated relation to people. This is exactly what we are facing in our region (and around the world), which can explain the desperate reactions of the architects who seek to "paste" layers of what used to "make sense" to the people in a vain hope of creating such a connection.

On the contrary, the embodiment of moral life described above was brilliantly achieved in some of the old works of Islamic architecture. These works excelled in creating multi-layered correspondences so that, passing through the richness of detail, the eye is neither bored nor exhausted. Zooming in from the harmonized whole, unwrapping the interwoven layers of space, elements, pattern, light, and water, the eye can move in small sequenced rebounds from sight to mind and back again. Every "layer" on which the eye settles invites the mind to follow it into an arena of pleasurable experiences. Think of a tree as an example. You can enjoy the shape of the tree, the smell, the shadow, and all that a tree can bring to your experience. You can enhance your experience and take it deeper to every possible given level; you can focus on its leaves and bark, on the small insects marching on it, on the details that dissect each leaf and each line of it. However, all these layers are combined within one soul. On each level of experience, there is a new world of design to be discovered and enjoyed.

This is exactly the effect where the old Islamic architecture aimed.

Next to pleasure, there can be *amazement*, and this is what many modern works want to achieve. Yet notice, if wow-ness is not followed and combined with pleasure, then it soon fades away,

leading to the alienation described by Scruton. Amazement and pleasure must be in balance just like the eye-mind movement controlled by moral thought. This is the key difference, from my point of view, between the buildings of today and those of the past. Yesterday, the ground of belief was not as slippery as today. Whether Greek, Roman, Buddhist, Gothic, Islamic or even Aztec or Pharaonic, such stability of belief ordered what was appropriate in moral life, from ancient days until recent history. Such order was subsequently carried over into style and sense of identity. After those beliefs shifted, architecture moved to a point where it now resorts to what Arnold Gehlen calls “ritualization” (Weber, 1994, p. 117). We see it in the cut-and-paste approach: “although classical architecture initially evolved from a stylistic repertoire similar to that of any indigenous tradition, its forms have become increasingly disassociated from their original meanings” (Weber, 1994, p. 116).

## CONCLUSION

We have seen how architecture in the Middle East struggles between two choices: either Gehlen’s ritualization or the abandonment of any continuity. Both have proved to be dysfunctional when it comes to recognizing the human need for settlement and home. This is a characteristic of modern architecture where new, invented tenets support aesthetic choices without any conception of nor respect toward the people who will undergo those choices. This was the pattern set by Le Corbusier in his inhuman plans for Paris and Algiers, and by Ecochard and Banshoia in Damascus. It is a pattern that has been too often followed by architects educated in Western schools and so often brought in as practitioners or consultants to the Middle East. Modern architecture prefers to control a place rather than respect it. And in order to achieve full control, it gives us plenty of computer-designed gadgets that bear no relation to our real needs, both moral and spiritual. This is well explained in Tom Leddy’s observation on the shift of man’s battle from controlling nature to avoid being controlled in turn:

For five hundred years the discourse of science has been about humanity overcoming nature through things that are rational, good, truthful, beautiful. Architecture, because it symbolizes the structures and cosmological attitudes of society, has, until now, followed science in being about overcoming nature. But today this is no longer the problem which science is addressing. The problem today is to overcome knowledge. Today knowledge is seen as information, which may be processed by computers. Humanity, if it is to be distinguished from computers, can still be seen to have wisdom. The knowledge revolution has gotten out of hand and has started to control humankind. (Leddy, 1994, p. 184)

Therefore, the problem seems to be that humans have lost control over what they were trying to achieve. Unacknowledgement of this loss of control leads people to try to compensate through amazement or the use of a stipulated repertoire peeled off the back of the past. Indeed, a wider issue to our world is that identity seems to stand irreconcilably at odds with the *Zeitgeist*, but this should be left for another discussion. What has been under the lens here is the crisis of identity that the regions of the Middle East are suffering. In this regard, we must give up the retro approach of using the past as a quarry of fragments. Stereotyping burdens architecture with an imposed message that denies its inner vitality. Criticisms should be extended to the habit of creating certain shapes whenever the term Islamic is used and the vast waste of resources on spurious demands, such as that of an exterior “identity”. Identity, in fact, should arise from our moral understanding, not from clichés and stereotypes. This must involve deeper exploration into the practice of the past, not only the resulting form but also the thought that produced it. Only by this, we can call out for a serious attempt to regain *our places*.

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# Generative Processes for Revitalization and Development

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## **ABSTRACT**

By synthesizing a previous, fully illustrated study (Hakim, 2007), this paper encourages the implementation of dynamic generative processes for town and neighborhood development versus the use of static “master plan” blueprints. The product of generative processes has attributes that can be described as dynamic complex adaptive environments, which embody the virtues of sustainability. It includes a discussion on how the components of a generative program can revitalize projects within historic towns or heritage areas. Two case studies—Albuquerque, New Mexico and Muharraq & Manama, Bahrain—are briefly discussed as examples of the enforcement of generative program principles. Over time, the results of such a program for revitalization will maintain the integrity, characteristics, and sense of place of the area by avoiding the static results that freeze the built environment and produce museums, which are of interest to tourists rather than the people living there.

**Keywords:** generative processes, historic towns, development, rules, codes

## INTRODUCTION

The goal of this short essay is to clarify what a generative process is and how it differs from the common processes of development currently used in many parts of the world. Although the research has addressed the context and problems of historic towns or heritage districts, the insight gained is applicable to new development projects as well as valuable for formulating policies and appropriate codes for projects that would incorporate generative processes in their implementation.

Figure 1 offers a first sight on the difference between an urban fabric resulting from a generative process and a built environment that has been planned and designed. The lower map shows an urban type based on a static plan in the form of a blueprint. Commonly known as a “master plan”, this describes what needs to be done and thus generates a fabricated structure. On the contrary, the upper map exposes an urban type derived from a generative program. This creates built environments that are guided by a step-by-step procedure within a reasonable timeframe. In essence, a generative process tells us what to do and what actions to take in order to build or revitalize buildings rather than detailed drawings that tell us what the end-result is supposed to be.

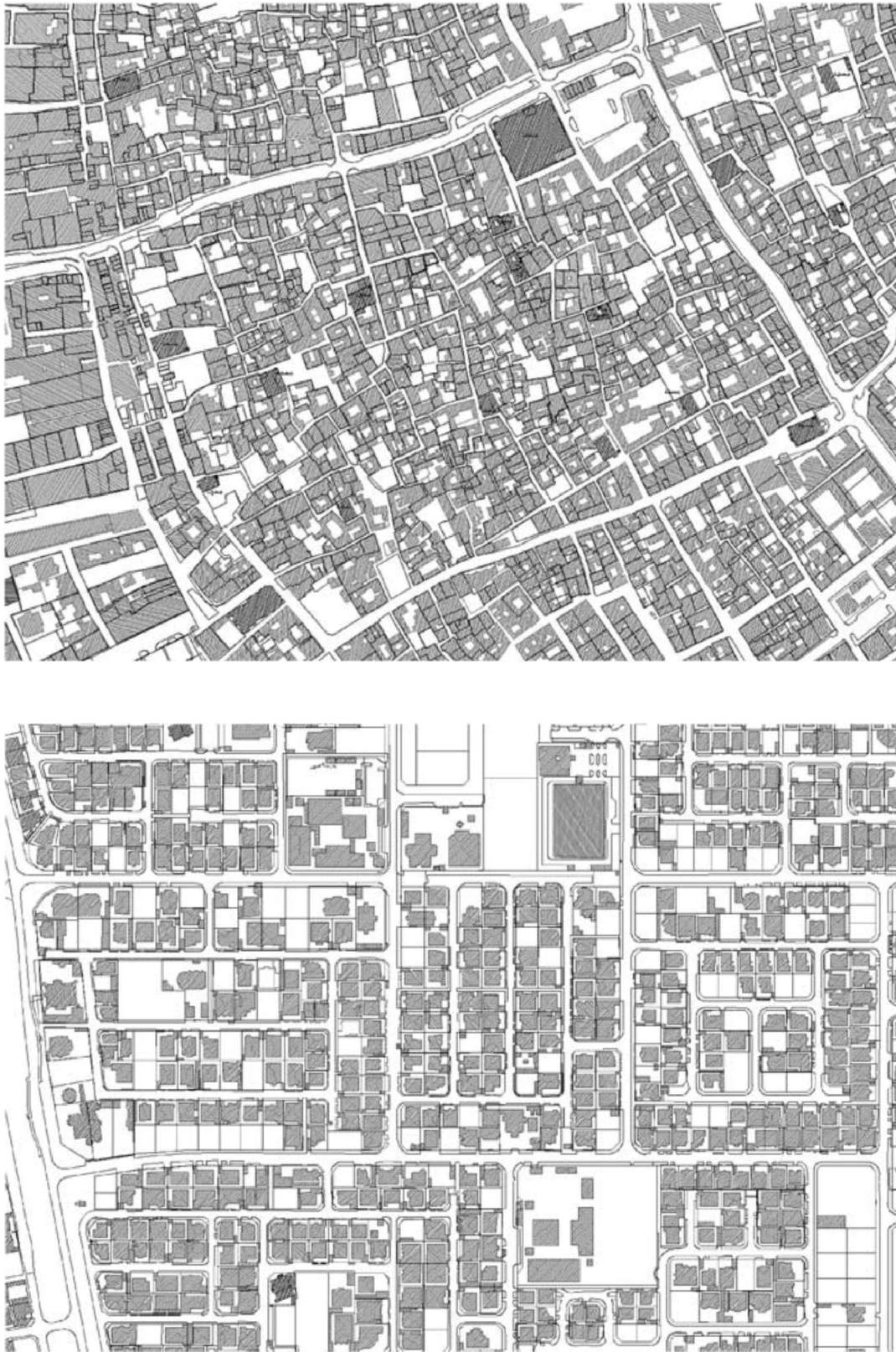
Historic towns in many parts of the world were initially built following a generative process. My analysis and findings of how this has occurred in towns around the Mediterranean basin since antiquity, including areas under Byzantine control or influence and later as a part of the Islamic world, have been the subject of several publications (Hakim, 2011; 2014).

When confronted with the task of revitalizing such historic towns today, we must create the conditions that will allow a generative process to function and thrive. The analogy is very clearly described by the biologist Lewis Wolpert when he says: “If the cells in the embryo ‘know’ where and when to change shape, contract, or move, then it begins to be possible to envisage a program for the development of form” and “we can think of this pattern of cell activities as being part of the embryo’s developmental program. It is a program that contains the instructions for making the shapes. A key feature of a generative program is that it can be made up of quite simple instructions, yet generate very complex forms” (Wolpert, 1991, p. 17).

Further, the same author offers an enlightening example for understanding such a process:

All the information for embryonic development is contained within a fertilized egg. So how is this information interpreted to give rise to an embryo? One possibility is that the structure of the organism is somehow encoded as a descriptive program in the genome, which contains a program of instructions for making the organism—a generative program.

Consider origami, the art of paper folding. By folding a piece of paper in various directions, it is quite easy to make a paper hat or a bird from a single sheet. To describe in any detail the final form of the paper with the complex relationships between its parts is really very difficult, and not of much help in explaining how to achieve it. Much more useful and easier to formulate are instructions on how to fold the paper. The reason for this is that simple instructions about folding have complex spatial consequences. In development, gene action similarly sets in motion a sequence of events that can bring about profound changes in the embryo. One can thus think of the genetic information in the fertilized egg as equivalent to the folding instructions in origami: both contain a generative program for making a particular structure. (Wolpert, 1997, p. 21)



**Figure 1.** A confrontation between a traditional fabric area (above) and a mid-1990s expansion (below) of Muharraq, Bahrain, shows the striking difference between a generative process and a top-down process. Maps from MoMAA, Bahrain, 2005 (Images sourced by the Author).

## **GENERATIVE SYSTEM AND ITS COMPONENTS**

I will put forward the essential components of a generative system. This is adapted from my insight of how traditional towns emerged from such a system and from my experience in designing programs for revitalizing historic towns. It is therefore an amalgamation from both sources.

A generative program must be composed of the following components:

### **A) Meta-principles comprised of ethical/legal norms that are derived from the history and value system of the society for which such a program is proposed**

To provide a concrete example of such principles, I will use those that were predominant in Islamic societies. Similar principles were also predominant in non-Islamic societies around the Mediterranean (Hakim, 2014). The following seven meta-principles are part of ethical norms:

- i. Good intentions are the basis for sound decisions.
- ii. The basis for action is the freedom to act within one's property, constrained by the ethical norm of "beauty without arrogance", and by avoiding the creation of harm as stipulated in the following norms.
- iii. Harm to others and oneself should be avoided, and if two damages should occur then, and only if necessary, accept the lesser of the two.
- iv. Respect the rights of older established conditions on the ground including existing buildings, and by extension accept the idea of interdependence and cooperation between neighbors.
- v. Respect the privacy of others, particularly avoiding the creation of direct visual corridors into private domains. In addition, where applicable due to local customs, avoid blocking the views of harbors and the sea.
- vi. Do not debase the social and economic integrity of adjacent properties by changes or the use of one's property that would create such harm.
- vii. Local customary practices must be respected and followed, although with the passage of time, changes to those customs might be necessary (Hakim, 1994).

It is important to note that the Golden Rule of reciprocity is very ancient and has been persistent through history until our time. Socrates, the Greek philosopher from the fifth century BC, wrote: "Do not do to others that which would anger you if others did it to you" (Flew, 1979, p. 134).

### **B) Private and public rights are fairly and equitably exercised**

In a generative bottom-up system, most of the decisions affecting the built environment are made by the people in their neighborhoods. Rights that affect those decisions have to be clearly articulated and understood by the public. They are:

- i. Right for abutting an adjacent neighbor, and the right of servitude and access. This will depend on the specific configurations of the site and buildings.
- ii. Privacy rights—their protection and maintenance.

- iii. Rights of original and earlier usage. This means that subsequent decisions and acts have to take into account existing conditions.
- iv. Rights for the full utilization of one's property that include the right to increase useable areas such as building a *Sabat* (room bridging the right-of-way without creating obstructions to traffic) or increasing the height of a building within stipulated restrictions, if those exist for a specific locality or site.
- v. Right to use a part or all of one's property for generating income, provided such use does not create damage to the neighborhood.
- vi. Right of pre-emption of an adjacent property. This right provides the first option for purchasing an adjacent property by the neighbors.
- vii. Right of *Waqf* property. The *Waqf* is an Islamic institution that allows owners of property to endow their property and the income it generates for charitable purposes.
- viii. Right of inheritance by taking into consideration the impact it might have on division of a property.

Public rights relate to transportation, infrastructure, and certain public facilities. The public authorities have to implement and maintain them.

### **C) Private and public responsibilities are properly allocated and implemented**

Historically, the responsibilities of private citizens and institutions in generative systems that were clearly evident in societies and cultures located around the Mediterranean basin were:

- i. Utilizing the exterior *Fina* when needed and the responsibility for keeping it clean. The *Fina* is a longitudinal space along the exterior wall of buildings about one meter wide. It has many useful purposes (Hakim, 1986, pp. 27–31).
- ii. Informing the public authorities of any danger to the public realm from within private properties so that corrective action is taken. A typical example is a leaning wall that might pose a danger to passersby on the street.
- iii. Each individual and family is responsible to maintain peace and tranquility with their surrounding neighbors.

Responsibilities of public authorities were:

- i. Protecting the rights of the public.
- ii. Building and maintaining public streets and sewer lines, water and electricity distribution and maintenance, garbage collection, and ensuring that the public realm—streets and open spaces—are always kept safe.
- iii. Protecting the integrity of local customs that are related to change and growth in the built environment.



- iv. Equitably resolving problems and disputes that may arise between property owners, particularly between adjacent neighbors.

### **D) Control and management**

It is important to establish a system of control and management that is guided by the meta-principles. These would ensure that private and public rights are fairly and equitably exercised, and that responsibilities are properly followed by private and public parties. Such a system of control and management should be based locally and must have legitimacy to the people living in the area, or who will live there in the near future. One effective method that was predominant in many traditional societies was the system of neighborhood representatives, i.e. one person is elected, selected or identified by the majority residents of a neighborhood to represent them at a council of representatives. If a council system were not used, then each representative would have direct access to the ruling authority. In some traditional communities, a council of elders was responsible for the day-to-day affairs of a community, including matters that related to building activities.

That was all that was needed in traditional societies to correctly control and manage the built environment. However, with changes that have occurred in many societies since the first half of the 20<sup>th</sup> century, plus the introduction of the municipal system in countries that traditionally did not have them, an intermediary became necessary. This role can take the form of the Office of Arbitrator and his/her technical and secretarial assistants. It can be a small office or a large one depending on the size of the community that it serves. Ideally, a council of neighborhood representatives should select the Arbitrator. His/her primary responsibility would be to liaise between neighborhoods and the central municipal authorities. This is necessary to maintain a healthy generative process controlled by the people, i.e. keeping it a bottom-up system. The Arbitrator will also be responsible for ensuring that all parts of a generative program function properly, and that the rights and responsibilities of private and public parties are respected and followed.

### **E) Rules and codes**

The necessary rules and codes, which can be followed during the process of growth and change and for resolving unforeseen conflicts between neighbors, represent another important component of a generative system. It is preferable that such a system of rules and codes is compatible with the ethical/legal norms, the rights and responsibilities of private and public parties, and should also be linked in content to traditional local customs that are still socially and technically viable. They should also be proscriptive in nature and their intention clear, i.e. what is to be achieved must be understood by everybody involved in the generative process. They are to be open for interpretation in response to the peculiarities of each location and condition. Prescriptive codes that do not allow localized interpretation must be discouraged unless they are absolutely necessary. For examples of such codes see (Hakim, 2007).

## **HIGHLIGHTS OF TWO CASES**

### **Old town Albuquerque, New Mexico, USA**

### **The historic districts of Muharraq & Manama, Bahrain**

An earlier case was developed for the city of Albuquerque, New Mexico in 1983 (Hakim, 1983). It was essentially based on two tools of a generative program: the appraisal process, and planning principles and guidelines that are to be used as necessary in specific parts of the old town after a

careful assessment and appraisal is made of a specific site and its surroundings. In other words, the generative program was designed for changes in the built fabric of an existing historic area that traces its history and its founding to 1706. The planning principles and guidelines were developed to ensure that results from change would maintain the character and sense of place of the historic district. To ensure authenticity, the Spanish Laws of the Indies that date back to 1573, comprising 148 rules and codes, were carefully consulted. These laws influenced the physical parameters of the old town at the time of its founding.

The other part of the generative program that was proposed is the Coordination Process between the city authorities and residents/users of the area. In the case of Old Town Albuquerque, it was made up of three components: i) certificate of appropriateness; ii) city investment in public improvement projects due to the large amount of land owned by the city in the area, and iii) user participation in projects initiated by the private sector. A number of steps for implementation were suggested as part of the generative program that was specifically worked out for this project.

The case of the historic districts of Muharraq & Manama, Bahrain was developed in early 2006 (Hakim, 2006). The generative program for this project was developed from a careful understanding of the history and traditional processes of the two historic districts. When developing a generative program for a specific site, it is imperative to do so based on the locality's history and customary practices that formed that built environment in the first place. Thus, such a generative program becomes unique to that particular project (Hakim, 1994). Accordingly, the cases of old Muharraq and Manama has similarities to other towns in the greater Islamic world, but they also have certain unique attributes.

The generative program, which I developed for the revitalization of these historic districts, was designed to ensure that the changes that occur would maintain the character and sense of place of each district. This is a similar goal that was established for the Old Town Albuquerque project described above. The general approach that I have used is similar to the outline of a generative program explained above. It remains to be seen if the centralized authorities of Bahrain will adopt a generative program that is based on a bottom-up decision-making structure. In other words, are the authorities willing to revert to a system similar to the one that created those historic districts in the first place? If they do, then it will demonstrate serious intention to revitalize those areas following a generative program.

## **CONCLUSIONS AND THE FUTURE OF GENERATIVE PROCESSES**

In the past, generative processes were the norm in most cultures, i.e. they were the type of processes that shaped the morphology and form of what we currently refer to as "vernacular architecture". They were very different from current "modern" processes that have spread to many parts of the world. For example, the temporal priority issue is very different from current practice. If someone has built something, then the person who comes later must legally pay attention to what is there and respond to it. This process is akin to weaving, i.e. the next act always responds to the previous act and completes it. Compared to current law in most U.S. cities and in other countries, that process provides each person the same rights regardless of the temporal sequence. Thus each project, and each lot, becomes an isolated island, with no significant relation to the whole, and is unable, for the same reason, to intensify the context in which it is located. A fundamental principle that was explicit in traditional generative processes is that a new construction shall not do harm to its surroundings. This is in reverse to the current approach of zoning law that is followed in most U.S. cities, which implicitly accepts that each case is different by blindly applying strict geometrical

regulations. Another important practice in traditional generative processes is negotiating decisions that may cause harm to their surroundings and the means to avoid them.

It is difficult to imagine that generative processes will make a comeback soon. However, they can at least be used for revitalizing historic towns and heritage districts within cities. This will ensure that authenticity will be maintained when revitalization is undertaken by a generative process that is derived from the uniqueness of a particular site and a thorough understanding of its history. Such an approach can embrace the use of modern materials and technologies where necessary or appropriate. It will also encourage residents of such places to maintain, improve, or renew their buildings, knowing that these activities will ensure the continuity of the general character and sense of place in their neighborhoods.

To summarize, the following are the attributes that must be present in a generative process:

1. Agreed upon ethical meta-principles, derived from a locality's history and customs, must be articulated. They have to be respected and followed by the residents.
2. Private and public rights and responsibilities must be clearly assigned so that all actors and parties making decisions know what is expected from them, either as individuals or as public entities.
3. Control and management: this must be worked out and established based on a locality's history and customs as it relates to the function of the traditional generative process, including the interface between residents and the various public authorities.
4. Traditional rules and codes must be identified and refined, revised if necessary, to be compatible with contemporary building materials, technology, and infrastructure requirements, including transportation. New rules and codes might also have to be devised to ensure maintaining the character and sense of place of the historic area or district.

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# Middle-out: How Complex Networks Made Obsolete the Bottom-up vs. Top-down Contrast

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## ABSTRACT

The “common ground” that has been justifying the substantial *unity of science* for centuries stems from the consideration that all the objects around us are made of the “same matter”. This is why we usually attach the word “fundamental” to microphysics research investigating the tiniest details of matter. The recent focus shift of basic science toward mesoscopic systems has provoked a drastic change in perspective: the new paradigm affirms that the unity of science stems from the fact that all the entities can be considered in terms of sets of *mutually related* elements. This new paradigm both makes obsolete the old controversy between reductionism and holism and offers the chance to establish an approach to *biophilic* design based on quantitative data.

**Keywords:** network thermodynamics, consonance rules, privileged patterns, complexity

## ORGANIZED COMPLEXITY

In a fundamental paper that appeared in 1948 entitled “Science and Complexity”, Warren Weaver, one of the fathers of modern information science, proposed a tri-partition of science styles (Weaver, 1948). Scientific themes can be subdivided into: 1) problems of simplicity; 2) problems of disorganized complexity; and 3) problems of organized complexity.

The first class (simplicity) collected all those problems faced in terms of differential equations and thus were well suited for deriving “general laws of nature”. These “simple problems” were the ones solved by most “sophisticated” mathematics because they were amenable to a high degree of abstraction (e.g. a planet could be considered an abstract dimensionless—“material point”).

Problems of disorganized complexity (class 2) allow for superior precision (and, most importantly, for a higher degree of generalization) than class 1 problems. These problems imply a somewhat opposite style of reasoning with respect to the “problems of simplicity”. In this case, the efficiency does not derive from the possibility to get an efficient abstract description of the involved players, but from totally discarding such “atomic” knowledge in favor of very coarse grain macroscopic descriptors corresponding to gross averages on a transfinite number of atomic elements. This is the case of thermodynamic parameters (e.g. pressure, volume, temperature, et cetera). The power of this approach is thus a gift of statistics, pushing Albert Einstein to affirm the following:

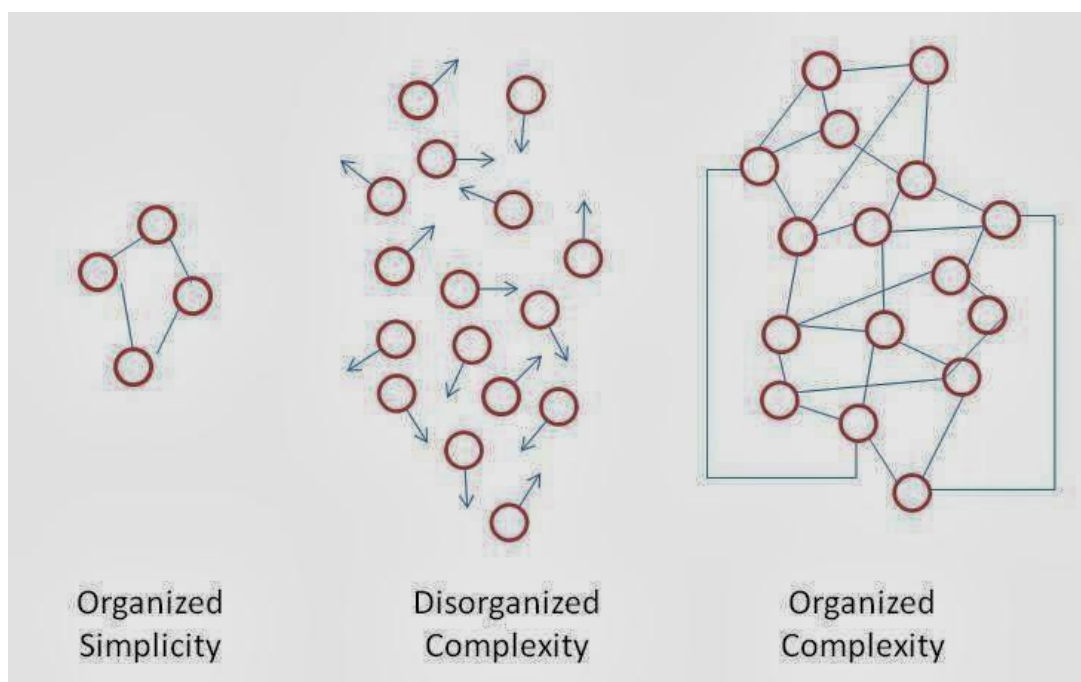
A theory is the more impressive the greater the simplicity of its premises is, the more different kinds of things it relates, and the more extended is its area of applicability. Therefore, the deep impression which classical thermodynamics made upon me. It is the only physical theory of universal content which I am convinced that, within the framework of applicability of its basic concepts, it will be never overthrown. (Schilpp, 1949)

It is worth noting that the founders of classical thermodynamics were wrong about the nature of the principal player of the theory: they erroneously considered heat as a fluid (caloric or phlogiston). Notwithstanding, classical thermodynamics work because the phenomenology of transformation holds true (e.g. even liquids flow from high to low and equilibrate when two tanks are set in contact) and, because of that, thermodynamics is by definition independent from microscopic details so acquiring the “universal content” mentioned by Einstein.

Both of the above methods meet drastic limitations in their applicability range. Class 1 needs the presence of very few involved players interacting in a stable way with a practically null effect of boundary conditions, whereas class 2 needs very large numbers of particles with only negligible interactions among them.

Problems of organized complexity (Weaver’s class 3) arise in all those situations where many (even if not so many as in class 2) players are involved with non-negligible interactions among them and with no possibility to sketch dynamical laws due to their extreme context dependence. This is the place where both biology and urbanism live; this is the *middle kingdom* of form.

Before going ahead, it is worth reporting the original figure of Weaver’s paper that sketches the three realms of science:



**Figure 1.** Weaver's classes (Image sourced by the Author).

The sketches in Figure 1 deserve a closer look: the circles represent the elementary players and the lines their mutual relations. The lines of the graph in the middle (disorganized complexity) do not connect different atoms: they only symbolize the trajectories of the particles whose interactions are both random and contingent, being limited to a huge number of hits whose cumulative effect can be easily described in statistical terms.

The left panel links are few and unique for any couple of elements, thus allowing for a clear mathematical modeling. The right panel relative to organized complexity is the only proper “network”: multiple links connect the elements, and multiple equivalent paths can be used to explore the system.

The concept of network seems to be affine to organized complexity.

## NETWORKS

In 1952, the Dutch electrical engineer Bernard Tellegen developed a theorem whose relevance has largely been underestimated (Tellegen, 1952). Tellegen's theorem is a conservation principle (tailored upon Kirchoff's laws of electrical circuits) of both potential and flux across a network. The flux does not need to be an electrical current and the same holds for the potential. Any system we model in terms of a set of nodes linked by edges (i.e. metabolites linked by chemical reactions transforming one into the other or mutually interacting persons in an office) has similar emerging properties independently of the physical nature of nodes and edges. *Network Thermodynamics and Complexity* aptly stresses that the theorem opens the way to “network thermodynamics”, whose principles are strictly dependent from wiring architecture, while largely independent of the constitutive laws governing the single elements (Mikulecky, 2001).

Network graph-theoretical approaches (a mathematical graph is equivalent to a network expressed in terms of its adjacency matrix) are located halfway between bottom-up and top-down approaches, focusing on the relation between the elements of the studied phenomenon. We can roughly describe the network approach as the answer to the question: “What can we derive from the sole knowledge of the wiring diagram of a system?”

Graphs are described by measurements located at local (single nodes), global (entire network), and mesoscale (clusters of nodes, optimal paths) levels. Thus we can compute the degree of each node (how many links are attached to a given node) that is a local descriptor, or we can compute the so-called “average shortest path” or “characteristic length” of a graph corresponding to the average length of minimal paths connecting all the node pairs (this corresponds to a mesoscopic feature of the system). Eventually, we can compute a global feature like the general connectivity of the network (density of links) (Giuliani, Filippi, & Bertolaso, 2014; Tasdighian, et al., 2013; Csermely, Korcsmáros, Kiss, London, & Nussinov, 2013).

The above organization layers are strictly intermingled and cannot be decoupled: they derive from the same basic representation (the graph) and any view influences—and it is influenced by—all the others. In other words, it does not exist as a unique “privileged layer” where “the interesting facts” are happening. The role of a node strictly depends upon its position in the network (top-down causation), while the global properties of the network strictly rely on the single nodes wiring patterns (bottom-up causation).

We refer to this kind of global organization as a “middle-out” so that the focus is on the mutual relation among the parts that represent the core of the explanation, from where to start grasping the entire frame. We neither go “top-down” (general laws dictate the behavior of specific cases like in problems of organized simplicity where, as for gravity, a cat is fully equivalent to a chair) nor “bottom-up” (statistics over large ensembles promulgate the laws governing the entire system, like in disorganized complexity cases).

Organic chemistry is an almost perfect example of the power of the middle-out approach: a chemical graph (structural formula) allows for deriving functional properties of the studied object (chemico-physical and reactivity features), in other words, a “semantics” emerges from a purely syntactical approach (molecular graph).

This is a crucial point for deciding the possibility to express a “meaning” from the “correct” wiring of elements’ set. This is the problem of urbanism and, more in general of architecture, where the whole emerges as a “middle-out” synthesis of many different features located at different scales.

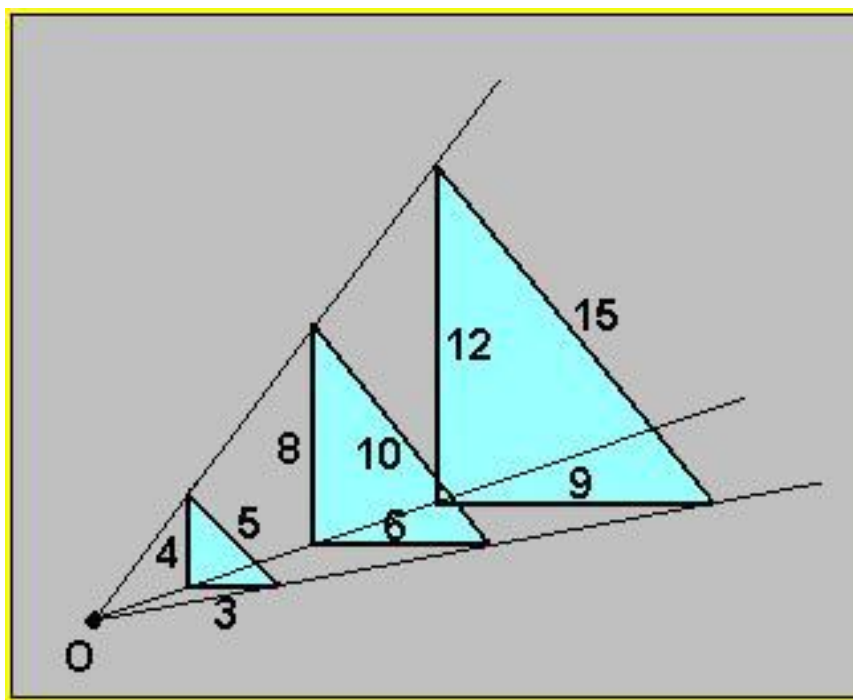
What we are looking for are the tracks of a “hard-wired” order in nature that automatically produces “beauty” (meaning beauty as the recognition of the attainment of a viable pattern). We are looking for “laws of form”.

## **LAWS OF FORM**

As “laws of form”, we mean the following: the presence of discrete preferred configurations that impose “ruggedness”—and hence energetic non-equivalence—to the flat landscape of the infinite combinatorics of a random assortment.

Here we adopt the most basic definition of form as a stable set of mutual relation between the parts.

Elementary geometry teaches us that two triangles are similar (i.e. have the same form) if their angles are identical. That is mathematically equivalent to the condition of the same correlation pattern among the variables defining a system (Pearson correlation coefficient is the cosine of two vector variables). This condition drastically limits the space of “allowed” patterns: similar triangles can have edges of length 3, 4, 5 or 6, 8, 10, or 9, 12, 15; but they cannot have edges equal to 3, 4, 5 or 6, 8, 9. The “form” is thus neatly discriminated by the concepts of “size” or “length”. The form of the triangle resides in the invariance of the ratios ( $3/4=6/8=9/12$ ;  $4/5=8/10=12/15$ ;  $3/5=6/10=9/15$ ) as depicted in Figure 2.



**Figure 2.** Similar triangles keep the same correlation (angles) between the variables (edges) that define them as systems (triangles) (Image sourced by the Author).

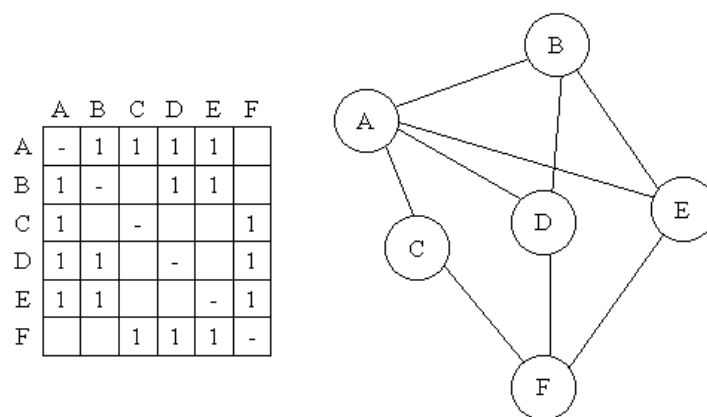
The formalization in terms of “ratios” is the same used in music theory for intervals between notes played together where simple ratios like the octave correspondent to 1/1 or the fifth ( $3/2$ ) are “consonant” combinations (privileged patterns) and, clearly, match the valence rules in chemistry. Not by chance, Dmitri Ivanovich Mendeleev based the Periodic Table of Elements on the equivalence between the distribution of atomic species features and harmonic rules. He was an excellent piano player, and his colleague Alexander Porfiryevich Borodin was both a great organic chemist and a worldwide-famous composer—member of the legendary group “The Mighty Handful” (or “The Five”), which often played in Dmitri’s home. Thus, Mendeleev was very familiar with the concepts of octave and of the “simple ratios” between notes for producing consonant sounds. The distribution of the elements in the Table and the valence rules producing stable molecules mirror themselves in these two basic harmonic rules.

The presence of rules does not impose limits to the creation. Hundreds of thousands of new organic molecules are invented each year within the constraints of carbon valence rules, and billions of pieces of music stem from harmony rules. On the contrary, the “flat landscape” of the equivalence of all the combination generates uniformity (a good friend of mine who teaches at the conservatory of Rome tells me the dodecaphonic composers often do not recognize their own pieces when played).



A graph is *naturaliter*—a form being equivalent to a set of relations (links) among its elements (nodes).

Figure 3 offers a sketch of this concept: reported on the right is the wiring architecture of a network, and on the left the same architecture is expressed as a set of relations (for simplicity being all set to 1) between its nodes.



**Figure 3.** The same architecture can be expressed as a set of relations (left panel) or as a network (right panel) (Image sourced by the Author).

We can recognize such laws at all the levels of biological organization.

The human genome contains about 30,000 genes interspersed along the DNA molecule. Each gene codifies for a specific protein (proteins are the effective actors of life). Considering each gene as a binary switch with only two on/off states (this is a severe simplification of the actual genes behavior), the number of possible combinations of on/off states in a cell are:

$$\binom{30000}{0} + \binom{30000}{1} + \cdots + \binom{30000}{k} + \cdots + \binom{30000}{29999} + \binom{30000}{30000} = 1 + 30000 + \cdots + 30000$$

$$= 2^{30000} = 7.94 \cdot 10^{9030}$$

The first term does not have a real meaning, but it is left for simplicity, considering that it is equal to 1 and it does not affect the final result. The second term accounts for the single genes as acting separately, the  $k^{\text{th}}$  term considers all the possible combinations of  $k$  genes within the 30,000 available, and the last term accounts for the case in which all of the 30,000 genes act together. The number of all those possible combinations is an unimaginable large number constituted by 9,030 digits (just look at the exponent reported at the end of the previous formula).

It is worth noting that one can observe only a very low number of configurations: mammals have only 200–250 tissues each corresponding to a largely invariant configuration of activated/inactivated genes. This implies that the “viable configurations” correspondent to a given activated/inactivated pattern over the 30,000 genes are very few. This kind of behavior is denominated “rugged landscape”, indicating the presence of few “low energy deep valleys”—and it is typical of biology. Analogously, protein molecules have very few “configurational optima” and the same is true for the “admitted” protein-protein interaction patterns.

The extremely limited number of viable protein-protein interactions also exerts a strong selective role. From introductory physical-chemistry manuals we learn that a tri-atomic ordered collision is

extremely rare (nearly impossible) in diffusive regime. Shifting to biochemistry, we learn about ordered sequences of chemical reactions involving dozens of ordered collisions. These long pathways are located at the very heart of life involving energy production (e.g. Krebs cycle), complex organic syntheses (e.g. lipid metabolism), and signaling (e.g. apoptosis).

Reconciliation between the physical-chemistry laws and the striking order of cell metabolism is only possible if taking into account protein-protein interactions: what is impossible in diffusive becomes feasible in a condensed state.

Enzymes involved in the same metabolic pathway mutually interact and aggregate to build molecular machines. Here, the steps from initial reagents to ultimate products are confined in a separate ordered phase with respect to the cell bulk. On the other hand, highly organized cytoskeleton protein meshes allow for directed signaling in tissue microenvironment. The presence of an organized “interactome” is the main pre-requisite for metabolism to take place.

Yeast is one of the simplest eukaryotic organisms with a total of 4,500 protein species as compared to the approximate 100,000 human protein species. Assuming the simplest (and extremely minimalistic) case of each  $n$  proteins present in a single copy in the proteome with all proteins engaged in pairwise interactions, the total number of yeast’s possible distinct patterns of interactions corresponds to:

$$N_i = n! / (2n/2)! \cdot n/2!$$

for  $n=4,500$ ,  $N_i$  corresponds to the huge number of  $10^{7200}$  possible interactions (Tompa, 2011).

This number collapses to only dozens of allowed alternative interactome wiring patterns. Given the fact that proteins are the products of genes, such a “collapse” is expected to exert a crucial role in terms of “viable expression states” of the genome.

All in all, nature is telling us of the presence of few “optimal forms” (in the sense of mutual relations among the parts of a system) that emerge out of the indeterminacy of the flat combinatorics of a transfinite number of players.

## CONCLUSION

We know the functional basis of some of these “preferred patterns”: e.g. in the case of proteins the peculiar wiring of protein contact networks allow for the most efficient and reliable transmission of signals across the structure, allowing proteins to play their enzymatic and regulatory role (Di Paola & Giuliani, 2015).

In the case of urbanism, we are still in the infancy of this approach, even if very intriguing research works are appearing (Porta, Crucitti, & Latora, 2006). Certainly, as we learned from network thermodynamics (Mickulecki, 2001), we can look for *ready made* solutions directly from nature (so fulfilling the “biophilic” approach). As a matter of fact, “network wiring principles” linking topology to function are totally independent from the material instantiation of the network, so that a “transport problem on a network” is exactly the same for a protein structure and for a city. This is great news for any true lover of beauty.

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# The Economic, Demographic, and Technological Evolution of the City

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## ABSTRACT

The present contribution aims to highlight how economic development, human evolution, and urban dynamics are entrenched. Obviously, this cannot be a full treaty on the subject but rather a discussion about some notable historical scenarios and their demographical, sociological, and architectural issues. The goal is an evaluation of different economic models and of their effects on cities. This work considers the results of those archeological and sociological researches that have determined a shift from previous models linked to a theocentric culture toward the “classic”, yet greatly advanced for their time, 19<sup>th</sup> century approaches. It deals with the dawn of human settlements, analyzes its evolution from the rise of the Middle Ages to the birth of the first industrial cities, and our present time.

**Keywords:** settlements, development, economy, currency, technology, Zero Waste

## SETTLEMENT

Identity and common defense must have been the first instances for human settlement. Evidences from prehistoric caves show the existence of a principle of solidarity. Hunters who were wounded and incapable of being self-sufficient were taken care of and thence made able to survive. The main features of the evolution toward huts and pile dwellings show that humans were sustaining themselves mainly through hunting, fishing, and gathering. Whilst the latter two activities fit a certain sedentarity, hunting required people to move, sometimes even over long distances. The first housing settlements (as everybody knows, the word “economy” comes from the Greek word *oikos*, which means house), were easy to build and to leave behind in search of better conditions whenever nature’s yield wanes. Settlements imply a first, fundamental division of roles. Healthy males leave to hunt for longer or shorter periods. Females, instead, settle down to take care of a few children and elders, leaving the houses only briefly.

At the time of caves, the whole tribe could hunt and birth was likely a rare event, as opposed to death. Female fertility was possibly low and uneven. On the other hand, diet improvement (food cooking) and other factors could have pushed toward a birth and a survival rate growth. As an effect, groups became more settled and women more likely to gather food from nearby surroundings. Things would have been different if hunting prey was more abundant and the need for long travels less urgent. On the contrary, the rarefaction of hunting prey and dangerous animals contributed to make the abandonment of caves and the rise of the first settlements possible (pile dwellings representing one eventual exception).

Settled people used to live as an extended family (horde). Males coming back from the hunt mated with the horde’s females without forming stable couples or, better, couples were not exclusive.

Drop of hunting’s production and demographic rise, due to climatic change, constrain this evolutionary phase as well. We know that very cold climate periods always shift into warmer ones favoring the growth of edible vegetables.

The dawn of human settlement with primitive sedentary features, as we understand them nowadays, originates from the need for substituting hunting-gathering food sources with dairy, meat, and crops from original farming. The Neolithic Demographic Transition (Bocquet-Appel & Bar-Yosef, 2008) thus causes a change in both production and settlement, but at the same time drives the need for more workforce because of the increasing production.

Steadiness of soil fertility—often typical of areas with cyclical river flooding—suggests farmers-herders to gather their dwellings together. This allows for an improvement of building techniques (e.g. clay bricks), which in fact do not occur when crop rotation is not enforced and the impoverishment of soil pushes people to migrate in search of new fertile lands. On the other hand, water scarcity or secluded water wells are associated with the birth of concepts such as property, exclusivity, competitive (exclusive) wealth, certainty of paternity, and female monogamy (Gurven et al., 2010).

The urban trend is bound to the concept of “family”—people sharing a shelter. This is true also in those countryside areas where the protection against enemies or dangerous animals is not a priority. Hence, the need for identifying a householder arises. The householder also holds a right over the family’s fertile females. At best, accordingly, other males must look for female company outside the family. Therefore, the breakdown of endogamy possibly represents the fundamental step toward family, as we know it, i.e. constrained by taboos about sexual intercourses within a certain grade of kinship.



## THE DAWN OF CITIES

Climatic change facilitates the following: demographic growth, the need for more food, the chance of enhancing production, and the rise of labor force employment in agriculture and connected activities. This brings the first “beyond-private” regulation issues at stake.

The original city is also a state. This latter may coincide with a sovereign who takes care of the subject’s needs with his own resources—a hypothesis that may take place under conditions of great abundance and wealth centralization around the relatively interdependent characters of the Goddess and the Queen Mother. Otherwise, the city determines the specialization of officials such as scribes, soldiers, regulators, et cetera, who consume food, but not only food.

At such a point, leadership is due, no matter if enforced as an assembly or an oligarchy. As it is difficult to enforce power through mere coercion, though, the state (the sovereign) imposes people to hand over part of their production, or to pay a tax on it. Under certain more evolved conditions, like in the most advanced realities of the Middle East, and seemingly not before the ninth century BC, the state issues money. The state uses money to pay its officers, and the producers use it to pay taxes. The officers will buy goods from the best producers, who in turn will be able to pay taxes in order to not undergo repression.

We are used to thinking of the city as a significant cluster of private housing, streets, and public buildings. This comes from a phase of development that culminates into the need for organizing a society. The lack of such an organization turns into a damage for almost every inhabitant—a damage that one can translate with the word “disorder” in the full extent of its meaning.

As mentioned, it is not relevant whether such an organization depends on a prominent figure or the shared engagement of its citizens. What matters is that it needs strong cultural foundations beyond the monetary tool (interchangeable with tithes or *corvées*). Such cultural foundations span from urban identity (we would say “localism”, nowadays) to a defined set of founding; shared values that in the end support the central role of religiosity.

Human aggregation finds its most evident expression during ritual and religious feasts or celebrations connected to phenomena of production, reproduction, and brotherhood, and connected to the (eventually mythical) origins of the city. Such feasts, along with the possibility of exposing imported or self-produced goods, call for the space of at least one square. The square becomes an identification place for the social life of the city.

## OFFICERS AND PRODUCERS

It is the co-presence of both the categories of officers and producers which marks the transition from aggregation without urban identity to the real city. Other characters (e.g. slaves or even kings) are unnecessary for such an identity, despite their relevance and the fact that they add specific peculiarities to a city.

A city can have many or no poor, and one or even two kings. It does not matter who rules the city—a king or a queen, a doge, a mayor, a council, or different kinds of assemblies. On the contrary, it matters if just the officers inhabit the settlement. If they are soldiers, the settlement is a military station, a fort, or a castle. If the officers are priests, then we are talking about a convent or an abbey. Sure, soldiers and priests could manage a production by themselves, but their exclusive

specialization within the non-urban context makes the aggregation nothing else but a castle or a convent.

Producers are individuals or families who devote themselves mainly to the primary sector. Generally, the city is meant to protect farmers in exchange for nourishment (and despite the fact that a city can have weak alimentary autonomy, it must have enough water supply). Non-primary producers such as artisans, cooks, et cetera, usually live inside the city or at least produce or distribute their services within urban walls.

The urban aggregation or village becomes a city when role specialization (e.g. safety and protection of inhabitants) shifts into the specific skill of officer rank.

Here, the term “officer” extends to every hierarchical level. The only exception is the holder of sovereignty, when all the other people are subjects. Therefore, it is the form of government and especially its nature (the origins of power) to allow the distinction between subjects and citizens within the *polis*.

This subject seems very relevant for politics but much less for economics. In fact, officers (soldiers, civil clerks, scribes, accountants, priests, policemen, librarians, controllers, and so on) are specialized and distinct from producers. There is not an “agreement” on eating nor on anything else. Being part of a city means undergoing taxation; whatever in the form of giving away part of the crop, labor, or money.

Sure, money represents a meaningful evolution. When a sovereign issues and manages a currency, he gives an identity to the city and to the state, and makes the land and people he rules pay taxes in exchange for protection and support. Therefore, support is mutual because in case of war, producers are due to join the specialized military officers as soldiers.

The city can even lack religious, cultural, and linguistic unity. In some cases, it can be the result of several “subcities”, each with its own specific identity. Different currencies can circulate within each subcity, but everyone will accept one of them that is most valuable. This is the currency for paying taxes and rewarding officers. The state will accept subcities’ currencies if they have an intrinsic value (made up with precious metal), and this will give room to the phenomena of money exchange and hoarding.

Compared to cities, temples and religious places require homogeneity. One could use a mathematical metaphor and say that the city is a complex, while a temple is a singularity.

## **THE MIDDLE AGES ENIGMA**

The Roman Empire had an extremely modern and fitting capital that Byzantium will later match. After the fall of the Empire, cities shrink, traffic of goods drops, roads decay, and traveling becomes a real endeavor.

The splendor of cities lies fundamentally in their public aim: palaces, temples, baths, squares, amphitheaters, and other ludic places. Latter archeological discoveries about ancient Rome, though, also witness private four-storey buildings (the poor living on upper levels) equipped with toilets, heating systems, and a basic but efficient water pipe system, that Arab architecture only, centuries later, will be able to improve.

Difficult economic conditions affect cities of the Middle Ages until the enigmatic shift of the year 1000. Population drops, public places are humble, if not decommissioned, and there are very few officers. Monks and soldiers represent a significant percentage of people, but they live mostly in fortresses and convents. Lords often prefer non-urban housing where life is more feasible and autonomous, and they can avoid the poor and the sick, defend themselves from attacks, and trade their protection for the fruit of the producers' work, especially in the primary sector.

After the year 1000 and a favorable climate change, public squares go on stage again. They become the centers of cities (despite they can sometimes be located near the walls), and work as gathering places for people in need and for those who bring goods and offer services both daily and during fairs and festivities.

Exchanges are mainly based on barter, but as soon as cities grow in population, economy, and aggregation power, the use of money rises once again.

Monetary fluxes retake the paths of Europe after the Roman Empire gave up its precious metal reserves for importing food from Africa and the Near East. It is the beginning of trade with the revolutionary Arabs. Arabs pay a lot of gold and silver for young slaves: girls for the harem and boys to become eunuchs. The Maritime Republic-Cities (mainly Venice) excel in trafficking by raids and attacks against the Arabic Sicilians over the Byzantine Calabrian coasts (Koehler, 2014, pp. 167ff).

Gold though, keeps being scarce until a new element adds up to this robbery economy—the issuing of exchange bills to avoid the dangerous transportation of gold. The inventors of such a system are the Templars, knights and monks of the City of the Holy Sepulcher. The Templars created a network among their many castles and the European cities, and succeeded in keeping the circulation of these bills for a much higher amount than that of the actual circulating gold.

The first Italian bankers will do the same, shortly thereafter. They will issue “*note di banco*” (to be called “banknotes” soon) that entitle exchanging them into coins with intrinsic value. In fact, banknotes make it possible to manage quantities of value higher than their “underlying” monetary value.

Thereafter, State bills (allegedly exchangeable with gold) will underlie every bank credit, and soon become legal tender currency issued by the central banks. The next (recent) step will be the predominance of money with no intrinsic value at all.

No urban rise would have been possible without a trade revival (the most important exchanges occurred among the Muslims and the Christians) and thus without gold currency—or, better, coins with an adequate precious metal standard. Nevertheless, even these coins would not have been enough to support growth. Hence, the relevance of the aforementioned, pivotal evolution of bank systems from the underlying lien's scarcity toward its uselessness (Kindleberger, 1984).

## **A MODERN STRUCTURE?**

After the Ottonian Renaissance and until the beginning of the Industrial age, cities shape the features of modernity. The construction of religious buildings or their stylistic transformation receive a great boost. Public offices are open to citizens and evolve accordingly. Nobility's palaces become the main residences of their owners and get wealthier, while countryside mansions narrow their functions. Shops tend to group according to merchandise; this explains the evolution of the

layout of roads. Walls tend to lose their importance as the state goes further into uniting the city and countryside by protecting every citizen or subject. In fact, the state increases its territory much further than the short and middle extent of the countryside around the city walls. The sociological differentiation between the rural and the urban heightens. The characteristic of importing food, or, from another point of view, exploiting its producers, defines the urban.

In fact, it is right to say that the modern city (well distinguished from the town that does not have a divide against farming areas) is based on keeping the rural world poor. Money is essential because it allows buying farm products. As a matter of fact, tithes and payment in kind (barter) help protecting the comparative value of goods produced by farmers. On the contrary, monetary taxes and the need for money in order to buy farming tools, et cetera, leverage the exchange more favorably for urban producers and officers. Even the wealth of countryside doctors and priests is lower because herders and farmers tend to pay them in kind rather than with money. In such cases, it is the doctor or the priest that must acquiesce. Yet when it is time for farmers to pay for urban services (taxes included), their condition of weakness becomes blatant. Development and wealth of cities are based on that (Storelli, 2015).

Most stealth unemployment hides in the countryside where many do not reach a minimum income despite their actual hard work. Newborn capitalism, and further industrialism, its most important expression during the past two centuries, are in exact need of that workforce. Such a need will shape cities, but the resulting change will not head toward more freedom.

## **THE ISSUE OF THE PROLETARIAT**

Capitalism was born before industrialism. It is an economic and social model whose prior goal is valorizing capital. This means that a certain amount of money (no matter if borrowed or not) must be transformed into a bigger quantity of money. It does not matter if this happens through a productive or—like nowadays—a financial process. What matters is that the produced quantity is expendable, e.g. as profit, salaries, et cetera.

In order to make such a definition more concrete and present-day (matching the situation of modern industry and proletariat), one should add that the only people who have the social authorization to manage non-expendable monetary tools (bank credit), and transform them into expendable money, are the capitalists themselves.

First things first. Capitalism was born when someone—from the nobility landlord or another class—did not aim anymore at building a palace or a church, at waging war, or at making any other action or work for the sake of owning or giving such object or result to someone else. In such cases, he would have just a capital commitment, i.e. he would have enough money for producing that effect, or enough power to impose someone else to produce it. The new aim is rather valorizing capital, i.e. making it grow.

This was always a rather fringe approach before modernity. Its first steps involve farming, breeding, and piracy during the 16<sup>th</sup> century, with the only previous enforcements by the Italian Maritime Republics. In a certain sense, yet, the Crusades share the same characteristics, and they happened much earlier. Some ardently religious ship owner collected funds and capital, paid soldiers and captains, sent a fleet to devastate “enemy” lands (obviously!) and, if the fleet came back with a booty of greater value than the investment, the operation was a success. If not, one could be content with indulgences and the possible access to eternal life.

Even though some well-documented and mean-minded historian would disagree, war and predatory war differ from a state's normal activity because the latter does not aim (or should not aim) for enrichment. Its goal is rather the best management of the public. It is hard, though, not to consider the well-documented and mean-minded historian who could easily show how some Houses of post-Renaissance Europe struggled for getting rich through wars and conquests. Yet most of the time, that was nothing but a failed capitalism resulting in financially devastated states where it was difficult to distinguish the Treasure from the properties of the Houses themselves.

Venetians, Genoese, Byzantines, and Arabs had a very interesting piracy history, but the present work must focus rather on the countryside.

In fact, when the old and the new rich (eventually because of some pirate raid) begin investing in the most productive sector, i.e. farming (at least until the rise of modern industry), the shift becomes evident. Proprietors aimed to keep their properties active and productive before original capitalism, even by minimizing investment or relying on remittances in kind by their peasants, workers, or farmers. Original capitalism brings the need for maximizing investment and reducing the workforce at parity of the product, or making the production grow at parity of the workforce—or a mix of the two options in order to improve revenue. This marks the end of common properties and civic uses (with a few exceptions) and the beginning of enclosure phenomena as an alternative to the spread of small rural properties, for example, in Eastern Sicily.

This also puts an end to stealth unemployment that could exist only because of family solidarity, where great land property did not take place. The masses of former unemployed or half-employed countryside people therefore immigrate to the cities.

The characteristics of the poor and the unemployed tend to merge. The poor was a low-income employee before the dawn of capitalism, and the unemployed did not exist but as a more-or-less rich nobleman who did not really like to struggle.

Hence, the city's physiognomy changes. The neighborhoods of the poor, the unemployed, and the ex-peasants occupy a bigger part of the city. Such a phenomenon unfolds differently in Europe, and characterizes the evolution of several cities.

This trend reaches its acme during the 18<sup>th</sup> century after the summation of the effects of different periods' demography and urbanization. The need for enhancing farms' revenue forces a huge quantity of desperate people out of the countryside. The improvement of production techniques and the introduction of the first forms of widespread healthcare support the rising of the so-called life expectancy. Climate change brings higher temperatures that benefit crops, heating in houses, and the survival of the newborn.

The previous farming revolution happened simultaneously 10,000 years ago on different parts of the planet and thus depended on favorable climate changes. It can only compare somehow to the social and urban changes of the second part of the modern era. It is not by chance that a new sensitivity toward the human condition has been born in the 18<sup>th</sup> century among both religious and secular people, especially scholars and precursors of the social science, as we mean it today.

Notwithstanding, destiny, divine Providence, and the insatiable lust for wealth of humans prepared an answer for the situation. The huge crowd of the poor that could not go back to the countryside morphed into the proletariat. The proletariat splits in two: the employed and the unemployed who were supposed to grant low salaries for everybody because of being ready to work for any wage, i.e. the current salary established by capitalists (Marx, 1990, sect. VII, ch. 23).



New factories differed in size from craft workshops. The latter were usually small enough to hide into existing buildings. New factories were instead much bigger and required a housing effort without precedent.

Factories needed to be next to shantytowns for two reasons. First, workers' means of transportation were their legs until public transportation began contributing to the next step of the urban revolution. Second, the owners of the factories were also usually the shantytown's proprietors, and they used to withhold rent from wages. Therefore, they were not at all interested in ameliorating the quality of shelters.

There is not much to add to the several descriptions of the terrible conditions of these first workers (Engels, 2009; Szreter & Mooney, 1998). The growing mechanization and the introduction of energy sources independent from human or animal force triggers a process that moves factories far from cities. New satellite neighborhoods rise with characteristics similar to the aggregations of previous peripheries.

Social alarm pushed authorities to provide dormitories with services, police control, sewage, road systems, et cetera. This city assists in the birth of workers' clubs, recreational organizations, and trade unions—that very often turn out to be useful for finding adequate workforce.

There exists a huge literature about the Industrial Revolution (Hobsbawm, 1962). A massively relevant event, it did not happen 10,000 years after the first agricultural revolution, but just one century after the end of the second agricultural revolution. One may want to stress here some phenomena that were already well featured by the end of the 19<sup>th</sup> century, i.e. the extraordinary—unpredictable just 100 years before—development of political parties, trade unions, and workers' culture; the birth of the first forms of mutual insurance against unemployment; state care (including healthcare); urban public transportation, and non-private schools.

These important changes mark the evolution of the city while new salary levels allow “the proletarians” to change their habits. Differently from previous generations, proletarians can now access school, savings, theatres and other amusement places, and streets and squares that transform the face of the city. Here comes the semi-periphery, i.e. a “semi-centrality” among dormitories (not each of them, and not completely) and the unattainable bourgeois Down Town or Core Town.

## **URBANISM FOR SUPERFLUOUS PEOPLE?**

Trade unions, democratic parties, and a great share of public opinion, thinkers, and artists tended to support high salaries and universal welfare during the first 80 years of the “short 20<sup>th</sup> century” (including the World War periods, paradoxically). This drove the proletariat to merge with the middle class and to share its ideals, consumptions, expectations, and way of life.

When the forces of education and productivity were not strong enough, both the struggle for introducing labor-saving technology and the level of salaries were kept low. Less democratic countries and countries that banned trade unions therefore stayed steadily backwards. On the contrary, democratic countries (at least until the great shift of the last 20 years of the 20<sup>th</sup> century) made room for an economic drive that produced a steadily growing society and an urban need for expansion (Galloni, 2016).

The span of time from the Bretton Woods Agreement (1944) to the Tokyo G7 Meeting (1979) marked 35 years of Keynesian, “expansive”, or mixed economy capitalism, characterized by more

state and more market. The cities of “democratic” countries witnessed two kinds of investments: private investments by individuals who wanted to improve their own lifestyle by increasing the cubic capacity of their own houses, often irrespective of urban plans and therefore with non-adequate infrastructures, and public investments aimed at augmenting the transportation capability of bridges and roads for, and at, fostering socialization.

When the first kind of investment was unopposed or not steered enough, life quality dropped. Parking areas, green areas, and potentially social or cultural places were sacrificed to the market. Consequently, peripheral and semi-peripheral (“semi-central”) neighborhoods, despite being knitted to each other and to the center, suffered a lack of valuable space that negatively affected real estate prices since the beginning of the 21<sup>st</sup> century economic crisis.

The second kind of investment lost momentum after new fiscal development rules. This led to an impoverishment in both the quality and safety of public buildings, i.e. schools, hospitals, and administrative departments.

Expansive capitalism ends during the 80s. A decade of restriction on public spending and of monetary conditions leads interest rates to skyrocket.

It is the end of a time, when post offices, prefectures, sport facilities, schools, and hospitals could become architecture paradigms. It is also the end of public building maintenance as a normal duty for administrators.

Capitalism overcomes the expansive model and goes back to impose high profitability of financial capital, of savings, and of real estate. For the first time since the beginning of the industrial revolution (considering historic data-crossing by decades), the condition of European and North American workers, as expressed by the trend of their payroll minus the social shock absorbers, drops structurally, and not because of a conjuncture.

High profitability of capital, including financial asset investments and the cutback of employee income, aggravated by the shrinking of public expenditure, affects the real estate market and the structure of the city.

The rise of financial interest rates was a planned result for giving back freedom of choice to the proprietors who lost it in favor of managers during the expansive phase of capitalism. In fact, managers determined the maximization of production (thus, of investments and of employment that pushed salaries ahead), obtaining the maximum total profit—but at the same time the fall of the rate of profit, i.e. the ratio between revenue and investment. Proprietors could not cope with such a situation until the interest rates were low (Galloni, 2016).

British banks begin to compete for the control of liquidity since the 70s by remunerating deposits and, for the first time, accounts. This lifted the whole structure of interest rates.

Finally, the 1979 G7 meeting in Tokyo took a stance against the substantial 1944 Bretton Woods Agreement and decided that each country shall be responsible for its own balance of payments. This means that weak countries must cope with this trade deficit by lifting internal rates of interest in order to attract capital from abroad and equilibrate their overall trade balance. For the record, this is why strong countries supported the liberalization of capital flow—because their savings could be valorized abroad.

As a last step, a decision was made—central banks could no longer intervene (by printing money) on state bond auctions aimed at financing fiscal deficit. Accordingly, states lose the chance of determining the interest rate to the advantage of banks that then require higher interest rates for buying the whole daily issue.

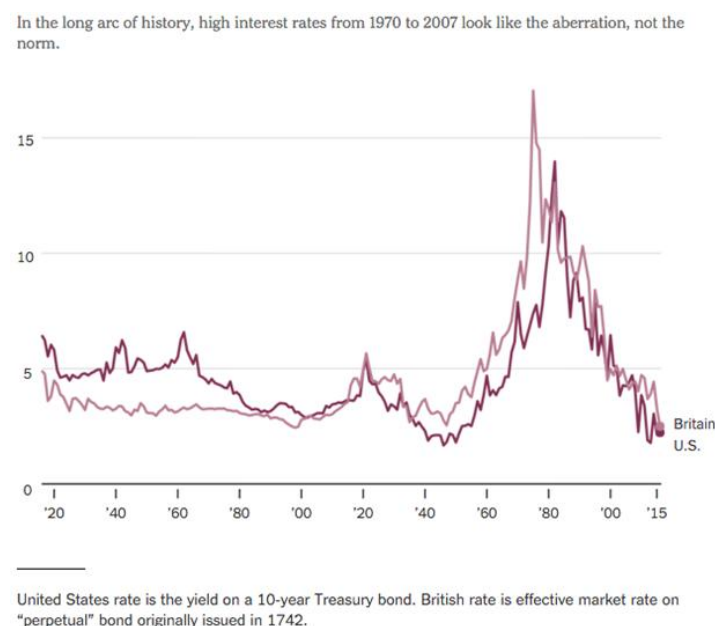
The aforementioned three circumstances (bank choices, G7 in Tokyo, and “divorce” between central bank and the treasury) led to the need for restraining public expenditure (that caused a negative fallout on landscape and public buildings) and to the possibility for private investors to choose among real estate and financial investments.

Private savings grew but so did wealth concentration. State’s influence diminished. This affected the organization of the city because public works and maintenance became more and more difficult. The drive of popular classes to buy houses was hindered and the once trending form of investments in residential areas shrank for private spaces only—mostly updating and restoring interiors (Galloni, 2016, pp. 30–32).

The so-called peripheries were abandoned to themselves, and once again, they began to morph into mere dormitories.

The valorization of savings, the industrial disinvestment race, and the slump of salary spending power produced a division within the middle class. The wealthiest could diversify their expenses (even buying a second house, eventually). The less wealthy had to abandon the peripheries, choosing between moving into satellite suburbia or even into small urban centers, tens of kilometers from the downtown.

Such a new capitalistic model based on high bond interest rates soon revealed its unsustainability because, in fact, it broke the social solidarity covenant, making the strong stronger, and the weak weaker. Yet reversing the course was not possible nor desirable. The sudden reduction of interest rates caused by the 1992 crisis of the European Monetary System was followed by an uproarious growth of equity investments because the new bonds were not as profitable as the previous decade.



**Figure 1.** U.S. and British bond rates, 1920–2015 (Image courtesy of Claret, January 18, 2016, after *The New York Times*).



**Figure 2.** 1927–2015 performance of S&P500 or the 500 NYSE/NASDAQ stock listed companies selected by Standard & Poor’s (Image courtesy of Claret, January 18, 2016, after Bloomberg).

Still, such a financial capitalism was all but new. In most of the cases (mature and traditional productions), the only way to stay listed on the stock market was to make the rate of return on capital grow more than the revenue by reducing investment and employment. This worsened the situation of the employees and of the state that took all the risk. In other words, the great property owners (pension and investment funds) were imposing the management to reach a very specific profit target: the bond yield rate of return from the previous decade when they committed to their investors. This way, for the first time, profit was no longer corresponding to the risk. Ethics was lost.

This financial capitalism, too, soon showed its unsustainable face and had an even shorter life than the previous one. The stock market crisis that had begun in 2001 unleashed a 15-year raw economic crisis that has yet to end.

A booming stock exchange and low interest rates mark the 90s, when banks bustle for disintermediating. In effect, the new rules for creating credit were to focus on capital requirements rather than on reserve constraints. The reader should keep in mind what we said above about issuing credit currency. Hence, banks enticed and forced their clients to buy their securities by suggesting not to keep large deposits of liquidity. Loans came with better conditions for the mortgagees. More and more strange and complex financial “products” were on sale, promising high rewards.

These are the years of great hopes for investors, when popular masses’ spending power worsens, just partially balanced by the imports of low-cost and low-quality goods due to world trade liberalization. This liberalization had a devastating impact on many European cities, where such low-price and low-quality product shops shaped their neighborhoods.

Hopes had an end with the 2001 crisis. Banks started resorting to financial derivatives and issued new toxic assets, waiting for a recovery that could not (and cannot) come until one prevents public expenditure to work as a driving propulsion for private investments.

Such an ultra-financial capitalism is based not on the stock market valorization of securities (that is devastating for the real economy) but rather on the maximization of the issuance of every kind of

securities, that always turn out to be toxic. Not only must Lehman Brothers fail, but every financial institution. Instead, central banks entered the game heavily. They provided every indebted and full-of-toxic-securities bank that requested it with unlimited monetary authorization.

It is the beginning of the latest and still running capitalistic model, the “ultra-financial collateralized” paradigm, where toxic assets are brought to central banks and changed into fresh money. Unlike the financial one, this model is ruled by mathematical algorithms that have nothing to do with the real economy. Definitely, real economy has been expelled from the core system (Galloni, 2016).

Metropolises or metropolitan areas come to life and grow during the aforementioned decades, with differences according to countries. Generally, what happens in the U.S. comes first, Europe follows, and Italy is last. The worsening of life quality of the working class that is less and less remunerated and more and more precarious (with a few exceptions) goes with the weakening of nation states (that still survive). Freelancers and professionals succeed in defending at least their income, but this cannot compensate a general negative trend. Peripheries, inevitably, become less and less livable with the seeming exception of a few areas where the nightlife takes place, bringing on the other hand, gratuitous disorder and violence. Metropolitan cities, including their satellite neighborhoods and small neighboring towns are stage to the problem of a more and more disheartened population that has too few real perspectives and hopes.

In other words, people have become a problem to be managed, and the city is the place where such a problem inhabits and acts; this is the most mortifying and alarming side of the situation. The ultra-financial capitalism features an unlimited supply of money (that does not reach the real economy) against the collateralization of toxic assets, and trusting in the low cost of the regulation. The latter corresponds to the regulation of the management of electronic fluxes of liquidity. Thus, its Achilles’ heel is the possibility that the people themselves find autonomous paths to valorization.

### **ITALIAN (AND NON-ITALIAN) ATTEMPTS: DISAGGREGATING AND DISRUPTING?**

Today, the potentiality of human growth is based on two connected and relatively new phenomena, which have been born less than fifty years ago. These phenomena recorded very few achievements despite their strength increases. They are: a) technological and productive power much superior to the material need of humanity, and b) the capability of creating monetary and financial tools that have no limits but the aforementioned technological and productive power.

So, what is wrong? Why is there a “crisis”?

First and overall—if capital supply is unlimited and, above all, almost costless, capital stops being a productive factor. In fact, it is the limit or scarcity of a good that determines its value, i.e. the limit or condition of growth. The only argument for defining capital as a productive factor is the arbitrariness of the appearance of its scarcity, despite legal money issuing has long been costless. The only productive factor is thence work, in every form—mental, intellectual, physical, caring, creative, artistic, scientific, et cetera.

As a productive factor, it is only work (its scarcity) that puts a limit to growth. Yet if technology (that is itself work but in a settled form) is capable of saving work... then the only real boundary is the limit of the potential growth of human population!



We need to address the so-called environmental sustainability before coming to understand why there is crisis (a Greek word, by the way, which means a “not-yet realized transformation”).

The high pollution of the planet and of its most important metropolitan areas (with some exceptions) comes from choices of the last decades to liberalize trade (globalization). Those choices have in fact rewarded the worst producers—those who paid their workers less, employed children, and did not pay for protecting the environment and human health—two subjects that merge into one, especially within great industrial cities.

Actually, industrial and technological progress can minimize the amount of polluting agents and of scarce or non-renewable resources per unit of product. This happens, though, only if companies actively aim at such a goal. The cost of scarce or non-renewable resources prompts the introduction of technologies for saving on labor and avoiding pollution, if the law imposes it. In order to make such a law effective, one obviously needs to prevent environmental dumping, i.e. the possibility for companies to move where legislation does not hinder polluting production, or where polluting costs less.

Likewise, supply and demand of “happy islands” such as urban or metropolitan natural parks have a meaning if there exists no important sources of pollution nearby.

One can, nowadays, distinguish cities and metropolitan areas of the planet between polluted and non-polluted, even if they claim the same number of leisure and sport infrastructures.

After decades of globalization, a new era must begin, characterized by the drive of countries with faster industrial development toward growth in domestic demand rather than in low-cost exports (which negatively affect income and the environment). The People’s Republic of China, along with other big actors, has already been prompting such a conversion for a few years. This is a very difficult process because China’s financial involvement leads the opposite direction, i.e. to supporting high rates of profit, which one achieves through low wages and avoiding the costs of care for environmental and human health. In fact, the debacle of the Chinese stock exchange originates from the effort of the government to re-orient the core of economy in favor of a greater and more sustainable (in every sense) domestic growth. It is not by chance that the announcement of the Republican candidate to the 2016 U.S. presidential election was about developing domestic demand, reducing exports, rising salaries, and defending the middle class—and this guaranteed industrial cities and trade union support, and thus the final victory.

## **A POST-INDUSTRIAL CITY?**

Here are some of the trends that are beginning to shape a needed change: Zero Waste, the so-called circular economy (recovery and recycling of materials), and the transformation of cities into metropolitan areas that include wide green areas and natural systems for absorbing carbon dioxide and making a productive factor out of it, i.e. for nourishing vegetal species (Zero Waste International Alliance, 2015).

A grassroots process of citizen sovereignty recovery, e.g. in food supply, is leading the deployment of farming and the so-called urban gardens within many Italian cities, Rome first.

The post-industrial city, thus, will not be an industry-less city, but rather a city that will focus on the recovery and recycle industry, on waste treatment, and other zero-waste productive activities. The same recovery of the existing building heritage will have to give priority to the use of local techniques and materials and to a zero or zero-ing environmental impact.

The metropolitan cities revolution needs to find lands big enough to allow zero-mile domestic farming, manufacturing, and services. Such a paradigmatic shift will also overcome the phenomenon of commuting. Instead of containing costs for the sake of export, society will aim at maximizing local production with the goal of surpluses that can compensate for non-replaceable imports. Surplus, in fact, enables supplying goods and services abroad at an arbitrary price, i.e. the current market price abroad, without stressing the cost of the productive factor. A double currency circulation (domestic and international) would support such a new economic model.

This possibly means that overcoming the conflict between urban and rural, producers and parasites, holders of scarce (valuable) currency tools and the dispossessed, and cost containment and resource allocation for buying non-replaceable imports will characterize the evolution of urban and human settlement of the future (Galloni, 2002).

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## ***All My Bones***

*All my bones will say woman.  
All my bones say woman.  
Woman.  
Why do you curve.  
Why do you adapt.  
Why do you embody pity.  
Why.  
Lips rounded  
your streets are lucid smiles  
your palate candied.  
Your bones are bleached deep  
your lips two weekdays sealed  
with golden twine.  
Your lakes are ancient dreams  
crucified with primordial blue  
like two aged warriors of wisdom  
your blessings are borders that burst  
your roses archived,  
your timing revealed,  
suspended, graceful as deer  
freed from the bridle,  
alienated from the python.  
Look not upon me  
because I am,  
because I was.  
I am  
white as the abyss of snowy mountains,  
scorched by honesty,  
my womanhood cast  
into shattered cisterns of interpretation.*

## **כל עצמותי**

כל עצמותי תאמרנה אשה  
כל עצמותי אומרות אשה  
אשה  
מה לך מתעגלת  
מה לך מסתגלת  
מה לך מרחמת  
מה לך  
אגנות שפתים  
רחובותיך חייכים וזכים  
חךך ממתקים  
עצמותיך לכו בוהק מעמקים  
שפתותיך שני ימות חל חתומים  
בשני הנהב  
אגמית חלומות עתיקים  
צלובים בכחול הראשית  
בשני לוחמי חכמה עתיקים  
ברכותיך סניג גבול מתפקעים  
שושניך גנוזים  
עתותיך גליות  
תלויות, לניות חן, אילות  
שלוחות רסנים  
מתנפרות לפתנים.  
אל תראוני שאני  
שהייתי  
אני  
לבנה כמו תהום הררים משלגים  
כי שזפני הישר  
והשליך  
את נשיותי הבוהקת  
לבארת נשפרים

# Biorural

## An Interview with Dr. Michael R. Rosmann

**Sara Bissen**

*The Ruralist Body, United States of America*

Dr. Michael R. Rosmann is a fourth generation North American farmer, writer, and clinical psychologist who has developed the field of agricultural behavioral health. Through genetic, anthropological, historical, and psychological evidence that relates to an instinctual human impulse, Rosmann presents his theory of the *agrarian imperative* (Rosmann, 2010). Defined as a purposeful drive for survival, Rosmann has found that “the agrarian imperative instills farmers to work incredibly hard, to endure unusual pain and hardship, and to take uncommon risks” (Ibidem, p. 72). Evolution, the development of tools, and migratory patterns have all contributed to this purpose of survivability.

The agrarian imperative has an epistemological value that relates to design. Despite the potential for erosion or recession, rurality retains a root in human beings that crosses the urban. Aesthetics for the sake of aesthetics, non-places, and modern urbanism hinder the drive to feel and survive. Such a drive, on the contrary, allows discernment of whether design is viable, lasting, and beneficial for life. The agrarian imperative and its corresponding evidence serves as an epistemological basis to decipher what stays and what does not.

**SB:** What are the human qualities of being rural, despite where one lives and what one does?

**MR:** It’s a very good question. It’s also complex and difficult to answer. As you may be implying, the demographic definition of what constitutes “rural” varies in the United States and probably in other countries. The U.S. Census Bureau, the U.S. Office of Management and Budget (OMB) and the United States Department of Agriculture (USDA) use different definitions.<sup>1</sup>

I assume you are seeking a social-psychological definition of rural, given the nature of the *Journal of Biourbanism*. I don’t know of any formal social-psychological definition of rural—I can only offer my impressions. Rural is not necessarily agricultural in the USA. Currently, only about 17% of U.S. citizens live in places defined as rural by the OMB, or about 55 million U.S. citizens. Only about 5.5 million U.S. citizens operate farms and approximately another 4 million or so persons have their primary jobs as laborers in agriculture (e.g., farm and ranch hands, migrant farm laborers, haulers of agricultural goods). Also, keep in mind that the USDA and the OMB include lumber harvesters, plant nursery operators and workers, and commercial fishers and hunters as members of the agricultural population.

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<sup>1</sup> For demographic definitions of “rural” see: (United States Census Bureau, 2016; United States Department of Agriculture, 2017) according to their respective offices.



Human qualities of rural, I think, are part of our genetic heritage because they had survival value in the past and still carry some of the genetic memories that can be called on, and which are present in varying degrees in everyone. The genetic memories are expressed as behaviors we exhibit yet today and which become more prominent when we have to survive on our own, such as when lost, or without food and in wars. We figure out how to scrounge for safety and for food. We become defensive and cautious. We become increasingly confident in our personal capacities, like our strength and our wits to survive on our own. We defend territories because our territories are needed to sustain us, such as our homes, our offices, our farms.

To me, the human qualities of being rural stem back to when our predecessors gradually emerged from Africa as hunter-gatherers and even before that. They lived in small bands until agriculture provided them a steadier food supply to live in communities like tribes and towns first and increasingly in larger urban settings later. All humans today trace our origin back to Africa. Our ancestors all were dark-skinned (which makes our skin color unimportant, for we once were all mostly the same). As Africans exceeded the carrying capacity of their continent, successive waves of people were pushed or chose to migrate elsewhere. They could only move northward, and followed the seacoasts or from river to river (for food, and maybe for transportation and shelters) into Asia first because southern Asia was warmer than Europe and northern Asia. The great glacial age from 1.8 million years ago up to about 11,000 years ago kept much of the northern hemisphere cold, but it also allowed people to follow frozen seas and land to the western continents of North and South America. As the ice gradually subsided, our sea level rose some 300 feet and our ancestors had to develop boats to travel over water to Australia and parts of the South Pacific (Cavalli-Sforza, Menozzi, & Piazza, 1994).

According to available evidence, some early humans in Asia were small people about 3.5 feet in stature. Neanderthals also moved into Asia and Europe as the gradually melting ice receded northward. These early humans were all hunter-gatherers. The most recent wave were modern humans, who emerged from Africa about 40,000 years ago. At least one woman carried a mutation that lightened her skin and which also accompanied a larger brain for language and thinking. She apparently had blue eyes as well. She is the mother of white people. Others also developed larger brains than their predecessors; some were the ancestors of Asians with their generally superior mathematical thinking. Others were more physically skilled for running, such as our athletes who are dark-skinned. We all have proclivities but we also share similar functional skills. It's so unnecessary to divide humans by color of skin. Some modern humans interbred with Neanderthals and possibly with the pygmy-sized people. I repeat, it's so unnecessary to divide humans by color of skin, size, and various attributes because we have more in common than we differ and we all came from the same origin.

Some modern migrants out of Africa brought knowledge of metallurgy with them. There is fairly solid evidence that iron was first smelted in central Africa (Alpern, 2005), but since Central Africa is now wet, and iron rusts, some of the evidence has disappeared and is difficult to find. Anthropologists think native Central Africans hollowed out termite mounds and used the mounds as smelters. They could plug or open orifices in the sides and the top of a mound to control the amount of heat that could escape from fires ignited in the bottom of the mound to create a hot draft like a chimney does. The natives found substances with iron in them and piled them on a dish-shaped rock that was placed inside the makeshift furnace and surrounded by burning charcoal. They mostly sealed the bottom entrance to the furnace to create a draft that heated the ferruginous material sufficiently to melt its iron onto the rock saucer. They added charcoal as needed to increase the temperature of the fire and even figured out to add grass to supply carbon to enhance the iron to form steel. While the molten metal was still soft, the saucer was removed and its contents beaten into tools. It isn't difficult to see how migrants from Africa to Southwest Asia and later to

surrounding areas fostered the Bronze Age and eventually the use of metals wherever they migrated (Bocoum, 2004).

The Bronze Age actually followed the emergence of agriculture (Rosmann, 2012; 2013a; 2013b). When the hunter-gatherers found they could grow plants they desired to harvest, they cultivated them with makeshift tools. They had a more reliable food supply for lean times like winter and droughts. They now could stay put in a favorable location. The community residents could specialize. Some remained farmers; others became builders; others made tools. Still others became medicine men and women who used plants to heal physical ills, while still others became witch doctors who listened to grievances of their clan-members and sometimes gave advice or placed hexes on disliked people—they were our first mental health providers! Still others became religious leaders and some were keepers of the culture, arts, and oral history. Eventually it became necessary to retain information other than by imperfect oral tradition and memory, so early writing in pictographs developed. Hieroglyphics and cuneiforms were subject to different interpretations, so eventually symbols that represented sounds became our alphabets (Coulmas, 1989). Now the communities could record histories and information about what was needed to maintain their culture, including raising food and climatic conditions. These increasingly sophisticated communities, mostly in Southwest Asia, also needed a method of recording the numbers of events, like how much grain they harvested. So they relied on their fingers, and sometimes their toes to count. Without a greater number than 20 digits, they developed a numeral system that had numbers 1 through 9, then a blank, and started over. Eventually the concept of zero occurred to successors. Numbers led to more accurate recording of information and to the formation of geometry theorems, algebra, and trigonometry (Flegg, 2002). Even the scientific method depended on agriculture for its development (Shuttleworth, 2009). The earliest observers of food plots noticed how growing conditions favored or detracted from production. They became shrewd observers of cause and effect. They compared outcomes. For all their advances, Southwest Asia residents depleted their land, for they didn't figure out how to replace soil nutrients and to keep the ground which their growing population relied on covered during wind and rain events. This was a common problem in much of Europe and Asia, but eventually the Chinese figured out to use fish, animal, and human refuse to fertilize plants to enhance the productiveness of food plots. Unfortunately, these ancient methods are giving way to use of modern fertilizers and chemicals and ever more pollution of land, air, and water in China and many other places. In the Americas, the earliest farmers some 6–8,000 years ago used slash and burn techniques to open up areas for farming and habitation, and they moved when the soil fertility dwindled, only to return decades later. It turned out, the abandoned refuse fertilized successive habitations. Slash and burn aren't viable today, as many are well aware.

Agriculture made life easier and made it possible for people to live in ever larger conglomerations, if they had ways to transport goods, people, and refuse. Today we have urban societies but urban residents still retain instincts encoded in their DNA in varying degrees to enable them to survive conditions that are more primitive. This is a lengthy way of describing what I think are human qualities of rural that we all carry with us. We can revert back to more primitive behaviors that are instincts with survival value. Maslow and others have defined what they think are a hierarchy of needs by humans (Maslow, 1943). These needs could be changing as we have an increasingly complex world. The behaviors that satisfy basic needs will always take precedence in the struggle for survival, however.

**SB: What does it mean to take care of the land? How does taking care of the land relate to having neighbors? Over time, generationally, have you seen any differences in attitudes or behavior?**

**MR:** To me, taking care of the land is mostly learned, but the drive to acquire land is inherited. From what we know about genetics, learning can become encoded into our DNA if it has survival value. Taking care of the land is an ongoing process of learning that slowly becomes encoded over generations into our genes (Extance, 2016).

Like animals that seek and defend territories to reproduce their species, humans seek territories on which to produce essentials for life that enable the human species to procreate and survive. I call this the agrarian imperative (Rosmann, 2010). It is a construct that is gaining validation which confirms the agrarian imperative as a basic human drive that motivates people to own or at least control in some form (e.g. rental agreements) the territories needed to produce food, fiber, and now renewable fuels. Human aggression, such as in wars, can be explained as efforts to acquire territories.

Taking care of the land sometimes followed its acquisition in early humans. Some societies did a poor job of caring for their land, such as the early Persian farmers. They did not adequately see a connection between protecting the land from wind and water erosion and use of fertilization through crop rotation, and use of animal and human wastes. The “fertile crescent” is now mostly poor agricultural land. Societies that did recognize these necessary methods of taking care of the land survived with a steadier food supply. For example, Southeast Asian farmers learned how to terrace their land to hold water, to raise fish as well as rice in the same plots, and to apply animal manure and human wastes on their plots. Native Americans figured out that burying fish in their gardens increased crop yields. As stated earlier, slash and burn farmers in Central and South America learned that abandoned campsites had some of the most fertile soil when they returned to previously used campsites decades later after their detritus had become part of the soil.

So I think taking care of the land has survival value and is part of what motivates farmers to want to leave their land in better condition than when they acquired it so the next generation can survive as well or better (Rosmann, 2015).

How does taking care of the land relate to having neighbors? It creates tensions. What some farmers think is good stewardship, such as applying manure wastes from livestock, is viewed by some neighbors as offensive because it causes odors and degradation of water. In the USA we are gradually seeing the emergence of two types of farming: 1) the industrial model favors high mechanization, technology, specialization in one or two crops or livestock, and ever larger scale; 2) the sustainable model favors careful application of technology and more use of machinery and hand labor to manage weeds than chemicals and GMOs and these operations tend to be diversified with livestock and crops of several kinds (Rosmann, 2016). The latter model includes most organic producers. Tensions and misinformation between adherents to these two main approaches lead to lawsuits. To use myself as an example, I farmed organically. I have problems with my neighbor who has a 6,500 head beef feedlot because he applies so much water from his manure lagoon to his land that sewage drains from his fields down through my land and eventually into the Missouri River. He doesn't like me having to turn him in to the state Department of Natural Resources for his pollution violations. Further, many industrial farmers think organic producers can't furnish enough food.

Are there generational differences in attitudes and behavior about caring for the land? Yes, in the USA, we are seeing organic farmers increasing and industrial farmers decrease. The children of organic farmers are more likely to remain in agriculture than those of industrial farmers. It's easier to get started farming when not as much capital is needed, as in organic and small community farms, than it is to get started in large operations that require a lot of machinery and working capital.

**SB:** Have you noticed any visible indications about housing choices that are consistent with a rural way of being? For example, are some areas of a city chosen over another? Also, how are rural areas changing—what have you found in the absence of the rural?

**MR:** There are several visible indications about housing choices that are consistent with a rural way of life. For example, lifestyle choice farms, also sometimes called hobby farms, are common in developments around many larger U.S. cities. People want to live in a semi-rural environment where they can have a few horses, sometimes goats, chickens, other animals, gardens, and orchards. Community plots where people have gardens are also common, especially in Europe. Many urban residents like to live near green spaces such as parks, buildings that have “green” roofs, and sometimes next to land dedicated to farming within cities and towns. These command premium prices to own or rent.

Rural areas are changing greatly in the U.S. Rural areas are losing population, and along with that the necessary community infrastructure, like schools, healthcare, et cetera.

**SB:** You have noticed the washing away of roots after three generations but also that an agrarian imperative can be reawakened despite this erosion (Rosmann, 2010). How does either the receding or reawakening of such roots affect design and life today?

**MR:** Over time we have seen certain conditions of evolution. There have been mutations for the purpose of sustainability and survival. This has happened in stages, not all at once. The mutations are not all the same in all people. Some are with a strong urge. This has survival value. An accumulation of mutations occur and we can never get rid of them. There is scientific and historical evidence of this. Farming sustainably happened because the world advanced. There would be no technology without the agrarian imperative. The world’s first farmers developed the numeral system, rules of geometry and math, the alphabet, and the scientific method—the principles of built civilization. When individuals are the same, when we do not tolerate diversity of thinking, and when we become dull, all of this allows opportunity for mutations to occur. There are risk-takers in agriculture, and this is what makes the agrarian imperative. The downside is that such people can be chastised, feel like a failure—something that may lead to the possibility of suicide.

Survivability depends on a broad diversity of species and people against anything that will harm us. As one example, by 2030 there may be hardly any corals in the sea. This affects fish life and our own life. This requires the ability to take risks and there is no formula. This is what is needed for survivability—to retain what makes building fine cities and civilization. This is based on feelings and drive. We will never lose the agrarian imperative. If we lose it, we would lose our survival.

**SB:** So where do we go from here, especially in design?

**MR:** Biourbanism is really fascinating and I think the whole concept has a great future because it brings into our current state of thinking the very issues that contribute to whether we survive—or close in on ourselves and fail to survive. What I like about the *Journal of Biourbanism* from looking at past issues is that it focuses a lot on the feelings that architecture and surrounding environments produce. It’s not just based on science but on feelings. And feeling is important because if we don’t act on what our heart tells us we are not authentic and we would not have been working as hard as we could have been. If we feel that what we do is important and essential, then we keep doing it and we figure out how to keep doing it. We must have something that drives us to do that.

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# Housing as a Verb: A Critique of Habitat III's New Urban Agenda —An Interview with Robert Neuwirth

Sara Bissen

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Sara Bissen interviewed writer and researcher Robert Neuwirth in November 2016 on the United Nations Conference on Housing and Sustainable Urban Development (Habitat III), held in Quito October 17–20, 2016. The text in which the interview refers to is the *Draft Outcome Document of the United Nations Conference on Housing and Sustainable Urban Development (Habitat III)*. Quito: United Nations General Assembly A/CONF.226/4.

**SB:** Following Habitat I in 1976 held in Vancouver, and Habitat II in 1996 held in Istanbul, what do you think about the most recent Habitat III in 2016 held in Quito—now that the New Urban Agenda has been adopted?

**RN:** I wasn't at any of these three conferences. But I do have some questions about the mindset behind them. At around the same time as the first Habitat gathering, John F. C. Turner wrote that we have to think of housing as a verb—not as a commodity but as an activity. Yet all three of these global conferences got stuck on the commodity nature of housing and urban development. And they didn't pay enough attention to the active way in which squatters were building whole neighborhoods while the technocrats stood by and did nothing.

Back in 1996, as a local reporter covering housing in NYC, I wanted to go to Istanbul to report on Habitat II. I had been in the city the year before and knew something about the *gecekondu* (built overnight) communities. And I was irked that the UN bureaucrats were going to sit in the hotels overlooking the Bosphorus talking about housing when what they really needed to do was take a ferry and a bus and visit the people who were actually building it. Though I couldn't get any news organization to send me to Istanbul in 1996, I was determined to get to those outlying neighborhoods all over the world where people, in stern disregard of the bureaucrats, were building their own future. It took me five years to develop the courage to quit my job and do it. And that was the start of my work on *Shadow Cities* (Neuwirth, 2005).

**SB:** As a first point, let's talk about #107 from the New Urban Agenda (United Nations Conference on Housing and Sustainable Urban Development (Habitat III), 2016, p. 15).

**107.** We will encourage the development of policies, tools, mechanisms and financing models promoting access to a wide range of affordable, sustainable housing options, including rental and other tenure options, as well as cooperative solutions such as co-

**housing, community land trusts and other forms of collective tenure that would address the evolving needs of persons and communities, in order to improve the supply of housing (especially for low-income groups), prevent segregation and arbitrary forced evictions and displacements, and provide dignified and adequate reallocation. This will include support to incremental housing and self-build schemes, with special attention to programmes for upgrading slums and informal settlements.**

**RN:** Here, the New Urban Agenda seems to once again have made the technocratic turn Turner criticized back in the early 70s. “Policies, tools, mechanisms and financing models” are, of course, terms that a New York or London or Brussels nonprofit could understand. And I’ve got nothing against activists in highly developed cities working on these things. But for the mass of urban residents—the billion squatters I wrote about in *Shadow Cities*—the New Urban Agenda offers only the pale promise of “special attention” to what it calls “programmes for upgrading slums”.

So what does this mean? Well, generally speaking, upgrading programs concentrate on getting people out of shanties and into more stable and long-lasting conventional buildings. But this ignores an important reality. When I was living in Kibera as I was working on *Shadow Cities*, I made a point of asking everyone I met what they wanted for their community. And the answer was never “a better house”. Though everyone knew they were living in degraded conditions, thanks to the absentee landlords and sclerotic land tenure scheme enforced by the provincial administration, bricks and mortar were not their main concern. Rather, they wanted toilets instead of latrines. Or paved roads. Or streetlights. Or access to municipal water. Or electricity. Or sanitation and sewers.

And when I heard what they wanted, I thought of the people I had previously met in the *favelas* of Rio de Janeiro. They, too, wanted these things. And they got some of them by stealing them. They stole electricity from the municipal power grid and water from municipal mains.

This taught me an important lesson. People know they can build homes. They will rebuild them one wall at a time, one brick at a time if necessary, to make them more permanent. The process may take a lifetime.

But they also know they can’t make large infrastructure outlays. Yet it’s the infrastructure that will save lives more than the structure. In South Africa alone, there are 4,000 shack fires every year in which hundreds of people die—and the majority of these fires are caused because the authorities have made it impossible for people living in shack communities to get legal electrical service. So they heat and cook and do their schoolwork and studies using candles and charcoal and kerosene stoves and lanterns. And when someone accidentally knocks one over, it generally causes a fire. The World Health Organization has also estimated that 4 million people die each year from being choked to death because they are cooking indoors over open flames without adequate ventilation. And another 2 million people die every year of water-borne diseases.

This is why theft of water and electricity is so important—because it saves lives.

The UN’s endorsement of upgrading misunderstands this fundamental reality. The only way forward is to work with communities on their own self-defined agendas.

Additionally, the UN misunderstands the multifaceted role a home can play in people’s lives. Many people work out of their homes. Some cut windows into their shacks and sell groceries. Others light charcoal fires just outside their homes and sell what they cook. Still others set up impromptu tailor shops. None of this is allowed in so-called upgraded buildings. Upgrading may offer an arguably



better home, but it may also deny people the possibility of doing the work they need to do to pay for it.

**SB:** Then, here is #111 (p. 15) that states:

**111. We will promote the development of adequate and enforceable regulations in the housing sector, including, as applicable, resilient building codes, standards, development permits, land use by-laws and ordinances, and planning regulations; combating and preventing speculation, displacement, homelessness and arbitrary forced evictions; and ensuring sustainability, quality, affordability, health, safety, accessibility, energy and resource efficiency, and resilience. We will also promote differentiated analysis of housing supply and demand based on high-quality, timely and reliable disaggregated data at the national, subnational and local levels, considering specific social, economic, environmental and cultural dimensions.**

**What does “arbitrary” mean in this context, in relation to “forced evictions”?**

**RN:** Habitat I and II were unequivocal. They both called for an end to all “forced evictions”. The New Urban Agenda only calls for preventing “arbitrary” forced evictions. The change may seem small but it’s actually crucial. While Habitat was going on, the government in Lagos, Nigeria started evicting waterfront shantytowns, most of which had been people’s homes for decades, and the French government descended on The Jungle, the informal refugee encampment in Calais. Neither of these actions was in any way arbitrary. Indeed, the authorities claimed they had solid and compelling reasons for moving forward. So they were not in violation of the New Urban Agenda. The people who wrote the New Urban Agenda simply failed to understand that no evictions are ever arbitrary. Every eviction has a reason. Otherwise they wouldn’t be worth the hassle. So that seemingly innocuous one-word change defanged the UN from ever speaking out against evictions anywhere.

**SB:** For #110 (p. 15), what is the Agenda really saying here?

**110. We will support efforts to define and reinforce inclusive and transparent monitoring systems for reducing the proportion of people living in slums and informal settlements, taking into account the experiences gained from previous efforts to improve the living conditions of slum and informal-settlement dwellers.**

**What would you say this improvement is based on? Did they do so well in the past?**

**RN:** Here, the UN is doubling down on a fictional claim it made four years ago. Back in 2012, the UN claimed a grand victory on the Millennium Development Goals. In particular, UN-Habitat claimed that it had improved the lives of 100 million slum-dwellers. The proof the UN offered was only an inference: “the share of slum dwellers in urban areas declined from 39 per cent in 2000 to 33 per cent in 2012, improving the lives of at least 100 million people”. Yet there were over 100 million more people living in shantytowns in 2012 than there were in 2000. How could these two things—a vast increase in the number of people living in shantytowns and a vast decrease in the percentage of people living in shantytowns—both be true? And why might the decrease in the percentage of people living in shantytowns be due to anything the UN had done? The organization couldn’t say. In the absence of any real knowledge, the most likely story is that the UN simply changed the definition of shantytown and slum communities so that some that counted in the 2000 statistics no longer counted in 2012. And that seems to be exactly what happened. The UN changed the definition of what constitutes a slum in 2008—for instance, weakening the standard on clean

water from “access to safe water” to the more porous “access to improved drinking water”, a category that, according to UN-Habitat documents, includes “bottled water” (Participatory Slum Upgrading Programme–UN-Habitat, n.d., p. 3), which everyone has access to as long as they have money. Other standards were also watered down. In 2000, for instance, any community relying on pit latrines as toilets was considered a slum. But in 2005, the UN changed the definition so that pit latrines with a slab (a covering with a hole that you can squat over) now qualify as “improved sanitation”. As David Satterthwaite has suggested: “The very large understatement of the deficiencies in provision for water and sanitation also means that the statistics on the extent of slum populations provided by UN-Habitat are too low, because ‘improved’ provision for water and sanitation are two of the four criteria used to define ‘slum’ households. The estimation of the world’s ‘slum’ population would be much higher if more appropriate standards were set on water and sanitation provision in urban areas” (Satterthwaite, 2016, pp. 114–115).

And this was most likely how, without being able to point to a single community having been improved or a single life transformed, the UN was able to announce a wonderful but purely illusory victory.

Finally, it’s important to note that the New Urban Agenda ratifies this same approach. It does not promise to reduce the number of people living in slums. Rather, it only proposes to reduce “the proportion of people living in slums”. In other words, the New Urban Agenda allows the UN to continue doing exactly what it did in 2012. It can continue lying with statistics.

**SB:** At point #23 (p. 6) we find the *Quito implementation plan for the New Urban Agenda* that says:

**23. We resolve to implement the New Urban Agenda as a key instrument for enabling national, subnational and local governments and all relevant stakeholders to achieve sustainable urban development.**

**Despite the fact that this document is void of indicators and specific project plans for implementation, there are over 150 points (#23–175, pp. 6–22) on the plan for implementation, effective implementation, the means of implementation, and follow-up.<sup>1</sup> This shows that how these commitments are going to be used as a “key instrument” is important. We don’t have the specifics of the how, yet the how is there. The Agenda talks about implementation, but what in fact are they implementing? What are the criteria for how?**

**RN:** The verbiage about implementation is grandiose, but let’s not forget: the New Urban Agenda is non-binding. Any nations that sign onto it are doing so voluntarily and there will be no

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<sup>1</sup> More specifically, #126 (p. 17) under *Means of implementation* sounds like a disclaimer where the entire world must align in order for the New Urban Agenda to work: “126. We recognize that the implementation of the New Urban Agenda requires an enabling environment and a wide range of means of implementation, including access to science, technology, and innovation and enhanced knowledge-sharing on mutually agreed terms, as well as capacity development and mobilization of financial resources, taking into account the commitment of developed and developing countries, and tapping into all available traditional and innovative sources at the global, regional, national, subnational and local levels, as well as enhanced international cooperation and partnerships among governments at all levels, the private sector, civil society, the United Nations system and other actors, based on the principles of equality, non-discrimination, accountability, respect for human rights and solidarity, especially with those who are the poorest and most vulnerable”. Point #128 (pp. 17–18) aims “to generate evidence-based and practical guidance for the implementation of the New Urban Agenda and the urban dimension of the Sustainable Development Goals”, and #161 under Follow-up and review (p. 21) further stresses deliverable implementation, “ensuring coherence at the national, regional and global levels, in order to track progress, assess impact and ensure the Agenda’s effective and timely implementation, accountability to our citizens, and transparency, in an inclusive manner”.

penalty for breaking the commitments in the document. Some of those who participated in Habitat III have suggested to me that the document is mostly a blueprint that local groups can use to shame their municipal, regional, and national governments over the coming decades. But, given how the document gutted the provision against forced evictions, it's hard to see how the New Urban Agenda gives squatters much to work with. On the other hand, cities in the developed world may be able to use the New Urban Agenda's endorsement of trendy urbanist notions of placemaking and tactical urbanism and the importance of public space. It's sad that this document approved with such fanfare in Quito will quite possibly have greater impact in cities like Chicago and Quebec and Copenhagen, cities that are already quite privileged in the ways in which they have developed.

**SB: Noting #35 (p. 7):**

**35. We commit ourselves to promoting, at the appropriate level of government, including subnational and local government, increased security of tenure for all, recognizing the plurality of tenure types, and to developing fit-for-purpose and age-, gender- and environment-responsive solutions within the continuum of land and property rights, with particular attention to security of land tenure for women as key to their empowerment, including through effective administrative systems.**

**Based on the nuances of the concept of property that you had found in squatter communities around the world—as presented in *Shadow Cities*—what do you think about this point?**

**RN:** “fit-for-purpose... solutions within the continuum of land and property rights” is an awful slogan to rally around. I have no idea what it means.

Look, security of tenure is absolutely crucial. But it is not at its heart a legal concept. In layman's terms it simply means staying power: the idea that you won't be summarily evicted and the sense, ephemeral though it may be, that your community is, at least for the reasonably foreseeable future, not going to be destroyed.

That's true security of tenure. It doesn't require any tortured legal codification.

I have long argued that water is secure tenure and electricity is secure tenure and sewers are secure tenure. By this I mean that the provision of infrastructure is the best pragmatic metric of security of tenure. When people have roads and water pipes and sewers and sanitation, it's hard to argue their communities are unsafe and unhealthy and deserve to be smashed to the ground.

**SB: In a way, the document assumes the city is static. How can the static characteristic of this particular New Urban Agenda deal with the world's crises? What does this mean for the importance of the “ruderal”?<sup>2</sup> Taking into consideration, if possible—rural, migration, and urban decay.**

**RN:** The best cities, of course, are in continual stages of becoming. This does not mean that developers are on the march erecting taller and taller paeans to wealth. Rather, it means that successive waves of new arrivals are being knit into the urban fabric and are developing new dynamics that merge with older patterns.

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<sup>2</sup> Ruderal, meaning a reality connected to “waste ground and refuse” as defined by Neuwirth (2016, p. 23).

To accommodate this, cities need their ruderal spaces. Not planned out parks or gardens or paved public spaces or plazas. But actual empty parcels and lots. These things are key. Cities are not only about development.

Years ago, when I was a community organizer fighting against the luxury redevelopment of Times Square, I discovered that the Environmental Impact Statement produced for the government-sponsored project defined all parks and community gardens and empty lots in the surrounding area as “underdeveloped property”.

It’s in just this way that we create waste ground—not in reality but as an idea. We dump this idea on certain parcels. And then we define those parcels as wasted, unnecessary, surplus, ready for exploitation.

The smart city, the planned city, the garden city, even the global city all need waste spaces. To absorb run off, whether of melting snow or the monsoon or simply the human need to stare at a rock outcropping or marvel at a tree that has somehow grown tall against the chaotic sprawl of skyscrapers or factories or shantytowns. To accommodate new arrivals—whether human migrants from the hinterlands or weedy species that need places to sprout. To save us from our own endless consumption of land and resources. To show us our own limits.

**SB: What do you think of this year’s focus on “the right to the city”?**

**In *Shadow Cities* (p. 311), you wrote:**

**The world’s squatters give some reality to Henri Lefebvre’s loose concept of “the right to the city.” They are excluded, so they take. But they are not seizing an abstract right, they are taking an actual place: a place to lay their heads. This act—to challenge society’s denial of place by taking one of your own—is an assertion of being in a world that routinely denies people the dignity and the validity inherent in a home.**

**Of the New Urban Agenda, *Our shared vision* #11 (p. 4) states:**

**11. We share a vision of cities for all, referring to the equal use and enjoyment of cities and human settlements, seeking to promote inclusivity and ensure that all inhabitants, of present and future generations, without discrimination of any kind, are able to inhabit and produce just, safe, healthy, accessible, affordable, resilient and sustainable cities and human settlements to foster prosperity and quality of life for all. We note the efforts of some national and local governments to enshrine this vision, referred to as “right to the city”, in their legislation, political declarations and charters.**

**Today, what are your thoughts on the right to the city?**

**RN:** What I wrote a decade ago remains valid. But the New Urban Agenda once again adopts technocratic language when it suggests that the right to the city can be promoted by legalistic efforts of national and local governments.

Henri Lefebvre, who coined the phrase, was suggesting something more radical: a move by people themselves to assert their place in the city. This is no mere charter or agenda or statement of principles. Rather, it requires action. For generations, the world’s squatters adopted silence as a survival strategy. The idea was that if they hid out in the hills and kept their heads down, they could keep their homes. This worked for many years. But silence will no longer work. The world’s billion

squatters now have to emerge. This will be difficult. But it is only through their emergence that anything like “the right to the city” can be actualized.

**SB:** Overall, do you think one may suspect that the purpose of the Agenda is to serve as justification for UN-Habitat and Habitat III existence? In fact, #170 (p. 22) states, after reaffirming its relevant General Assembly resolutions, that “we reiterate the importance of the Nairobi headquarters location of UN-Habitat”. Considering Nairobi’s Kibera was where you once lived, could you talk more about the slums that exist next to the home of Habitat?

**RN:** I’m certainly in favor of UN offices being spread all over the world and I think it’s appropriate that the UN’s agency that thinks about cities and rapid urbanization be located in Africa. But let’s be honest: UN-Habitat’s headquarters is not in a publicly accessible office building downtown. It is on its own lush campus in a wealthy suburban-style suburb known as Gigiri. Spiritually, it’s just as far away from mud hut communities like Kibera and Korogocho and Mathare as it would be if it were in New York or Geneva. And its efforts to involve itself in actions in those communities have been abject failures.

In *Shadow Cities*, I used a fragment from Franz Kafka to start my chapter on UN-Habitat: “a cage went in search of a bird”. Habitat is an agency designed along the Western technocratic model. Its personnel are well-meaning, but their actions are limited by what the UN Member States will permit. UN-Habitat has never been permitted to be as radical and experimental as some of its staffers would like.

**SB:** Creative urban concepts are embedded throughout the Agenda, but they seem either already inherent to informal settlements themselves, or not central to the most pressing housing concerns.

These include concepts such as an “urban paradigm shift” (#15 under *Our principles and commitments*, p. 5), “smart-city approach” (#66 under *Environmentally sustainable and resilient urban development*, p. 11), “well-designed networks of safe, accessible, green and quality streets and other public spaces that are accessible to all” as #100 (p. 14) plus #109 (p. 15) even more “accessible, green and quality public spaces” but this time specifically in relation to slums and informal settlements (both under *Planning and managing urban spatial development*), and “walking and cycling” #114(a) (p. 16) (under the same section).

**Based on your experience, how valid are such notions in the Habitat discussion when there are slums without the basic infrastructure that the general public tends to take for granted?**

**RN:** The New Urban Agenda supports trendy notions of “placemaking” and “tactical urbanism” and “public space” without understanding that these labels actually describe the natural way that people create their communities. Every shantytown or street market is a place that engages in tactical urbanism and tries to maximize public space and create a true destination even as it is super-dense and, because of lack of infrastructure, sometimes super-decrepit. The real “urban paradigm shift” needed is to recognize that squatter communities and street markets are legitimate parts of the city.

**SB:** Point #1 (p. 1) in the Note by the Secretariat, the General Assembly “reaffirmed its decision” that Habitat III “was to result in a concise, focused, forward-looking and action-oriented document, which should reinvigorate the global commitment to and support for housing and sustainable urban development and the implementation of the New Urban Agenda”.



### **What do you think about the result of this document?**

**RN:** At a recent conference, I got a bit of pushback from some NGO-types that the Habitat document really exists for local people to try to use it as a lever to spur municipal action. Maybe so. But then, instead of 22 pages, it should have been one page, and instead of being non-binding it should have been compulsory. Perhaps something like this:

**In the 21<sup>st</sup> century,**

- 1. There will be absolutely no forced evictions, but rather all communities will become lead partners in their own redevelopment.**
- 2. All city plans will assess how and when and how much it would cost to extend all basic infrastructure—including sewage, fresh water, sanitation, and electricity—to every resident and these timelines should be updated every four years.**
- 3. Governments on all levels must recognize the crucial importance of System D/the informal economy<sup>3</sup> to the life of their residents.**
- 4. Governments on all levels must ratify radical transparency and local empowerment and the importance of doing things together.**

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<sup>3</sup> “System D” refers to the ingenuous and improvised stealth economy typically performed outside the official economy by *débrouillard* (resourceful) people, as defined by Neuwirth. It has been estimated that two-thirds of the world’s labor will be working in System D by 2020 (Neuwirth, 2011, pp. 17–19).

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# A Structure-free Structure: Being as Unknowing

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## **ABSTRACT**

Essence is a non-scientific concept that nevertheless exists in spoken discourse and has strong significance when defining the act of architectural design. It might appear an easy task for us to answer the question of essence with our subjective conceptualizations, which are not necessarily verbal or tangible. From my perspective, in order to examine essentiality, there is no more suitable a field to travel in than the poetic. Within the poetic, the non-verbal is expressed through a verbal picture that contains multi-layered foci. These confer on the poem a spatial and multi-dimensional quality, the materiality of which depends on that which is not, as much as that which is there. In this essay, I will attempt to move between the present and the absent within the fields of lyric poetry of both Western and Eastern traditions, and to appropriate from this realm the fundamental questions that invite poetics to become an integral part of the intervention of architectural design.

**Keywords:** poetry, *tanka*, *haiku*, sonnet, lyrics, essence, space, Heidegger

*I write  
I erase and finally  
The poppy blooms*

—Hukoshi

In this paper, I will attempt to trace “being in essence”. The initial paradox of this endeavor is that the very essence that I am attempting to determine in words is something whose verbal description is slight, refined, and benefits from the art of reduction. The space created around what is defined is all-encompassing, a rare quality that captures everything and is precisely what I will attempt to do in this essay with so many words. In this sense, the above poem by Hukoshi with which this paper opens, should speak the silence encased within it and I, whispering through his poetry, should say everything that is not right for him to say, yet so obvious and well arranged within his poetry.

In order to investigate the basic concepts of this theme, I believe that fundamental questions should be asked that lead us to a primordial vision as if this were a first meeting, arousing a new gaze, and resuscitating concepts that are familiar to us. Through this act, the familiar becomes alienated, and because of this, reasserts its own qualities. What was obvious for us, receives a new presence of existence. In the language of poetic concepts, this is called de-familiarization—an action that turns a familiar concept into something unfamiliar and in doing so, enables that same concept to receive a new vitality in which the qualities that characterize it shine as they did when they first came into being. As Victor Shklovsky says in *Art as Technique*:

If we start to examine the general laws of perception, we see that as perception becomes habitual, it becomes automatic. Thus, for example, all of our habits retreat into the area of the unconsciously automatic... And art exists that one may recover the sensation of life; it exists to make one feel things, to make the stone *stony*. (Shklovsky, 1965, p. 11)

In this instance, the methods are usually figurative and use tools that have a quality similar to the unfamiliar, as a metaphor in which qualities of one concept are used in order to illuminate the qualities of another.

An example of this kind of experiment can be found in George Perec’s *Species of Spaces and Other Pieces* (Perec, 2008), which deals extensively with the deconstruction of place and reconsiders the basic uses of language in order to break out of the obviousness of private and public spaces, within which we have become accustomed to dwelling and moving.

This characteristic of renewing the gaze, and by doing so enabling the familiar to become alienated and return to its “thingness”, is applicable to all creative fields. The kinetics, the multi-dimensionality, the possibility for change within an existing medium such as a text, an architectural structure, or a city is applicable to all the arts. This is because its root is affixed to the source of the work of art, as explained in Heidegger’s *The Origin of the Work of Art* (2002). That source, in other words, is the deliberate consciousness that constitutes a work of art. Also under the category of creative processes falls the sphere of architectural intervention and urban design, which poses a certain challenge to the clarity of this definition, and which widens the relationships that appear in the micro toward the macro, creating a series of connections that bring forth new opportunities.

In my argument, I assume that this sphere belongs to the realm of art based on the visionary origin of the act of architectural intervention, and on its fundamental elements that are the concern of this paper. The functional aspect can alter the point of view or the conceptual spectrum of the definition.



Therefore, defining this sphere as art demands a separate discussion that is certainly relevant to the topic but will be deferred at this stage. For the sake of convenience, I am applying the creative aspect and thus, will use the term creation and not art.

When considering the poem in *Off the Beaten Track*, Heidegger disassembles the forest as a name differentiated from its identity and invites the reader to *be* through trees.

## THE WAYS OF TREES

“Wood” is an old name for forest. In the wood there are paths, mostly overgrown, that come to an abrupt stop where the wood is untrodden.

They are called *Holzwege*.

Each goes its separate way, though within the same forest. It often appears as if one is identical to another. But it only appears so.

Woodcutters and forest keepers know these paths. They know what it means to be on a *Holzweg*. (Heidegger, 2002, epigram)

Trees. Paths are arranged through the trees. They are tree-paths. The forest is a collection of particulars. Even the tree-paths are an aggregate that appears to be coherent but characterized by their uniqueness to exist side by side, “each and every way continues of itself but in this is the forest. The trees, the forest and the paths provide an opportunity to pause. The forest is not a homogenous, blocked space and the paths have their individual qualities. *Holzwege* do not necessarily lead to any specific place, but they are present in open space, side by side. A path is an invitation into the unknown, into suspension. Some already have knowledge of this secret (“the woodcutters and forest keepers”). The secret is to know how to be on the path of the trees. The tree path is an invitation to move, to rest, to pause, to be. Despite the fact that it is possible to go much deeper into the poem, for the sake of the discussion, what propels us forward is precisely the stopping of knowing: the stopping, the knowing, the knowing of being—being on the path.

When contemplating the ways of trees, a space for fundamental questioning is created. The fundamental notion I seek does not belong to any analytic method. That is to say, it is not necessarily an analytic method to be used on space, structure, and the formal elements of the poem for finding its essence. We will rather focus on what that space is at the moment of conception, before the creator/writer/designer has given birth to his thought. This “first line that hits on the head” is what I call the writer’s consciousness (the creator-designer).

השורה הראשונה שמכה בראש  
ומהממת אפשר לכתב בכת  
מהממת לא לזכר עוד כל ולרוץ  
שלוח רסן פרוע שער ולבוש על  
פני כל השורות בין כל  
השורות הצופות בה נדהם איש  
שלא מן האנשים ולהגיע איכשהו  
שובר רגל ומפרקת על פני  
מהמורות מראות סיים שלמים  
נשברים למכתות אל סף של

תהו בהו בראשיתי

וכל שלא אמור אמור בין השיטין

The first line that hits on the head  
 and stuns can be written as powerfully  
 and stunned not to remember any more and to run  
 dispatched bridled and wild-haired and dressed  
 over all the lines between all  
 the lines watching you stunned human  
 not of the human and to arrive somehow  
 breaking a leg and in front of me  
 showing a complete life  
 breaking into shards on the threshold of  
 chaos in Genesis

And all that remains unsaid will be said between the lines.

(Gilboa, 1987)

Amir Gilboa is one of the first authors of modern Hebrew poetry in Israel.

How can we define an architectural/urban intervention? Are the parameters of planning used in the process of creation enough to define whether or not an intervention was implemented here, or alternatively, am I committed to a result in order to determine the nature of the intervention, or even admit that such an intervention happened? In order to add an essential aspect to the attributes of the question of urban intervention, it will be worth our while to apply the same question to the field of poetics, and particularly when these two fields of content overlap at the points of the aforementioned reference.

If so, as writers or readers of poetry, how can we know that what lies before us is a poem? Can we deduce this observation from the regularity of the structure, the meter, or perhaps the said or unsaid content? Do these characteristics make the poem a poem? Is every text that conforms to certain structural rules to be placed under the category of a poem? The refined answer I strive for is the connecting thread between the two disciplines—poetry and architectural/urban design.

David Avidan, another pioneer of modern Hebrew poetry, formulated his own response when answering the following question in *A Modest Contribution to a Theory of Poetics* (ועהצנ תרומה (הפואטיקה של לתיאוריה):

שיר הוא דבר שאני קובע שהוא שיר  
 לאחר שאני כותב אותו  
 כשיר או כלאשיר  
 אבל מפרסם אותו כשיר

ועכשו תקבעו מהדש מזשיר

A poem is a thing  
 That I determine is a poem  
 After I have written it  
 As a poem or a non-poem  
 But I publish it as a poem

And now you determine anew whatzapoeem

(Avidan, 2009, p. 264)

David Avidan uses tools such as “portmanteau” and in his writing does not adhere to any given set of rules. In this, he creates words and a language of his own, a very personal poetic that challenges the reader in that he is the one who sets down the rules—not just about his own verses, but furthermore, about what defines poetry in general. He does, however, leave the reader with an apparent corner for intervention. The process of turning the writing into a poem is conditional upon the author’s awareness of the poem’s coming into being—“after I write it as a poem or a non-poem”. It is precisely during the process of wording that the writer is not obligated to make a poem. His obligation is first and foremost about the creative process itself. Only upon completion does the poet determine if it is a poem: “a poem is a thing that I determine is a poem”. This connects us to the third stage in which the poem as a poem is presented to the reader and in doing so, it receives the title “a poem”—“but I publish it as a poem”. The consciousness of the writer dictates the creation of the poem, posits it as a poem, and within this dialectic process Avidan claims to create a “new poetry”—“you determine anew whatzapoeam”. Avidan leaves behind the critical intervention by the reader. His first assertion significantly shows that the definition of a poem remains dependent upon what the writer determines. It is clear that the creator’s assertion regarding his poem is highly subjective. Modern Western poetry has broken every structural rule, and yet it has preserved the deepening of the subject and its involvement, almost to the point that the writer becomes the exclusive object of the poem.

If we turn back to classicism, we see how both Eastern and Western traditions have enforced processes of liberation from structural limitations. I propose observing these processes of poetic development as a way of relating to the fundamental issue I attempt to characterize as constitutive of any creative process, and whose presence will necessarily be expressed in the outcome of the creative action itself. The same essence, which is easier to characterize in a personal way, will help us answer the question about what architectural intervention is and what a poem is.

There are three parameters that can be offered as a possible bridge between the two disciplines: regularity or obedience to formal rules, awareness of the observer (designer or writer), and the empty space or absence. These will assist us in examining the connection between the two fields through examples, in order to outline a different mode of being for architectural planning.

Lyric poetry is characterized by themes that relate to nature, love, and at a later stage contemplation, philosophy, and hierarchal relationships. From Western traditions, I chose the sonnet, which is a poetic form developed in 13<sup>th</sup> century Italy. From the evolving Japanese theory of poetics, I selected the *tanka* during its transformation into *haiku* from the 12<sup>th</sup> century onwards.

## THE WEST

The word *sonnet* means a song, a small sound or little poem in Italian. It is classical poetry, poetry of emotion. The sonnet makes use of formal rules as a tool to create an experience that goes beyond the limits of the individual, towards the universal. The sonnet originated in Sicily during the 13<sup>th</sup> and 14<sup>th</sup> centuries and was originally a poem about love and nature. Later on, it deepened its meditative character, turning to everyday life through temporal elements and relationships, seasons, and political eras. Timelessness became accessible through phraseology. The two main sonnet forms are also defined through their differing rhyming schemes—the Petrarchan sonnet, named after Francesco Petrarch in the 14<sup>th</sup> century, and the Shakespearean sonnet from the 16<sup>th</sup> century.

## THE CHALLENGE OF FORMAL RULES

The regularity of the sonnet expressed through a strict rhyming pattern and structure of uniform stanzas, meters, and syllables, forces the writer to adapt the development of a personal idea or thought to a set of dictated conditions. The expression of individuality is subject to a system given in advance. The challenge of originality in a space that is already defined can enable the use of shape to convey the content in various meaningful ways and provide a platform for the connection between the personal and the universal.

The structure of the sonnet consists of four stanzas. The first two stanzas are an octet: two quatrains each consisting of four lines. The final two stanzas are a sestet: two tercets, each consisting of three lines. Altogether, the sonnet amounts to a total of 14 lines. The sonnet's meter consists of five and a half iambic feet and eleven syllables. Form of content: in the classical sonnet, the first eight lines (the octet) express a problem/theme/situation. The sestet, however, offers a solution/antithesis/reaction, and often suggests a conclusion/illumination in the last couplet. The rhyming scheme is rigid: for the Shakespearean sonnet—AB AB, CD CD, EF, EF, GG; for the Petrarchan rhyming scheme—ABBA, ABBA, CDE, CDE, and so on.

The following is an example of a sonnet, *A Dream Pang*, written by Robert Frost:

I had withdrawn in forest, and my song  
Was swallowed up in leaves that blew away;  
And to the forest edge you came one day  
(This was my dream) and looked and pondered long,  
But did not enter, though the wish was strong:  
You shook your pensive head as who should say,  
“I dare not—too far in his footsteps stray—  
He must seek me would he undo the wrong.”

Not far, but near, I stood and saw it all,  
Behind low boughs the trees let down outside;  
And the sweet pang it cost me not to call  
And tell you that I saw does still abide.  
But 'tis not true that thus I dwelt aloof,  
For the wood wakes, and you are here for proof.

(Frost, 1995)

## THE EAST

Lyric Japanese poetry moves from *man'yōshū* to *tanka*, and from *tanka* to *haiku*.

*Man'yōshū* (meaning “a collection of ten thousand leaves”, in Japanese) is a poetic form that was prevalent from the eighth until the 12<sup>th</sup> century AD. Its structure consists of 5 or 7 syllables, or one long poem. It can also be short and free of formal restraints. It is open to all social classes, written in a simple and straightforward fashion. Its themes are suitable for lyric poetry: the expression of feeling through nature, yearning, love, allegiance to a ruler, et cetera.

*Tanka* (meaning “dweller in the paddy field”) has developed from the 12<sup>th</sup>–16<sup>th</sup> century. It is a short lyric poem, which consists of 5 lines (columns) and 31 syllables. The poem is divided into two

parts: three opening lines divided into syllables in groups of 5, 7, 5, and two closing lines in which the syllables are divided into two parts with 7 syllables each, devoid of rhyming. All the words end with a syllable. The division of themes is as follows: the three opening lines picture nature, the following two lines with which the poem ends complete the meditative aspect of the picture. In other words, the poet's reaction to a picture is a kind of meditative reflection on nature through his emotional world.

In a *tanka* the writer holds two mirrors: one mirror reflects nature, and the other reflects the poet's own image as he beholds nature. The *haiku* is in fact the opening of the *tanka* (*hokku*, in Japanese); *ergo*, the first three lines (5, 7, 5 syllables with a total of 17 syllables) without the two last lines with which the poem bids farewell.

How does this farewell occur? The development of Japanese philosophy, from the consciousness of an involved contemplator who observes with wonderment, devoid of contemplative reflection, is what caused the two final lines of the poem to be omitted, as they included the involved expression of the writer. The second mirror, the mirror of the "self" is shattered. The writer now holds only one mirror, which only reflects nature. The *haiku* poem "sheds" the contemplative "I" and leaves the reader with simply a depiction of nature. Furthermore, the medley of the poem that includes only the opening line and the *haiku* as it evolved (originally, the *renga*) became the accepted and popular form for poetry.

An example of *tanka* and *haiku* poems according to the syllabic structure follows, by Ki No Tsurayuki (10<sup>th</sup> century):

For every breath  
Of the ever-passing wind  
Between the tree grove  
My cloak becomes heavier  
From the scent of the blossom

(Hoffman, 1998)

What will the poem look like when it is transformed from a *tanka* into a *haiku*? One possibility is offered below, by Eifuku Mon'in (1271–1342):

Drenched in a fragrance  
the heaviest blossoming.  
The cloak that I wear.

(*A state devoid of any contemplative aspect, as opposed to the tanka*)

So night fell.  
Yesterday as well  
the sun descended  
Over the mountain peaks  
And bells rang.

(Hoffman, 1998)



From *tanka* to *haiku*:

the sun descended  
over the mountain peaks and  
bells began ringing

The dropped lines are of reflection or contemplation.

### **HAIKU—BASIC FORMATION**

The *haiku* is written in present tense, defining a one-time situation, as in the Western poetic lyric tradition. It constitutes a reflection of something seasonal (the ephemeral on the one hand, and the cyclic on the other) through self-denial, an identification between the object and the subject. The object of the poem is seen with perfect clarity. *Haiku* is like the soul of the dramatic—it presents rather than talks. “Learn from the pine about the pine—learn from the end about the end”, wrote Basho, the foremost poet of *haiku*, in the 17<sup>th</sup> century (Hoffman, 1998).

The number of syllables appears alongside each row:

The storeroom burned down	5
not a thing can camouflage	7
the face of the moon	5

Let us examine *haiku* poetry according to the three parameters discussed above: regularity, the observer’s consciousness, and the void as well as their spatio-temporal dimensions.

### **HAIKU—EMPTINESS**

The “nothingness” is accentuated in delicate contours, both in the visual and the verbal. A snowy landscape will be perceived by the eye only if there is a point that is not covered in snow. Such are the words of the *haiku*, placed on a point in space in order to give actuality to the entire space (Hoffman, 1998).

This poem, written by Lao Tzu from *Tao Te Ching: A Book about the Way and the Power of the Way*, has been translated many times and appears here in the translation by Ursula K. Le Guin.

Thirty spokes  
meet in the hub.  
Where the wheel isn’t  
is where it’s useful.  
Hollowed out,  
clay makes a pot.  
Where the pot’s not  
is where it is useful.  
Cut doors and windows  
to make a room.  
Where the room isn’t,  
there’s room for you.

So the profit in what is  
is in the use of what is not.

(Lao Tzu, translated by Le Guin, 1997)

Another *haiku*—by Daido Ichi'I, 14<sup>th</sup> century—appears in Hoffman's book and is worth lingering over for its intense simplicity and delicate expanse of nothingness.

A tune of non-being  
Filling the void:  
Spring sun  
Snow whiteness  
Bright clouds  
Clear wind.

(Hoffman, 1998)

### ***HAIKU*—TIME AND SPACE**

The poem is in present tense, the language of the now. It describes presence in a specific place—through its own being it represents all times and all places, and thus nowhere at all. Furthermore, it represents timelessness. This recalls classic lyricism, which goes beyond temporality or specific location, due to the poem's existence in the immediate here and now. Japanese culture is based on philosophical perceptions and does not distinguish between time and space, as opposed to Western philosophical tendencies.

### ***HAIKU*—CONSCIOUSNESS**

In *haiku* poetry, things are perceived as they are. For example, when a person sees a spectacular sunset or beautiful flowers he may stand silently, in a state of awe, since the only way one can express oneself is through a cry of wonderment the length of which is that of one breath—ah! The sight enraptures him to the extent that he can only be aware of shapes, colors, sounds, or smells (Hoffman, 1998, p. 15).

Similarly, in *haiku* there is no place to express a thought, a judgement, or a feeling of the observer-writer. The tendency of *haiku* poetry is to transfer such a sensation. As mentioned earlier, the *haiku* is dramatic: the drama displays the theme but does not debate it.

### ***HAIKU* AS AN AESTHETIC EXPERIENCE—POETIC STRUCTURE**

Silence says more than words, but is unclear without them. For this reason, the words appear like the few lines of ink in Chinese and Japanese landscape paintings that serve to accentuate the empty space: the nothingness, the gap between things, or the negative space (known as *ma* in Japanese culture). The strict rules compel the writer to distill the picture down to its very primordial essence, devoid of expression or experience. In this concentrated spatial mindset, a picture is captured that manages to “imprison” motion (kinetics). This picture is multi-dimensional and has a non-linear focal quality that enables the picture to contain every time and every moment in real time (Hoffman, 1998).

It can be seen how the Japanese poetic lyric form preserved the formal structure yet yielded the reflective expression of the observer. The final two lines of expression are in fact what developed in Western lyricism. The shape itself preserves the experiences, enabling them to be expressed within that same single picture simultaneously and in all forms of time while remaining timeless.

To return to the beginning of this essay, the same quality of the *haiku*, which does not have to use a multitude of figurative means or directly interfere with the speaker, as in Western poetry, is able to bring, through a pictorial presence, an emotional-experiential state that enables primary experience. The same experience that is able to create a first or a renewed meeting (such as retrieving a forgotten memory) produces a creative ripple in the reader's consciousness, inviting new creativity in the same way the poem was created. I use the example of the *haiku* because, in my mind, this is where the movement reaches its purest and most powerful moment. It goes without saying that also in Western poetry—classic, modern, and post-modern—such a motion can occur. However, the *haiku* displays presence as a central dimension. That same presence of essence enables the viewer/reader to experience him/herself as present and active, and awaken him/herself to movement within that presence as an involved individual, as creator.

Is it possible to create such an experience in the framework of architecture or urban design? To answer this question, we must attempt to trace the origin back to the act of intervention—the consciousness of the writer/designer. If we rely on the assumption that what we are interested in creating allows the user to take an active part, then there is a need to leave room for this to happen. The space we wish to create is not one that subtracts from what exists, but one, the presence of which, feeds off the source of the creative act of planning. In fact, according to Heidegger, in order to reach essence, one has to be attentive to the source. The interventional act of man in his environment deals with capturing being, but not necessarily through its material expression. In Western poetic terms, this will entail the use of figurative, allegoric, or formal language. In Eastern poetic language, this will be a picture dependent upon the present, the timeless, that will invite the present person to pause and dwell. This suspension does not have a time or a place, precisely because it results from time and place.

In urban spaces, this question extends to tangent intersecting points. These points own a multiplicity that has the potential, as brought forth by Heidegger, to create an entity whose constitutive quality is one of a path. When a multiplicity of functions take place, no matter the original intention of the design, we have the creation of a place. There a dwelling is like walking on the path or way of trees. There, the thing itself can happen. Life can become, people can stroll, and the forest will never hide the trees.

A collection of my own poems is interspersed throughout the contributions of the present issue of the *Journal of Biourbanism*, devoted to epistemology in design. It includes the original Hebrew versions, inspired by space, time, meter, and pauses. In each poem, a slender stem of being was present, reverberating within my consciousness throughout the pre-writing process.

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**Doe**

*Doe, don't be  
an extension of the wind.  
Come closer to the water,  
see how face answers to face  
like the heart of a woman,  
and when you open,  
open on the daily page of love.  
Erase all sign language.  
I want to rest between the phrases  
and to read you in a single word.*

**אילה**

אילה, אל תהיי  
שלוחה של הרוח  
קרבי אל המים  
הביטי.  
כמי הפנים לפנים  
לב אשה.  
וכשאת פותחת,  
פתחי בדף  
היומי לאהבה.  
מחקי את שפת הסימנים.  
אני רוצה לנוח בין הצרופים  
ולקרא אותך במלה אחת



# **Mind the Gap: A Discussion of Philosophical and Psychological Dichotomies**

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## **ABSTRACT**

Differences, dualities, and dichotomies play a fundamental role within the psychological and philosophical frameworks through which humans interpret phenomena. Boundaries and binary oppositions abound in our thinking and actions, manifesting metaphysically and physically, internally and externally, and on all conceivable scales. Drawing upon insights from past and contemporary systems thinkers and integrating an assemblage of personal experiences, together with observations, the present work aims to understand how and why our psychological, thereon our philosophical relationship with oppositions frame the collective societal response to rapid change and upheaval, and what role might transdisciplinary thinking have to play in reconciling societal differences.

**Keywords:** systems theory, complexity, dualism, societal change, socio-ecological systems, boundaries, systems thinking

Goodness knows what the end will be  
 Oh I don't know where I'm at  
 It looks as if we two will never be one  
 Something must be done

—Gershwin & Gershwin, *Let's Call the Whole Thing Off*, 1937

## DO YOU SAY “TOMATO” OR DO YOU SAY “TOMATOE”?

We, each of us, whosoever we are, have of late been confronted with a growing divergence of public opinion. In another year, upon hearing London's official New Year's Eve firework display end with the words “Mind the Gap”, one may have read the statement at face value, thinking it to be merely a reference to the London Underground. However, given the tumultuous nature of the political developments that took place across the United Kingdom in the preceding year, and the societal response thereto, one could be forgiven for thinking the intended meaning to be somewhat more profound.

The year 2016 saw the passing of many notable figures, one of which was futurist and author Alvin Toffler. His seminal work, *Future Shock* (Toffler, 1970), remains one of the most well researched and considered explorations of how people respond to a “greatly accelerated rate of change in society”. Echoing the theories of Carl Gustav Jung, Toffler recognized that for all our relative genetic homogeneity, *Homo sapiens* exhibits wide-ranging worldviews, of which the consequence is a perpetual tug of ideological war between the parties.

Having rejected the notion that Freud's psychoanalytical theory amounted to indisputable fact, Jung had looked to myth, philosophy, and religion, as well as his own case studies when researching and developing his counter argument (Jung, 2017). Recognizing the ongoing dichotomy between ontologies born of subjectivity versus those born of objectivity, Jung approached his research systematically, working within philosophical constructs developed in earlier times, including the Kantian transcendental categories (Kant, 2007) and the Platonic theory of forms (Plato, 2009).

Jung's findings led him to conclude that there are two fundamental psychological orientations: introversion and extraversion. Essentially, whereas some form a worldview predominantly born of their thoughts (internal), others tend to understand the world through that which occurs about them (external). Highly conversant in the dualistic nature of historic cultural narratives, Jung frequently referred to the dynamism at play both between and within these archetypes. Simultaneously, Jung integrated ideas from the biological sciences, for example, applying the concept of homeostasis to psychology. In these and other ways, Jung's life work anticipated several of the themes that became central to the field known today as systems theory.

## WALK LIKE AN EGYPTIAN

Both Jung and Toffler followed ancient suit, or more specifically, ancient dualism suit. In Predynastic Egyptian mythology, the ontological and ethical concept of Maat, that manifests both as an omnipresent primordial force embodied in a goddess of the same name, prevented the order of the Universe from descending into chaos. Governing the seasons, the tides, and the stars, Maat was believed to regulate the many rhythms of the natural world. Yet to mere mortals, perhaps her most formidable role was that of weighing their soul upon death (Booth, 2015). Whereupon the heart, where the soul resided, weighed more than Maat's feather of truth, access to Aaru, the Egyptian

paradise, was denied and the soul devoured by the demon Ammit, thereafter residing in the perpetual hell of the Duat.

The etymologically-minded will doubtless connect “duat” and “dualism”, which is appropriate given Maat’s ditheistic opposite was Isfet, and it was believed that so long as the pair (order and chaos) were kept in equilibrium, all would remain well within the Egyptian world. Maat and Isfet were but two of many ditheistic (rivalry and opposition), and bitheistic (harmonious) pairs within Egyptian mythology, and indeed in many and varied belief systems that came thereafter, including, but not limited to Taoism (Yin and Yang), Hinduism (a veritable pantheon of gods in binary opposition, including Shiva and Shakti), and Christianity (God and Satan, Mary and Magdalene, and so on) (Leeming, 2005).

Moving beyond the realm of demiurgic gods, deities, and demons, duality has been a central theme of both philosophical and creative thought for at least as long as humanity has been documenting its ideas through the medium of writing. Young and old alike, we remain just as enchanted with tales and fables of Good versus Evil, as were our ancestors many centuries ago. Indeed, a great many of the foremost popular stories of the present are the very same as those familiar unto our ancestors: the works of Ovid, Aesop, and their Classical kin repackaged time and again. One might argue that Shakespeare owes a sizeable chunk of his reputation to the art thereof. For example, what is *Romeo and Juliet* if not a rework of Ovid’s *Pyramus and Thisbe*, that being a poem with which Shakespeare was clearly familiar given his reference thereof in *A Midsummer Night’s Dream*? Likewise, by and large, the highest grossing film franchises of all time stick to the tried and tested dualistic script formula from *Star Wars* to James Bond, Harry Potter to *The Hunger Games*, to *Avatar* and far beyond: light versus dark; nature versus machine; hero versus baddie; love versus hate, and man versus monster.

However, not merely in myth, religion, and filmmaking do we experience duality, for nigh on every facet of our existence is underpinned thereby, and to the extent that the very fabric of the Universe itself is comprised of binary opposing forces: matter and anti-matter. Day to day, particle physicists aside, most of us are not consumed by such grand schema. But, we are nonetheless continually reminded that in many and varied ways our being, and in turn the life choices at our disposal, both personal and professional, are defined by duality: man/woman; child/adult; single/attached; professional/amateur; left/right, and so on.

## IN THE EYE OF THE BEHOLDER

Numerous and diverse press and media entities have, and for not merely months but for decades, reinforced the idea that all things, all events, all actions, and all people are explicitly good or bad; saint or sinner. Given headlines of the latter variety tend to sell in exponentially greater numbers (Robinson, 2007), it is no great surprise that national “news” papers and Web sites, and notably those of the currently less than “United” Kingdom and States, have engulfed themselves in what some, myself included, conclude to be a veritable race to the publishing bottom. Whether environmental or social, scant are the events that are subjected to any depth of analyzes on the part of some journalists and editors. Instead of projecting that which occurs as being part of a globally distributed socio-ecological system about which causes and effects ricochet from one species onto another, one region onto another, and one era onto another, common is the practice of presenting events as being spatially and temporally isolated from all else; mutually exclusive in the broadest possible sense.

Arguably, many such content creators are working to acutely vested interests, of which the lowest common denominator is frequently profit. One such damning indictment thereof is the propensity on the part of many news sites to host advertising for third party vendors that promote clearly fabricated content, such as fake celebrity “revelations” and fantastical stories of physiological impossibilities of the genre of “three legged man runs a marathon”, or “woman loses half her body weight in a week”; a phenomena better known as “click bait”. Examples are so abundant that I do not feel the need to cite any particular news or magazine site that is currently engaged in this practice.

However, press and media groups are by no means the only ones to be found trading in heavily augmented and often acutely linear “realities”. The world over, innumerable individuals, ranging from high profile celebrities to ordinary men, women, and teenagers, also deal in artifice, wracking up “Likes” and “Shares” from a seemingly perpetual stream of doctored selfies. All manner of instrumentation, and not least Instagram filters, now enable anyone with a smartphone to achieve editing feats that until recently were the exclusive domain of professionals working with such tools as Adobe Photoshop.

The dichotomy of fake versus authentic self-image is an ancient one. Indeed, it is at least as old as the appearance of the mythological deities Maat and Isfet<sup>1</sup> (Booth, 2015). Over two decades ago, I penned a thesis titled *In the Eye of the Beholder* (Serry, 1995), of which the subject was the current and future state of the beauty industry. The foremost notable conclusions thereof were that firstly physical augmentation would become accessible to the masses, such that almost every aspect of an individual’s appearance—face, body, hair, nails, and so on, could be modified relatively cheaply. Given the immensity of the pressure many individuals feel to conform to commonly held beauty standards, I concluded the uptake would be significant, and so much so that a relatively homogenized appearance would become comparatively common within the wider populous of the developed and fast-developing world. However, millennia of historical precedence suggested that in response thereto, a counterculture would fast emerge wherein the authentic, the original, the quirky, and the unusual would become highly revered by the fashion cognoscenti. There would be several factors underpinning the tension between the oppugnant aesthetic schools. Rule of thumb dictates that market forces tend to drive down the value of that which has become readily available. Anecdotally, it appears there is a tendency on the part of some to believe the general premise of the saying “the grass is always greener on the other side”. Thus, given that which is on “the other side” is not always accessible, some “want what they can’t have” which, at least in part, helps explain the social, therein market dynamics.

Holding the thesis conclusions against the metaphorical feather of truth, that being the real world events, which have come to pass since its publication, evidence of a beauty culture/counterculture abound. On the one hand, that being the aesthetically augmented hand, in 2016 market research analysts predicted by 2019 the global nail care market from varnishes to acrylics and beyond will be valued 9 billion USD. On the unaugmented hand, in 2016 U.S. performing artist Alicia Keys went barefaced, and not merely for the sake of a few carefully posed selfies posted to her social media accounts, but at press conferences, concerts, and televised appearances. In several interviews, Keys made it apparent that her decision was a conscious rejection of the daily pressure placed upon women, and particularly those in the public eye, to adhere to unrealistic beauty standards. Keys is but part of a fast-growing global movement now challenging the aesthetic expectations of others, and no less so than those of the mainstream press and media. Examples of that statement include

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<sup>1</sup> Building on Protodynastic tradition, from Predynastic times onwards, the Egyptians developed myriad means of augmenting their physical appearances, including use of Kohl eye cosmetics and wigs made from wide-ranging materials including plant fibers, animal, and human hair.

several leading apparel brands embracing diversity in age, gender, sexuality, race, and size. In 2016, Spanish fashion house Loewe sent actress Charlotte Rampling OBE, 70, down its runway (Stansfield, 2016). On the cusp of 2017, Italian luxury goods brand Bottega Veneta announced that at 73, Lauren Hutton is the face of its new campaign (Hyland, 2017). A few days later, iconic French fashion house Dior Homme announced that Boy George stars in its Spring/Summer 2017 campaign (Young, 2017). Whereas, since 2016, Australian lingerie brand Lonely, has simultaneously championed diversity in size, race, and age, in an ongoing commitment to challenge mainstream beauty standards, and the impact thereof on women's sense of self-esteem and confidence. All in all, the last time the fashion industry interrogated these and other boundaries with such gusto and imagination, the late David Bowie's alter ego *Ziggy Stardust* was touring with *The Spiders from Mars*. Is the timing co-incidental or, have the above brands and public figures got their fingers placed firmly on the societal pulse? Are boundaries being pushed beyond the fashion industry?

Beauty is said to be "skin deep". However, whereupon we look back over several thousand years of beauty ideals and standards, we come to realize that a mirror reflects not merely the aesthetic but ideology too; we paint not just faces but a picture of our society (Sterry, 1995).

## HOME TRUTHS

The history of politics is strewn with accounts of lies, treachery, and deceit, as exemplified by the historian Tacitus in his record of the conduct of the fifth Emperor of the Roman Empire, Nero Claudius Caesar Augustus Germanicus. Thus, for not centuries, but millennia, a significant proportion of the general populous appear to have retained a high degree of scepticism with respect to the promises made on the part of politicians. Artefacts that reflect the matter thereof include innumerable cartoons, poems, songs, paintings, films, television shows, and sketches, with a few examples including 18<sup>th</sup> century British painter William Hogarth's pictorial satire and cartoons, 80s television series *Spitting Image*, and Genesis' 1986 hit *Land of Confusion* with its accompanying video. Yet in 2016, such were the political developments in Britain and America that even satire and humor could not reconcile the growing divide in public opinion. Passions ran so very high as to see families and friends falling out (Walsh, 2016). Few it seemed disputed the matter that political "porky pies", a Cockney rhyming slang for "lies", were being told a many. However, on the matter of who was telling lies, the citizenry of not one but two developed world nations were, and indeed at the time of writing, at loggerheads. So prevalent was the theme of lies and deception that the *Oxford Dictionary* declared "post-truth" its "Word of the Year 2016".

Back to Toffler's *Future Shock* and to its relevance to the present. In November of last year, I joined peers in London to explore the theme of biological intelligence.<sup>2</sup> One of many interdisciplinary gatherings intended to bridge the gap between "The Two Cultures" (Snow, 1956),<sup>3</sup> the bitheistic love-in converged scientists and artists, theorists and architects, researchers and practitioners alike. Having noted the fast rising volume but not the depth of discussions around the topic of "artificial intelligence", and no less so than in light of the events of the past several months, I thought it timely to ask a fundamental question: what is intelligence? Toffler's tome felt to be the ideal medium through which to explore the question.

<sup>2</sup> Biological Intelligence was the round-table discussion theme of BioSalon III which, held at Ambika P3 Gallery at the University of Westminster on November 30, 2016, was part of an ongoing interdisciplinary London-based events series.

<sup>3</sup> In 1956, scientist and novelist C. P. Snow authored an essay discussing the gap between the sciences and the humanities. Titled *The Two Cultures* and published in the *New Statesman*, Snow expanded on its central themes in his *Rede Lecture* that was delivered at the Senate House in Cambridge on May 7, 1959 and later published under the title *The Two Cultures and the Scientific Revolution*.

In *Future Shock*, Toffler posited there to be four fundamental personality types: denier, specialist, reversionist, and super-simplifier. He wrote that “the denier’s strategy is to ‘block out’ unwelcome reality. When the demand for decisions reaches crescendo, he flatly refuses to take in new information”. Ring any bells? Thereafter, we have the specialist who “doesn’t block out all novel ideas or information. Instead, he energetically attempts to keep pace with change—but only in a specific narrow sector of life”. Not so much bells ringing as a gathering of campanologists. Moving on, Toffler introduces the reversionist who “sticks to his previously programmed decisions and habits with dogmatic desperation. The more change threatens from without, the more meticulously he repeats past modes of action”. The final character in this all too familiar quartet is the super-simplifier, of whom it is stated: “With old heroes and institutions toppling, with strikes, riots, and demonstrations stabbing at his consciousness, he seeks a single neat equation that will explain all the complex novelties threatening to engulf him”. Toffler’s conclusions mirror those of Jung,<sup>4</sup> in that Toffler’s four personality types divide into a duality of those that build walls and those that knock them down, or to put it another way, those who, by nature, prefer to go with the flow and those who go against it.

Whereupon we view the political, social, and cultural developments of late through the lens of Toffler, we gain some sense of why and how we find ourselves in the midst of such deep social divisions. Turning the clock back from 335 to 323 BC, we find Aristotle grappling with the very same issues. In *The Art of Rhetoric*, the philosopher describes modes of persuasion adhering to three fundamental types: *ethos*, *pathos*, and *logos*. Therein, once again, we find duality in that at one end of the spectrum we have *logos*, which appeals to the head, at the other we have *pathos*, which appeals to the heart, with *ethos* falling between the two.

Relating Aristotle’s rhetorical theory to Jungian psychological types provides substantial insight into why political rhetoric often resonates with one community but not another. Jung postulated that individuated realities are constructed in consequence of the degree to which an individual relies on each of the four psychological functions at their disposal—sensation, thinking, feeling, and intuition. Adhering to his logic, whereupon one has established whether an individual and/or group tends to sense, think, feel or intuit “reality”, one knows which rhetorical style will most likely win their favor in an argument.

As the saying goes, “different strokes, for different folks”, for, ontologically speaking, intelligence is subjective. We, each of us, have differing interpretations of what constitutes an intelligent decision, be it the political party unto which we ought cast our electoral vote, or the route we plot by means of getting from A to B, be it physically, intellectually, and/or emotionally. However, if applying Jung or Toffler’s logic, no matter how individualistic we may see ourselves, we are nonetheless, relatively predictable in our choices, in so far as, if we do not fall explicitly into one of the primary personality types, we will most likely be a hybrid thereof (Jung, 2017; Toffler, 1970; Sterry, 2016a).

Turning to another figure that explored the societal impact of our psychological predispositions, we come to psychotherapist, philosopher, and semiologist Felix Guattari. In *The Three Ecologies*, he stated:

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<sup>4</sup> In 1921, Jung published *Psychological Types* in which he built on earlier constructs, including that of individuals either habitually emphasizing the external or the internal (extraverted or introverted). He postulated there to be four primary psychological types: sensing, thinking, feeling, and intuiting, for which there are two variants (extraverted or introverted) for each.



It is quite wrong to make a distinction between action on the psyche, the socius and the environment. Refusal to face up to the erosion of these three areas, as the media would have us do, verges on a strategic infantilization of opinion and a destructive neutralization of democracy. (Guattari, 2000, p. 27)

*The Three Ecologies* illustrates Guattari's laser-sharp precision in pinpointing the foremost factors that may undermine our capacity to address societal and environmental problems. A particularly poignant observation on his part noted that:

In the field of social ecology, men like Donald Trump are permitted to proliferate freely, like another species of [toxic] algae, taking over entire districts of New York and Atlantic City; he "redevelops" by raising rents, thereby driving out tens of thousands of poor families. (Guattari, 2000, p. 28)

Having explained how individual actions manifest at the scale of society, and in turn environment, Guattari speculated on that which needs to be done in order to improve upon the future lot of people and the planet. His conclusions embedded themes that were prevalent in the minds of radical thinkers of the time. For example, on January 10, 1989, WNET aired an episode of the *The Eleventh Hour* in which architects Lebbeus Woods and Michael Sorkin joined host Robert Lipsyte to deliver an alternative vision of the potential for development of the "last big piece of undeveloped land" then remaining in Manhattan—the site that would go on to become Riverside South, Manhattan. In contrast to Trump's proposal, Woods and Sorkin collectively perceived of a speculative proposition built in acknowledgement of "The Site", "Our Collective Conscious", and the fact that "architectural plans, no matter how visionary and profound, depend on the contribution of thousands, or millions of people, who work anonymously, and without recognition" (Shebar, 1989). Using terminology as would have resonated with Plato and his teacher Socrates, Woods spoke of the "play of forms" and of textures and colors that collectively created a "majestic" beauty to a then, ruinous, former industrial site. Theirs was a vision that expressed an innate respect and understanding of what makes a place unique, yet connected to the whole. In many respects, Woods and Sorkin's proposal articulated a complex system in architectural terms. On the other hand, Trump's schema, to quote Sorkin, had "fewer architectural ideas per unit volume than any project since Robert Moses's most malnourished housing schemes. It's the kind of work that would get a D- at a second rate school of architecture" (Sorkin, 1991, p. 144).

The dichotomy expressed in the architectural proposals of Trump, and of Woods and Sorkin, go some way to explain the outcry on the part of Sorkin and of several other noted U.S. architects and architectural institutions in response to Trump's ascent to presidency (Sorkin, 2016; Capps, 2016; Perez, 2016).

## **"YOU TALKIN' TO ME?"**

A more recent analysis of human behavior in the face of global change was *The Future and its Enemies: The Growing Conflict over Creativity, Enterprise, and Progress* (Postrel, 1998). Echoing the themes discussed above, Postrel posited that there are two basic personality types: those who seek stasis versus those who seek dynamism, and like Toffler and Jung, she divided the pair into subsets. "Reactionaries", a variant of the stasis personality type, "seek to reverse change, restoring the literal or imagined past and holding it in place". Whereas "Technocrats", also of the stasis persuasion, "are 'for the future', but only if someone is in charge of making it turn out according to plan". In other words, not so much going with the flow as attempting to direct the flow. As I am a dynamist, my mind casts to the words of Aldo Leopold's parable *The Round River*:

The biotic stream is capable of flowing in long or short circuits, rapidly or slowly, uniformly or in spurts, in declining or ascending volume. No one understands these variations, but they probably depend on the composition and arrangements of the soils, faunas, and floras, which are the conductors or channels of the flow... This maze is complex; no efficiency engineer could blueprint the biotic organization of a single acre. (Leopold, 1993, pp. 159–162)

Put another way, whereupon we attempt to guide the future with any great precision, unintended consequences will invariably manifest.

The juxtaposition of a Leopold quote in the context of Postrel's stasis versus dynamist hypothesis is not incidental. One of the primary questions Postrel explored is the way in which human psychology, therein behavior, impacts humanity's relationship with the natural world. Postrel states: "Dynamists are often drawn to biological metaphors, symbols of unpredictable growth and change, of variety, and of experiment, feeding back, and adaptation" (Postrel, 1998, p. 30). She goes on to discuss how dynamists are consumed not so much with outcomes as processes, stating: "To dynamists, there is no scratch. Starting from scratch, or staying there, is a static idea, a myth for technocrats who draft plans to redesign the world and reactionaries who dream of a return to Eden" (Postrel, 1998, p. 49).

Toffler also contemplated humanity's changing relationship with nature. During the 5-year period he spent researching *Future Shock*, he interviewed Nobel Prize-winning chemist Arne Tiselius. Toffler asked Tiselius: "Is it conceivable that one day we shall create, in effect, biological machines—systems that can be used for productive purposes and will be composed not of plastic or metal parts, but of living organism", to which the latter responded: "We are already there. The great future of industry will come from biology". Tiselius' statement would have been enough to send deniers and reversionists running at Olympian speeds straight to the Stasis Hills. However, specialists and super-simplifiers of the age very much shared Tiselius' belief. Furthermore, interdisciplinary-inclined dynamists, and no less so than Nicholas Negroponte, spread their intelligence net to the far reaches of the known biological world, which in Negroponte's case was the very latest developments in neuroscience. A year prior to the publication of *The Architecture Machine* (Negroponte, 1970), he published a paper that was arguably one of the foremost accurate insights into the coming phenomena known today as the smart city. Like Charles Darwin<sup>5</sup> over a century earlier, Negroponte's research was informed by his immersion in a scientific community spanning far beyond the traditional boundaries of his primary discipline. But, and again, true to dynamist form, rather than attempt to dictate the outcome of the ideas he explores, Negroponte's works of subsequent decades have centered upon opening, not closing access to his discoveries, for example, founding the One Laptop per Child Association and MIT Media Lab.

Postrel's description of dynamists suggests that their psychological predisposition aligns them to Jung's thinking and intuitive types. Jung's extraverted thinking type responds predominantly to external stimuli, and a talented problem solver is psychologically geared towards crafting practical solutions. Whereas, inherently more intellectual, Jung's introverted thinking type tends to work not with hands-on solutions, but with theories, concepts, and ideas. Put succinctly, were the extraverted and the introverted thinkers both scientists, the former would be inclined toward applied science, whereas the latter would be drawn to blue-sky thinking. Jung's extraverted intuitive type is innately interested in the future, thus their mental radar is perpetually seeking signals of change, of which

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<sup>5</sup> Charles Darwin's correspondence makes evident that he was deeply involved in debate and discussion with his scientific contemporaries. The evidence thereof is not merely reflected in his letters but in his several published works in which he relates his theories to those of his peers. See: (University of Cambridge, 1974–Present).

the external manifestation is an inclination toward reinvention, both of the self, and of the world about them. On the other hand, Jung's introverted intuitive type, though similarly consumed with potentialities, gravitates to work with words, symbols, images, and sounds to make the intangible visible and/or audible. William Turner, David Bowie, John Lennon, Andy Warhol, Elsa Schiaparelli, Alexander McQueen, Malcolm McLaren, Godley & Creme, and Björk, are but a handful of the artists, designers, and performers whose work resonates the qualities one might expect of Jung's intuitive type.

Jung's psychological types are not mutually exclusive. Thus, an individual that primarily exhibits the traits of a thinking type may also express the traits of an intuitive type and vice versa. However, whatsoever the configuration of the psychological types, like Postrel's dynamists, Jung's thinker and intuitive both tend to embrace, not reject change.

In contrast, Jung's descriptions of feeling and sensation types suggest that whether introvert or extravert, both will be more inclined towards a position of stasis. Jung describes sensation types as inclined towards objectivity; "seeing is believing" in their mind-set. One hundred and fourteen years before Jung's *Psychological Types* went to print, Hegel published *Phenomenology of Spirit*, (Hegel, 1807), which he described as "the exposition of knowledge as a phenomenon" (Singer, 2001, p. 64). Hegel disputed the notion that one may gain unbiased understanding through the senses alone. Professor Julius Sensat interpreted Hegel's position as thus:

It is self-contradictory to claim that an unmediated knower confronts an unmediated object, or that knower confronts known in an immediate connection, because this "splitting" of sense-certainty into two "Thises" requires at least the mediation of one by the other. (Sensat, 2002)

In other words, Hegel thought there is no certainty to the validity of reason born in the absence of conscious evaluation of the context and meaning of things, and the experience thereof. His words have since been echoed by many and varied authors whose works have explored the workings of the human mind. Amongst them, contemporary Mexican author and spiritualist Don Miguel Ruiz, who stated: "We only see what we want to see; we only hear what we want to hear. Our belief system is just like a mirror that only shows us what we believe" (Ruiz, Ruiz, & Mills, 2013).

Jung's description of feeling types speaks to those who are led by value-judgements informed by what is familiar to them, for example, the opinions of their immediate peer group. Unlike thinking and intuitive types, sensation and feeling types are inclined to feel threatened by that which lies beyond the realm of their personal experience. Politically, Postrel summed up the campaign rhetoric that usually resonates with Jung's sensation and feeling types, when she stated: "If stasist criticisms are impossibly vague, they seem all the more profound. What matters is the general message: The world has gone terribly wrong, and someone needs to take control and make things right" (Postrel, 1998, p. 5).

On June 23, 2016, the accuracy of Postrel's insight was evidenced. Indeed, not merely had the campaign for the UK to leave the EU adopted the rhetoric of *pathos*, but with that, its central slogan was "Take Back Control".

## UNITY OF OPPOSITES

Whereupon we *Walk Like an Egyptian*, or more specifically, a Predynastic Egyptian as ascribed to the ontological and ethical concept of Maat and Isfet, we are reminded that in several ancient, and

indeed some living belief systems, opposition involves not so much “them versus us”, or to cite the father of Alexander the Great, Philip II of Macedon (382–336 BC) “*divide et impera*”, as a Heraclitian unity of opposites. The matter of what is right, and what is wrong is not, and please forgive the dualistic pun, always black and white.

Nineteenth Century dynamist extraordinaire Hegel examined both the philosophical and psychological context of oppositions in some considerable detail. Hegel not merely turned to the work of his immediate predecessors, namely Kant, and to that of his contemporaries, such as Schelling, when researching the matter, but to the sum of human history as was available to him. Hegel’s lectures on the *History of Philosophy* embraced the belief systems of ancient China, India, Persia, Greece, and Rome, relating the legacy to the development of thought in Europe, and in turn, to the events contemporaneous to him. Hegel expressed there a necessity to reconcile that which had been held in binary opposition, stating:

The principles of the metaphysical philosophy gave rise to the belief that, when cognition lapsed into contradictions, it was a mere accidental aberration, due to some subjective mistake in argument and inference... That true and positive meaning of the antinomies [relating to Kant] is this: that every actual thing involves a coexistence of opposed elements. Consequently to know, or, in other words, to comprehend an object is equivalent to being conscious of it as a concrete unity of opposed determinations. The old metaphysic, as we have already seen, when it studied the objects of which it sought a metaphysical knowledge, went to work by applying categories abstractly and to the exclusion of their opposites. (Hegel, 1830, p. 48)

Whereupon we consider that Hegel conceived of our understanding of self as, in part, built upon a process of comparing and contrasting ourselves to others, we realize that in Hegel’s view that which is external to us (i.e. belief systems) mirrors our internal thought processes (i.e. cognitive functions). Therein, in Hegel’s mind, like that of Jung, human consciousness needs to be perceived systemically; and so, the first tentative steps towards von Bertalanffy’s *General Systems Theory* (von Bertalanffy, 2015) and, shortly thereafter, Gregory Bateson’s *Steps to an Ecology of Mind* (Bateson, 1972) were taken.

The process of forming a sense of self—of identity—through comparing and contrasting one to another is evident in children and teenagers. One often finds the former expressing a keen interest in that which makes one different from another, for example, one’s clothing and/or one’s personal interests, and hobbies. However, the latter, teenagers, often express not merely a strong sense of the general construct of duality, but with it, a desire to embrace much as appears in opposition to the preferences of those to whom they are accountable, i.e. parents, teachers, and/or those who dictate the laws, standards, and general practices of the land. Whole industries, and in particular fashion, beauty, music, and more recently technology, make considerable profits from the matter thereof. But, a perusal through myriad archives that document the ways and means by which individuals express their sense of identity makes evident that the mental process of comparing and contrasting the self to others, and actions born thereof, is ongoing. One way in which we see this commonly expressed in the media is “hot or not” lists, which reinforce the idea that we should be constantly looking over our shoulders to see what others are doing, thereon aligning to the choices of people with whom we relate, while rejecting those of people with whom we do not. Put another way, we should embrace one thing, at the expense of another, or to use Hegel’s terminology, we should contradict ourselves by embracing black one season and white another, but never the metaphorical twosome.

## VARIATION UNDER NATURE

A discussion of the finer points of the role binary oppositions play in shaping the society of the present, of the past, and of the future would be incomplete without a contribution from the “father of science fiction” himself, H. G. Wells. Having trained in biology under Darwinian Thomas H. Huxley, Wells had a keen interest in the potentialities for humanity’s future relationship with nature, and in turn, with itself. A prolific reader, influenced by both historical and contemporary works, including the pastoral utopian vision of William Morris as portrayed in *News from Nowhere*, Wells crafted his inventions not in the lab, but in print. Having perfected his literary style as an author of short stories, essays and reviews, and redrafted the story several times over, Wells published *The Time Machine*, which serialized in a magazine, earned him the reputation “man of genius”.

*The Time Machine* is indeed, I believe, a work of genius, which speaks to a robust grasp of philosophical, social, political, and scientific constructs. Wells not merely presented the dichotomy of pastoral versus industrial society but surgically picked each proposition apart, and by doing so, imparts readers with an understanding of the dangers inherent in adopting deeply polarized positions. “Out of futurity”, Wells writes, emerge a pair of descendants of *H. sapiens*. The *Eloi* inhabit a “long-neglected and yet weedless garden”, inferring that their long diseased ancestors (us) had genetically-modified the environment by means of removing all species as were perceived to be redundant and/or hostile, and therefore useless and/or threatening to their biological kind. Wells leaves us in no doubt of this matter, for further into the novella he writes: “We improve them [species] gradually, because our ideals are vague and tentative, and our knowledge is very limited; because Nature, too, is shy and slow in our clumsy hands” (Wells, 2005, p. 31).

However, the imaginary world of the *Eloi* is no “social paradise”. A little while before we descend into the subterranean mechanical world of their binary opposite, that is the *Morlocks*, we realize—and not least because Wells even cites the term—that, as well as exploring the philosophical and ethical implications of humanity’s engineering of the natural world, he simultaneously presents an extremely artful but scathing critique of social engineering, and more specifically, of communism. Like a master-weaver, Wells flawlessly pulls together the many prescient threads, not least of which is space-time, running through his succinct but exceedingly thought-provoking exploration. *The Time Machine* makes for a case study into the mind of an author that sits astride Jung’s thinking and intuitive types, of Postrel’s dynamist persuasion, highly adept in the art of Aristotelian rhetoric of the genus *Logos*.

Might *The Time Machine* also be conceived as an early forerunner to Toffler’s *Future Shock*? In a manner of speaking, yes, because from beginning to end, human psychology, and the dualities inherent therein, is a preeminent theme of the book, which is a matter that becomes apparent in its opening chapter no less, when *The Time Traveller* converses with *The Psychologist*. Interestingly, and again, presciently, Wells anticipates hypotheses as were explored by eminent scientific figures long after his death. He presents the *Eloi* as persisting in a state of stasis, having evolved into a species devoid of intellect and creativity and thus, entirely at the mercy of the natural and social elements about them. By contrast, the *Morlocks* are curious, industrious, and innovative, yet brutal creatures. The central message thereof relates to the Darwinian theory with which Wells, as a direct scholarly descendent, would have been extremely familiar; evolution dictates that, over time, biological characteristics for which there is no longer any need diminish. Therefore, Wells concluded it logical that, were the *Eloi* farmed by the cannibalistic *Morlocks* in such fashion as contemporary humans herd livestock, the species would adapt and in doing so lose its capacity for survival in the absence of its keepers.

Fast forward to 1968 and to interdisciplinary biologist and dynamist Ludwig von Bertalanffy. One of the pioneers of *General Systems Theory*, in his book of the same name, while referencing research on the societal impacts of World War II, von Bertalanffy stated:

Precisely under conditions of reduction of tensions and gratification of biological needs, novel forms of mental disorders appeared as existential neurosis, malignant boredom, and retirement neurosis, i.e. forms of mental dysfunctions originating not from repressed drives, from unfulfilled needs, or from stress, but from meaningless of life. (von Bertalanffy, 2015, p. 207)

“What doesn’t kill you makes you stronger” is common parlance that strikes to the heart of what von Bertalanffy meant. Therein, while approaching the topic of psychological and cognitive functioning from very different perspectives, both he and Wells concluded that a degree of tension, of challenge, of change, and in short, of dynamism, is not merely advantageous to the human condition, but essential to the health, the well-being, and the welfare of people. Relating back to Guattari, whereupon we seek to attain a systemic perspective, we need to connect the psyche to the collective, both in the human and the environmental sense.

Thinking at the level of the individual, it is often said that when children have more, not less of their wishes met, they become “spoilt”. Most often, the statement relates to a common belief that such children grow up to exhibit an overt sense of self-entitlement and/or selfishness and/or greed. Whereas, anecdotally, much is there to suggest that if children are given not ends, but means, and/or meet a degree of resistance to some of their wishes, they develop greater problem-solving capacity, and/or more ability to understand their own wants and needs in the context of others. Supporting the statement on problem-solving capacity is a long list of child entrepreneurs in developing world nations including Africa, India, and South America, such as Richard Turere. Aged just nine, Turere was charged with the responsibility of protecting his Maasai family’s livestock farm from lions. Turere met the challenge head-on by inventing Lion Lights—a solar-powered lighting system that protects prey from predator and that does so without inflicting harm upon the latter (Turere, 2013). How might Turere’s lights illuminate not lions on the African plains but the ways and means by which the education establishments and protocols of the developed world might better equip young people to not merely cope in a fast-changing world, but to thrive? What lessons might education policymakers learn from a boy that evidenced the ability of the human intellect and imagination to meet challenges not merely in the absence of abundance, but in the midst of one of the harshest and most unpredictable environments to be found anywhere on the planet?

Drawing on Darwinian thought, by which I refer to Darwin’s own words and not third party interpretations, one might argue that both at the scale of the individual and of the collective, Jung’s psychological types, together with those of Postrel and Toffler, serve a distinct evolutionary purpose. In so far as, were all persons of the same psychological disposition, much tension would be removed from the daily functioning of society. In the absence of the necessity to navigate the dichotomies inherent in our collective differences of opinions, might we descend into the intellectual equivalent of Well’s *Eloi*? Perhaps more importantly still, through the ongoing process of comparing and contrasting ideas and battling of wills, most often, if not on the individual level at that of society, ultimately, we create more robust solutions in consequence thereof. Within both academia and business, we generally find that whereupon ideas are subject to interrogation by persons of different perspectives they become more robust.

In the late 1990s, together with my then colleagues, I took a Jungian-based psychology test. Our collective results revealed that our four board members were a perfect balance of Jung’s psychological types. On the surface, our strength lay in our likenesses, for example, we shared



similar aesthetic and audio preferences, and generally enjoyed the same kind of social activities. Superficially, we were peas in the same ideological pod. But, delving deeper, the tests revealed that it was our differences that gave us the edge. Our team comprised a technologist of primarily intuitive inclination that instinctively spotted the next big hard and software trends; a designer predominantly consumed with the sensory impact of our various creations; a sales lead largely led by a gut feeling for the needs of potential clients; whereas myself, as the strategist, principally thought through the details of our market, both current and future. One might conceive of the collective as a microcosm of society and its dynamics, whereupon all four psychological types have capacity to express their thoughts, feelings, senses, and intuition, such that, whatsoever the direction the collective takes, everybody has a hand in the decision. Yet what happens when only one or two of the parties “have their say”? How does the dynamic of the psychological collective change, and what are the potential implications on humanity, and in turn, the species impacted by the actions thereof?

## FALSE INTERPRETERS OF NATURE

*Taraxacum* of the family *Asteraceae* is more commonly referred to as a dandelion, that being a plant with a great many potential uses. In some nations, including China and Greece, dandelions are a traditional food source. Several beverages, including root beer and wine can be made from dandelion roots (former) and petals (latter). Over millennia, dandelions have been used as a medicinal herb in regions including Europe, North America, and South Asia. Dandelions attract pollinating insects, are grazed by a variety of birds and mammals, and improve soil quality through the process of nitrogen fixation. Yet in the minds of some, dandelions are perceived as a nuisance to be eradicated using means, including but not limited to, pesticides. Put another way, one’s man flower is another’s weed.

The dandelion is symbolic of a far bigger issue. Perceptions of flora and fauna, and the value and the context thereof, vary greatly across humanity. Whereas people of a stasis predisposition tend to view the natural world in terms of outcomes, people of a dynamist predisposition are inclined to think in terms of processes (Postrel, 1998). The significance thereof cannot be under-estimated, for the consequences are immense, and not merely to current generations but to those who will follow, both human and nonhuman.

Imagine if you will, that we are Victorian time travelers, whom having set the machine’s dial to 2017, are exploring present-day London in such fashion, as did Wells’ time-traversing adventurer. What might we note of interest about 21<sup>st</sup> century humans and their urban habitat? Whereas, genetically speaking, we would find our descendants to be the very same, doubtless we would note, and with relative immediacy, that behaviorally some changes had been afoot. Like *The Time Traveller*, we might note that the wider-terrain hosted less biodiversity than did Victorian London, and that human actions appeared to be the causation thereof. However, whereas *The Time Traveller* inferred this to be the consequence of genetic engineering, we might note that biodiversity appeared to be reduced due to the absence of appropriate floral and faunal habitat within the urban domain. For example, we might spot that many gardens and parks had been tarmacked or built over. We might also take note of some attempts to rectify the issue thereof. In particular, having noted that whereas *The Time Traveller* witnessed a world in which the dichotomy of machine versus nature was explicit, wherein a terrestrial paradise juxtaposed a subterranean hell, the scene before us would appear to be somewhat ideologically inconsistent. Walking along Piccadilly, we would see the vertical garden of *The Athenaeum*, which we might recognize to be an attempt to reconcile an old built environment paradigm with a new one. However, our overall impression of the London before us, and in particular its architecture, would speak to a binary opposition in which, for the main part,

humanity perceives of itself and of its various creations as being apart from nature: city versus rural; domesticated versus wild; constraint versus freedom, and control versus co-operation.

Stepping out of our imaginary time machine and into the world of the here and now, the impact of our psychological predispositions upon biodiversity near and far is starkly apparent. For example, consider how humanity's physical delineation of boundaries impacts a myriad other species. Whatsoever the speed and scale of anthropogenic climate change, and in turn of land-use change, fauna and flora will need to adapt and at great speed in consequence thereof (WWF, 2016; Root, 2016; Pearce, 2016; Sterry, 2015). Roads, railways, and walls, not least those of the height of national border walls, make the task of migration sizably harder for many species and result in innumerable loss of faunal life (WWF-India, 2016). While awareness thereof is growing with some governments, including those of the Netherlands, Canada, and India, adapting national infrastructure to accommodate wildlife migratory routes (Conservation Corridor, 2017; Zobel, 2009), others are working on a contrary policy agenda (Sullivan, 2016), such that biodiversity is being pulled between the two ends of an ideological pushmi-pullyu. Whereas some build ecological bridges, others, and literally so, build walls.

However, civil transportation and delineation infrastructures are but one of many ways in which human actions and the underlying ideologies thereof, are greatly undermining the integrity of local and global ecological networks. In the United States alone, bird mortality in consequence of building collisions is estimated to be between 100 million and 1 billion annually (Loss, Will, Loss, & Marra, 2014). High-rise buildings obstruct the flight paths of migratory bird species and in particular, glass clad-exterior pose a threat whereupon bird-friendly materials have not been used (Chaisson, 2014; Wood, 2012). Whereas, many historic architectural styles integrated features as provided nesting sites, shelter, perches, and hunting opportunities for birds, small mammals, insects, and reptiles, many modern-day architectural styles do not (Sterry, 2015; Sterry, 2016b). The impact of urban design upon biodiversity is not merely restricted to the here and now. Urbanization is evident within the genetic as well as the behavioral development of species (Alberti et al., 2017). In the words of the character *Bugs Bunny* (Hogan, 1940): "All those in favor of us *not* hitting that wall, say 'aye'." The "us" being biodiversity, the "wall" being anthropogenic spatial delineations.

A more contentious issue still is that of humanity's wider relationship with the natural world. Historically, the dichotomy of human versus animal has been employed by means of justifying the objectification of fauna species (Berger, 1982). Palaeolithic humans left relics and artworks that suggest they revered many faunal species (von Petzinger, 2016; Bradshaw Foundation, 2011). Several ancient civilizations did likewise, seemingly building on their ancestors' beliefs and rituals, which included the worship of deities that fused human and animal features, with one example thereof being the goddess Maat (Booth, 2015), commonly depicted with bird-like wings attached to her arms. Nevertheless, over time, humanity increasingly saw itself as separate from the animal kingdom, the exceptions thereto being indigenous peoples, and a handful of far-sighted scientists, artists, and philosophers, including Leonardo da Vinci, of whom it was said: "Often when he was walking past the places where birds were sold he would pay the price asked, take them from their cages, and let them fly off into the air, giving them back their lost freedom" (Vasari, 2015, p. 4).

By the 19<sup>th</sup> century, such was the immensity of the perceived gap between *H. sapiens* and the rest of the animal kingdom as for Darwin to stall the publication of his *Theory of Evolution* for several years. However, Darwin's words make it much evident that not merely did he perceive of humans as biologically related to animals, but cognitively and behaviorally likewise, stating: "The difference in mind between man and the higher animals, great as it is, certainly is one of degree and not of kind" (Darwin, 2013, p. 80).

Through the eyes of those in Toffler's super-simplifier persuasion, such as da Vinci, Darwin, and Wells, it is a small step to perceive of humans as just one piece of an infinitely bigger ecological puzzle. Biologically, we are more alike than unlike other mammal species, and particularly our Great Ape cousins. Behaviorally, we share many traits with many species, including cetaceans and elephants, both of which exhibit empathy, grief, companionship, teamwork, play, problem-solving, and tool use to name just a few of the many observed similarities between them and us (Whale and Dolphin Conservation, 2016; Sheldrick, 2013). Indeed, so manifold are the papers, articles, and books documenting scientific studies that have established, and firmly so, the matter that many traits once believed to be exclusively human, are anything but, as to be too numerous to keep track of. Yet in the words of Dutch primatologist and ethologist Frans de Waal: "Instead of making humanity the measure of all things, we need to evaluate other species by what they are" (de Waal, 2016, p. 275). Now empowered with all manner of scientific and technological paraphernalia as was not at humanity's disposal in the past, we are coming to realize that animals of all kinds are in possession of skills and abilities so extraordinary as to have evaded not merely our attention, but our imagination in the past. As 20<sup>th</sup> century German theoretical physicist Werner Heisenberg recognized: "What we observe is not nature in itself, but nature exposed to our method of questioning" (Heisenberg, 2000, p. 25), his words echoing those of Hegel, Jung, and Ruiz in their belief that "we see what we want to see". There are those who, as did da Vinci, see sentient, intelligent, and social creatures, which are deserving of rights akin to those of humans. On the other hand, some people "see" animals as merely objects with a pulse. Much indeed can we tell of a person's psychology from the way they perceive other species.

Whereas those who exhibit the psychology of Postrel's reactionaries tend to champion the replication of historic architectural styles (all things neo), those that she describes as technocrats tend to start from scratch, embracing that which, on the surface, appears brand spanking new, but ideologically is fixed firmly in the past (Postrel, 1998). In contrast, people aligned to the psychology of Postrel's dynamists tend to question the viability of the urban visions of both the former and latter, thinking and/or intuiting other paradigmatic possibilities. Dynamists delineate not borders, and look for ways and means for nature to permeate the man-made, as opposed to merely cladding brick and mortar in flora. Outward, not inward looking, dynamists perceive of open networks between disciplines, regions, peoples, and nations. Whereas reactionaries and technocrats tend to think in hierarchies, such that information, therein control, flows up or down, dynamists tend to perceive of distributed data that flows around and across socio-ecological networks. Dynamist decision making involves thinking beyond any one particular discipline, culture, belief, or territory; round table discussions between peoples of differing experience, skills, knowledge, and approaches. The evidence that supports that statement spans both research and practice worldwide, and not merely in the present but in the life works of the several transdisciplinary philosophers, psychologists, scientists, artists, writers, technologists, designers, engineers, and architects whose work is discussed above. Over 1,800 articles that document a wide-range of inherently dynamist transdisciplinary works that investigate the potentialities at the interface of biology, design, art, and architecture can be found at *Bionic City* (Sterry, 2013–2017). The curator thereof, when deciding whether a feature is appropriate for inclusion, I ask not merely whether the work might benefit our own species, but that of all; is the project life-friendly? Does it serve both humans and biodiversity? Is it conducive to the optimal functioning of socio-ecological systems?

Many and varied are the ways in which transdisciplinary thinkers are breaking down mental, as well as disciplinary and physical borders. The foremost radical thinking individuals not merely acknowledge the phenomena of nonhuman intelligence, but are actively working with other species in an effort to solve human problems. Two such researchers are the microbiologist, arts collaborator, and curator of the world's largest collection of bacteria, Simon Park, and bio artist and

founder of the Slime Mould Collective, Heather Barnett. Both Park and Barnett perceive of microorganisms as collaborators and co-creators of works. Park recently stated:

It's not about deliberately designing life, but politely asking bacterial life to solve our problems. After all, they have an unmatched head start. Billions of years of evolutionary history has endowed bacteria with a time-tested ability to solve biological problems. (S. Park, personal communication, 2016)

Working with wide-ranging microbial forms, including photosynthetic and bioluminescent bacteria, Park's work has explored numerous applications of microbiological intelligence and behavior to human problems (Ibidem; Plough, 2016). Barnett perceives of similarly broad applications for collaborations with life of the micro-organism kind. Whereas some speak to a technological singularity, the work of Park, Barnett, myself and others, such as Rachel Armstrong (2009) and ecoLogicStudio (Pasquero & Poletto, 2016), speak to a biological singularity; the emphasis thereof not technological, but philosophical. Our medium is life. Our understanding is systemic. Our practice is co-creation. Our work, like that of von Bertalanffy, Wells, Guattari, Toffler, Bateson, and Postrel, speaks not to stasis as enabling a well-functioning society but to dynamism. Our attitude is inclusive and seeks to overcome the problem highlighted by Snow, as was framed in the statement:

...polarisation is sheer loss to us all. To us as a people, and to our society. It is at the same time practical and intellectual and creative loss, and I repeat that it is false to imagine that those three considerations are clearly separable. (Snow, 1959, p. 12)

## **PUT ON YOUR RED SHOES AND DANCE THE BLUES**

Drawing this essay to a conclusion, ours is not the first generation to contemplate the fundamental nature of reality. Humanity has a long and rich history of examining both internal and external phenomena, and at all scales, both in the physical, and the metaphysical context. Whereupon we look to the works of a great many of those who dedicated themselves to the weighty task of deciphering truth from falsehood, we find notable similarities in their conclusions.

Psychologically, we, each of us, decipher reality by a process of comparing and contrasting that which we encounter. However, where we vary is in our understanding of the relationship of one thing to another. Some of us are inherently more subjective, whereas others are more objective. Some people are conscious of the way in which their psychological predisposition impacts upon their perspective, therein their behavior, and vice versa. Several notable psychologists, psychiatrists, and philosophers, including, but not limited to those discussed above, have posited the existence of four primary psychological types. While the descriptions thereof vary, the commonalities are plain to see when the works are examined as a collective.

Whereupon the variations in psychological type are viewed through the lens of systems thinking, it seems plausible that there is a distinct evolutionary advantage to humans exhibiting not one, but a range of types. One might postulate that variety is not just the spice of human life, but that it is integral to its very survival. In the absence of difference, would humanity enter a state of relative intellectual and creative stasis? The dichotomies found within the humanities, the arts, and sciences have, and for many centuries, created the dynamism that drove humanity's understanding of both the internal and external world forward. The visual record thereof can be seen in a timeline of art, fashion, and architectural history, where the elasticity of human culture is laid bare; a swinging pendulum, idealism was followed by realism, which in turn was followed by idealism, and so on.

As the worshippers of Maat and Isfet believed, and with them a great many as came thereafter, including H. G. Wells, the tension between order and chaos, creation and destruction, and oppositions of innumerable other kinds, is as fundamental to life, be it human, or any other kind, as are the elements.

Boundaries, and the placement thereof, are impermanent. The external mirrors the internal: be it a wall, or any other kind of construction, that which we build evidences our understanding of the world about us: our psychological state. The fact that humanity has pushed planetary boundaries (Rockström et al., 2009) to their potential tipping points, necessitates greater efforts to understand how and why individuals, and in turn, communities, think and behave as they do. We cannot solve the world's problems by the application of science and technology alone. Thus, just as some believe that ecologists need to sit at the design table, so too, I argue, do psychologists, psychiatrists, cognitive scientists, sociologists, philosophers, and social historians. We need to go beyond bridging "Two Cultures" to bridging all cultures. The sciences, the arts, and the humanities need to triangulate their insights if we are to fully understand the events unfolding about us. All pretence that one discipline is in some way superior to another need desist: today, as was the case historically, vertical hierarchies got us into this socio-ecological mess. The boundaries that delineate research disciplines are no less artificial than national borders.

We find ourselves in the midst of difficult times: press, media, and politicians pitting people against one another, such that many are more aware of the differences between "us", all humanity, than the similarities. We may not know where we are "at", and quite what must "be done", but "let's" hope we can find a way to "be one", and not call "the whole thing off". May we remember that, since first cited in 1595, the fruit, of which the original Aztec name was *tomatl*, has become so popular that its genetic, nomic, and phonetic variations are too numerous to mention, and yet, a "tomato" is one and the same as a "tomatoe".

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### ***Pale Glass***

*It was pale glass  
your image reflected like  
something that could not be seen  
through an open window.  
I knew, this was not the way to  
recognize the redolent blossoming  
of pale tree-toes  
the vivid silence in the streets of the river,  
the wadi washing through my hair.  
Motionless, I can no longer stand  
here, subject to your moves  
through glass, transparent,  
I watch  
you too*

### **זכוכית בהירה**

זו היתה זכוכית בהירה  
דמותך נשקפה כמזמרה  
שלא נשקפה מבעד  
לתלון פתוח  
ידעתי, כך לא יודע ריח  
הפריחה הבהירה של  
בהונות העצים  
ססגוניות השתיקה של רחובות נהר  
הנדי הנשטף מבעד לשערותי.  
לא יכולה עוד לעמוד  
תלויה בתנועתך  
מבעד לזכוכית  
שקופה מביטה  
גם אתה  
רואה

# From Hell to Babel: Creating Value in the Ecocene

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## **ABSTRACT**

We are in the belly of an environmental Hell, yet we should not aspire to forge ourselves a utopian Eden to find a sense of ongoingness in these challenging times. Rather, we should unleash a biospherical Babel from which hybrid practices, paradoxes, and as yet unknown modes of being in the world may be discovered. While we do not yet have the language or apparatuses that can midwife these convergences, bittersweet encounters, and monsters, we can begin to make a transition from an Enlightenment-centered view of the world—based on the utopian vision of New Atlantis, a society shaped by science that gave rise to the modern city, towards an incompletely characterized “Ecocene”, a time of flux, uncertainty, diversity, and instability—by shaping the values on which our decisions are founded through iteratively explored and experimental practices that are evaluated through “being-in-the-world” and the sensibilities of “living”.

**Keywords:** ecocene, flux, edible beauty, metabolism, transformation, ecological

## INTRODUCTION

These are contrary times at the start of the third millennium where we are making a transition between one mode of existence and another. Specifically, we have one foot firmly in an Enlightenment culture and the other in an emerging ecological era, or “Ecocene”. The slippages between these perspectives are perhaps most acutely experienced through our encounters with the material conditions of the world. While our planet has always been a complex, turbulent system, Enlightenment approaches have created apparatuses that equip us with an apparent degree of control over the natural realm—but they also impose a degree of stasis, hard control, determinism, and unflinching inertia. Yet as the side effects of industrialization, with its relentless consumption of natural resources and fouling of our environments, setup feedback loops that destabilize the very systems that sustain us, the hypercomplexity and nonlinear character of the biosphere evade our ambitions to bring these runaway consequences back under our control through the tools of modern synthesis. These experimental tools and fundamental findings integrate genetics, paleontology, systematics, and cytology within a system of biological thought that prioritizes mechanism over population-scale phenomena. Currently, “parametric” design forms the backbone of operations, which generates a digital model that allows architects, scientists, and engineers to select a few dominant variables (e.g. sunlight, stress, prevailing wind) and view variations in a narrow range of valued impacts on a site or structure. Yet although many parameters can be examined, they are not infinite and still operate within a finite range of possibilities, while also continuing to reflect Vitruvian ideals of commodity, firmness, and delight. Indeed, classical science does not measure human values through these lenses—it instrumentalizes them. In this nightmarish situation where we claim objectivity by removing the body and its feelings from this world, meaning in our world slips and slides around us as rivers of numbers and abstractions that are dissociated from their material relevance. Yet the harder we try to “solve” the unfolding ecological catastrophe, the more it evades our attempts at resolution. We are reaching the limits of modern technology to address the challenges of “wayward” nature, and we are faced with the daunting prospect of reimagining our position within the world and the way we construct the idea of value in the Ecocene (Morton, 2009).

## LEGACY OF THE ANTHROPOCENE

Half a millennium of Enlightenment thinking that has characterized the Anthropocene did not help our ability to quickly adapt nor change our values and practices. Rather, it has given us the impression that virtuosity is more valuable than lived experience. Indeed, we prefer to belligerently hold onto what we already know to be true and enforce more of it, more quickly, and efficiently. This is because we are looking for rapid amelioration to the catastrophe that is falling like earthquake rubble around us. We are more likely to rebrand rather than re-evaluate so that it feels like we are making a difference. In an age of representation, where the deceitful senses were cast out of our discourses of truth, we look for symbolic reassurance that we can overcome our great challenges. Hence, we speak of “green” architectures, “biomimicry”, and “sustainability” while fundamentally implementing these ideals using exactly the same kind of approaches that caused our problems in the first place. In fact, we regard matter as being problematic, distancing ourselves from “base” materiality. We prefer a lighter, smarter, ephemeral “information” space that is based on abstraction, mathematics, semiotics, GPS, big data, and computer modeling. Yet while these systems may provide an all-seeing eye on the scale of our challenge or help us better understand current changes through visualizations, none of these tools enable us to directly engage with the natural realm on its own terms. We are therefore left speaking in phenomenological tongues—as we have one set of ideas about the way the world should work and another dataset that provides new discoveries about its actuality and the way that matter works—often in surprising ways. For



example, the recent discovery that the luminous realm is only five per cent the whole of reality, the rest being composed of dark matter and energy, should at least give us pause for thought in our rationalization of the present, even if we have no idea how exactly to use this information.

In the attempt to reconcile our capacity for thought with action on the material realm—Lucretius’ great paradox—through the idea of multimodal convergences, we are faced with how we reposition ourselves with the strangeness of matter and its vast, incalculably complex character. However, this third millennial materiality is not the same set of substances that Descartes cast from their brute connections with the soul. Rather, it is innately enlivened, stranger, and darker. Enlightenment perceptions of reality seek a hierarchically ordered realm that is deterministic and deals with small, highly controlled challenges that are performed at equilibrium states. Third millennium materiality, instead, opens the portal to a probabilistic, massive, softly engaged realm that operates at far from equilibrium, whose modes of articulation, interpretation and understanding are only just beginning to unfold. It is not that these modes are therefore un-scientific; they are simply at the cusp of our understanding of a dominant scientific practice, its specific way of looking at the world, and its technological portfolio. Yet the immensity of third millennial challenges are requiring us once again to deal with unknowns, which is a position that the Enlightenment promised to banish with discoveries such as radio waves, gravity, and cosmic radiation.

Although modernity has come far in its engagement with a world that was once shaped by idiosyncratic beliefs, we still do not understand everything. As we attempt to name and model the present reality, we begin to appreciate its guileless inconstancy that challenges the old ideals and dichotomies, measuring systems, and narratives that have dominated Enlightenment thinking. In their place, stranger, more contrary ideas that resist simple resolution are taking hold. For example, the idea of “dark” ecology, which is full of uncomfortable paradoxes and nightmarish juxtapositions of comedy and tragedy where different knowledge sets and practices collide, offers a strangely incomplete, yet informative view of the unfolding ecological catastrophe (Morton, 2016).

## EXPERIMENTAL ARCHITECTURE AND TRANSDISCIPLINARY SYNTHESIS

Experimental architecture addresses these perpetual contradictions and inconstancies through the art, practice, and exploration of experiment, which is not classically scientific since it is not driven towards a particular outcome, like solving a mathematical equation. Rather it aims to explore the complexity of reality by focusing on irreducible experiences like trying to describe the taste of coffee. Aaron Betsky notes that at the end of the second millennium, the visionary practices of experimental architecture, as practiced by Peter Cook and Lebbeus Woods, may be considered a comment on postmodern irony, whereby “disturbance in the known and the expected was the leading edge of Postmodernism” (Betsky, 2015). The juxtaposition of thought with material effect through the experimental process becomes a negotiable catalyst for change. Indeed, Woods found resonance with Leonardo da Vinci, who he considered an architect of indeterminate form exploring parallel worlds through “analogy” (Woods, 2010). In a practical context, experimental architecture seeks to include a whole range of knowledge practices, and iteratively uses a variety of laboratory spaces and instruments to interrogate the contradictory landscapes we inhabit. This is so that informed decisions may be made about the choreography of space, which includes and embraces discoveries made by the tools of modern synthesis like synthetic biology and molecular science, without insisting on their universalization.

Rolf Hughes observes that from a hands-on perspective, experimental architecture engages with the integration of new research methods, artifacts, performances, and encounters. He identifies its contribution to knowledge as taking place through *storytelling as transdisciplinary synthesis*, which

becomes key not only to develop the scope of research itself but also its capacity to link and connect forms of expertise previously kept apart. Central to its process is the replacement of Enlightenment metaphors and analogies with those from the emerging Ecocene, which may provide the means to develop alternative—if not radical—knowledge structures, value systems, and cultural impacts. Experimental architecture therefore positions bodily experiences as the central integrator of knowledge making. This way, instead of rational, sterile, highly controlled centers of knowledge that characterize the modern laboratory, it offers a counterpoint through an engagement with “messy” highly distributed laboratories, which are closer in character to “real” world ecosystems. These unregulated spaces may expand our capacities to innovate and produce alternative narratives that resist centralized order. Such stories can facilitate hitherto “impossible” encounters that enliven our capacity for disruptive, innovative inquiry that, in turn, sustains and enriches our knowledge of an ecologically stressed planet. Such research methods imply a need for new evaluative criteria that both speak to established notions of research *quality* while yet respecting the specific characteristics of each disciplinary contribution that invoke feelings, memories, aspirations, and passions. These evade resolution and reside within the terrains of poetry, magic, and monsters to give rise to a rich platform for new kinds of juxtapositions, synthesis—and insight (Hughes, 2016).

## BEING IN THE WORLD AS VALUE CREATION

Value creation within a third millennial context asks us to exceed the established tropes and portfolio of architecture, which have always been subject to intense negotiation. Yet with the re-centering of the body in the production and choreography of space, the practice exceeds the choreography of space and engages with many more elements that slip outside architectural conventions to become “worlding”. This question of “worlding” is at the heart of my practice. The term is associated with Martin Heidegger’s notion of “being in the world” and speaks of the actual process of living as fundamental to how reality is conjured, produced, and orchestrated.

It is within this context that I will offer bittersweet values, which gesture from living in the belly of Hell and moving from catastrophe, not towards a utopian Eden and final resolution of all our difficulties; but constructing a Babel of ecological contradictions through which we may discover new languages and modes of survival. There is no happily ever after promised in the pursuit of this question. Indeed the pathways towards this state of affairs is only littered with risks. And yet, tired of the conflicts forced upon us through modernity’s war by stealth (Latour, 1993), it is a journey that we must embark upon to stand a chance of making meaning that speaks directly to these inconstant times and does not stray from what Donna Haraway refers to as the “trouble” of being in this world (Haraway, 2016).

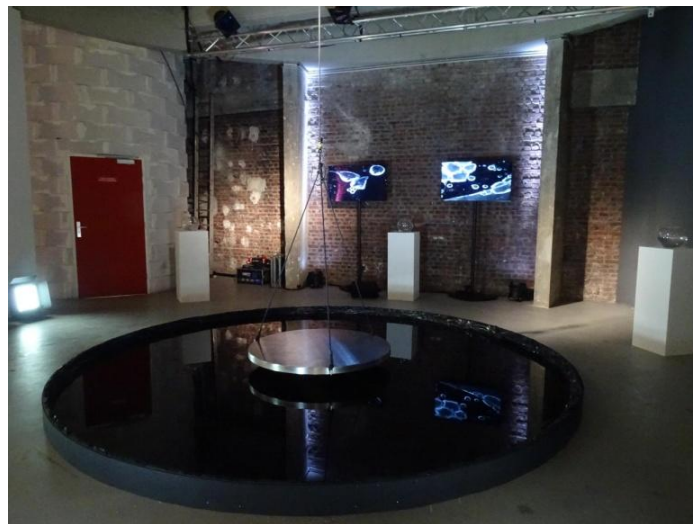
By placing the human experience at the center of valuating architectural experience, experimental architecture begins to construct ethics, principles, instruments, and apparatuses that enable their interrogation.

## EXAMPLES

### The Temptations of the Nonlinear Ladder

*The Temptations of the Nonlinear Ladder* is the name of a contemporary circus performance that took place in April 2016 at the Palais de Tokyo as part of the *Do Disturb II* festival. Collaborators were Rachel Armstrong, Professor of Experimental Architecture, Newcastle University, UK, Rolf Hughes, Head of Research, and University of the Arts, Stockholm, and Olle Strandberg from Cirkör

LAB, part of Cirkus Cirkör, Sweden. Performers used an exploratory instrument that comprised a five-meter diameter black “screaming” pool. The pool provided a highly transfigurative site and portal to another plane of existence through the reflections, refractions, and scattering of light on its surface above which a reflective metal disc on a pulley system was suspended that would safely take the weight of the performers. The space was backlit with bowls of medaka fish (*Oryzias latipes*), the only vertebrates to breed in nonterrestrial conditions. During the 3-day experiment, circus performers explored how to use fractured images from the unconventional light in the space to generate nonlinear ladders—bridges between planes of existence—that transformed their bodies and fused them in unexpected ways with the fish that were adapting to life without gravity. The performers produce unstable, ectoplasmic expressions of new spaces between elemental realms—earth, air, water—and created images of new bodies for themselves. This project explored the ascension of creatures from one plane of existence to another through a nonlinear ladder; a transitional and contextualized space that challenged established ontological systems to create the conditions for alternative modes of being.



**Figure 1.** Performance space for *The Temptation of the Nonlinear Ladder*, Palais de Tokyo, Paris (Photograph by and courtesy of the Author, April 2016).



**Figure 2.** Circus performer Methinee Wongtrakoon in *The Temptation of the Nonlinear Ladder*, Palais de Tokyo, Paris (Photograph by and courtesy of the Author, April 2016).

Yet the valuation of such an experiment where there are no obvious baseline experiences requires us to reconsider our conceptual framework for the production of space and the way we inhabit the world at this uncertain time. An iterative, experimental, immersive, and sensible process is required where empiricism is not enough to create meaning but requires our bodies to feel and understand the actual situation we are facing rather than stay at a distance from its representations and mirrored reflections.

### **Edible Beauty**

With the potential blossoming of alternative types of habitation, it is critical that we begin to establish ways of embodying those value systems that articulate the nuances of experience such as understanding the idea of “beauty” in an ecological and ethical context. This way we can begin to see the world again without being paralyzed by cynicism and irony. Such experiential shifts of being in the world empowers designers in making choices and evaluating the whole portfolio of approaches they may use for better dwelling in the world, which implies a critique on the status of architecture and the qualities of space that shape the urban environment. A classical value such as “beauty” invokes potentially sublime relationships between people and is historically entangled with the idea of “goodness”. An alternative, coherent reading of such a value system has been provocatively articulated by Salvador Dalí. The famous artist subverted the classical discourse by proposing a “cannibalism of objects” that spoke of a “terrifying and edible beauty” (Dalí, 1998, pp. 193–197). Dalí used his paranoiac-critical method to invoke a great, edible, decompositional, psycho-sexual, and ecological effect. Often profoundly phagic, where one system literally engulfs another in an unending writhing mass of bodies, objects, systems, moods, and images, Dalí’s obsessions confound expectations and regain their coherence to propose a new kind of synthesis—through symbiosis and reincarnation. Dalí located these transformations within the realm of psychotic conditions. The physical nature of ecological systems, though, can literally (re)materialize these transgressions and transformations in ways that have the capacity: 1) to change our worldview, value systems, and encounters with the living realm on one hand, and 2) to physically act upon them on the other, so that its qualities begin to influence living agencies—from bacteria, to forests, soils, air, and oceans. Beauty may now be discussed as a collective quality that is no longer superficial but shares ontology with the potency of matter that possesses a deep connection with life, diversity, vital exchange, and all its radical transformations. Edibility now becomes the cornerstone of an alternative aesthetic that is not limited through the classic framing of the body but is also extended into the decomposing matter and its landscapes. There, beauty links the cycles of life and death and does not necessarily bring out “the best” in us. While venerated—beauty may provoke sadistic acts of admiration like, putting something on a pedestal, stalking behaviors, jealousy, or various forms of control and defilement. In keeping with the bittersweet and uncertain nature of these times, the idea of beauty is not rewarded with preservation, immortality, or a worshipful status but has a precarious relationship with its ecologies of interaction, as in this strange tale of male animal beauty by Leonora Carrington:

No animal or bird ever looked so splendid as did Ignose in his attire of love. Attached to his curly head was a young nightjar. This bird with its hairy beak and surprised eyes beat its wings and looked constantly for prey among the creatures that come out only at the full moon. A wig of squirrel’s tails and fruit hung around Ignose’s ears, pierced for the occasion by two little pikes he had found dead on the lakeshore. His hoofs were dyed red by the blood of a rabbit he had crushed while galloping and his active body was enveloped by a purple cape, which had mysteriously emerged out of the forest. He hid his russet buttocks, as he did not want to show all his beauty at one go... Ignose was looking deeply at himself in the water. The hunters fired, and the dogs finished him off. They put Ignose into a big sack and

said, “This one will do for the bistro in Glane, we’ll get at least a hundred francs.” (Carrington, 1988, pp. 7–10)

“Beautiful” architecture now springs from the entrails of abject terrains, pulses with nonlinear vibrancy, congeals and dissolves through metabolic connection, proposes evolutionary characteristics, and asserts the potential for radical transformation. Rather than being caught in a fantasy of unchanging, ageless surface appearances, immortality, and faultless geometries, we now encounter a world that celebrates its continual adaptations to changing needs, society, decay, decomposition, putrefaction, and ecology—where designers, the public, and even nonhuman agents are actively engaged in the construction and editing of our living spaces by linking metabolic webs and spirals that connect the living and the dead. Nevertheless, this is not an imperial decree for the conditions of existence, but encourages a continual reworking that may, for example, occur through “local” opportunities, indigenous histories, and cultural preferences. An example of “beautiful” ecological architecture perhaps would now be the “Intelligent Building”, or BIQ house in Hamburg, which pumps living organisms and air through its panels, where pond slime munches on carbon dioxide and sunlight to create biomass. Yet it knits these solar exchanges among infinite globular ripples, which rise as hypnotic jellyfish. Their magnificent strangeness is reminiscent of leaping flames that bubble or boil into molten wax columns that rise in globular forms as if within a lava lamp column—not formally “alive” and yet far from being inert—passersby stand trance-like momentarily under their spell. However, it is not the object that is beautiful. The building shell is minimal, featureless, undecorated, and rather joyless. Beauty is found in those moments where the light shatters through the liquid surfaces and sparkles dance on fleeting membranes as soft kaleidoscopic mirrors layer image upon image twisting and contorting them into relentless moments of color, form, poetry, and delight that cross-contaminates, metabolizes, transforms, and vanishes—again, and again, and again. This spectacle is not the same today as it was yesterday—when it was raining and the precipitations dragged their dirty fingers down the pane so that chalky phantoms appeared to be rising out of the tank like skeletons from a grave, more in keeping with the grotesque than the sublime. Such inconstant beauty, shared by the moon and the sun, vexes our encounters with these tempests that relentlessly shake and unsettle our senses, so that we can no longer declare the “true” nature of things. For many things are true. Their constancy is shaped by perspective and contexts, which is very different from the character of Platonic truths. Of course, this is not everyone’s idea of sensory transcendence, where beautiful architecture cannot be defined or fixed by a set of universal rules, traded with, or defiled, but remains sensitive to its many contextualized relationships and to the preferences of its inhabitants, communities, and other (nonhuman) observers. Thereby, it retains plasticity and meaning within a world in flux, where beauty relates to a complex relationship about the civilizing of appetites that are materially transformed through birth and death. This sublimation could be called “*le petit mort écologique*”. It starts a new conversation about beauty—made with subversive materials, some of which are nonliving, some of which are in the process of putrefaction, and others that are fully “alive”.

## Future Venice

New meaning can now be explored within the character of urban landscapes through the construction of narratives by using a whole portfolio of approaches, which begin to reveal previously hidden characteristics under superficial veneers of construction. By observing places differently, our habitats begin to acquire an alternative character, whereby a new kind of complex value system condenses in the inhabitation of spaces.

Rather than the sublime imagery conferred by biomimicry, experimental architecture generates narratives at a time of environmental apocalypse that seek alternative metaphors and symbols particularly at a time of post-industrial decay and a biosphere that is riddled with its poisons. Yet

catastrophe does not imply a sudden eradicating of life but the occurrence of odd transformations in which toxic landscapes and their inhabitants are challenged to find a pathway of ongoingness against seemingly impossible circumstances—for this is life’s three and a half billion years unbroken legacy. We are reminded that the great extinctions are full of incomplete adaptations like scorpions that defecate through the tips of their tails, which at in-built lines of weakness grow back through autotomy, when their bodylines tear and heal under times of stress. Perversely, after the writhing tail and its digestive tract is shed, the creature never fully recovers when a new appendage grows back, since the anus is not regenerated. While new tailed scorpion abdomens swell from the build-up of excrement forcing tail segments to break off to providing temporary relief, these seemingly regenerated creatures are tortured in perpetuity from the inside by their own waste products. And so, the polite perfection of the natural realm and the exacting designs suggested by biomimicry and the sweet efficiencies of biological systems, take on a different character that is darker, stranger, and precarious.

Indeed, the Ecocene is a time of bittersweet optimism and relentless creativity that invites its life forms to tread strange, alternative pathways towards uncertain futures. Venice is one of these creatures that sprung from the mud between the ninth and 12<sup>th</sup> century, when the city-state of Venice was born. Using the latest technologies of the time, agrarian land drainage techniques made soft silts livable through digging canals and opportunistic bridges that gushed out between islands to form twisted walkways, like briars. Then, by networking about a 118 islands together, the city accreted its present form through these structural weeds. Yet when we walk through Venice looking for the story of its construction, we encounter it the wrong way up.

The teetering city has maintained a tenuous skyline absent of vertical lines for over a millennium. It clutches the ground with its woodpile heels, just about staying upright by virtue of the enforced camaraderie of oblique buildings that lean on each other, with unlikely struts, pins, and braces. This architectural uncertainty produces a rich tapestry of peculiar and ornate forms where spaces are linked from inside to outside with metal piercings, corseted to fall inwards or pushed apart by brick piles at the apex of narrow alleys where roofs almost touch in triangular formation. At other points, bridges subtend odd angles to negotiate the structural scrum between walkways, water, and walls. While the city tilts and twists, the silt swallows the ground. It is here that we find our first traces of living bricks, the creatures that steady the soft delta earths—calcareous algae, biofilm producing microorganisms, barnacles, oysters, mussels and tenacious sabellariid worms. Venice is a creature of shoreline slurry—a glimmering mudfish. If you flip the city on its back, you will see the carefully constructed details of its organic underneath. The “living stones” of Venice, offer myriad of typologies that mirror John Ruskin’s analysis of the architectural details of the city and sift the lagoon’s silty water for slime, grit, industrial waste, household effluents, marine condiments, and countless garbage garnishes. They choose their building materials from these broths to form hardy bioconcretes that both bind the brickwork and chew on its bones so that—around its edges—Venice is constantly reinventing its boundaries, its lands, and its communities through countless, unregulated, dynamic processes.

This is where Venice becomes interesting. Like all settlements, it is founded on rich soils that offer provision for its inhabitants, the founding communities being forced to seek the safety of extreme mud flats to escape invasion. These ancient migrants had to find ways of adapting to the wetlands in ways that natural organisms are already able to do. So if you examine the city’s underbelly alongside the palimpsests of agrarian technology that sought to drain and firm the silt, you will also see evidence that the city’s foundations are already “living”—where nonhuman communities flourish alongside the human populations and become part of its founding stones and stories. These collectives of biofilms are inclusive, biodiverse sites that leak carbohydrate scaffolding into long threads of matter, and clean the watery world around them, like a kidney. Gradually, these



civilizations lay down living stones that they harvest from the sediments in the lagoon. Seeking further modes of attachment in the waterways, they claw erosions in the buildings and gnaw at the foundations where they splay into sites of further decay. In these constantly shifting material fields, these communities are digesting and reshaping the city's boundaries, re-drawing territories, and directing resources. Tirelessly these metabolic materials equip Venice with a living layer that enables it to negotiate its survival in an ongoing struggle against the shoreline elements—just as a creature does—navigating the impacts of waves, wind, tides, sunlight, desiccation, and organic invasion. All the while these tiny cities are synthesizing their options through Venice's living stones, so that we are kept guessing about what this highly active structure might become.

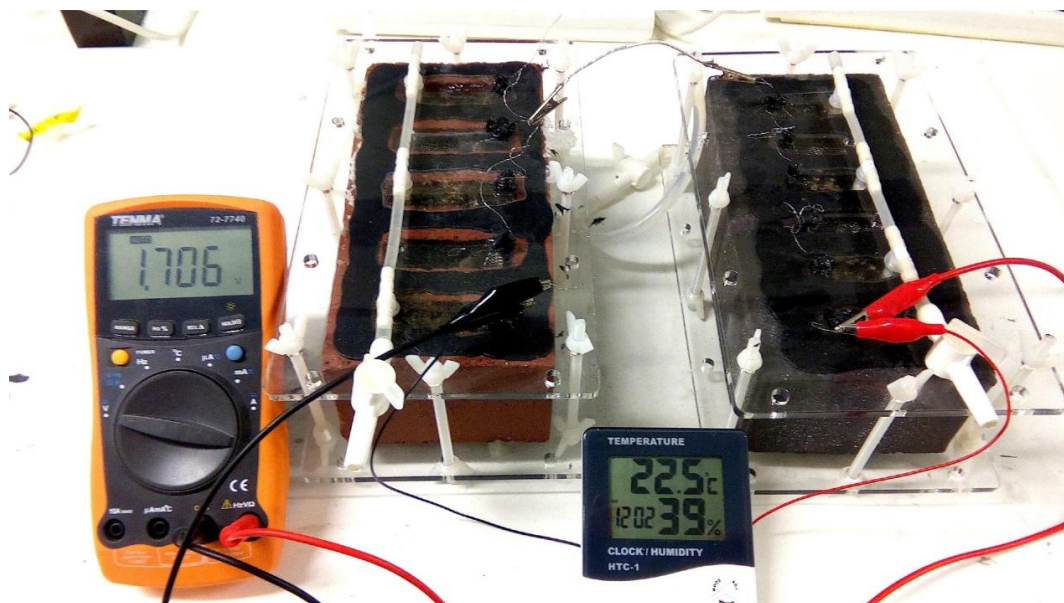
In 2008, we began to ask whether it was possible to turn around the fate of Venice, which because of devastating changes in its relationship to rising water levels, is likely to be claimed by the sea. By equipping it with some of the properties of living things, the city may actively fight back against the elements in a struggle for survival—like creatures do—and so, adapt to its changing conditions in ways that we would normally associate with living systems. “Protocells”, which are chemically programmable droplets, were used as a possible platform that could potentially transform inert to living matter by wrapping a synthetic coating or “biocrete” around the buildings' foundations. Yet this technological system was not based on biology, but the chemistry and physical properties of dynamic matter and possessed simple metabolisms. Demonstrations were conducted in the laboratory to show proof of principle. They were also held by the side of the Venetian lagoon in experimental tanks, which had been transported into the field so that “live” observations could be made on site. Potentially, such a system could transform the physical properties of the city from its traditional use of inert materials such as wood, brick, and stone, towards something that shares some of the properties of living things, acquiring an outer surface like a growing reef, and so initiate the construction of a protective limestone shell around the grounds of the city by biomineralizing Venice's wooden foundations. These are under particular threat by the traffic from large cruise ships whose wakes suck the preserving salt water out from under the base, leaving the foundations exposed to the air, where they rot. With time, the bio concrete-stimulating droplets then would form a kind of protective kettle-limescale during these times and even build up a residue that could repair erosion of materials at the tidal zone in some specific locations. Field studies to identify possible sites for testing the technology revealed that natural marine wildlife was already carrying out a metabolically vigorous version of this process. This suggested that it might be possible to find ways of orchestrating a whole range of events between the biological systems in the lagoon, the chemical technology, and the concrete-forming processes in the waterways to produce a synthetic platform, which was potentially programmable (Armstrong, 2015).

While “protocells” were an early exploration of the capability of designing and engineering with materials that possess the characteristics of living things and were a valuable lens for breaking down the expectation of material performance associated with a traditional architectural portfolio, a more robust apparatus was needed to take the insights into another stage of relevance in relationship to the city and its inhabitants by incorporating the metabolic potency and ranges offered by biological systems into the synthetic choreography. In other words, the technological apparatus was no longer one species of device but an interacting range of agents with mutual and transformative relationships.

We had explored the ability of natural biofilms to attach to discarded plastics, and thus potentially produce a hybrid material and fabric for a new island within the Venetian lagoon, as a pre-proof of concept series of experiments entitled *Future Venice II*. Afterwards, we began working with technology based on the microbial fuel cell (MFC), an organic battery powered by the anaerobic metabolism of microorganisms. This has become the infrastructure for the current project *Living Architecture*, or *L/A project* (April 2016–2019). This work in progress is also situated in Venice and

extends the design conception of working with living systems by bringing together the sciences, design disciplines, and the arts to explore the possibilities of “living” in the broadest sense of the term in the third millennium. The €3.2M scheme is a next-generation, selectively programmable bioreactor. It includes experts from the universities of Newcastle (UK), the West of England (UK), and Trento (Italy), in collaboration with the Spanish National Research Council (Spain), LIQUIFER Systems Group (Austria), and EXPLORA (Italy). The technology is envisioned to function as an integral component of human dwelling, capable of extracting valuable resources from sunlight, wastewater, and air—and in turn, generating oxygen, proteins, and biomass through the manipulation of their interactions. The goal of L/A is to design and build a proof-of-concept “living architecture” whose targeted breakthrough is to transform our habitats from inert spaces into programmable sites. Developed as a modular bioreactor-wall it aims to extract resources from sunlight, wastewater, and air. The “building blocks” are conceived as standardized building modules that fit together and create “bioreactor walls” that may then be incorporated into housing, public buildings, and office spaces with value notions that speak to a “circular economy”, and also by functionally retrofitting our living spaces with improved performance criteria, such as making electricity from organic sludge and finding new ways to power our homes and cities.

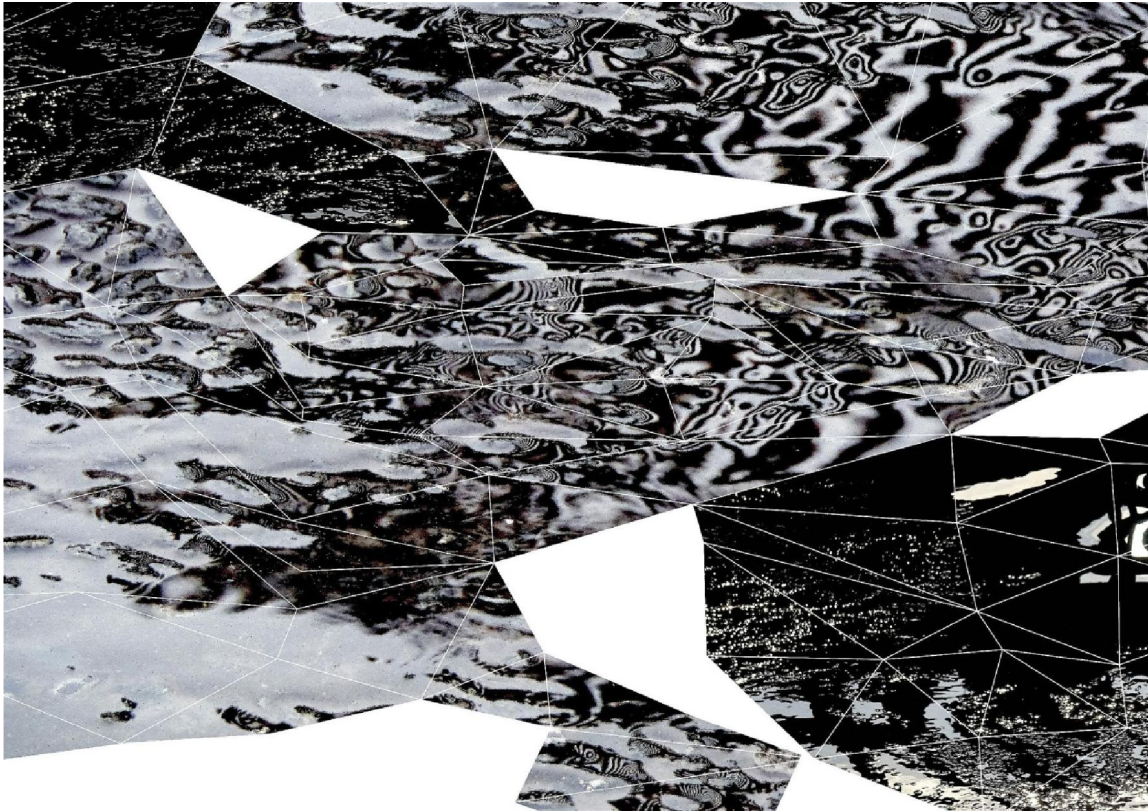
The first prototypes are “living bricks” which are part of the story of an alternative future for the historic city and begin to specifically articulate how relationships between human habitation, technology, and nature may be shaped through a mutually beneficial relationship. While outcomes are not specifically directed towards the mineralization process at this stage, they are being made available to the local Venice community so they can be directly investigated.



**Figure 3.** Living bricks produce enough metabolic electricity to power an electronic device while making clean water and detritus (Image courtesy of the University of the West of England, October 2016, sourced by the Author).

It is hoped that these apparatuses may be useful in addressing real challenges within Venice and other places further afield that do not offer a solution to a particular grand challenge but help construct increasingly relevant prototypes that articulate the choreography between agents with complex relationships and enforce various approaches to optimize and differently address some of the pervasive problems of human habitation. For example, living bricks may deal with our waste differently, provide clean water for everyone, or create rich composts for urban gardens, so that we

may no longer be passive in our relationship with these spontaneous natural processes. It creates a context in which we may begin to “speak” chemically, physically, biologically, mechanically, and even digitally (through electricity) with the living world. Of course, this ambition is aspirational but creates the conditions in which we might be able to envision a better and more symbiotic relationship between cities and the natural world, and with this possibility an ethical, mutually beneficial, ongoing future for both human and nonhuman alike.



**Figure 4.** Detail from a living brick design. It indicates the complex forces that are working at the micro scale within the field of operation of a living brick. The technology provides us access to these highly complex environments. It explores how we can orchestrate exchanges between the digital and organic worlds to produce useful events and materials that have the potential to transform our homes and cities into sites that work alongside natural forces rather than consume them (Image courtesy of Simone Ferracina, sourced by the Author).

Yet such projects are ongoing and necessarily incomplete. Indeed, experimental architecture is a form of knowledge and value making that is fundamentally synthetic rather than analytical, reductive, or expert—it is a collision, remodeling, and propositioning of material events and their teleologies as an active coupled exploration of *being in the world*—where “the world itself is part of the fundamental constitution of what it means to be human” (Critchley, 2009). At the start of the Ecocene we are faced with the task of reconfiguring our relationships to matter, space, time, ecology, and each other in an ongoing birthing, testing, and experiencing of alternative spaces, disciplines, concepts, relational possibilities, collisions, contradictions, subversions, and paradoxes. For it is only by clashing matter, ideas, and values together—and inhabiting them—that we may challenge what we assume to be true, and find new meaningful ways forward that we rehearse until they become adopted as culture—rather than become stranded in an ironic island of intellectual inaction from which we disdainfully watch our world boil and drown, declaring to the sweet melody of a Kurtzweil keyboard violin: “There, we told you so”.

## FROM HELL TO BABEL

There is no remedy for the present apocalypse. The tipping points of the world we once thought we knew have already collapsed and irreversible changes are afoot. There is simply no going backwards from our present situation. While we can limit further damage through considered remediation, and make ourselves more comfortable by clinging to familiar experiences and modes of existence for as long as we are able, this is not the same as developing a new paradigm for worlding—the way we shape, dwell, and establish meaning in our habitats. Although such a task seems daunting, impossible, harder to imagine than the end of the world—we must take our first steps by accepting imperfection, risk, change, uncertainty, and chance with no more intellectual or technical status than that of the amateur. While we provoke the unknown, we will not remain in this state of unknowingness. As we immerse ourselves in strange assemblages, prototypes, models, installations, and enactments—new modes of thought, forms of making, and expert practices will begin to condense. In orienting ourselves around these spaces and reading its fields and interfaces like language, it may be possible to generate new kinds of design where metamorphic entities precipitate fresh downpourings of words and ideas that enable strange things to spring up everywhere—even from out of the ground.

Worlding embodies rather than represents the processes it discusses by curating and producing texts, ideas, quotes, themes, poetic expressions, narratives, and stories, which collide to become condensations of new modes of thought. Through experimental architectural inquiry—that engages with a sensible relation to reality—a form of choreography emerges to suggest the beginnings of a theatrical space and performance laboratory for the practice of worlding and becomes an apparatus that generates meaning for our living spaces. As such, we are no longer building homes and cities but constructing parallel worlds that offer insights and tactics about how new experiments may keep us off balance in our thinking so that we evade consensus, universality, homogeneity, and equilibrium. In this *weird Baroque* of performance, drama, tension, exuberance, grandeur, experiment, and the poetry of life, the seeds that enable us to invent new stories about our collective livability mark our first steps towards a (re)worlding of this planet. Observed from within a Cambrian explosion of design choices, excesses, diversity, and an abundance of vibrant spaces, we find ourselves moving away from an apocalyptic Hell towards a precarious ongoing existence within an emerging Tower of Babel. Through forging new value systems, we will re-engage with multiple acts of diplomacy to find coherence in the diversity of experiences and paradoxes that these changing times provoke, which will gradually become comprehensible and even familiar to us. The time of homogeneity, theories of everything, Platonic ideals, universalities, and one-stop techno-fixes that characterized the Anthropocene will be subsumed by a flourishing of possibility and further refined by the processes of the living. Indeed, the richness of our experiences within these challenging times and strange spaces will be the way experimental architecture progresses architectural discourse and articulates its emerging values. By enriching the material flows and movement within our living spaces, we may generate alternative choreographies that are asserted through their own poetics and articulated in sensible metrics. No longer will our buildings be constrained by existing conventions of empirical assessment such as post occupancy surveys and energy efficiency evaluations—but they will even spill into spaces beyond our native and terrestrial environments from which new modes of existence will become possible. The values that characterize these spaces will embrace risk as a condition of existence and develop a broad palette of lively multi-materialities inhabited by radical bodies, which incessantly coalesce to provoke new encounters with the places we inhabit.

Architects that work with these conditions will encounter fuzzy surfaces, cloudy vistas, fragile details, quantum logic, soft scaffoldings, and all kinds of teratogenic in-betweens that infiltrate the spandrels between the mineralized bones of industrial construction. Yet these nascent terrains and



complex, fertile substrates do not claim to provide totalizing solutions to the constantly unfolding multiplicities and challenges that we are facing. Rather, they catalyze new opportunities for invention by providing an emerging palette of new possibilities and paradoxes from which we may birth new kinds of architectures, urban environments, and communities. In this way, the built environment shares a common project with the natural realm that can be shaped by new values and ethics through the production of life's poetry and our mutual, continued survival into an ever unfolding adjacent possible that is full of surprises that can enrich societies, cultures, and the world itself. So despite ongoing catastrophe—everything is still to play for.

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# The Theoretical Basis of Well-being as a Motivation for Design

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## **ABSTRACT**

Recent rapid urbanization is associated with increased stress and reduced sense of well-being. The environment where we live, work, learn, and play affects us. What are the co-benefits of design for well-being? Addressing socio-environmental factors through design interventions leads to better health outcomes, faster. Well-being crosses theory and practice as a valuable epistemic foundation for design. Standard design practice no longer matches the multi-disciplinary theories that intersect well-being, requiring a focused, new design culture to offset and mitigate impacts of urbanization. Urbanism that explores only the interaction of inhabitants with the built environment misses the natural environment in which a city is set. Philosophically, design enquiry relies on doubt. This paper will critically review the literature to define well-being as a sound principle of design, to remove doubt, and to create a design paradigm on which designers are prepared to act.

**Keywords:** biophilia, salutogenesis, salutogenic design, attention restoration theory, stress recovery, public health, urbanism, urban design, urban ecology, well-being, positive mental health

## INTRODUCTION

One could exemplify salutogenic design by confronting two city streets: one street has leafy trees and places to sit, while the other does not. Generally speaking, the first street is likely to attract more passersby because of the peaceful feeling that it produces, and compared to the second street, to become a preferred location for businesses and shops.

Rapid urbanization requires a new design culture to offset and mitigate the impacts of change. Negative impacts on society, the environment, and economy have been greatest in places where change has happened most rapidly, where the triple bottom line has been crossed (Elkington, 2004). While contemporary design evolved with political and economic influence, inclusion of elements effecting environmental and social outcomes can aid public health and well-being.

A search for urban design assessment models from the past 30 years shows little progress towards a new urban design approach that interfaces equity, culture, politics, and the environment. Standard healthcare still treats people when they are ill. Standard architecture still treats people as if they are well (Souter-Brown, 2015). At the same time, so-called lifestyle-related non-communicable diseases such as stress, depression, obesity, and some cancers now kill more people than the old communicable diseases such as measles, cholera, and malaria. In large part, this is due to improvements in sanitation and food safety, vaccines, antibiotics, and nutrition. However, the early success of medicine and early urban planning has created a problem. It has led people to put their faith in the notion that medical science would succeed in overcoming the remaining obstacles (Schlipkötter & Flahault, 2010). At the turn of the 20<sup>th</sup> century, health practitioners worked closely with urban planners (Kent & Thompson, 2012). As health improved and the war years intervened, the focus of urbanism moved away from health towards facilitating rapid economic recovery. Kent and Thompson noted that “despite closely linked origins, the contemporary professions of public health and urban planning largely operate within the neoliberal framework of academic, political, and policy silos” (Kent & Thompson, 2012).

## BEYOND SILO THINKING: THE CASE FOR AN INTEGRATED, MULTI-DISCIPLINARY APPROACH

Existing assessment models are based on outdated scientific patterns that analyze cities and their features as separated and disconnected pieces. But cities are complex systems, whose infrastructural, economic, and social components are strongly interrelated, and it is therefore impossible to understand them separately. The result is an ineffective policy, often leading to unfortunate and sometimes disastrous unintended consequences (Bettencourt & West, 2010).

We now know that health and well-being are intrinsically linked with sociological and environmental factors, the so-called “social determinants of disease” (Diener et al., 2010; Harter, Schmidt, & Keyes, 2003). Gary Cohen, a pioneer in the environmental health movement for over 30 years, believes that healthy environments are like a vaccine against illness. The environment where we live, work, learn, and play affects us. Likewise, it can offset stress and reduced well-being resulting from urban migration and densification. Co-benefits of design for well-being allows for co-designing services and settings, addressing socio-environmental factors through design interventions, and leads to better health outcomes faster (Cohen, 2016). Well-being crosses theory and practice as a valuable epistemic foundation for design. Standard design practice no longer matches the multi-disciplinary theories that intersect well-being, requiring a focused, new design approach to mitigate the impact of urbanization. Urbanism that explores only the interaction of inhabitants with the built environment misses the natural environment in which a city is set.

Philosophically, design enquiry relies on doubt. This paper will critically review the literature to define well-being as a sound principle of design, to remove doubt, and to create a design paradigm in which designers are prepared to act.

As urban planning has successfully addressed public health in the past, we look there to find inspiration for the well-being of the future. In 1902, the father of modern town planning, Sir Ebenezer Howard, wrote in his book *Garden Cities of Tomorrow*, “in these days of strong party feeling and keenly contested social and religious issues it might be thought difficult to find a single question having a vital bearing on national life and well-being on which all persons... can agree... It is deeply to be deplored that people should continue to stream into the already overcrowded cities” (Howard, 1902, pp. 2–3).

Howard’s “deplorable” migration to overcrowded cities has continued, with a backdrop of growing health challenges. Thirty years ago the emergent concept of lifestyle and the rise of lifestyle-related disease were noted by Coreil and colleagues (Coreil, Levin, & Jaco, 1985). Since then, researchers from multiple disciplines have recognized the need to formally link nature with urban studies but each have tended to come with a monofocal, reductionist lens. In 1986, the biophilia hypothesis was promulgated by Edward O. Wilson as a way of explaining humans’ innate attraction to living things (Wilson, 1986). Ten years later, medical sociologist Aaron Antonovsky developed the concept of salutogenesis, an approach that focuses on factors that support human health and well-being rather than on factors that cause disease (pathogenesis) (Antonovsky, 1996). Although evidence of the health impacts of environmental design were growing, at that stage biophilia and salutogenesis were not linked. In 2003, ecologists led by Alberti proposed an integrated framework to test hypotheses of the evolution on human-dominated ecosystems from interaction between humans and ecological processes. They observed that both the natural and social sciences have adopted complex systems theory to study emergent phenomena. They further stated that “while human and ecological processes are studied as separate phenomena decision making will remain fragmented” (Alberti et al., 2003, p. 1169).

At the same time, while ecologists were connecting humans and ecological processes, eco-psychology was growing as a new discipline. Kaplan and Kaplan were among the first to document the health benefits of a green view in post-operative patients (Kaplan & Kaplan, 1989). Soon after, Ulrich noted the stress-reducing effect of plants through experiments with unthreatening natural environments. He successfully predicted that nature-rich environments will have a reducing or restorative influence, whereas many urban environments will hamper recuperation (Ulrich et al., 1991). The resultant stress recovery and attention restoration theories developed as a response to the growing awareness of the potential health benefits of nature.

While ecology and psychology have been the major sources of literature on the impact of design, disciplines as diverse as forestry, real estate, workplace productivity, and accountancy have studied linkages with improved well-being on their area of interest. In 2008, the analytic hierarchy process was developed to determine the most sustainable design proposal for an area undergoing urban renewal (Lee & Chan, 2008). This process does not address lifestyle and well-being per se, but by looking beyond economic factors to include environmental sustainability in the design process, it rather addresses health and well-being by default.

Environmental degradation, inequality, stress, and depression add their weight to struggling infrastructure data. While urbanism attends to the interaction of inhabitants with the built environment, it misses the natural environment in which the city is set (Northridge, Sclar, & Biswas, 2003). While design has moved towards the politics of fashion and material convenience, the incidence of lifestyle-related disease has reached unsustainable levels (Chan & Bloomberg,

2016). Multi-disciplinary research now unequivocally shows what has been long suspected: nature reduces stress and improves well-being (Harter et al., 2003; Kaplan, 1995; Maller, Townsend, Pryor, Brown, & St Leger, 2006; Stigsdotter, 2005; Tenngart Ivarsson & Grahn, 2012). Sensory gardens, by their biophilic, salutogenic, attention-restoring, and stress-reducing nature, offer an opportunity to provide a therapeutic dose of nature where people live, work, learn, and play (Gonzalez & Kirkevold, 2014; Hussein, 2010a; 2010b; Söderback, Söderström, & Schäländer, 2004). The broad general perspective aims to join the dots to break down the silos. While as individuals we may intuitively know that connecting with nature is good for us, the discipline of design still views the natural environment with ambivalence. However, as the marketplace shifts to demand more for money, one way to add value to the design process is through understanding well-being as motivation for a new paradigm.

## SPATIAL IMPACTS OF BIOPHILIC DESIGN

As urbanization has sped up, the environment has suffered increasing degradation and the incidence of lifestyle-related diseases. This led to pockets of interest devoted to the intersection between health and well-being on one side and urban ecology, architecture, socio-economic, and academic/work outcomes on the other. To date, researchers have used a relatively narrow, discipline-defined lens to examine potential linkages. The theories of personality of socio-psychologist Eric Fromm first raised the term “biophilia”, our love for living things, as a potential cue for many innate behaviors (Fromm, 1964). The ecologist Edward O. Wilson took the idea further, to propose the biophilia hypothesis. In his book *Biophilia*, he stated that “our natural affinity for life—biophilia—is the very essence of our humanity and binds us to all other living things” (Wilson, 1986). This approach asserts that humans have an innate connection with nature that assists in making the urban environment more effective with supportive, human abodes. In an urban context, opportunities to connect with nature can be problematic. For the purposes of this study we offer “landscape”, “gardens”, and “environmental design” as a means to facilitate the necessary nature connection within an urban setting (Souter-Brown, 2015). Biophilic design is thus articulated by the design profession as the relationships between nature, human biology, and the built environment (Browning, Ryan, & Clancy, 2014).

Edward O. Wilson’s work brought together scholars from diverse fields. From this assemblage of intellectuals emerged the book *The Biophilia Hypothesis* (Kellert & Wilson, 1993). In 2006, academia, industry, government, finance, and civil sectors came together at a conference in Rhode Island, USA to further discuss the biophilia hypothesis. This prompted a search for potentially alternative “green” or nature-based therapies. As disease rates have grown, health commissioners, sociologists, and health economists have looked to nature for facing the growing burden of lifestyle-related disease (Figueras & McKee, 2012). For all the work of academia, it took a journalist, Richard Louv, to note the condition and coin the term “nature deficit disorder” in his book *Last Child in the Woods* (2005). Louv’s work documents the impact of contemporary Western lifestyles against the amount of time children and adults spend outdoors. With the rise of technology has come a disconnection from nature. A study of 12,000 parents with children aged 5–12 years in 10 countries found that almost a third of children play outside for just 30 minutes or less a day. One in two children spend less than one hour outside per day, in contrast to prisoners who are guaranteed two hours in the open air every day (Packham, 2016). At the same time, mainstream media, as purveyors of the public see, create headlines that sell. Recently we have been told that trees are dangerous and must be carefully managed near children (Murphy, 2016). Trees have also been accused of adding pollution (Vidal, 2016). In some parts of certain cities, there are up to three generations with no lived experience of a tree (J. Wing-Long, personal communication, June 24, 2012). While quick to point out that this is not a medical diagnosis per se, Louv suggests that nature

deficit disorder is real and has far-reaching effects on child and adult health and well-being. Wilson's biophilia hypothesis explains why, subconsciously or consciously, we seek out leafy oases in the city. In his address to Santa Fe College students, Louv states that "the future will belong to the nature-smart—those individuals, families, businesses and political leaders who develop a deeper understanding of the transformative power of the natural world, and who balance the virtual with the real. The more high-tech we become, the more nature we need" (Louv, 2012, p. 4).

As a backdrop to a growing disconnection from nature, in the last 30 years two significant cultural events have occurred. Firstly, there has been increasing urban migration with the costs of city living requiring long work hours, reduced leisure time, and increased stress. Secondly, the advent of the digital age has seen people connect to devices and disconnect from nature (Louv, 2012). In 1983, the U.S. education policy statement, *A Nation at Risk*, told parents that their children needed to work harder to be competitive. Further, U.S. federal policies like *Race to the Top* "fomented an achievement culture, putting additional stress on students" (Lythcott-Haims, 2015). This pressure to succeed has extended into tertiary education. Third, Lythcott-Haims noted that the rise of the self-esteem movement saw a fundamental shift from the outcomes approach (raising a student to be resilient, responsible, and resourceful) to valuing personhood (raising a student to be aware of their rights, which in turn gave rise to the "me" generation). As mothers entered the workforce in record numbers, they struggled to find time to allow children to play outdoors. When parents began scheduling play, daycare for younger children morphed into organized after-school activities for older children (Lythcott-Haims, 2015). As a result, students entering university may have had little time to connect with nature through their programmed, focused childhood.

At the same time as the cultural shift, a change was observed in young adult health and well-being statistics. In the UK, teenage rates of depression and anxiety increased by 70% since the mid-1980s, particularly in the past 25 years (YoungMinds, 2016). A similar picture emerges in New Zealand where youth suicide, anxiety disorders, eating disorders, behavior problems, and obesity increased as social skills, problem solving, and personal resilience deteriorated (Disley, 1997). Research by architects, eco-psychologists, foresters, and economists hinted at a potential three-way link between cultural changes, access to nature, and child health and well-being (Hägerhäll et al., 2010; Ulrich et al., 1991). Their studies show that stress reduction, attention restoration, and general health improvements were seen to follow exposure to a green (nature) view.

In acknowledgement of this, public money has been lavished on parks and playgrounds as part of health promotion programs (Blanck et al., 2012). However, while research showing the health benefits of nature grows, fashion in architecture has become hard-edged. This has added to urban stress levels as we disconnect from nature (Newman & Söderlund, 2015). The book *Landscape and Urban Design for Health and Well-Being* showed that although some parks display an awareness of the need for nature connection, most new parks and playgrounds still show little awareness of their health promotion potential (Souter-Brown, 2015). While much work has been done in the area of connecting health with environmental design, there is still a disconnection between empirical knowledge, perception, and belief.

## ATTENTION RESTORATION AND STRESS RECOVERY THEORY

Positive mental health focuses on well-being rather than the negatively connotated conditions such as depression, anxiety, and autism spectrum disorders (Keyes, Dhingra, & Simoes, 2010). Stress reduction is key to positive mental health (Wilkinson & Marmot, 2003). In the 1970s early eco-psychologists Greenway and Shapiro began to explore links between green views and health. Eco-psychology (or environmental psychology) explores the emotional bond between human beings and

the environment out of which we evolve. Roger Ulrich's seminal study on the effect of a green view on patient recovery times established the basis for use of nature for health outcomes (Ulrich, 1984). Steven and Rachel Kaplan took the exploration further with their attention restoration theory about restorative environments. Their book, *The Experience of Nature*, brought a health-promoting focus to psychology and ecology (Kaplan & Kaplan, 1989). "Eco-psychologists are drawing upon the ecological sciences to re-examine the human psyche as an integral part of the web of nature" (Brown, 1995). Maller's study, *Healthy Nature Healthy People: Contact with Nature as an Upstream Health Promotion Intervention*, shifted design thinking to focus on active lifestyles (Maller, Townsend, Pryor, Brown, & St Leger, 2006). Cycle ways and walkability were shown as necessary for healthy cities. Maas and colleagues' 2006 study, *Green Space, Urbanity, and Health: How Strong is the Relation?* took attention restoration and stress recovery further into the realm of health promotion (Maas, Verheij, Groenewegen, de Vries, & Spreeuwenberg, 2006). Green space was found to be strongly associated with stress recovery. However, for all the work of eco-psychologists and epidemiologists to "set the scene" for nature-based treatments, traditional views continue to influence health service delivery.

## COGNITIVE BEHAVIOR THERAPY

Cognitive Behavior Therapy is considered the most cost-effective treatment choice for mild-moderate stress and depression (Churchill et al., 2002). However, the clinical effectiveness of such a standard treatment was reviewed and it was found that "although there is support for the effectiveness of cognitive behaviour therapy, the finding that the reviewed randomized controlled trials had limited effectiveness within routine clinical practice demonstrates that the evidence is not conclusive" (Coull & Morris, 2011, p. 2239). Given such inconclusiveness and the growing evidence of the efficacy of green or nature-based interventions (World Health Organization Europe, 2016), this paper challenges standard design practice to propose a translational nature-rich space. When cost effectiveness and cost efficiencies are important, as they are across housing, business parks, the university estate, and elsewhere, evidence-based design is the methodology of choice (Frumkin, 2003).

Mindfulness is increasingly used as a stress reduction intervention (Shapiro, Astin, Bishop, & Cordova, 2005). Mindfulness Based Stress Reduction and Mindfulness Based Cognitive Therapy were reviewed by Fjorback and colleagues with mixed results. Mindfulness Based Stress Reduction is recommended as a useful method for improving mental health and reducing symptoms of stress, anxiety, and depression. However, results are generalizable only to individuals who have the interest and ability to participate in such a program (Fjorback, Arendt, Ørnbøl, Fink, & Walach, 2011). A meta-analysis of nature-environment studies by Bowler and colleagues found "testing for direct health benefits of nature is problematic given the variety of aspects of a natural environment and way in which they might impact on health" (Bowler, Buyung-Ali, Knight, & Pullin, 2010).

The more urbanization increases and our cities grow, the more design-based health promotion and prevention tools are critical. However, perhaps due to research problems in knowing what to study, design theory and practice have been slow to adapt. Steel louvres are still attached to buildings for shade instead of planting adjacent street trees. For example, the theory behind crime prevention through environmental design has promoted vandal-proof steel and concrete street furniture and "landscapes" to become commonplace across urban settings. Hard, square-edged material are used instead of softer, rounded, more sustainable and salutogenic timber. The environment is thus perceived as aggressive. Contemporary design paradigms, whereby form has prevailed over function, have negatively influenced the current health statistics (Souter-Brown, 2015). Therapeutic landscapes and humanist concepts such as sense of place and symbolic landscapes are under-



recognized. Contemporary design archetypes do not offer a particular solution but rather the underlying system of ideas causes a range of solutions to be “normal” (Williams, 2002).

## **SALUTOGENESIS AS A DESIGN APPROACH**

An alternative to traditional healthcare, the “salutogenic model” as a theory to guide health promotion, was first mooted by Aaron Antonovsky (1996). Traditional healthcare waits until one is ill and then treats the person back to health. Salutogenesis undertakes a better and less expensive path from preventing disease to address the social determinants of health (Mittelmark & Bull, 2013) within the community. The Landscape Institute states that “throughout history landscape architecture can be linked to the need to create places that were beneficial for people’s health and well-being” (Landscape Institute, 2015). Mental health is closely linked to physical health (Canadian Mental Health Association, 2016). If we focus on physical health alone, then we miss a key driver for the overall well-being. Architecture recognizes the potential health impacts of design (Sadler et al., 2011), and ecologists concerned with the environmental implications of a population disconnected from nature are looking to the growing demand for human well-being to provide environmental benefits (European Centre for Environment & Human Health, 2017). Nature connections, whether through forest walking or urban landscape design interventions, have been shown to reduce stress (Capaldi, Passmore, Nisbet, Zelenski, & Dopko, 2015). Stress is a primary prompt for mental and physical illness. Hence, a salutogenic design approach could be a powerful tool for health and well-being.

Young people with special or additional educational needs have been found to respond positively to nature-based design interventions (Stigsdotter et al., 2011). Likewise, a variety of lifestyle-related non-communicable diseases such as obesity, type 2 diabetes, cardiac and upper respiratory tract disease, depression, anxiety, and dementia can be effectively managed and prevented at a community level (Maller, Townsend, Pryor, Brown, & St Leger, 2006). A salutogenic approach to healthcare utilizes factors that support human health and well-being as a cost-effective, preventative tool (Lindström & Eriksson, 2005).

The literature has identified the eco-psychological basis for green, nature-based interventions (Grahn & Stigsdotter, 2010), and opportunities for community-based improved health outcomes (Roe et al., 2013). The World Health Organization’s Healthy Settings movement came out of the World Health Organization strategy of Health for All in 1980. The approach was more clearly laid out in the 1986 Ottawa Charter for Health Promotion (World Health Organization Europe, 2016). The successes of settings-based approaches have been validated through internal and external evaluation and experience (Bloch et al., 2014). Optimal spatial forms (the settings that make users feel good) derived from the environmental design formula to promote and enhance well-being. They are innovative and take a multi-disciplinary approach to health promotion and prevention (Carmichael, Barton, Gray, Lease, & Pilkington, 2012). Biophilic architecture and green buildings are two examples of this innovative approach. However, knowledge about the interplay of cultural structures on design typology or the potential for nature-based interventions in a place is insufficient. We know culture and ethnic background impacts appreciation and use of an environment, but do they impact the efficacy of gardens as a treatment for stress? In 2013, landscape architect Catharine Ward Thompson researched the stress levels in deprived urban communities and the effect of community-based greenspace to pedestrian exposure (Roe et al., 2013). Ward Thomson found that regular exposure to street trees decreased stress cortisol levels across the sample population. Roadside trees are also thought to decrease driver stress levels. Speed was reduced in tree-lined streets in Baltimore, and in Toronto accident rates were up to 20% lower in tree-lined streets (Battaglia, 2010).

To add weight to the case for environmental design interventions as a social good, in 2011 Lynn Ilon investigated whether education equality can trickle down to economic growth. Her study found a strong correlation between education and economic growth in Korea. The national UK schools survey looked at the effects of introducing nature and social connection points. Social and educational effects were noticed with decreases in absenteeism, bullying, vandalism, and increases in attendance, attention in class, aspiration, and outcomes. Home-school partnerships were also enhanced with parents more involved in their community (Learning Through Landscapes, n.d.). So, by extension, can environmental interventions enhance economic growth? Think tanks such as Terrapin Bright Green agree with Ilon's conclusion that "education's power to bring about social change, to stabilise or destabilise communities, and to increase global competitiveness places it firmly within the purview of national policy as well as market forces" (Ilon, 2011). He thus suggests that environmental design can be important as a social good (Terrapin Bright Green, 2012).

Stress on campus was examined in a study in Nigeria. The research, which interestingly was reported in an accountancy journal, looked to the need for students to perform at their peak in order to promote overall national development. As in the Korean study, education is seen as an important medium that facilitates improvement of leadership qualities and turns out excellent future managers and professionals in different fields (Oseyomon, 2015). The authors observed that undergraduate students at the University of Benin were moderately stressed and that an inverse relationship exists between perceived stress levels and academic performance. The study recommended the university to develop stress-coping techniques to lift academic/work performance, but did not suggest how to go about it. More recent research has addressed possible environmental design interventions for stress reduction. The impact of landscape views on stress and mental fatigue reduction has been studied by Li and Sullivan. They found positive correlations between attention levels and green views from classrooms, and that attention restoration and stress recovery are two distinct processes (Li & Sullivan, 2016).

## **WELL-BEING AS A DESIGN FOCUS: INTRODUCING SENSORY GARDENS**

A defined "dose" of nature, within a controlled, specialist-facilitated, social, and therapeutic horticulture program can reduce stress and depression (Hartig et al., 2011). Hartig tested the restorative environments theory through a meta-analysis to prove its efficacy (Hartig, 1993). Dose responses for both intensity and duration show large benefits from short engagements in green exercise and diminishing but positive returns (Barton et al., 2010). Every green environment improved both self-esteem and mood; the presence of water generated greater effect. As such, they found that the environment provides an important health service (Barton & Pretty, 2010). As new urban areas are developed, whether town centers, housing, universities, or business parks, one should consider the opportunity for stress reduction through environmental design. Well-being can be "designed-in".

Shanahan and colleagues investigated human response to natural parks in Brisbane, Australia. They sought to determine the required "dose" of nature for human health and well-being. In summary they found that,

people who made long visits to green spaces had lower rates of depression and high blood pressure, and those who visited more frequently had greater social cohesion. Higher levels of physical activity were linked to both duration and frequency of green space visits. A dose-response analysis for depression and high blood pressure suggest that visits to outdoor green spaces of 30 minutes or more during the course of a week could reduce the population prevalence of these illnesses by up to 7% and 9% respectively. (Shanahan et al., 2016, p. 4)

Researchers at the Universities of Alnarp, Sweden and Copenhagen, Denmark, have created therapeutic sensory gardens to support psycho-social teaching programs with local primary health objectives. The University of Alnarp created them on campus. The University of Copenhagen's Grönska therapeutic garden is situated in a private green area. Like Alnarp, the Grönska garden is zoned according to the eight characters—or fundamental elements—of garden spaces, where Social and Therapeutic Horticulture and the “Alnarp Method” are the therapeutic tools (University of Copenhagen, n.d.). Therapeutic horticulture is the process of using plants and gardens to improve physical and mental health, as well as communication and thinking skills. The Alnarp method was developed as a result of research into the fundamental building blocks of healing gardens (Grahn, 1991; Grahn, Stigsdotter, & Berggren-Bärring, 2005; Hedfors & Grahn, 1998; Stigsdotter & Grahn, 2002). The Alnarp gardens have been used for 13 years to treat adults with depression and anxiety, and multiple studies have shown their efficacy in treating stress related disorders (Adevi & Lieberg, 2012). The eight fundamental design elements are: 1) serenity; 2) wild; 3) rich in species; 4) space; 5) common; 6) the pleasure garden; 7) festive, and 8) culture. These design elements can be combined within a zone or separated, but must be included for optimal effect (Grahn, Stigsdotter, & Berggren-Bärring, 2005).

The Alnarp method allows people to progress at their own pace from one gradated garden zone to another, depending on need and mood. The zones progress from a passive reflective space through a garden designed to facilitate moderate physical exercise to a physically active tending, growing, edible, and ornamental plant space, to a space designed for social engagement. The sensory gardens provide key opportunities for:

- Improving mental health through a sense of purpose and achievement.
- Learning how to structure the weekday, to focus on the present moment, and to allow breaks and rest in order to avoid new relapse from stress and burnout.
- Bettering physical health through exercise, and learning how to use or strengthen muscles to improve mobility.
- Connecting with others by reducing feelings of isolation or exclusion.
- Acquiring new skills to improve the chances of finding employment.
- Simply feeling better for being outside, in touch with nature, and in the “great outdoors”. (University of Copenhagen, n.d.).

The attention restoration theory and stress recovery from green space literature (Kaplan & Kaplan, 1989; Ulrich et al., 1991) suggests that a modified, non-specialist-facilitated form of Alnarp's sensory garden may be a viable self-help tool to manage stress. A future study will build on the existing literature to fuse an understanding of the role of urban ecology, objectified through nature connection, in creating and sustaining health and well-being as it influences academic or work achievements. It will test whether experience in a non-facilitated sensory garden is effective at reducing stress and improving work output in a New Zealand setting. Although based on the highly structured, managed experience of the Alnarp method, if the study shows the modified Alnarp sensory gardens to be effective at impacting stress, it may be possible to provide sensory gardens in diverse settings where people can self-heal. In addition to the university, social housing developments, care homes, schools, and workplaces could benefit from a self-help health promotion design tool. If proven, the value of such a tool would be in its accessibility and relative low capital and operational maintenance cost. It would enable architects and facilities managers to promote their developments as the “healthy option”.

How we look after the well-being of students and faculty within the institution of a university setting has parallels with care homes. Kane identifies the value of “quality-of-life domains—namely security, comfort, meaningful activity, relationships, enjoyment, dignity, autonomy, privacy, individuality, spiritual well-being, and functional competence” (Kane, 2001, p. 293). The author adds: “these kinds of quality-of-life outcomes are minimized in current quality assessment and given credence only after health and safety outcomes are considered” (Ibidem). Similarly, environments for younger students, especially pre-schoolers, are often designed around perceived safety and practicality. An emphasis on indoor environments and rubber-matted, hose down-able outdoor spaces, rather than around the health and well-being of the users, has impacted child health statistics (Souter-Brown, 2015, p. 105). As a result of a largely sedentary life indoors, many children today have weaker bones, poor muscular coordination (although their thumbs and index fingers may be well developed), rickets, and such a low life expectancy that today’s children are expected to live five years less than their parents (National Institutes of Health, 2005).

Focus on prevention presents opportunities and challenges. In 2016, Japanese and British ecologists recognized the ongoing loss of human interactions with nature, the so-called “extinction of experience”, as one of the major obstacles to addressing global environmental challenges (Soga, Gaston, Yamaura, Kurisu, & Hanaki, 2016). Their study of schoolchildren found that affective attitudes (individuals’ emotional feelings) toward and willingness to conserve biodiversity are positively associated with the frequency of both direct and vicarious experiences of nature. In the Japanese study, path analysis showed that these experiences on children’s willingness to conserve biodiversity were mediated by their affective attitudes. Children who frequently experience nature are likely to develop greater emotional affinity to and support for protecting biodiversity. If sensory gardens connect people with nature, these will likely develop greater emotional affinity to and support for protecting biodiversity and become advocates for nature-based health and education initiatives.

### **COULD SENSORY GARDENS BE AN EFFECTIVE AID TO WELL-BEING?**

Sensory gardens are accessible, species-rich environments within urban settings. They are designed to address specific social, emotional, cognitive, spiritual, and physical health needs of adults and children (Souter-Brown, 2015). The health-giving benefits of urban green space and nature are generally well defined. In an urban setting, where opportunities for nature connections are often managed, confined, and access-controlled, sensory gardens provide an ecologically-balanced environment where sensory inputs are planned in terms of access, comfort, acoustics, color, scent, sights, and sounds. Sensory gardens can bring a health-giving “dose” of nature.

The landscape architect Hazreena Hussein found that sensory gardens are effective as a tool to enhance the educational development and social interaction of children with special needs (Hussein, 2010b). In 2014, another landscape architect, Rita Berto, asked how attention restoration works and what is the role of nature in coping with psycho-physiological stress. She conducted a comprehensive literature review on restorativeness. Ecological restoration, through the development of sensory gardens or other nature-rich environments, were found to enhance and restore attention (Berto, 2014). As community stress levels grow and as urbanization increases pace, the incidence of adults and children suffering stress and diminished attention is growing. The World Health Organization has stated that the rising burden of non-communicable, lifestyle-related disease is unsustainable. The evidence is unequivocal. Sensory gardens afford opportunities to connect socially and with nature, which has been seen to promote well-being and community resilience (World Health Organization Europe, 2016).

Lifestyle-related stress, depression, and physical inactivity are global challenges that require local solutions. On a local level, city mayors are well positioned to play a preventive role through the provision of green space for rest and recreation, clean air, and locally grown food (Chan & Bloomberg, 2016). Concomitantly, despite the growing body of literature showing causal relationships between health, well-being, education, and design (architecture) or nature, and between stress, environment, and lifestyle-related disease (British Association for Counselling & Psychotherapy, 2016), nature-based interventions are not routinely used as a prevention and health promotion tool.

## **MOTIVATION FOR DESIGN**

Designers have an increased opportunity and responsibility to work collaboratively within multi-disciplinary teams. What are the designer's motivations? Do they live in art or science, or in the liminal space in between? Do designers desire to be known for an iconic piece of art, or to be part of a movement towards the science-art amalgam of beautiful forms that enhance functional well-being? Architect and educator Jonathan Hill believes that a subject creating, occupying, and even destroying a space moves spatial design beyond a subject that occupies an object (Hill, 2001). Green buildings are likely to become more popular with clients as corporations work to enhance both their image and human capital (Eichholtz, Kok, & Quigley, 2016). Green infrastructure has to become the norm if design is to tackle the dual challenges of public health and climate change. The spaces in between the buildings as well as the buildings themselves must be considered in their totality.

Placemaking has been supplanted by placekeeping. Places for both social and natural connections are required.

## **CONCLUSIONS AND FUTURE DIRECTIONS**

Design for well-being is a departure from the mainstream. A salutogenic approach to well-being asks design's focus on forms to be redirected toward function. For human well-being, we need functioning, healthy, urban ecologies. Sensory gardens, from their species-rich serenity spaces, opportunities for culture, pleasure, and festivity, and view of wildlife-attracting water, sunlight, and shade, attract people. Urban street trees bring low-dose sensory delight, while sensory gardens can bring high-dose nature experience to users.

Well-being has been defined as more than the absence of disease. For people already disconnected from nature, when faced with increasing societal and perhaps personal stress, it might seem easy to maintain the concrete-and-steel urbanism. However, this is not true, and disconnected designers and their clients need to be awakened to the potential of design for well-being.

Design has been shown to be efficacious as a support for a sense of well-being. Reflecting on the epistemology of design and the blend of practice and theory helps us understand both the theoretical basis for well-being as design motivation and the very practical nature of such an approach. The evidence presented shows design to be ready and able to play its part in public health and well-being. The past 50 years have seen a design emphasis on cities as centers of commerce. Cities of the future will judge their environments by how well people function. Functional urbanism requires a reinjection of nature. Our well-being depends on it.

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# Placemaking: The Power to Change

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## **ABSTRACT**

Placemaking is an approach to designing and planning public spaces, including their management, which is becoming widespread not only in the United States but worldwide. The idea of placemaking is revolutionary because of its approach to urban issues that opens up new possibilities of participatory design. The focus of the practice is on the place, consequently on the community that uses and lives in it because public space symbolizes the “connective tissue” of communities, hence the importance of its care. This paper outlines the issues and major trends emerging from recent placemaking experiences.

**Keywords:** resilience, placemaking, sustainability, just cities, right to the city, third place, community, collaborative, open source

*Defining what makes a good city is more a matter of heart and soul than engineering.*

—Enrique Peñalosa, 2007

*The freedom to make and remake our cities and ourselves is, I want to argue, one of the most precious yet most neglected of our human rights.*

—David Harvey, 2008

## **A PROCESS OF CHANGE**

Placemaking is considered both a practice and a way of thinking. It is an approach to designing and planning public spaces, including their management, which is becoming widespread not only in the United States but internationally. It is a practical tool for bottom-up, community-driven processes to improve a neighborhood, a city, or a region. Qualities that define placemaking are “collaborative, culturally aware, context-sensitive, multi-disciplinary, visionary, inspiring, inclusive, transformative, flexible”; conversely, the process is not “imposed from above, project-focused, design-driven, static, one-dimensional, reactive, exclusionary, privatized” (Project for Public Spaces, 2009c).

The idea of placemaking is revolutionary because the approach to urban issues starts from a different angle than usual, opening up new possibilities. The focus of the practice is on the place, consequently on the community that uses and lives in it because public space symbolizes the “connective tissue” of communities, hence the importance of its care.

The aim of placemaking is to spread more people-oriented urban development models and people-centered town planning principles, returning public spaces to the people. Therefore, the shape of the environment should facilitate social interaction and improve a community’s quality of life, in other words, create livable and pulsating places.

Since the human being is at the center of this practice, the community becomes the main placemaking process expert. Consequently, placemaking takes advantage of the local community’s resources, motivation, and capability. It is an evolving process that creates a sense of belonging; linking neighborhoods, supporting social justice, and community safety as well as economic development and environmental sustainability. The final goal is to promote people’s healthiness, happiness, and well-being by making effective, beautiful, and pleasant public spaces.

Placemaking is the result of a combination of physical characteristics, activities carried out, and the meaning that places represent for people. Succinctly, it is a way to unfold the “genius loci” of a place.

## **PLACES & PEOPLE: WHO IS CHANGING WHOM?**

The most successful placemaking projects demonstrate the importance of the practice over the outcomes, as it happens in community design and planning processes. The experiences prove that the effects of the action of “making” go far beyond the “place”, as a consequence of its iterative and collaborative elements, repetitive actions, and cooperative approach. The main changes take place in the mentality of the people involved. Communities are no longer passive users but active participants in the making of change. The practice of “making places” enriches both communities and social life and gives power to people. In addition, the process of placemaking produces a dual effect, a virtuous cycle that reverberates not only in the spaces themselves but also on the

individuals and communities that are active in those sites. Susan Silberberg writes that an effective placemaking project “builds connections, creates civic engagement, and empowers citizens—in short, it builds social capital” (Silberberg, 2013, p. 9), and people benefit from the social and physical features of the place.

## RECONSIDERING A PEOPLE-CENTERED URBAN DESIGN

Since the 20<sup>th</sup> century, fast urban growth increasingly driven by a functionalist logic has created towns that did not meet the real needs of their inhabitants, who were considered only as numbers in a development plan. The city became a place of contradictions and chaos with conflicts between this “rational-ideal-static image” and the ever-changing community that strives to live in those spaces. In the 60s, architects, urbanists, sociologists, and journalists such as Kevin Lynch and Jane Jacobs started to study the city and urban planning with a different approach. They examined the disorder of their contemporary cities and urban fabrics that strongly contrasted with the efficient and abstract model of the modern city.

Lynch and Jacobs analyzed the use of public spaces and how the city was experienced: the meaning of public spaces for people, what kind of life those spaces supported, and their weaknesses and potentialities. In this way they laid the base for a new approach, a new way to comprehend, design, and program public spaces.

With his studies, Lynch highlighted the fact that cities are networks of different personal experiences and perceptions that create a personal image: “structuring and identifying the environment is a vital ability among all mobile animals. Many kinds of cues are used: the visual senses such as smell, sound, touch, kinaesthesia, sense of gravity, and perhaps of electric or magnetic fields” (Lynch, 1960, p. 3). Such personal image is called the *environmental image*. It is relevant “how closely it is linked to our sense of balance and well-being” and the relation with different environments that “resist or facilitate the process of image-making”. Lynch stressed that “the city is in itself the powerful symbol of a complex society” and is defined by three components: identity, structure, and meaning (Lynch, 1960, pp. 4–8).

Lynch’s work had great influence on the current of thought that stresses the importance of urban design on a human scale and in the placemaking practice. He noticed the possibilities opened by porous spaces: “An edge may be more than simply a dominant barrier if some visual or motion penetration is allowed through it—if it is, as it were, structured to some depth with regions on either side. It then becomes a seam rather than a barrier, a line of exchange” (Lynch, 1960, p. 100).

Jacobs was inspired by Lynch’s studies in her exploration of the urban situation in the United States: the factors that create the life and spirit of the city, and the reasons why some places are better than others. Jacobs stressed the importance of public spaces and the web of paths that form the social fabric and vital spaces of neighborhoods, which endorse human relations and create trust and civic respect. Her approach put the people at the center of urban processes. Jacobs emphasized the role of the *mixité* in urban fabric, with a diversification of population, as a way to increase livability, safety, and civic sense: “A city’s very structure consists of a mixture of uses, and we get closest to its structural secrets when we deal with the conditions that generate diversity” (Jacobs, 1992, p. 376).

She underlined the concept that life attracts life. When dealing with cities “we are dealing with life at its most complex and intense”, with the “inclusiveness and the literally endless intricacy of life”, which are the characteristics of cities, ever-changing complex systems that cannot be simplified in

one static image. She highlighted the need for an urban strategy, able to illuminate and clarify life, “its meanings and order—in this case, helping to illuminate, clarify and explain the order of cities” (Jacobs, 1992, pp. 372–375).

With a systematic approach, William Whyte developed Jacobs’ approach to cities and urban spaces (Whyte, 1980). He investigated the essential elements for the development of social life in public spaces, providing the foundations that make a public place enjoyable for people. His investigations on pedestrian behavior and city dynamics formed the basis for the placemaking approach. The innovative idea behind it was that the design of the city should be people-centered to meet the needs of its inhabitants. Therefore he encouraged a bottom-up approach in designing public spaces stressing the concept that design should start with a comprehensive understanding of the way people use and would like to use spaces. He highlighted the importance of learning by observing and talking to people to discover their needs, and then using this knowledge to create urban realities that facilitate civic engagement and community interaction.

As a disciple of Whyte, Fred Kent developed and applied Whyte’s studies and in 1975 founded the “Project for Public Spaces”, a non-profit organization that is one of the most active in placemaking practice and dissemination.

At the same time, in 1977, Christopher Alexander published one of his seminal works, *A Pattern Language* (Alexander, Ishikawa, & Silverstein, 1977), in which he identified a web of interrelated patterns from large to small on the designing scale, with the somewhat provocative intention of providing people and communities guidelines to be able to design by themselves.

In this debate, Jan Gehl (2010) underlines the importance of the human-scale in urban design. In a city designed for people the scale would be smaller, spaces would be safer since people use them, and the quality of life would dramatically improve as do relations between people.

## **THE POLITICAL AND DEMOCRATIC DIMENSION OF URBAN SPACES**

In the late 1960s, to regain a sense of democracy of places, the debate also focused on the “right to the city” (Silberberg, 2013, p. 6). Many philosophers and urbanists, such as Henri Lefebvre and later David Harvey, argued against a top-down approach and administration of the public realm, which they considered as a limit to social exchange and relationships (Lefebvre, 1991). These authors, in fact, stressed that people have the right to shape their urban spaces: “The right to the city is far more than the individual liberty to access urban resources: it is a right to change ourselves by changing the city”. David Harvey writes: “It is, moreover, a common rather than an individual right since this transformation inevitably depends upon the exercise of a collective power to reshape the processes of urbanization. The freedom to make and remake our cities and ourselves is, I want to argue, one of the most precious yet most neglected of our human rights” (Harvey, 2008, p. 23).

Urban space fosters a civic and democratic sense. Ray Oldenburg identifies urban spaces as “third places” that he describes as “the places of social gathering where the community comes together in an informal way, to see familiar and unfamiliar faces, somewhere civic discourse and community connections can happen” (as cited in Silberberg, 2013, p. 6; Oldenburg, 1999). Oldenburg stresses that the urban spaces are a “neutral ground”, where people may gather freely, feeling at ease, without playing the role of host.

Enrique Peñalosa stresses the role of public spaces as an indicator for the level of democracy in a society: “Public space dedicated to pedestrians can be an equalizer—a means to more inclusive

society. In public space people meet as equals, stripped bare of their social hierarchies”. He remarks that it is only in free time that the difference in the quality of life by social classes is enormously evident. The alternative to television for lower-income people is public space: “Over the next few decades, lower-income citizens will have access to computers and a wide array of electronic equipment. What they will not have is access to green spaces and sports facilities—unless governments act today”. Hence, the importance—Peñalosa points out—of factors such as plazas, promenades, bicycle paths and pavements, waterfronts, parks and public sports facilities. These “show respect for human dignity and begin at least to compensate for inequality in other realms”, since a just city and a “democratic city must be designed for the most vulnerable of its members” (Peñalosa, 2007, pp. 311–313).

Richard Sennett stresses the importance of public spaces: “porous and incomplete open spaces at the heart of the cities” are the democratic potentiality of urban spaces, providing “opportunities for democratic engagement”. Moreover Sennett emphasizes that “when the city operates as an open system—incorporating porosity of territory, narrative indeterminacy and incomplete form—it becomes democratic not in a legal sense, but as physical experience” (Sennett, 2007, pp. 295–296).

## **FOCUS ON NOW: THE EXPERIENCE IN THE USA**

Placemaking in the United States involves many different experiences and activities led mainly by organizations and professionals, some of which are very active in the practice and promotion of the placemaking concept.

One of the most active is the Project for Public Spaces—PPS (2009–2011), a non-profit planning, design, and educational organization. Founded in 1975, PPS has been a pioneer in the field, with roots in the work and study of William H. Whyte. Project for Public Spaces has developed and published a harvest of interesting guidelines and tools for people, to aid in designing and maintaining public spaces and empowering communities and their sense of belonging.

Since its foundation, the organization has worked with numerous partners such as public and private organizations, federal, state, and municipal agencies, business improvement districts, neighborhood associations, and civic groups, while engaging in projects with over 3,000 communities in 43 countries.

Another organization, a very active opinion leader in placemaking practice is PlaceMakers (2017). This planning and design firm is effective in addressing placemaking in all its issues: from planning and urban design, to context-specific coding and community engagement. The main goals of their actions are to nurture human needs by cultivating good environments and places, empower communities and connections, and open up new opportunities by designing resilient, soul-satisfying places to enhance livability.

They all suggest and are inspired by the thought and work of Jane Jacobs, Christopher Alexander, Nikos Salingaros, Leon Krier, Jan Gehl, Ray Oldenberg, and Jeff Speck, just to name a few.

Tactical urbanism starts from the idea that an urban place may be easily improved by small, quick, cheap, often temporary demonstrative actions and projects. The aim of these actions is to improve the quality of living in those places, so that a small part of a city will become more enjoyable and lively. The idea is that the livability of a city could often start from community-focused, incremental, small-scale steps on the street, block, or in the building. These actions are also seen as a test prior to making substantial political and financial commitments.

Projects and actions are frequently named as *pop-up urbanism* with pop-up cafés or shops, *guerilla urbanism* with guerrilla-gardening or painting, *city repair*, *D.I.Y. (Do It Yourself) urbanism* with demonstrative actions like open streets, play streets, street fairs, park(ing) day, pavement to plazas, chair bombing, food carts/trucks, and mobile vendors. All of them are characterized by community-centered and realistic goals (Lydon, Bartman, Garcia, Preston, & Woudstra, 2012; Sennett, 1992).

The tactical urbanism approach is defined by five main characteristics: activate the change; put forward answers for local planning challenges; short-term tasks and realistic expectations; maximum results with little risk; and the development of social capital between citizens and the public-private institutions and organizations involved in the process (Lydon, Bartman, Garcia, Preston, & Woudstra, 2012).

Part of the tactical urbanism approach, the Better Block Foundation (2016), was established in Oak Cliff, Dallas, TX in 2010. The idea quickly spread to cities like New York, Memphis, Boston, and Saint Louis. In the transformation process of a Better Block project, communities are quite active and provide feedback. It starts when a group of people, that is neighbors, community experts, and property owners, gather to make a commercial block in an underused neighborhood corridor more livable. The community provides all the necessary resources to make the place into a pedestrianized neighborhood node for citizens with bicycle paths, lights, greenery, cafés with seats, and pop-up trades.

Better Block turns out to be a bottom-up approach and model of urban design, an open-sourced action, and a demonstration tool. It temporarily changes a place to develop its potential, and to create a walkable, pulsating, neighborhood space.

## PLACEMAKING METHOD

In the placemaking process, there are three main steps. The first involves analyzing and discovering not only the place but also the people and the community, the life and the lifestyle, and then collecting all of the information. It is fundamental to perceive a place as a whole, with a fresh eye, observing carefully the smaller-scale issues. In brief, actively watching, listening, and asking to discover local community needs and aspirations. It would help to ask questions about quality places in close proximity—places that need to be developed, their connections with the surroundings and with the local community, and looking at the dimension of the space and how it affects relations between people.

The information gathered is used to produce a shared vision for that place, which represents the second step of the process. This vision can be used as a base on which to develop the third step, an *implementation strategy*. It is very important to be simple and start on a small-scale, with feasible improvements that can produce immediate benefits to citizens and the neighborhood.

## A GLANCE AT THE PPS TOOLBOX

Project for Public Spaces uses a number of reference tools for communities involved in placemaking processes. Here are just a few of them to give a glimpse of the process. As a premise, PPS recognizes that the community is the main expert in a placemaking project since communities are the depositaries of the local knowledge, needs, and desires. PPS' approach is based on incremental, slow changes and uses temporary, inexpensive streetscape components.



The first tool is called “11 Principles” (Project for Public Spaces, 2009b). These guidelines point out the main aspects and issues that have to be carefully considered to develop a good and effective placemaking process: suggestions and capacities from the community represent the basis from which to start to imagine a public space. To make a place implies a wider vision and the need to satisfy key attributes like accessibility, activities, comfort, and networking. A good network and cooperation is fundamental to access a pool of resources and expertise; observe a space and how it is used to fearlessly undertake new things shaped to meet the needs of the community; pay attention to the functionality of a space and its potentiality of being enjoyed by people. Creating synergy between activities and elements is another core factor. The last principle stresses the importance of management and good care of a public space as a key element for its success.

The “Power of 10” is another easy framework dedicated to communities and stakeholders. The main idea is that: “any great place itself needs to offer at least 10 things to do or 10 reasons to be there” (Project for Public Spaces, 2009a). Characteristic of the “Power of 10” is to proceed with small-scale projects to achieve bigger ones. The goal is to create a network, focusing on the excellence of a community or place, then the area would achieve a critical mass. Of course, for a good network, there is need for synergy on a different scale involving places, neighborhoods, cities, and regions; creating a collection of interesting communities.

“Lighter, quicker, cheaper” is an attitude and a powerful slogan that echoes the tactical urbanism approach. The goal is to create short-term, incremental, low-cost actions on a smaller-scale as a testing mode: “ideas can be efficiently implemented, assessed, then tweaked and customized based upon a community’s response” (Project for Public Spaces, 2011).

The Place Diagram is another tool for communities (Figure 1) which allows for evaluating a place in the placemaking process using four main criteria: “access and linkage”; “comfort and image”; “sociability”, and “uses and activities”. The four issues are expanded with intangible qualities and measurable data. For “access and linkage”, a successful place should be evaluated by its accessibility and its connection with its surroundings. The grade of comfort of a place involves the perception of the following qualities: “safe, clean, green, walkable, seatable, spiritual, charming, attractive, historic”; while the measurable qualities will be: “crime statistics, sanitation rating, environmental data” (Project for Public Spaces, 2009d). The same criteria applies for the other two issues: “sociability” and “uses and activities”.

## THE MAKING IS OPEN SOURCE

In conclusion, there are some major trends emerging from recent placemaking experiences. The key issue is programming since places can always be improved, and the process does not really have an end. Light activities demonstrate potentialities and empower people. Partnerships between private and public sectors are valuable achievements of the process because interactions and networking are even more important than practical results.

Furthermore, the placemaking goal is to focus on the needs of contemporary cities and the empowerment of people and communities in order to respond to the ongoing challenges. Ethan Kent stresses the concept of placemaking as an unfolding process: “builds capacity for things to happen that wouldn’t normally occur in a project-driven approach” (Silberberg, 2013, p. 27). Moreover, Susan Silberberg notes that placemaking “emphasizes flexibility, embraces impermanence, shares information, and draws on unorthodox sources for influence” (Ibidem, p. 10).



**Figure 1.** The Place Diagram is a community tool (Image courtesy of Project for Public Spaces, sourced by the Author).



**Figure 2.** Placemaking sketch by Lloyd Dangle (Image courtesy of Project for Public Spaces, sourced by the Author).

Frank Bryan highlights the new paradigm: “that is non-hierarchical, community centred, and fundamentally (and uniquely) democratic in character” (Bryan, 2012, p. ix), in other words, the new model will be open source.

The practice of placemaking is spreading to such an extent that a forum called the Future of Places was held in Stockholm (June 2013), with the topic “Transforming Cities through Placemaking and Public Spaces” and three strategic themes such as “Governance of Place”, “Place Capital”, and “Healthy Communities”.

The forum was organized by the *United Nations Human Settlements Programme* (UN-Habitat), *Project for Public Spaces*, and *Ax:son Johnson Foundation*. Future of Places is the name of the first of three forums that led to the Habitat III conference in 2016 to contribute to the definition of public space through a people-centered approach for the “New Urban Agenda” of the 21<sup>st</sup> century. The conference aimed to promote a shift in the traditional planning and management of cities, hence to emphasize the necessity and positive reward for the livability of cities that comes from a human-centered approach to urbanization. Hence, the importance of public spaces for any successful regeneration strategy in urban development processes. “The social dimensions of public spaces are essential in terms of democracy, inclusiveness and openness” (Future of Places, 2013).

To conclude, only by a socially just and democratic governance and a shared communitarian product will the city be a place of genuine democracy and happiness. The sociologist Richard Sennett stresses that the real strength of the city is the strength of reciprocity, and Richard Burdett writes that reciprocity defeats alienation and anger (Erbani, 2007, p. 43). As Enrique Peñalosa points out: “Realization of one’s potential is very close to the definition of happiness” (Peñalosa, 2007, p. 319), and happiness is a birthright and an aspiration of every human being.

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# Connecting the Spaces of Co-work: Joy of Expedition in a Growing Trajectory

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## ABSTRACT

What is the potential of co-working for bottom-up urban transformation? This paper examines *Mushrooming*, a network based on Information and Communications Technology (ICT) that connects small, independent co-working spaces in Helsinki, Finland. Our aim is to analyze Mushrooming's six-year development as an evolving trajectory. Yet externally supported, its growth happens mostly through placemaking and peer-to-peer economies, achieving the inclusion of hundreds of co-working spaces. Mushrooming has made peers visible to each other, increased their professional and personal linkages, and enriched their capacities for collaborative placemaking. We find that, to increase these benefits, facilitators must focus on shared knowledge generation. Knowledge depends on practice; therefore, facilitators should constantly adapt their practices. By improvising and keeping a network as open as possible, facilitators can make use of the self-organizing nature of its trajectory.

**Keywords:** Mushrooming, co-working, urban transformation, placemaking, infrastructure, peer-to-peer, knowledge generation, practice theory, network

## INTRODUCTION

### Researcher falls for the thrill of what might come

*Mushrooming* is a network of small, independent co-working spaces in Finland. These co-working spaces differ from commercial office hubs because they are self-managed by a group of people who make their everyday environments and communities for themselves. Today, Mushrooming connects hundreds of co-working spaces. It uses Information and Communications Technology (ICT) and helps people create and sustain co-working places by a growing “mycelium”, i.e. linkages between small co-working communities; thus the name Mushrooming. In this paper, we analyze the network’s birth in Helsinki (635,000 inhabitants) and its six-year development as a growth case of do-it-yourself placemaking and peer-to-peer economies in cities.

Connecting and creating relations among these co-working spaces represents a practical contribution to biourbanism, one that takes design and self-organization as a starting point for creating conditions for human-centered spaces and bottom-up urban regeneration. In biourbanism, the dominance of non-places is seen as one of the biggest failures of our cities. These non-places are built opposite to what human well-being as a psycho-social whole would need. Unfortunately, it is also argued that aesthetic values of professional designers often produce these non-places (Caperna & Serafini, 2013; Salingaros, 2006). Mushrooming enables people, also the non-professionals, to re-gain the touch of what kind of a place really supports them as they are slowly making the places for themselves (Figure 1).

Since the beginning of the Mushrooming project, the tension between design and self-organization constituted the basic epistemology of its approach. One of the authors (Elina Alatalo) worked as a key initiator and later as a researcher-facilitator for the project. The story of Mushrooming’s initiation has been drawn from her field diary, describing a discussion between two friends at their self-organized co-working space:

Just after sharing views on surprising things that we had learned from each other at our co-working place, my friend got inspired: “But we are not the only ones. There is a lot happening in the neighborhood. I see interesting-looking people going to strange places that must be co-working spaces as well. What do they do? What could we do together? Have fun, learn? What if we could encourage interaction in-between these small co-working spaces? Something would surely happen”. And I got that feeling, a growing excited itch, that there really is something here. The couple of independent co-working spaces that we are familiar with are full of brave experimentations. Still, they mostly consist of old friends from the same professional fields, as isolated cells. What would start to happen, if these pioneer people would simply meet each other more? And as a key motivation, what could I learn and what spaces could I see in getting to know all these different collectives?

The purpose of our paper is to use the case of Mushrooming to explore the potential of co-working for bottom-up urban transformation. Our research questions are as follows: 1) How can placemaking and urban transformation be stimulated from below through increased interaction among peer-to-peer economies?; 2) What are the roles of facilitation and knowledge generation in this intervention?, and 3) Why and how does the context of urban change matter in the turning points of this process?





**Figure 1.** Co-working communities using Mushrooming have developed varied spaces and amenities, supporting a diversity of professionals (Image by the Authors).

In practice, we examine how Mushrooming's evolving reconfigurations began to provide different resources for the peer-to-peer economies operating in these urban spaces. The emerging resources were social, material, and virtual. As they benefited peer-to-peer economies in the network and increased their interaction, they also promoted bottom-up urban transformation. As an example, co-working spaces in the network were often inherited from one co-working community to another, resulting in a process where a rough space was renovated little by little as an accumulation of the efforts of each community. Co-working communities also began to cluster, and their activities started to spread from rented interior spaces to public spaces in the neighborhood. Since our research focus is not on individual co-working spaces, we do not exactly know what the emerging resources were in each case. However, we gained evidence of these resources as new practices were born in the network. Our empirical part of the paper looks into some of these practices in detail.

In terms of epistemology, we first conceptualize Mushrooming as a knowledge producing process between design and self-organization. We define Mushrooming as a dual trajectory and analyze it via the reciprocal interaction between its two constituents (i.e. design and self-organization) and evolving context. Our analysis is inspired by Anselm Strauss, who has thoroughly examined various social trajectories and their internal and external dynamics in different institutional and political situations (Strauss, 1993, pp. 53–54).

Second, we investigate Mushrooming from the perspective of the facilitator group, considering that the researcher-facilitator mostly assumes this view as a member of the group. We are interested in the extent to which facilitators are able to perceive whether the trajectory is developing in a productive fashion, bearing in mind that the design process follows many principles of openness, as we will explain later. The internal dynamics of the facilitator group have their own influence on the evolution of the trajectory. The researcher-facilitator follows the perspective of action research (Baskerville, 1999) and gathers ethnographic data from participatory observation, discussions, interviews, et cetera.

What counts as valid knowledge for the researcher-facilitator, and how can she gain it while constantly re-adapting the targets and facilitating the self-organizing process? Does it bring us to a greater understanding of the trajectory in order to consider how intuition, personal feelings or strong values, such as supporting low-income entrepreneurs, sometimes guide the action/research more than rational knowledge? These questions lead us to examine practice theory (Cook & Wagenaar, 2012; Shove, Watton, Hand, & Ingram, 2007) as a resource to conceptualize the facilitators' practices of knowing in the course of an emergent process.

We begin the rest of the paper by describing the main ways in which Mushrooming is related to global changes of urban work. In the following two sections, we conduct an empirical analysis of Mushrooming. First, from the perspective of practices and shared knowledge generation, then from the facilitators' point of view. In the discussion section, we develop our main findings, particularly with respect to openness and improvisation. In our conclusion, we discuss selected political implications.

### **Change in work toward peer-to-peer economies**

A tactical starting point of Mushrooming is work, one of the central aspects of human life in cities. In a sense, work is "sociogenesis" because it does not build but generates the society (Serafini, 2014). In Western working life, more and more people are becoming self-entrepreneurs. At the core of this shift lies the search for and experimentation with new livelihoods. This phenomenon of "New Work" (Jakonen, 2014; Ross, 2010) is a social process in which people become active makers of their everyday working lives. On one hand, it means being free, for example, to make

one's own place of work. This can be tactically supported to become a city-scale accumulated action, resulting in the creation of hundreds of personalized places of work refitted by the dwellers themselves. On the other hand, it means that "new workers", being free from traditional work communities, are left very vulnerable, particularly if there are no new peer communities to replace them. Given this marginal, though significant change, we claim that New Work, which integrates the peer-to-peer mindset into economies and placemaking, is a highly relevant starting point for thinking about urban repair from the perspective of peer-to-peer urbanism (Salingaros et al., 2010) and biourbanism (Tracada & Caperna, 2013).

Sooner or later, Mushrooming (or something like it) would have emerged in Finland. The ICT revolution has detached the work of numerous Western people from traditional working spaces, times, incomes, and communities (Cappelli & Keller, 2013; Osnowitz, 2010). During times of economic crisis, big companies make themselves more agile through networks of freelancers, and city departments outsource their services. New people carry work that compounds several sources at diverse times in various places. These people work at home, in public spaces (e.g. libraries or cafés), in public transport (e.g. trains), or in different kinds of co-working spaces.

There is the compulsion to look for new income, but people have also started to shape their own cultures of work when possible. Therefore, one clear feature of contemporary work is its politicization—people want to make work that is defined by themselves, based on their own values, and with the people they choose. This kind of individuality can be argued to threaten the sense of community (Spinuzzi, 2012), but we claim that individuation and community-building can happen simultaneously if it is openly possible to join relevant and appropriate peer communities of work. If there is a great variety of available special work peers, then one can choose to participate in activities of several different and even contradictory groups, thus forming more of an individual collage of one's own communities of work. This kind of process of individuation does not threaten but builds special communities, such as the different co-working communities, as in our case. It also builds a larger-scale community of all co-workers acting in that network, through which the special kinds of peers are made available.

### **Placemaking of New Work**

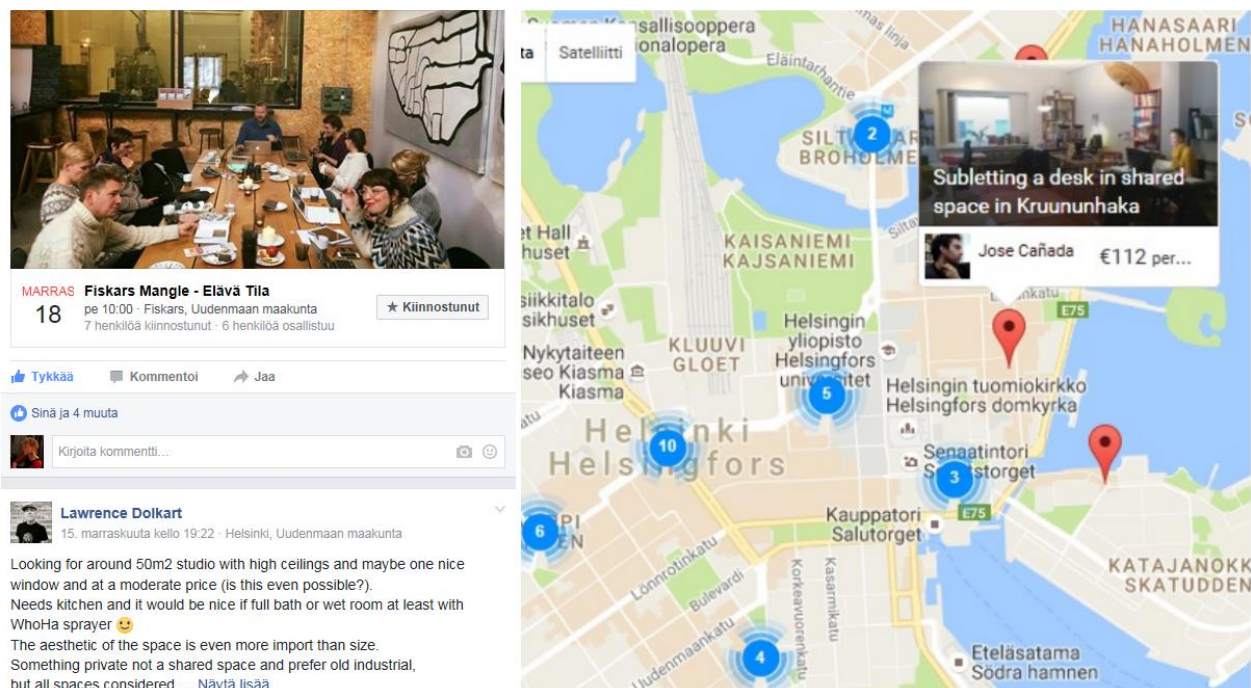
For many, working life is splintered: we commute, move through countries, and often switch professions (Arthur & Rousseau, 2001; Mitchell, 1999). Unlike large and anonymous office hotels, small self-organized co-working spaces create unique spatial and communal anchors in an otherwise multi-placed and Internet-mediated working culture. While the projects of our livelihoods change, we can still meet the same people at our co-working space. With placemaking, we refer to the ways humans alter spaces to be lived in so that they support well-being and are pleasurable and interesting (Alexander, 1977). Placemaking is also about creating the community that meets and acts in that place (Schneekloth & Shibley, 1995). For a new worker, the goal of placemaking is to create both the space and the community with whom to be frequently and physically present.

According to our observations, self-organized co-working spaces create flexibility by keeping their costs low. Such flexibility is needed, for example, when finishing studies, entering work life, starting a new business, learning a new skill, coming back from a long-term illness, or moving to a new culture. The makers of New Work repeatedly encounter such periods of change. Costs are kept low by sharing space with as many people as possible. Furthermore, new workers seek spaces in which the normal market is not interested, which are thus very cheap, e.g. premises that are in need of renovation, buildings in strange locations, forgotten rooms in cellars and attics, or even storages in corners of backyards. Having a co-working community then turns into placemaking in a very concrete sense: people usually renovate the space to fit their special needs and taste. In some



situations, sharing is also used to reach luxury premises that a single entrepreneur could never afford alone. Luxury premises are mostly leftovers from the normal market. All these characteristics mean that self-organized co-working spaces become interestingly varied.

Different kinds of co-working places that fit different needs at different times support the process of self-entrepreneurialism for new workers and their search for new livelihoods. Sometimes you may wish to write a book surrounded by inspiring thinkers. Other times you may also need to learn how to build the missing parts of an engine. Is there a better way to do this than by sharing a garage with other mechanical enthusiasts? Through the Mushrooming network of co-working places in Finland, it has become increasingly easy to explore these special groups of work peers and their places. One can go and visit a place, try it out for a while, and feel secure that there are also other places and other communities to explore if the initial place does not fit.



**Figure 2.** Mushrooming enables sharing workspaces by a map-based service (mushrooming.fi). This service is connected with local Facebook groups where users can make more complex inquiries and invite each other for collaboration (Image by the Authors).

Mushrooming began in the spring of 2010. At first, it was about friends inviting friends to present their co-working communities to one another. The process of getting to know each other was supported by an open map, happenings, and a Facebook group (Figure 2). Mushrooming became more commonly known in 2012, following co-operation with both an institutional event (the Helsinki World Design Capital) and its alternative movement. This phase of active facilitation culminated in the development of a new Internet service to mediate co-working space memberships. The existing members of a couple of thousand users sustained the network for two years. Then, in 2014, the number of users suddenly doubled, bringing Mushrooming into new cities. To support this growth, the mushrooming.fi Internet service was retrofitted, producing an ICT-based network of both formal and informal interaction channels on local and national scales, enhanced through face-to-face meetings for the benefit of the totality of co-working culture. The network has grown in a bottom-up manner facilitated by volunteers. No real advertisement has been done. The Facebook groups of different cities (Mushrooming Helsinki, n.d.) currently comprise approximately 6,000

members with different levels of participation. During high activity, about five co-working space memberships are mediated per week.

## LEARNING WITH TRAJECTORY

### Shared knowledge generation traced via actors and their practices

A detailed examination of how different actors have interacted through the trajectory of Mushrooming at different times tells us about the actors' shared processes of knowledge generation. When the context changed, these processes became visible as new knowledge practices (Table 1).

Actors	Key Knowledge Practices in Order of Time from Left to Right			
<b>The Network as a Whole</b>	Making work peers visible and knowing each other	Prototyping new practices	Finding new people to share spaces with	Users learning to take active roles in developing the network
<b>Facilitators</b>	Co-operating with anyone whenever common ground is found	Keeping the process open on many scales	Doing action research through facilitating an open process	Learning to improvise as complexity grows

**Table 1.** New practices of shared knowledge generation emerged in Mushrooming, making it versatile and resilient during its development. The upper line includes practices based on the interaction between users, facilitators, and outsiders. The lower line presents tactical practices among facilitators.

During the first years of Mushrooming, it was important for co-working communities to simply know that other similar communities were nearby and that it was possible to co-operate with these communities if desired. Similarly, it was encouraging for single workers to see that they could take risks and choose work peers from among a wider pool of options. Thus, in the beginning, the shared knowledge generation was simply but powerfully about raising awareness of possible peers. This special shared knowledge grew from a practice of small co-working places introducing and positioning themselves on an open Internet-based map. At this phase, facilitators and users were essentially the same, and there was no defined facilitator group. The initiators of the network, as described in the introduction, were also users who sought to develop something interesting and useful for themselves.

A second set of knowledge practices arose during the same phase, when initiators, users, and facilitators were the same people. Different possible practices of getting to know each other through face-to-face meetings were invented and tested. This phase produced happenings such as open studios, open invitation brunches, and movie nights at different co-working places. A Facebook group was established to communicate these happenings. This created a channel of informal digital communication, which together with face-to-face meetings, produced a successful two-fold platform for prototyping new practices. This capacity for prototyping new practices made Mushrooming a living organism, constantly seeking and developing new functions. For example, a user who needs additional co-workers to share expenses of a space can post an open request to the Facebook group and find them. Encouraged by this success, another person in the same situation makes a similar inquiry. Suddenly, many have adopted the practice and people have even begun to

reverse the process, describing themselves and advertising their search for free spaces. A new practice has been collectively developed, little by little, enabled by the informality of the platforms.

This specific practice of looking for members to share a space or searching for a free place in a co-working community became so strong among the Facebook group that some people grew interested in creating an Internet service to better meet the need. There had been a more active group of people organizing, for example, the face-to-face happenings, but ultimately it was the act of creating an online service that glued together a group of people who became the facilitators. Knowledge sharing is a process, hence the relevance of this facilitator group, interested in maintaining Mushrooming and keeping the process alive.

During the years to come, the facilitator group learned that the practice of mediating memberships to co-working places, which was born out the generation of shared knowledge and the prototyping of new practices, actually became the central reason for Mushrooming's existence. Facilitators could not foresee this, but in retrospect, the need is very understandable. Co-working spaces suit people during different periods of change; so beyond the main managers of a given co-working place, there are always people who come and go. From the perspective of the one hosting a co-working space, there is often a need to find new members to share costs. This central practice of mediating memberships generates the shared knowledge embedded in the peer-to-peer activities of the network.

When Mushrooming was about three years old, there came a period when the facilitators withdrew, following interests elsewhere. Then, Mushrooming could have benefitted from active facilitation, but it did not necessarily need it. During this time, users informally took care of the network. They also slowly invited new people to use the Mushrooming service. After two years, there came a point when the number of users had doubled and new impulses in the network invited the facilitators back. Whereas earlier, the development paths had emerged more subtly. Now, users directly submit new development ideas to the facilitators. For example, people in new cities contacted the facilitators to ask for help in setting up localized branches of Mushrooming. At this point, the initiator-users of new city groups were also ready to become new local facilitators, taking on new roles in the trajectory.

Earlier core facilitators had to create new practices to develop a shared understanding of the Mushrooming structure. They had to answer several questions, such as: what is the relationship between the Internet service and the Facebook groups? What are the relationships among the different city-based groups? Are there varied levels of interaction? Who are the new city facilitators? The need for formalization also stemmed the pressure to interact more clearly with such actors as financing institutions, bigger real estate companies, city administrators, et cetera. In response to these pressures, the Mushrooming association was established.

When helping new city groups, facilitators gained the possibility to revisit the early stages of Mushrooming. At the start of each new city group, the shared knowledge of being visible or available and the ways for workers to get to know one another were again very important. New iterations of prototyping practices behind these knowledge generation processes were required to make them more fluent. New practices were also needed for refining the prototyping itself. The facilitator group started to organize different open workshops around specific problem-solving issues and via these workshops, a new and even more sophisticated Internet platform was realized. Shared knowledge generation became a problem-solving tool, and users became problem solvers. If shared knowledge is thought of as existing only when in use, then it was important that the new Internet platform for assigning memberships to co-working places became more functional and available, inviting more co-workers to use it.



The six-year evolution of the Mushrooming trajectory has produced new, increasingly specific but fluctuating roles, partly due to the emergence of new peer-to-peer economies. We use expressions such as initiator-user or designer-facilitator to highlight situations where a new role has been activated. From the early period of initiator-users alone, there grew two groups: facilitators and users. Then, there was a period of more active designer-facilitators operating with users who gave signals. During its slow growth phase, Mushrooming was mostly about users informally facilitating and exploring the network. The next change was again launched by active initiator-users, some of whom also became facilitators of new city groups. Following this shift, the core facilitator group became responsible for the network as a whole. It also invited them back to active designer roles, through which they, for example, created problem-solving workshops to help users become problem solvers. Thus, facilitators gained varied pieces of knowledge that became recognized as professional skills, and some started to earn livelihoods from them. As the facilitators became experts, some no longer worked in co-working spaces and grew apart from users.

As defined roles emerged, they became assigned to specific people. In recent years, it has become more and more difficult to get new people to join the core facilitator group. Facilitators themselves believe that, from the outside, core facilitation is now seen as their task—as a project owned by them, regardless of what is communicated about its openness. Experience shows that new facilitators join when they see an opportunity for a new project, something in which they can feel ownership and to which they can contribute special skills. Such situations emerge, for example, when establishing new city groups.

### **Facilitators adapting their mutual practices of knowing**

The facilitator's practices have proved to be central, even in a trajectory comprised largely of users' actions (Table 1). They are critical, particularly with respect to whether and how user activities are harnessed. One central practice in Mushrooming concerns inclusiveness, which has a long history. The first real push to scale Mushrooming up came from the wish to participate in the 2012 Helsinki World Design Capital (HWDC) that focused on an Open City. HWDC did not succeed in realizing its theme, and Mushrooming became one of many to propose an alternative program. After many turns, Mushrooming was found to be part of both HWDC and the movement that criticized it. Though this sounds confusing, it led Mushrooming to become a rich melting pot of people who used to differentiate from each other. It succeeded in becoming recognized as a useful network by both the sharp professionals of HWDC and the grassroots alternative cultures. Through this process, facilitators learned to co-operate with anyone sharing the same interest.

This principle has remained a core tenet of Mushrooming. One does not need to fully agree with another party as long as there is honesty and openness in sharing and discussing different viewpoints. Such a practice is also visible in the core facilitator group that has consisted of five to 10 people fluctuating a little over time. Facilitators come from different backgrounds and with different motivations, therefore bringing varied understandings of what Mushrooming is and what it produces. The resulting diversity of interests, skills, and viewpoints in the facilitator core group has helped Mushrooming flourish in several directions, making it stronger and more sustainable.

Another facilitator practice that favors openness matured particularly during the period of slow growth: do what appeals you, do not exert effort toward something that does not feel necessary or inviting. This means that facilitators guide themselves toward tasks in which their input is most fruitful. This also means that certain tasks tend to receive attention only from the most motivated facilitators, yet monotonous but important tasks often do not get done until they become urgent. Still, in general, facilitation is accomplished easily and with a flexible timetable.

As stated before, one of the central motivations of the facilitators was simply the curiosity to see what might happen if small, pioneering co-working communities were encouraged to interact more. Soon, this curiosity had the flavors of more serious interest by the researcher-facilitator. It began to take the form of a research project that eventually evolved into experimenting with open process. Here the term open process means that there is no fixed idea of what Mushrooming should become. How it might become has been often discussed among facilitators, yet loosely defined.

Mushrooming illustrates the potentiality of action research and, more specifically, of action research dealing with an open process. When acting in an open process, it is impossible to know what is coming. This is a challenge for a researcher. In fact, what does it mean for a researcher to be deeply intertwined to an open experimental process in a city? To be the one actively but gently pushing and pulling, acupuncture a growing organism, like a natural scientist back in the old days? What and how am I learning? How can I research what might unexpectedly come?

The phenomenon under study becomes visible as the researcher works on it—and through her work. Here, we can talk of *creata*: data that are in action or data that create (Petersen, 2013). The value of such data is neither in how true they are nor in how exact their imagined representation of the world may be. Instead, their validity is judged by the processes into which data are embedded, by how these data are discussed in relation to existing knowledge and society and, most of all, by what they create.

The extract in the introduction is written in the form of *creata* in the sense that it is something between a field note, an observation, and a participation in the process on one hand, and a writing that gives participants and readers insights into an iterative process of shared knowledge generation, on the other. *Creata* as a text may be helpful in re-imagining and improvising new ideas about the future development and capacities of Mushrooming.

*Creata* is an emerging concept that has been recently developed by Eva Bendix Petersen (Petersen, 2013). We have used it for exploring ideas related to the specificity of open process research in which the researcher is a full member of the group of facilitators. Acts of facilitating, such as posting a written text to the Facebook group, becomes *creata*. In relation to the epistemology of biourbanism, the concept of *creata* illustrates the situation of design and urges us to consider our attitude toward an open process. Thinking about *creata* has thus far helped us understand that practices of knowing and facilitating an open process are performative (Glass & Rose-Redwood, 2014; Loxley, 2007) in several important ways.

First, practices are performative in that they engage the facilitators with the single, evolving object at hand that has to be designed. Second, they are performative because they constantly shape the trajectory. Third, by shaping the trajectory, the practices of knowing have made the trajectory available to other epistemologies, which is an important urban-political point of view. The practice of doing research through an open process experimentation has made the phenomenon of Finnish co-working culture visible and capable of being researched via other means. Before Mushrooming, it was simply impossible to reach co-working communities. To illustrate the change, a recent study (Houni & Ansio, 2015) tells us that half of the co-working posts searched for by individual people in Helsinki were found via Mushrooming. This is significant, since, before Mushrooming, one could only search via one's own existing contacts. The interviewees themselves were also found mostly through Mushrooming.

As Mushrooming has made co-working communities visible, we have learned that the phenomenon of shared working spaces is more broad and diverse than commonly thought. For example, a study

by *Deskmag* (2013), referenced by several researchers (Merkel, 2015; Salovaara, 2015), proposes that in lively Berlin in 2012 there were approximately 80 co-working spaces. At the same time, Mushrooming of Helsinki counted approximately 150 co-working communities. It is unlikely that there would have been less co-working communities in Berlin than in Helsinki. Most possibly, many of the co-working communities in Berlin have not been accessible for study, as there is no network such as Mushrooming in that city. In addition, even the 150 represented only part of the picture in Helsinki. Local facilitators acknowledged the existence of several co-working communities that did not use Mushrooming at that time.

The practices of knowing have shed light on Mushrooming's cross-boundary context. Through Mushrooming, it has become clear that co-working communities do not exist only in downtowns and capital cities. Rather, there are also co-working communities in suburbs and smaller towns. Through the users of the network, we have learned that the phenomenon of New Work touches not only more creative and information-intensive fields but also nearly every profession imaginable. We have also learned how New Work is broader than the work done to gain monetary livelihood. In fact, New Work is intertwined with hobbies, training, and all kinds of transitions and experiments. Through Mushrooming, we can also see that New Work happens in more versatile environments than just office-style co-working places. Other spaces such as shared kitchens or dancehalls are also being used.

The final performative aspect is that it is the practice of knowing that actually created the phenomenon of co-working. Through Mushrooming, people who did not previously know each other started to share co-working spaces and professions started mixing, creating new border-crossing collaborative projects. Further, more co-working places were successfully launched and maintained. For example, a co-working space host in Helsinki noted that two-thirds of the space's members during its five-year history have come from Mushrooming, and that he could not imagine how they could have kept their place or created their professional crew without this network.

## DISCUSSION

### **Roles of actors when keeping a trajectory as open as possible**

Sociologist Anselm Strauss uses the trajectory concept to describe the development path of an action process born by merging together individual and collective activities (Strauss, 1993, pp. 53–54). A trajectory comprises two sides: the rationally guided direction of action, usually led by facilitators, and the coincidental development, in which the complexity of action and interaction gains self-organizational features. This second side refers to emergent development, which can be only partially guided and stems from a variety of interacting actors. This creates new situations for the trajectory and, again, leads actors to refine their interactions.

Trajectories have traditionally been used to conceptualize such phenomena as the work of civil servants or professional education, in which actors' roles tend to be defined and stable. Using the notion of trajectory to conceptualize Mushrooming showed us how the added possibility of changing and developing new roles during the trajectory growth amplifies its emergent features. In Mushrooming, these new roles result from users having the ability to invent their activity status as co-facilitators due to the openness of the network.

Design researcher Ezio Manzini describes situations in which users that had earlier been the passive receivers of a service take an active role in organizing their everyday lives and become producers of their services as social innovations (Manzini, 2015). These changes of roles and activity are so

strong that Manzini speaks of small mundane revolutions. It is interesting that, despite covering recent changes in almost every field from food production to elderly care, Manzini has not yet recognized the social innovation in co-working. The existence of Mushrooming is based on how people have started to create their own work cultures. There is also another level of social innovation, as users of Mushrooming have begun to take the roles of co-developers of the network itself.

In Mushrooming, the openness through which people are increasingly taking on more and different active roles is recursive and happens on many scales. Anyone can join the network, and there are no fees for interactions. The software tools that Mushrooming uses to support ICT interaction are open source. Facilitators love to share tips on how to organize, for example, happenings that foster local interaction. Anyone can start a new local group. Users participate in developing their networks by introducing new ideas on how the networks could be used, but they are also welcome to participate in open workshop sessions run by the facilitator group. These sessions deal with making tools and creating strategies for adding new features to Mushrooming.

Sociologist Alberto Corsín Jiménez speaks of openness as a characteristic of prototypes (Corsín Jiménez, 2013; Corsín Jiménez, 2014). He sees prototypes as designs that remain in permanent beta condition, staying open for iterative cycles of refinement through different applications. Such a strategy has been applied by open source software developers. Corsín Jiménez uses the feature of openness in prototypes to discuss “the right to the city”. This is also visible in Mushrooming: in independent co-working communities, most new entrepreneurs experience a period of limited monetary resources; however, by sharing and renting cheap spaces that are “left over” from the market, they can continue their work and maintain their right to be in the city. These spaces are often in need of renovation, but fixing them fulfills another aspect of “the right to the city”: the right to create your own personal space for yourself and your specific needs.

As described in the introduction, Mushrooming was born to be an open process—to see what will happen. Since the end result is not fixed, the amount of rational guidance of the trajectory is minimal. The platform’s openness on many scales has produced a growing variety of actors, and their evolving roles continue to bring more and more complexity. We see that new cases, such as Mushrooming, that have less need for rational guidance and amplified emergent qualities, bring forth possibilities of looking deeper into the conceptualization of the trajectory.

### **Dealing with complexity: developing skills for improvisation**

Architect Christopher Dell uses the concept of improvisation to develop spaces (Dell, 2011). According to Dell, in a complex real-life situation, improvisation is a superior tool. It creates a unique, reactive, and situated collective action. Through improvisation, subtle and tacit forms of knowledge (Shove, Wattson, Hand & Ingram, 2007) come alive. Improvisation embraces subjective experience and personal skills to facilitate creation with other people. Dell claims that even though we cannot exactly plan what to do in complex situations, we can still act. He refers to the improvisation of space as music by improvisation: as you play, you do not follow exact notes, but neither do you act without any idea of possible choral structures or ways of interacting with other musicians. In Mushrooming, improvisation skills are built through shared knowledge generation via emerging and developing practices that in turn produce frameworks for improvisation. This finding supports Noam Cook and Hendrik Wagenaar’s idea of turning knowledge on its head because practice evokes knowledge rather than the other way around (Cook & Wagenaar, 2012).

Inside the group of Mushrooming core facilitators, there are different views on which tasks are prioritized. Facilitators have learned to act despite uncertainty. It does not really matter whether one

sees Mushrooming as urban activism, as a service design project, or as an interesting problem of economics. These personal interests and agendas can be woven together via skillful and relaxed improvisation. Cook & Wagenaar (2012) talk of actionable understanding. It is a mutually held understanding of a complicated case that enables to take action upon something that is commonly accepted. This relates to Dell's idea of recognizing possible choral structures or ways of interacting with others in order to improvise music (Dell, 2011). Actionable understanding is a bundle of more or less consistent practices that are often taken for granted as giving a sense of what should be done, but which actually comprise much more vague and complex situational guidelines. Cook and Wagenaar's argument is that it is within the immediate presence of practice that actionable understandings are formed (Cook & Wagenaar, 2012).

Building upon that, we claim that facilitators of an open process have to improvise by using cues arising from the users and several other sources. Tackling these cues that admit multiple interpretations, they have to reach what is enough for a mutual understanding of the situation. If they reach this moment without ignoring its resonance with the cues, then improvisation has been productive. Because this is a practice that increases individual capacity for action, they can learn from it and gradually develop new improvisation skills. This can include a growing diversity of actors, along with their subjective and even contradictory ideas, strong feelings, values, and other personal drives. There are moments when nothing gets done because of confusion among roles. This has happened several times in Mushrooming during the turning points of its development. There are also moments when facilitators do not find peers and are forced to manage alone, no matter how important they see their issue for the sake of everyone. For example, in Mushrooming, it is one person who has repeatedly saved the whole network by getting funds to sustain the ICT tools.

Our findings show that improvisation is crucially important when facilitating open process and shared knowledge generation.

### **Practices of openness and improvisation creating context**

Co-operating with anyone who shares a common interest has, during the growth of the trajectory, compounded an equivocal identity of what Mushrooming is for. It functions equally well for finding a high-tech workshop, launching a series of discussions, or planting a shared garden. This means that actors with diverse identities, who might usually differ, first recognize common points within the trajectory. Then, these actors gain the courage to interact with each other. This diversity of actors and their practices creates the context for Mushrooming to exist. Cook and Wagenaar believe that this feature of context as an artifact of a practice tells us of the epistemological properties of practices (Cook & Wagenaar, 2012).

Other global networks through which co-workers can find one another, such as Sharedesk, Wework, and Deskttime, do not have practices for informal interactions and offer no possibilities for users to improvise. In these networks, one can search for spaces or new members using pre-structured categories, reading a blog, or participating in happenings of interest. By contrast, Mushrooming thrives on possibilities to discuss and ask questions that are as diverse and complex as life itself. "Does someone have a space where I could work with a laptop, test some new clay molding techniques, and play drums in the evenings?" "Does anyone have a room 6 meters high?" "Who has a workspace where I could enter with my wheelchair?" Similarly, renting out announcements are more versatile: "Does anyone want to rent my desk every other weekend?" If the existing co-working spaces do not fit user needs or are all full, then in Mushrooming the users can create new collectives. One can also launch a series of events by oneself. To our knowledge, no such

complexity is yet possible in other co-working networks. These practices, therefore, give Mushrooming a special context.

Linking itself to users' diversity and their varied practices has made it possible for Mushrooming to flourish in rather small cities within Finland. This characteristic also distinguishes Mushrooming from other co-working networks, which tend to be located mainly in cities of millions of people. There it is possible to earn a living from building a co-working network, so these networks become enterprises; thus, they also need to earn a profit. In their created contexts, these networks often have a start-up background, which means they need to scale up rather quickly. This guides them to focus on the most common types of co-workers and their spatial needs: creatives or knowledge workers with laptops. These networks can then only situate themselves in the biggest cities, where they have access to large pools of such co-workers.

Without the possibility or pressure to make money or grow quickly, Mushrooming has created another kind of context for itself. As a result, it has actually become a more creative part of the larger trajectory of the evolving culture of New Work: Mushrooming supports processes in which professionals who have not interacted before have the opportunity to meet and create new collaborative projects. This happens in a loop that fuels itself. Understanding that practices create context is visualized clearly here, as these practices support emergence. Via Mushrooming, any kind of space enabling any kind of work has and can emerge to be shared. When co-spaces are versatile, new and unexpected professions start to engage with the network. As a result, inspiring professional combinations are born, creating novel contexts for New Work pioneers and, thus, novel grounds for innovation. Some of these innovations result from people experimenting with new ways of making a living, and will eventually grow into larger businesses. Therefore, Mushrooming has not only created a context for itself, but also established a new context for the whole co-working trajectory: one of the politics of innovation at the city scale.

## **CONCLUSION: NEW WORK, PEER-TO-PEER ECONOMIES, AND URBAN REPAIR**

Mushrooming can be seen as a living structure that sustains its vitality by remaining adaptive to changes in its context as well as among its users and facilitators. The adaptability of this trajectory comes from being as open as possible, and that this openness is enacted with brave improvisation with anyone sharing an interest at a certain moment.

The aforementioned foundation enriches the network's connections and interactions, supporting the search for new members of co-working communities. Listening to users' signals, considering users as co-developers, and even letting a project go if it is unfit—are all ways of adding to the richness of the interactions. By learning the skills of improvisation, the potentials of this openness are taken on, and openness and improvisation build on each other. One example is the possibility of sharing improvised moments with once-unknown peers after finding them within the open network. Main challenges lie in situations where confusion in roles causes either cacophony or no action at all. By learning to improvise rather than pushing the trajectory with force toward an outdated and static goal, facilitating, using, and researching the trajectory becomes a naturally flowing expedition to the unknown. This kind of rich networking, self-inventing, and adaptive trajectory is very resilient.

Practices of openness and improvisation have built, little by little, a common understanding of the path of the trajectory. Users can trust that they will find peers and places of work from there now and in the future. In Finland, it would be very difficult to build a network of co-working spaces to challenge Mushrooming now that a certain existence of the trajectory in the society is established. It is somewhat contradictory, however, that this common trajectory path comprises the actions of



individuals seeking to make their everyday working lives even more individuated. Within this shift toward self-entrepreneurialism, subjective politics are in play, and subtle and personal everyday political agendas are embedded. Against this background, Mushrooming's trajectory has been able to collect, facilitate, and channel these scattered informal politics, using the logics of peer-to-peer economies to form a common path.

In the material city, this common path is visible as urban repair, which is scattered around in various small places. This kind of urban repair is easily dismissed, as it emerges in ways other than dominant models. The repair is done by people themselves, usually without professionals. It happens little by little, both because the repairers must often manage with limited economical resources, and because they seek to experiment and slowly feel what kinds of spaces each community actually needs or wants. Places chosen by co-working communities are usually the exact opposites of the premises favored by the dominant market. The urban repair that is part of the trajectory of Mushrooming, thus, brings life to leftover spaces. Through repairs that follow individual needs, co-workers create a pool of spaces that are rich in variety. This pool is accessible by peer-to-peer practices of sharing spaces, which create new ways of using a city. Mushrooming's shared pool of highly special spaces offers a welcoming contrast to urban public spaces, which are too often repaired generically while compromising everyone's needs and tastes.

In our consideration of how it is possible to connect peer-to-peer economies and co-working spaces across a city, and to guide bottom-up urban regeneration through them, we see that openness and improvisation play key roles. A trajectory that is as open and as skillfully improvised as possible can be deeply rooted in its societal context, and it is capable of fruitfully supporting the people living through its change in pursuing something that cannot be foreseen.

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## **DISCUSSIONS & REVIEWS**





# URBAN Emergence Manifesto

Like all good manifestos, this one was written on a napkin in a basement bar that happened to be in Saint Petersburg. It was borne of a frustration with the pomposity and worthiness of most urban manifestos. Why is it that the most exciting manifestos tend to be the ones that spout the least acceptable views? (See the Futurists for example). We wanted to go beyond the usual platitudes to create a set of simple ideas for capturing the complex idea of cities as a living organism that evolves and thrives on diversity and interconnectedness. So, after a few beers, what might a radical urbanist manifesto look like...

- I. Satisfaction is not the goal. Comfort is overrated. Cities should act as catalysts for new ideas, creative change, and individual and collective evolution.
- II. To be a citizen of a city transforms both you and the city. It confers rights and responsibilities, but also huge opportunity.
- III. Cities are living organisms, complex emergent systems capable of self-organizing, adapting, and developing. Their power is naturally arising, but it needs to be nurtured by wise governance.
- IV. A city evolves on three planes: the inner growth of every person, the interaction between individuals and between generations, and between humans and their environment.
- V. The right to the city is a revolutionary act. Cities are playgrounds for societal development and new governance initiatives—new ideas almost always emerge in cities.
- VI. Streets and other public spaces are the organizing framework for every city stimulating connections and co-creation.
- VII. A city without trust is a walking cadaver heading for a graveyard. Polis turned necropolis.
- VIII. The open city attracts people who want to better themselves. The cities that do this best will win the future.
- IX. Cities thrive on change—10% of the city's fabric should be destroyed each year to allow room for creative reconstruction and meaningful evolution.
- X. A city is an infrastructure for love.

**Check if you and your city are alive and well.  
Sign and promote the Manifesto.  
Join the Evolution!**

On behalf of speakers and participants at The International Spatial Development Forum, held in Saint Petersburg on September 26–27, 2016, and the movement for conscious evolution of cities:

1. *David Rudlin, director, URBED (Urbanism, Environment, Design); Academy for Urbanism, Manchester, UK*
2. *Leo Hollis, urbanist, author of Cities are Good for You, London, UK*
3. *Lev Gordon, co-founder, Association for City Development; National Community of Practice Living Cities, Izhevsk, Russia*
4. *Alexandra Yarlykova, member, National Community of Practice Living Cities, Moscow, Russia*
5. *Stefano Serafini, research director and secretary general, International Society of Biourbanism; managing editor, Journal of Biourbanism, Rome, Italy*
6. *Nikolai Novichkov, advisor, Minister of Culture of Russia; member, Expert Council to the Government of the Russian Federation; co-founder, National Community of Practice Living Cities, Moscow, Russia*
7. *Sergei Zhuravlev, project manager, Center for Urban Research, SKOLKOVO School of Management; co-founder, National Community of Practice Living Cities, Moscow, Russia*
8. *Maxim Arzumanyan, managing director, SMART ARCHITECTS; co-founder, National Community of Practice Living Cities, Saint Petersburg, Russia*
9. *Pavel Luksha, member, Expert Council of Agency of Strategic Initiatives; co-founder, Global Education Futures and National Community of Practice Living Cities, Moscow, Russia*
10. *Andrei Sharonov, rector, Moscow School of Management, SKOLKOVO; member, Expert Council to the Government of the Russian Federation; co-founder, National Community of Practice Living Cities, Moscow, Russia*
11. *Valeria Terentieva, managing director, WORK LINE; co-founder, National Community of Practice Living Cities, Moscow, Russia*
12. *Gleb Vitkov, head of Urban Project Lab at Higher School of Urbanism of Higher School of Economics; managing director, New Earth; co-founder of National Community of Practice Living Cities, Moscow, Russia*
13. *Michail Klimovski, co-founder, International Spatial Development Forum; director of development, Institute of Design & Urban Studies, ITMO University, Saint Petersburg, Russia*
14. *Alexander Starkov, head of organizing committee, Living Cities Forum; co-founder, Art-Center Griffon, Izhevsk, Russia*
15. *Cees Donkers, founder, QASE Urban Studio (Quality in Architecture, Society and Education); co-founder, City Embassy European Network of Cities; National Community of Practice Living Cities, Eindhoven, The Netherlands*
16. *Andrei Asadov, vice president, Union of Architects of Russia; director, Asadov Architectural Bureau; member, Moscow Civic Chamber; co-founder, National Community of Practice Living Cities, Moscow, Russia*

# Paradise Design

**Urška Škerl**

*Designer, Slovenia*

Our world is founded on myths. Like language, poetry, and science, myths set the horizon and constraints within which our drives, vision of the world, ethics, and rational concepts arise and play (Cassirer, 1953, pp. 8–12). It is the imagination—or rather the lack of it, lately—that constructs our physical world.

Here I would like to briefly analyze the impact of the image of paradise on the collective human consciousness and environment that we create accordingly. The idea of paradise is as deep as it is broad. Paradise is not a recent or peripheral theme in any known traditions; rather, “it is, at the very core of the perennial spiritual impulse, re-emerging in every generation’s literature, art, and social ideals” (Heinberg, 1989, p. 3). Drifting through the Golden Age, Garden of Eden, Elysium, Paradise, Arcadia, Utopia, and New Jerusalem, it is an ever-changing paradigm within society’s aspirations. However, the dichotomy between earthly and heavenly paradise has disconnected reality as a whole.

We tend to forget that humans are part of the natural world, despite having assigned a scientific name to ourselves. Ironically, though, *Homo sapiens* is marked as the least endangered species on the red list of the International Union for Conservation of Nature, still we distance ourselves from other creatures. In his book, *On Human Nature*, biologist and theorist Edward O. Wilson says: “We are a biological species, arising from Earth’s biosphere as one adapted species among many; and however splendid our languages and cultures, however vast our creative powers, the mental process is the product of a brain shaped by the hammer of the natural selection upon the anvil of nature” (Wilson, 2004, preface). Hence, whatever our minds create, including the image of God, comes from nature.

We have been exploiting the word “nature” as it does not seem to correspond to a tangible reality and always needs a wider context to be understood. Nature has come to have so many connotations; we really do not know what it means, standing alone without further attributes. The Oxford dictionary definition recites: “the phenomena of the physical world collectively, including plants, animals, the landscape, and other features and products of the earth, as opposed to humans or human creations or civilization.” Yet Adam, the “first” god-like human, got his name from the Hebrew *adamah*, meaning “(the one formed from the) ground”. God can be understood as an expression of cosmic forces beyond visible or known, always subtly present yet mysterious.

Point is that humankind, nature, and God are terms describing connected entities of reality through their hierarchical positions and are puzzling and interchangeable with time according to different philosophical views and available knowledge. Perhaps we could say they are similar concepts in a different guise.

Humans stand at the bottom of the hierarchy but are “reasonable” enough to play more-or-less equal partnership. Humanity, in short, has created the concepts of divinity and nature in order to define and justify its own position and existence.

In *De Anima*, Aristotle explores the connections of body, intellect, and soul. The intellect is the moving force of the universe. Nature acts according to the universe and consists of self-organizing entities. The soul organizes the body, while soul and body are inseparable and inherent in every living thing (Gendlin, 2012).

Religious hierarchy, as expressed in the “great chain of being”, puts God above all, in hierarchical order above spirits, humans, animals, plants, and finally minerals. Man is both mortal flesh, as the substances below him, and spirit, as those above. In this dichotomy, the struggle between body and spirit becomes a moral fight (Lovejoy, 1974).

Regardless of what the fall or loss of the Golden Age was supposed to mean, it seems evident that *H. sapiens* has passed through some form of struggle. Possibly, its alienation from nature: “the human beings were innocent and happy as long as they simply lived off the bounty of Nature. Once, they began to bend the cycles of Nature to their presumed benefit—their innocence was lost” (Heinberg, 1989, p. 166). *Hyle*, Aristotle’s term for chaos, literally means *forest*, or as Virgil describes forest, using the word *silva*, a psychic realm of violent and primitive passions. Bachelard also sees forest as the primal dystopia, the unstructured, infinitely penetrable space. Efforts are required to reconstruct a garden which must offer a sanctuary to neutralize the painful consciousness of vulnerability (McClung, 1983, p. 16).

Fear on the one hand, and capability to do so, on the other, moves us from the pristine towards man-made, mirroring poetical images of nature’s perfection (or curing its imperfections). What a complicated world we have created, where even the words describing these idylls reveal alienation or defense from nature. The word Paradise comes from Old Persian *pairi-daêzã*, meaning an enclosed plot, and therefore inevitably referring to the perfect city dwelling. Garden’s etymological root too points at an enclosure of outdoor space (Turner, 2011, p. 2). “To survive, in fact, Eden must become a garden-city” (McClung, 1983, p. 19). In order to deal with the chaos that rules in nature, man had to conceive an orderly, submissive garden.

Interpretations of nature can be traced throughout the history of gardens, as “their design has been influenced by views of the interrelationships between God, man and nature” (Turner, 2011, p. 24). The following paragraphs aim to recapitulate predominant historical ideologies and social constructs of perceiving nature, expressed in garden design.

Unexplained elemental forces of nature in pre-civilization cultures were sources of fear and often took sacrifices. Perhaps the moral question itself stems from natural “catastrophes” cast upon human beings. Subordination to nature was embodied in animistic beliefs.

Ancient civilizations such as Greece and Rome gave gods human shape, rather than deifying nature. “The result of such an approach is orderly, subdued, humanized nature” (Ogrin, 1993, p. 15). Despite little information is known about ancient Greek gardens, their culture gave us the “democratic” public space, *agora*. Nevertheless, the cosmology of ancient Greece and Rome begins with Chaos, who gives birth to Gaia. Put in other words, in the beginning there was nature.

Christianity adopted the concept of nature as a whole, but nature owed its existence to the Creator. Hence, the conflict between God and Nature. In medieval Europe, the two predominant and opposed garden types are *hortus conclusus* and *lustgarten*. The first form is typically found behind cloister’s walls, incorporating elements such as a tree or a fountain in the geometrical center, which indicates the *axis mundi*. This runs vertically through the cosmic spheres representing the world order. St. Augustine, in his *City of God*, “prompted medieval garden-makers to abjure earthiness and look heavenward for inspiration for their designs” (Turner, 2011, p. 155). The second type, or

*lustgarten*, as the name indicates, is intended for courtly and bourgeois pleasures, consisting of lush plants and water elements, allowing rich sensual experiences able to simulate a *paradis artificiel*. “Virginity is condemned, hell is reserved for those who do not observe the commandments of nature and of love” chants *le Roman de la Rose* (Huizinga, 2016, ch. 8).

During the Renaissance, classical antiquity revives and gives rise to a new intellectual climate. Humanism puts the individual at the forefront of interest and the human figure substitutes the *axis-mundi*. Man is opening himself to nature, art, and science. Interestingly, the Church follows. Pope Pius II had arranged for himself to be “transported into the mountains on a litter, to enjoy the panoramic vistas” (Ogrin, 1993, p. 47). Nature is perceived as mathematically ordered, as though God is a mathematician himself. The gardens of Italian Renaissance villas look outwards, over the *campagna* (of what the man ruled over). Villas were characterized by their gardens, often incorporating themes and motifs from ancient mythology with statues and nymphaea. New ideals and utopian dreams emerge, stimulated by the discovery of the New World. In a letter to Lorenzo de Medici, Amerigo Vespucci wrote: “The inhabitants of the New World do not have goods of their own, but all things are held in common. They live together without king, without government, and each is his own master. Surely if the terrestrial paradise be in any part of this earth, I esteem that is not far distant from these parts” (King, 1979, p. 57).

Europe in the 17<sup>th</sup> and 18<sup>th</sup> century consists of aristocratic power and enlightened reason. Spinoza’s “*Deus sive natura*” on the one hand, and extravagant court gardens on the other. In Versailles, *axis-mundi* stretches on the ground until it blends with the horizon, saying “*l’etat c’est moi*”, although the garden is still employing a mythological context to narrate the king’s supremacy. The Copernican heliocentric model showed the human insignificance, though not acknowledged for another generation, just as Rousseau’s back-to-nature point of view did not make a far reach into the garden design.

Eighteenth century English landscape garden took their inspiration, again, from antiquity. Landscape architects adopted natural forms in design, as they resembled freedom, compared to the French garden where “nature is enslaved” (Ogrin, 1993, p. 124). Arcadia was a poetical imperative. Archetypical rural landscape was used as an image, provoking social reform against autocracy and industrial changes in agriculture. McHarg stated that such a created nature, where form follows natural process, was a precursor of ecology (McHarg, 1992).

The bridge between nature-resembling forms and complete abstraction of nature in gardens during modernity produced eclecticism, a confusing mixture of styles from previous periods. A significant change in the 19<sup>th</sup> century, as a response to rapid industrialization and urbanization, was the emergence of public parks. One of the earliest, Central Park, was designed by Olmsted in a manner of his belief “that nature contains a moral power that could improve the city and offer a fuller life to its residents” (Ogrin, 1993, p. 366). In one sense, that nature in the city is assigned with special value and becomes a gentrifying factor, is almost hypocritical. Another acquisition of the 19<sup>th</sup> century was wilderness, assigned to a natural park. The area of Yellowstone was declared as untouched and seemed Edenic in its purity, although “mankind had been using it for thousands of years” (Rushby, 2006, p. 216).

In the 20<sup>th</sup> century, Modernism had resulted as the climax of enlightenment philosophy. Although it has been described as rational, materialistic, technological, lacking in expression and sensitivity to genius loci, we must take into consideration modernist strive “to re-instate spiritual, even mystic values in a changing society. They believed architecture must embody the values of a ‘superior existence’ which is the ‘real’ one in spiritual term” (Andrescu, 1993, p. 7). Architects were aiming for a perfect, challenging relationship between man and nature in garden city planning. The two

most recognized are Le Corbusier's Radiant City and Frank Lloyd Wright's Broadacre City. Le Corbusier took the city as a machine as the point of departure, fulfilling human needs with spatial organization inspired by a biological body. He juxtaposed geometrically formed towers in high contrast to surrounding nature, simulating the temple and the holy city. Wright's approach was organic, melting city and landscape into one, proposing decentralization and democracy by placing an individual family home as a focal point in his Usonian society. Nature in Modernism (freshly mowed grass plane) is only to be observed and contemplated from behind the glass of a clockwork house.

In Postmodernism, designers were again inviting historical context back into gardens, yet the uniform style was as confused as it is today.

Intriguingly, the element of *grotto* (recreation of a cave), was continuously used in gardens at different times in the past, even if gardens had a completely different essence. Grottoes survived until modernism swept them along with all that was considered superfluous.

Caves were mystical objects of nature and are still addressed as such in a metaphorical sense—the passage to the underworld, womb of the Mother Earth, dwelling places of spirits, unconscious stratum of mind, and inspiration for philosophers, from Plato to Jung. Caves were natural dwelling places of our ancestors; there must be a linkage to our primordial life. Although grottoes were often used as a fashionable garden accessory, or as reminiscence of the past, they held all the bestial and grotesque nature within, inhabited by the unseen, unknown, mystical, and uncontrolled forces. Naomi Miller describes the grotto as a metaphor for cosmos, hence vague in definition. It represents higher realms of the Apollonian side, as well as Dionysian agents and darker, chthonic forces (Miller, 1982). With grottoes, crude nature was invited into illusively ordered gardens.

In modern times, we tend to fence nature out—from ourselves. Parks get closed to the public, and walking on grass is prohibited. Wilderness became a paradise, without us being allowed to enter. Grottoes morphed into pockets of succession in cities, to compensate for the loss of greenery in the built environment. With the secularization of society and human mastery over it, nature has lost its magical charm. There are no unpredictable or inexplicable forces at play and everything can be controlled. Rational thinking, based on science as the new religion, has no space for nature. Man is now the designer of nature and the heaven invader by colonizing space. It is amazing, nevertheless.

(Dystopic) design of a perfect human in a perfect society, dwelling in a perfect place, is running against the odds of nature. It is still bestial and creeps back in. Human is one such example, turning in against himself. Science creates the illusion of knowing; a safety net, when it only really shows disintegrated miniature parts of incomprehensible reality.

In the ongoing civilization process, we have (over)designed ourselves as well as our living spaces, and we expect nature to do the same. This results in generic solutions that do not necessarily bare an answer to our needs or correspond to a specific locus. Norberg-Schulz writes, "a settlement excludes the natural forces and therefore complements the natural situation. Environment is experienced as meaningful" (Norberg-Schulz, 1980, p. 21). "To be meaningful, however, the inventions of man must have formal properties which are structurally similar to other aspects of reality, and ultimately to natural structures. If this is not the case, they would isolate themselves within a purely artificial world, and lose contact with reality" (Ibidem, p. 169). Greening façades is not a solution, of course. Perhaps being bestial and divinely spiritual at the same time, inviting the sublime back into existence, could help us overcome the boredom of reality we are creating. Being conscious and thoughtful when designing, yet playful at the same time, might be healing. Progress yes, however not by all means. Before we design a post-human being, we could ask ourselves by



whose image Adam is going to be created, what garden is he going to live in, what is the promised city going to look like, and what the new utopia will be. As we know, utopia has no place at all, while paradise is lost and very unlikely to be regained in the future.

If we have no answers, perhaps we should stop designing. Or at least have a rest; take a Sunday off.

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*Between cloth and body*  
*We are like a person*  
*Traveling in the wind's erasure*  
*Progressing in place,*  
*Where we were meant*  
*To withdraw*

בין הבגד לגוף  
כמו אדם אֲנַחְנוּ  
נָעִים בַּמְחִיקַת הָרוּחַ  
מְתַדְדָּקִים בַּמָּקוֹם  
בוֹ נִוְעַדְנוּ  
לְסִגָּת

# Data-driven Design

**Davide Barbieri**

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Facts are stubborn things.

—J. Adams, *Argument in Defense of the Soldiers in the Boston Massacre Trial*, 1770

In software engineering, top-down approaches were historically used to develop logical infrastructures. System architects started from an abstract idea that was refined into modular pieces of code. The initial concept was only in the mind of designers. Often, such methods failed to meet the end users' needs. Therefore, they have been overlooked in recent times, and more bottom-up, down-to-earth, software engineering methodologies have prevailed. The underlying idea is that a software architecture should solve some practical problems, usually allowing for more informed and savvy judgment.

Nonetheless, outside the domain of information technology, design has predominantly adopted a top-down approach: the *a-priori* idea of the designer is put in place and will eventually meet (some may say rarely) the end users' needs. Such a process may require a lot of trial-and-error. Creativity alone is the starting point, followed by the capability of turning it into something actionable. Observing the world—and the needs of those inhabiting it—is neglected.

The rationalists have a very strong argument against *observationism*, correctly affirming that one cannot just observe. One must choose what to observe. Attention is selective, and an observer always needs to adopt a specific point of view before observing something. In this sense, reality becomes a second-hand source of knowledge, used exclusively for the purpose of supporting the initial hypothesis. Ideas come from a Platonic world: that of *stricto sensu* intellectuals (as selfish as it seems). Quite paradoxically, in an age of materialism, matter-of-factness has little importance in the design phase of a project.

Nonetheless, even if designers always need a deductive *a-priori* framework, ideas cannot be used as an argument against reality in the way that idealists have the habit to affirm (e.g. the sentence “If facts do not conform to theory, so much the worse for the facts”, as usually in reference to Hegel). Design must meet the necessities of end-users, who are the real stakeholders. In logical infrastructures and in the accumulation of knowledge, a bottom-up approach should meet the (loose) top-down idea that necessarily preformed the designer's framework. Abstraction is used to filter the details of the problem at hand in order to make it more manageable.

In conclusion, some designers may be attributing to the ideal world—which nobody has ever inhabited—more reality than it deserves. And the previous paradox may in turn reveal its consistency: “materialism” is an abstract, hypothetical idea, far from the material world (as realism is from reality), and as such it fails to address most concrete needs, including that of physical well-being. A more ground-based, data-driven approach to design should therefore be considered if designers want to build more robust architectures that will endure the challenges of time and necessity. No doubt, ideas and creativity are still at the very beginning of the process, and nobody can get rid of them. Nevertheless, designers should be humble enough to acquire the necessary information by observing reality and talking to stakeholders—if they want to avoid building their foundations in the air.







# Subcodes in Linguistics and Design: A Comparison about Biophilia and Language

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An important principle of biourbanism is that nature and culture do not belong to separated aims but interact on a common ground, whose center is the human body.

After the great influence of Robin George Collingwood and of his idealism (Collingwood, 1958), 20<sup>th</sup> century critics tended to regard art and architecture as a strictly intellectual subject. The discovery of mirror neurons, on the contrary, witnessed that the visual experience of environments, objects, and depictions is at once always emotional and cognitive, and that every representation activates neuro-motor circuits. The so-called “neuroaesthetics” studies the phenomenon of the artistic representation with the support of the functional magnetic resonance imaging (fMRI). Such a technique shows, for instance, that looking at a representation of a suffering person activates the brain networks normally involved when the observer himself feels pain. Certain abstract pieces of art, e.g. Lucio Fontana’s “cuts”, stimulate the circuits that coordinate the same body movement the artist did while creating his work. On the other hand, the observation of Michelangelo’s “unfinished” Slaves (*Prigioni*) triggers neural discharges in the very same cortex areas connected to the movement of the body parts that seem to be struggling for setting themselves free from the marble (Freedberg & Gallese, 2007; Ramachandran & Rogers-Ramachandran, 2006). According to Vittorio Gallese, in fact human beings come to know the outer world by mirroring it into the dynamics of their own body. Such an “embodied simulation” generates an “intentional consonance” which autistic subjects typically lack (Gallese, 2003; 2006).

The isomorphic resonance involves the whole organism along with its intentional, cognitive, and emotional processes on an objective neurological basis. Physical-mathematical *optima*, the same that rule the physical, biological, and neural order measure such objectivity.

Evolution in biology has come a long way during the last decades, following the discovery and affirmation of auto-evolution and the laws of forms (Gould & Lewontin, 1979; Lima-de-Faria, 1988; 2012; 2017; Denton, Marshall, & Legge, 2002; Stewart, 2003; Gielis, 2003; Brown, West, & Enquist, 2005; Fodor & Piattelli-Palmarini, 2010). The role of chance and natural selection has been dramatically reconsidered, opening the gate to the second great revolution of the Darwinian model corresponding to the radical change that happened in physics after the advent of nonlinear dynamics of complex systems (Depew & Weber, 1995; 1996). Even genes have lost a great share of their centrality as axes of transmission of evolution because it is the physical-mathematical constraint (long before genes) that canalizes their function into the organization of the form (Lima-de-Faria, 1988). Unfortunately, Kaplan missed such information when, during his research on biophilia, he thought of referring to the primeval environment of the savannah as a ground for human design preferences (Kaplan, 1987). According to this author, human beings would feel attracted by certain forms because they recall the original African environment where our species has evolved. In fact the foundation has to be structural rather than historical, and it seems that it can be explained by cognitive reasons (Salingaros, 2010), possibly based on the homorphism between the brain structures and the environment after the so-called “laws of form” (Piattelli-Palmarini, 2006).

Notoriously, fractal features are common in nature (Hagerhall, Purcell, & Taylor, 2004; Taylor, 2006; Taylor, Newell, Spehar, & Clifford, 2005). These in turn are connected to the Fibonacci number and the golden rule (Snijders, 1993), i.e. the number that is the limit to  $n$  that tends to the infinite of the ratio  $P(n+1)/P(n)$  among two consecutive Fibonacci numbers.

The result is the outstanding presence of geometrical details in natural objects ordered in a self-similar and densely scaled way, e.g. arborescent structures such as trees, river deltas, lightning structures, or the rhythm of sea waves and of mountains peaks. René Thom, with his pioneering works, has shown that all natural phenomena share a substantially mathematical character (Thom, 1980; 1991, p. 77).

Studies partly explained the impressive spread of the Fibonacci series in nature with its optimality, for example in both phyllotaxis' packing and unfolding (Crompton, 2005). Seeds, petals, and leaves are packed and unfold in space with a constant angle of  $0,618034...$  (or  $222,492...^\circ$ ). Thus there will be 1,618... leaves at every turn (or 0,618... turns for each leaf), which means the best possible exposition to light with the less shadow from the above leaves—a splendid example of translation of a morphogenetic process into the morphofunctional level (Douady & Couder, 1993).

Finally, Adrian Bejan opened up a new field of studies after the discovery of the “constructal law” that unites the living and the unliving worlds by defining the time direction of all evolutionary design phenomena, based on a constant facilitation of flow access (Bejan & Zane, 2012). Shapes of things—no matter if artificial or natural—exist because they obey the flowing dynamic that shaped them by functioning through them. Think of the feature of an ocean wave. Its form is the result of a flow obeying the material constraint of a fluid pushed from wind into air. Design is intrinsic to the organization of matter, and the morphofunctional level of biology, including its periodicity, lies in the molecular and atomic level, as Lima-de-Faria puts it in his revolutionary works about evolution (Lima-de-Faria, 1988; 2012; 2017).

If one can be amazed by the constant presence of Fibonacci and prime numbers in nature, expression of a self-organizing morphogenesis (Douady & Couder, 1996), more impressive is the discovery of universal patterns and “spontaneous” irrational algorithms in geopolitics (Lotman, 1990, especially pp. 191–202), poetry (Duckworth, 1962; Pötters, 1987), music (Snijders, 1993), mythology (De Santillana & von Dechend, 1969), and linguistics (Carnie, Medeiros, & Boeckx, 2005; Soschen, 2006). How it is possible, if the free will of man is supposed to have created them?

Biourbanism, after Salingaros, has focused on the geometrical features in spontaneous urban environments and buildings. Biophilic architecture—from Bushmen huts to European Gothic—has in fact the structure of an authentic living language. It is organic, auto-similar, full, and coherent on every scale (Crompton, 2002), capable of bringing emotional and cognitive regeneration. So does the so-called “everyday urbanism” (settlements without urban planners), which exhibits an instinctive use of universal scales. Goldberger speculated that the fractality of Gothic architecture expresses some patterns of the organization of our brain (Goldberg, 1996) and found that fractal dynamics are an important indication of physiological health, e.g. in the cardiac rhythm (Goldberg et al., 2002). Yannick Joye thinks that fractal forms are effective in *art therapy* (Joye, 2006). Frances Kuo and William Sullivan noticed that when built environments lack natural features they trigger aggressiveness (Kuo & Sullivan, 2001; Kaplan, 1987b).

On the ground of researches that connect neurology and linguistics, besides general observations on the nature of the context (Lotman, 1990), we could link this biophilic design to natural languages. According to Salingaros (2010), anti-language design is usually achieved through anti-patterns, i.e. anti-structures unfolded from the deliberate destruction of natural patterns.



Piattelli-Palmarini and Uriagereka (2008) unveiled some algorithms at the basis of human language and offered some valid elements to sustain the hypothesis of a direct relation between the structure of language and the morphogenetic order of the neurophysiological structure. Here, I will try to reflect on such a match by confronting the results of their research to a seemingly unrelated work carried out by Christopher Alexander half a century ago.

Alexander and colleagues arranged a series of interesting experiments at the Center for Cognitive Studies, Harvard University during the 60s aimed at measuring the perceived coherence of patterns. Coherence was defined in operational terms as perceptual agility (Alexander & Huggins, 1964; Alexander & Carey, 1968; Alexander, 2002–2005, vol. 1, pp. 186–194; 449–457) and followed the concept of “center”.

According to Alexander, a “center” is an entity that, for geometrical and functional reasons, resonates with our perception, making a pattern “alive” (Alexander, 2002–2005, vol. 1, pp. 83–85). The more a place or an object exhibits centers, the more it feels alive and attractive to people. Overlapping local symmetries (distinct unities of symmetry within a whole) tend to produce centers and enforce the character of wholeness of the object or space within which they occur. For example, the façade of the *Zeppelinfeld* by Albert Speer with its monstrous and violent overall geometry lacks such a quality, which instead is abundant in the complex of the *Alhambra* in Granada, where the overall geometry is missing yet thousands of local symmetries rule the scene (Ibidem, 186–188).

As test material, the researchers produced 35 paper strips composed of 7 squares. Four of these squares were white, and 3 were black. The 35 patterns represented in the strips filled every possible reciprocal space combination (segments) of the 7 squares when connected.

The strips were given to different subjects for them to rank their “coherence” as patterns, and the results were significant: the “coherence” rank order tended to be roughly the same according to every different observer (see Figure 3). The correlation did not change by administering the test in different modalities. No matter if subjects were questioned about individuating the pattern “with more coherence”, or “with more structure”, or “the quickest to be recognized”, or “the easiest to remember”, or “the easiest to describe in words”. The recognition of coherence came out to be a very stable variable also when shifting to different cognitive processes. The same occurred when changing subjects. In the end, it is a matter of ease of perception, i.e. of rules in human cognitive processing or *gestalt*, and the result is no surprise.

It took four years of study, however, to understand that the coherence perceived by the subjects in the experiment depends on the number of local symmetries or subsymmetries that are present in the pattern and not on the lumpiness or the overall symmetry of the object. The latter contain the subsymmetries, which result as “hidden” because we are rationally used to focusing on the “major” features of an object. This was also true in the case of the extreme simplicity of the material used for the test.

Despite local subsymmetries are often far from being evident at first sight, Alexander found that in fact subsymmetries work as a “glue”. The more subsymmetries, the more solid and coherent is the resulting space or object. The more subsymmetries overlap, the stronger the glue, which is the more the space shows the quality of “wholeness” (or *W*). For making it easy to measure such a wholeness, Alexander proposed the following function, where  $S_i$  means subset and  $C_{\text{symm}}$  means coherence (“life”) of a given set  $R$  (in the specific experiment, the pattern):

$$C_{\text{symm}}(S_i) = \begin{array}{ll} 0 & \text{if } S_i \text{ is not connected} \\ 1 & \text{if } S_i \text{ is connected and bilaterally symmetrical} \\ 0 & \text{if } S_i \text{ is connected but not bilaterally symmetrical} \end{array}$$

In other words, the locally symmetric connected sets stand out as the strongest centers of  $R$  (Alexander, 2002–2005, vol. 1, p. 450).

The number of values  $S_i$  equal 1 in a given set  $R$  indicates the value of the “wholeness” ( $W_{\text{symm}}$ ). Now,  $W_{\text{symm}}$  has a predictive power about the way a set  $R$  will be experienced. The formula needs some adjustments, and the Author indicates two specific patterns: WBWBBBWW and BWBWWB (where W means white and B black). These configurations work as centers despite they lack symmetry, i.e. people recognize them as wholeness but the function  $W_{\text{symm}}$  does not. Nevertheless, the approximation is so good that the function  $W_{\text{symm}}$  is able to foresee (and partly explain) the way we experience patterns as wholes. Then, the approximation has been the subject of ulterior refinements (Salingaros, 1997; Klinger & Salingaros, 2000).

The fact that we can often miss the “wholeness” because of the rigid mindset imposed on cognition by our logocentric education reminds us of the teaching by Edmund Husserl (1954). The incapability of being non-judgmental (Husserl’s *epoché*) misleads our focus from certain characteristics of the experience toward others. Alexander suggests that it is exactly such a bias on perception of wholeness that is the main cause of so many architectural disgraces, where an intellectual superimposition interferes with the natural flowing of the cognitive process. Such a cognitive bias, according to the observations of the Author, especially characterizes adults and averagely educated people, not children nor mentally disabled persons (Alexander, 2002–2005, vol. 1, pp. 453–454). People schooled according to our logocentric and mechanistic culture, therefore, tend to miss the “wholeness” and to catalogue perceptual sets according to pre-formed, abstract, and arbitrary categories that do not match what Alexander calls “life”.

Let us now go to the biolinguistics research by Piattelli-Palmarini and Uriagereka (2008). These two authors also noticed the existence of optimal organizational patterns consisting of cognitively significant subsystems. They ground their work on the existence of relevant morphogenetic structures in biophysics, and manage to apply such an evidence to linguistic behavior. First, thus, they focus on the recurrence of the golden ratio in the ontology of phonological syllables.

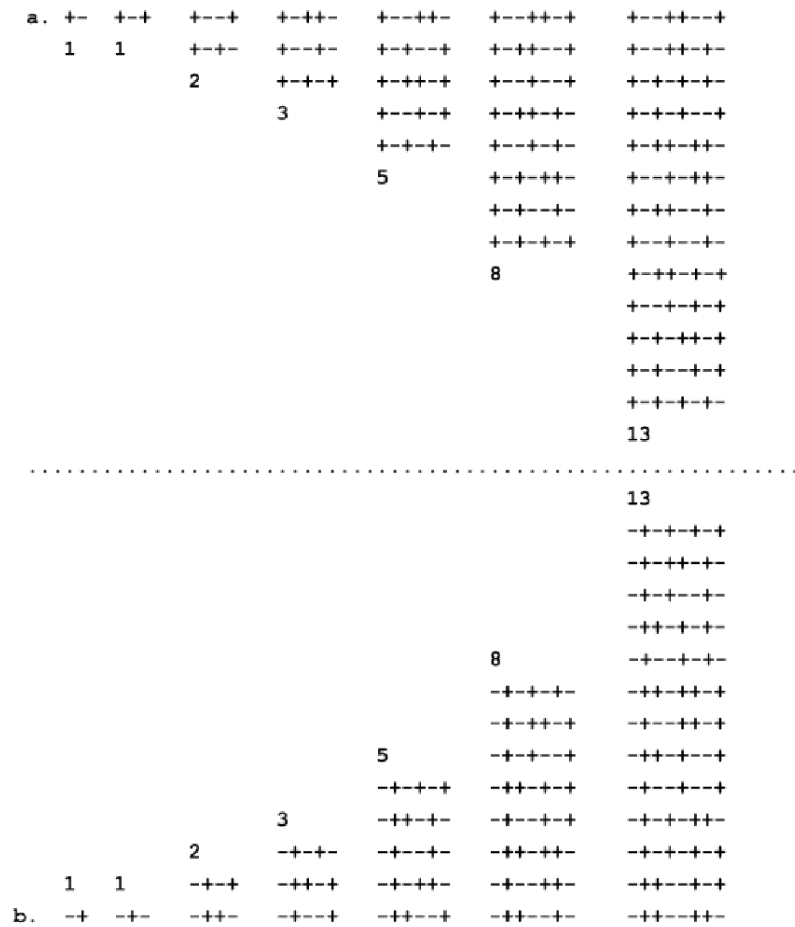
Not many people know that the set of vowels (V) and consonants (C) of every known language always follows a pattern of decreasing recurrence (Blevins, 1995), as below:

CV (and its stressed variant CVV)  
CVC (and its stressed variant CVVC)  
V  
VC

Languages do not recognize/accept templates as, for example, CVVVC or VVC. The above variants in parentheses appear only seldom and can be explained in terms of nuances of consonantic groups or vocalic coloritures. Some languages, such as Native American Klamath or Vietnamese Sedang keep the same pattern with the only difference that they do not have syllables without an onset (V(C)). Only a few languages work with just units CV, for example the indigenous Peruvian Arabela.

On the basis of this, it is possible to generate a binary optimizing algorithm, which Piattelli-Palmarini and Uriagereka call  $F$  because the number of its possible combination grows according to the Fibonacci series (Figure 1).

In the algorithm, the sign (–) means spaces and the sign (+) means boundaries:



**Figure 1.** F patterns emerging from the *F* game for 2, 3, 4, 5, 6, 7, and 8 symbols (Image after Piattelli-Palmarini & Uriagereka, 2008, p. 211).

As one can see, the series of spaces and boundaries obey a Fibonacci pattern, namely:

1, 1, 2, 3, 4, 8, and 13

The rules that produce such a curious development are simple:

- i) Beginning with either a + or a –
- ii) Concatenating it to another + or a –, at the condition of
- iii) Avoiding to combine identical symbols unless they are adjacent to a different symbol.

We can transform the above into linguistic rules, as follows (Piattelli-Palmarini & Uriagereka, 2008, p. 212):

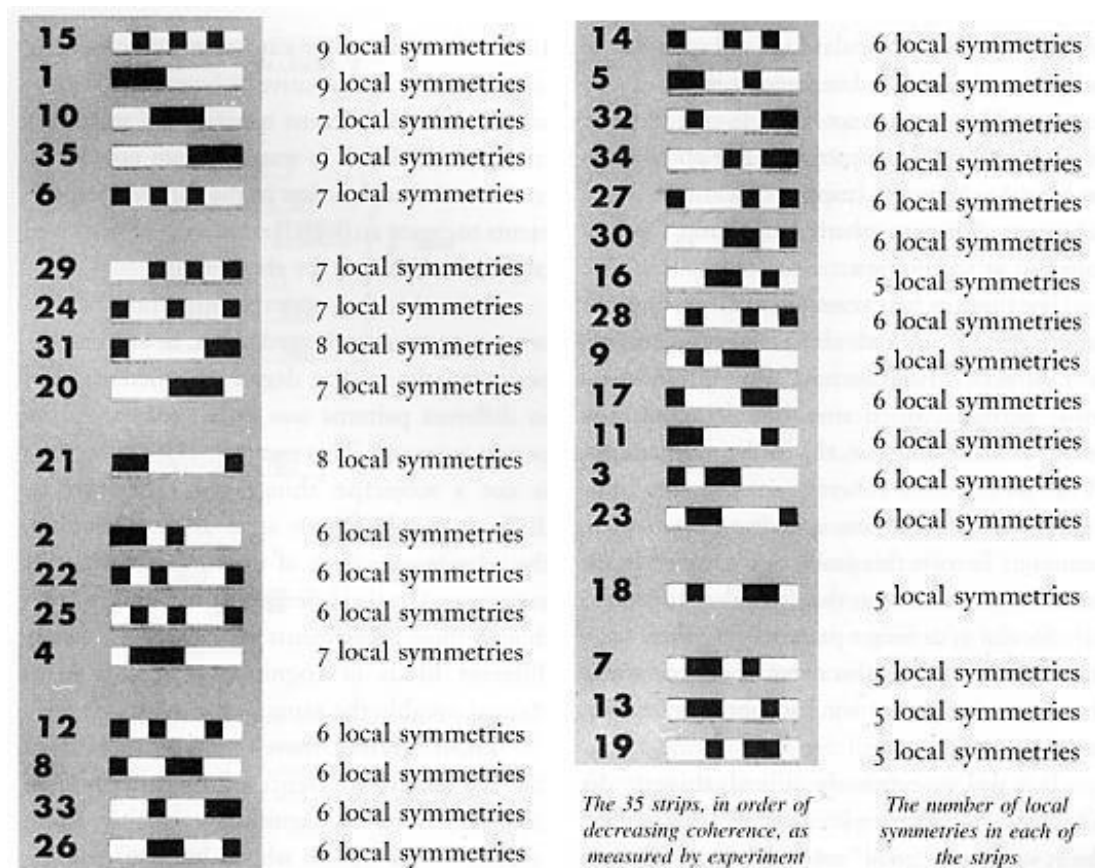
- i) Nucleus constraint: look for a maximal space. Then,
- ii) Onset constraint: try to assign an onset boundary to that space. Then,
- iii) Coda constraint: try to assign a coda boundary to that space.

The consequence is the following:



subsymmetries to the one that has less subsymmetries ( $W_{\text{symm}}$ ). The maximum  $W_{\text{symm}}$  value is 9 (above left), the minimum 5 (below right). If we compare this to the result by Piattelli-Palmarini and Uriagaereka, we find that their  $F$  game has generated sets with value 1 (“connected and bilaterally symmetrical”). The cognitive structural emergent property of the linguistic recognizability/acceptability of the syllables matches the bilateral subsymmetry that characterizes the centers of Alexander.

It is clear that we can formally compare only one out of the 16 columns of the  $F$  game to the set of strips given by Alexander, i.e. the sixth column, which is also the one composed by 7-element strings.



**Figure 3.** The 35 combinations (strips) of 4 white and 3 black segments in order of perceived intensity of wholeness or coherence (Image adapted after Alexander, 2002–2005, p. 189).

Therefore here we are with 8 sets:

- + - - + - - +
- + - - + - + -
- + - + - - + -
- + - + - + -
- + - + - - +
- + - - + - +
- + - - + + -
- + + - - + -

That is, by appropriately replacing the signs:

- a. CVV CVVC (7 subsymmetries)
- b. CVV CV CV (6 subsymmetries)
- c. CV CVV CV (6 subsymmetries)
- d. V CV CV CV (9 subsymmetries)
- e. V CV CVVC (6 subsymmetries)
- f. V CVV CVC (6 subsymmetries)
- g. V CVVC CV (5 subsymmetries)
- h. VC CVV CV (5 subsymmetries)

This set produces the following frequency values:

- For the sets beginning with (+) or C:

CV	4 occurrences
CVV	3 occurrences
CVVC	1 occurrence

- For the same beginning with (–) or V:

CV	6 occurrences
V	4 occurrences
CVV	2 occurrences
CVVC	2 occurrences
CVC	1 occurrence
VC	1 occurrence

- For all the sets:

CV	10 occurrences
CVV	5 occurrences
V	4 occurrences
CVVC	3 occurrences
CVC	1 occurrence
VC	1 occurrence

The match is striking. We can see the emergence of a structuration of cognitive “preferences” after order and frequency, congruent to the linguistic “preferences” that spontaneously self-organize in human languages. One could repeat the Alexander experiment with longer strips that allow for matching all the 16 columns of the *F* game, but this seems enough to me for showing an example of isomorphic patterns emergence in two distinct processes involving linguistics and design. Both of these processes lie in “cultural” but at the same time radically “natural” phenomena.

These morphogenetic patterns emerge in design, like in language, as subcodes rather than proscriptions. Biopractice in design is a repository and a creative forge of generative (connective) acts and rules that refer to and use these subcodes. It finds and respects the conditions of matching languages that in turn could be well unlimited in number. The presence of subcodes can be the mark of a design that performs well in relation to the environment, health, neuroergonomics, et cetera, because its order is likely to match the same constraints that it shares with the environment, our body, and our nervous system.



Design that instead breaks these patterns may feel as a linguistic “mistake” and a stressing improper element that the organisms refuse. Anti-language design is thus not a matter of style but of disconnection from these “hidden” subcodes.

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# Do Cities Become Smart?

T. M. Vinod Kumar (Ed.). (2017). *Smart Economy in Smart Cities: International Collaborative Research: Ottawa, Saint Louis, Stuttgart, Bologna, Cape Town, Nairobi, Dakar, Lagos, New Delhi, Varanasi, Vijayawada, Kozhikode, Hong Kong*. Singapore: Springer Nature Singapore.

## Review by William Arthurs

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How do cities become smart? Cities have always embodied (or in the case of the planned cities of the 20<sup>th</sup> century, were explicitly intended by their planners to embody) built-in intelligence about the best way to do at least some of the things that people in cities do: practical wisdom, for example, about situating certain trades in the same quarter, or an efficient topology of streets and alleys. What does the terminology of smartness add to this? One answer is that if smartness is limited to the domain of Information and Communications Technology, applied so as to be responsive to citizens' interactions with it, there is a possibility of devising investment appraisals, or other empirical tests of the incremental contribution that smartness has made to the overall welfare of city dwellers. Less promising, by contrast, is an implicit designation of smartness as a proxy for overall welfare, via the incorporation of a collection of factors that are always presumed to conduce to welfare (for example, certain environmental or governance factors): the distinctiveness of the concept is thus lost, and discussion of the smart city risks diversion into a fruitless argument about the definition of terms.

In the volume under review (more than 1000 pages), this question is left unresolved. Following a series of general introductory chapters, the groups of contributors discuss various cities or metropolitan areas around the world, to "show how smart cities promote urban economic development" (back cover), while each group is left to define smartness in their own way. Chris Webster, in the third Foreword, defines the smart city in a simple and promising way: "A Smart City is an IT-enabled city... A Smart City is one where ICT is used to reduce the costs of the transactions that are the heart of a city's life and economy" (pp. ix and xi). The introductory chapter by Vinod Kumar and Bharat Dahiya, however, goes to an extreme of inclusion with an extensive definition of the "Smart City System", which is described as built from the following components: "Smart People", "Smart Economy", "Smart Mobility", "Smart Environment", "Smart Living", and "Smart Governance" (see diagram, p. 12). The following five pages list the elements of each of these components: though they include criteria that are in line with Webster's definition, they also cover all manner of other unrelated criteria, whether relevant to general welfare ("Smart people maintain a healthy lifestyle", p. 13), or to specific industries which one cannot assume are salient in a particular economy. As examples of the latter: "A smart city is a destination that people want to visit (tourism)" (p. 13) and "A smart city has a vibrant downtown, 24 h and 7 days a week" (p. 15), which may well apply to world cities such as London, Rome, or Sydney, but not to, for example, the United Kingdom's garden cities or new towns such as Milton Keynes. A variant of this classification is applied by S. S. Govada et al. in chapters 6 to 10 about Hong Kong. These chapters comprise a summary history of Hong Kong's economic development since 1945, an assessment of Hong Kong as a "smart city" under the very broad definition mentioned above, a case study of the new CBD plans for Kowloon East and the former Kai Tak airport area (although this reviewer noted that the history of this development omits a crucial date—the airport closed in 1998 on its supersession by Chek Lap Kok airport) and concludes with a brief proposal for a way forward. In particular, the discussion in chapters 6 and 8, of the development of Hong Kong's state-controlled

public transport system and the broader growth in acceptance of Octopus, the stored-value ticket, for making low-value cash payments in the local economy, is clear and accurate. But there is an equal amount of discussion on pollution and the raising of environmental standards to enhance Hong Kong's livability without any specifically "smart" relevance. Also, it is worth noting that the criteria for "Smart Governance" raise the political question whether Hong Kong's level of participatory democracy (as expanded by Chris Patten, the last British Governor before 1997, and scaled back since then under Chinese rule) is genuinely effective. This is too charged a question for discussion here. The analysis that the reader might wish to see, instead, is comparative, looking at a range of bold, visionary state-sponsored technology projects, where participatory consensus may not be achievable, and which are undertaken on the assumption that the infrastructure will be needed in the future but will never be built if left to private initiative alone. An example of such a project, not mentioned in this volume, is Singapore's fiber optic network, initiated in the 1990s and now used for broadband. Where and how does one draw the line between building scalable technology infrastructure with a realistic plan for maintenance and upgrade, which adds genuine value to a city's economy—and the vanity projects that once typified the developing world in the post-colonial period?

In chapter 23, Antonio Caperna, Guglielmo Minervino, and Stefano Serafini set out to test the correlation between smart economy initiatives and economic growth by examining recent data for the metropolitan area of Bologna in Northern Italy. Admittedly, this exercise is complicated by the after effects of the world financial crises (2008) and the ongoing economic problems of the Eurozone. Bologna's "Local Digital Agenda" is congruent with the European Union's Digital Single Market strategy. A few examples of how ICT has been applied locally: residents' dealings with the municipality regarding public services—the use of ICT in schools—installation of broadband infrastructure—ICT applications to manage traffic flow and provide information about public transport and car sharing schemes—municipal geographic/cartographic information systems—emergency communications (for example in cases of extreme weather or natural disasters). These policies are, however, not a panacea for economic development, the authors determine, in view of "the obvious weakness in the quality of government policies and practices that appear to be hindering innovation in the region" (p. 647). To put it another way, at least some components of the typical smart city infrastructure may be prerequisites for economic development in the way that a functioning road network or a fair legal system is, but in the absence of other necessary policies they are by no means a sufficient guarantee of economic development. One suspects that, in many cases, the main economic development taking place is in the business plans of software vendors and management consultancies marketing "smart city solutions".



# A Mediterranean Social Builder from the 14<sup>th</sup> Century

Besim S. Hakim (Ed.). (2017). *Rules for Compact Urbanism: Ibn al-Rami's 14<sup>th</sup> Century Treatise*. Albuquerque: EmergentCity Press.

## Review by Stefano Serafini

*International Society of Biourbanism, Italy*

This short, important treatise has been written by the builder and master mason Mohammad bin Ibrahim al-Lakhmi from Tunis, also known as Ibn al-Rami *al-Banna* (*the builder*) or Mohammad *al-Banna*. We know that he was active between 1302 and 1333 AD, and that he was an authority among builders and men of law who often requested his opinion about neighbors' disputes and issues.

The first Arabic, non-critical edition of Ibn al-Rami's manuscript was published in Morocco by Majallat al-Fiqh al-Maliki wa al-Turath al-Qada'i bil-Maghrib, 2/2,3,4 (1982): 259–490; followed by two scientific editions: in Riyadh, 1995 by Abdul-Rahman al-Atram in two volumes, and al-Ilan bi Ahkam al-Bunyan in Tunis, 1999 by Ferid ben Slimane.

Professor Besim S. Hakim has been the first to recover Ibn al-Rami's work and edit it in a clear English translation by Mohd Dani Muhamad. In his introduction, the Editor explains why Ibn al-Rami's treatise is so relevant.

As *Journal of Biourbanism* readers know, Professor Besim Hakim undertook extensive research in Greek, Latin, Spanish, and Arabic sources and manuscripts for addressing building rules within Mediterranean societies throughout his entire career. Most of the relevant information on building rules is found in jurisprudence manuscripts, with the exception of sixth century Palestinian architect Julian of Ascalon (Hakim, 2001; 2014). That treatise documents building rules in a prescriptive fashion, i.e. it tells one what to do based on precedence and customs that are primarily regionally based. It does not articulate the principles that underlie the prescriptions. It also confines itself to the level of the building and does not incorporate streets and the urban fabric. It did however influence urban regulations, 377 years later, in Constantinople by becoming part of the *Book of the Eparch* and, by extension, other territories under Byzantine rule (Hakim, 2001).

The work of Ibn al-Rami collects the widest number of building rules from antiquity—the very same rules that kept spreading along the whole basin of the Mediterranean region from the sixth century AD to the beginning of the 20<sup>th</sup> century (Hakim, 2014)—and are of utmost importance for understanding the compact and sociogenetic fabric of Southern European, Northern African, and West Asian towns. Further, Ibn al-Rami was a master mason, not just a good theoretician. He interprets the teaching of books in the light of his builder's experience, and, most importantly, he adapts these teachings to the reality of his contemporary Tunis—one of the major Northern African urban centers at the time. His great practical competency about building rules is also demonstrated by his knowledgeability about several texts from the Islamic *koine*—namely the Arabian peninsula, Iraq, Egypt, Islamic Spain, and Tunisia—that had spanned for six centuries before his time.

The reader will notice how well this ancient builder was into laws and community rights. Among the puzzling issues that he deals with by taking care of the rights of all parties involved, we can list: growth in a compact built environment, walls, and neighbors' relations. His solutions support individual freedom but avoid harm and damage to anyone, with a very practical sense of justice and social distribution of that special common good that is the public and semi-public urban space. Ibn al-Rami teaches us a dynamic process in urban design along the flowing line of time. His solutions accompany the interests of property owners and inhabitants towards a never-ending process of adjustment and mediation. It is a civic language nourished by continuous feedback and initiatives that represent the participatory actions of citizens to the construction of the city.

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### ***Soon***

*Soon, and I will swallow  
seven souls, I will be a cat  
at night, shooting morning sparks  
through the yowling.  
Soon, and I will be swallowed up  
into whimsy,*

*I will be a pulsating spring  
free of the edge of the abyss.  
Seven breaths and I'm there.*

### **עוד מעט**

עוד מעט ואֶבֶלַע  
שִׁבְעַת נַשְׁמוֹת  
וְאֶהְיֶה לַחֲתוּל לַיְלָה  
מְתִיז גִּצִּי בְקָר  
מִבֵּין הַנִּהְמוֹת.  
עוד מעט ואֶבֶלַע  
בְּתוֹךְ הַגִּהְמוֹת  
וְאֶהְיֶה קַפִּיץ רוֹטֵט  
בְּלִי סֵף תְּהוֹמוֹת.  
שִׁבְעַת נְשִׁימוֹת  
וְאֲנִי שָׁם

# Free Soil Republic

Robert Neuwirth (2005). *Shadow Cities: A Billion Squatters, A New Urban World*. New York: Routledge.

## Review by Sara Bissen

*The Ruralist Body, United States of America*

Of course, we outsiders would find ways to discredit this free soil republic. We would call it a slum.  
—Neuwirth, 2005, p. 15

Robert Neuwirth is a journalist, investigative reporter, and community organizer who stands out, among others, for having collected years of research in squatter communities on four continents. The result is his book *Shadow Cities: A Billion Squatters, A New Urban World*. Neuwirth not only went through a deep archival tracing of squatter heritage but also shared life with the people described in his work by cohabitating with them. Hence, his writing is about how people thrive from their beginnings, through possibilities and limitations, and toward the tomorrows of life.

The book focuses on how people relate to land and housing in such an original condition, like the one happening at the borders (or at the dawn) of official cities. His writing presents different characteristics of settlements that share the “shadow” reality: “Four cities. Four countries. Four continents. Four cultures. One reality: squatters” (Neuwirth, 2005, p. 9). This is a difficult task if performed in distance—or in blind—as too many scholars and officials unfortunately tend to do.

Overarching generalization is in fact the original sin of institutions dealing with cities. Thus, in a time that asserts and exalts urban diversity as a slogan without acknowledging the growing worldwide typological homogeneity of the urban, it is not strange to see the denial of the real variances that traverse cities around the world—hence the shadow pointed out by Neuwirth. The Author found specific cases where a quarter of the earth’s inhabitants will soon be squatters (Ibidem) and identified housing criteria from the social creativity of long-established *favelas* in Rio de Janeiro and the construction of shanty towns in Nairobi, to the class organization of squatter communities in Mumbai and the political structure of the *gecekondu* in Istanbul.

Neuwirth published *Shadow Cities* 12 years ago, and its subject, heterogeneity, and epistemological strength make the book actual and relevant as when it was written. With a few exceptions, such as Christens (2005), academia seems to have not yet grasped its generative, crucial value. Neuwirth’s work, in fact, stands alone. Further publications on the subject have merely followed his footprints without the same existential, unbiased, and empathetic will of understanding that makes it an exceptional primary source.

The Author’s ability to be an independent observer and his passion for knowing the protagonists of such housing without objectifying them is, in my opinion, at the core of his epistemological sharpness. His analysis comes from a subjective, direct experience that is on a one-to-one scale with the people he meets. The Author’s contact with squatters collapses distance and reaches local knowledge on how people design and relate to land and their peers based on the authenticity of self-building their homes and lives.

Of course, from an urban point of view, the world considered by Neuwirth is inglorious. Dirt and lack of basic infrastructure—not to mention total absence of decorum and aesthetics, as meant by mainstream architects, may turn such a subject into something that many designers and urban scholars prefer to avoid.

Neuwirth is therefore an Author that unearths the overlooked. Beyond the usual historical and contemporary surface-level discussion on, for example, urban drift, Neuwirth shows the fundamental, generational link between rural anthropology and the creation of the urban, introducing the reader to somewhat of a meta-historical pattern. According to Neuwirth, “21<sup>st</sup> century squatter cities are positively medieval” and have always been present (Neuwirth, 2005, p. 179). The pre-capitalist medieval city, largely self-built by peasants, was dense both in its physical organization and in terms of a kinship-like social connection. Likewise, the crowded slums built by rural migrants at the border or in the belly of modern megalopolises, are free places characterized by strong social interdependence. Conversely, the design of the modern, capitalistic city with financial and so-called political stakes controls and actively destroys sociality in favor of an order based on political heteronomy, i.e. mere profit.

In that sense, even passive approaches to hide and diminish squatter communities hinder the positive (human and hence, political) values that Neuwirth rediscovered in shadow cities. As the Author observes, denouncing its contradictions, UN-Habitat has its own job “to end the medieval character” of squatter communities (Ibidem, p. 241) while claiming to protect people’s livelihoods. Therefore, after noticing the power of today’s squatters, Neuwirth asks how their strength might be visibly asserted as finance-centered cities continue their development.

The Author’s insight and inquiry into these questions highlight differing perceptions about land. Further, Neuwirth identifies the political power structure comprised of legality, social organization, and ideology to argue the role of squatters—grounded in the fact that squatters themselves are already challenging societal norms, perceptions, and even well meaning but mistake-ridden plans. This is particularly evident when Neuwirth examines the paradox that he identifies as “proper squatters, improper property” (Ibidem, pp. 281–306). Neuwirth advances the discussion to not just property, but possession. One example by the Author comes from Rocinha, the Brazilian *favela* that exists without titles but with “roof rights” where, layer after layer, building happens by selling the rights of one’s own roof in order for others to build up from the first story. As Neuwirth explains, “it becomes very much, in my mind, like a self-built version of the kind of Medieval or Renaissance Italian hill towns, where you get these strange towers and very convoluted street plans, and this reminds me of that” (Neuwirth, 2005b). Regarding land tenure, the Author’s investigation establishes an important consideration: “The legal instrument is not important” but “the political instrument is” (Neuwirth, 2005, p. 301). He continues: “Security, stability, protection, and control are what’s important”, and “when they [squatters] know they are secure, they build... actual control, not legal control, is the key” (Ibidem, p. 302).

Words are important. Media and academia are used to referring to these important and pervasive forms of settlement as slums (Davis, 2006; Gilbert, 2007; Braathen, Jordhus-Lier, Sutherland, & Dupont, 2016; Corburn & Riley, 2016). As Neuwirth calls them shadow cities, he sees in them, first of all, a powerful expression of freedom—in contrast to the self-declared, mainstream “progressive” agenda by important institutions (Bissen, 2017). For the same reason, Neuwirth tends to refuse common use of the expression “informal economy” when talking about a way of life that characterizes the squatters of shadow cities. Rather, he refers to System D—from *débrouillard(e)*, a word from French-speaking Africa and the Caribbean to describe the social and economic reality of resourceful, self-reliant people working to make a living (Neuwirth, 2011, p. 17). *L’économie de la débrouillardes* translates into what Neuwirth refers to as an economic system of ingenuity, a



“spontaneous system, ruled by the spirit of organized improvisation” (Neuwirth, 2011, pp. 17–19) assuming the dignity of half the world’s workers and an economy that, following the United States, represents the second-largest in the world (Ibidem, p. 28).

Critiques regarding use of the word “slum” are present in other writings but tend to be insubstantial and not based on the human value of the people living there. An example is “The Return of the Slum: Does Language Matter?” (Gilbert, 2007). This work discusses the 1999 UN-supported Cities Alliance “slum-upgrading” initiative called “Cities without Slums”. Gilbert argues that the UN should not employ the term “slum” because the word implies negative judgment about their dwellers. This would fuel the anthropological prejudice that is at the base of slum clearance. Despite that, much like the institutions he evaluates, Gilbert also sees slums as a problem and wishes for a change of their reality—he wants them to become like the official city. Gilbert does not seem to recognize the specific agency of people living in slums or squatter communities, and does not see their political and urban-generating value. Neuwirth, on the other hand does, and he does so by recognizing their freedom; similar to Pasolini when he denounced the way the Center assimilated the “real cultural models” of peasants, subproletarians, and workers of mid-20<sup>th</sup> century Italy (Pasolini, 2008, pp. 22–23). Gilbert’s attempt to de-stigmatize the word shows criteria that are as top-down as the institutions that he critiques and does not describe the experience of slums or squatter communities. Rather, he proposes standard adjustments to goals that turn out to be inaccurate when facing the concrete phenomenon of slums that in fact no one can control.

Speaking out against “slum” evictions, Neuwirth demonstrates that institutions and academia build rhetoric, not houses. People laboriously escaping homelessness need real words and real infrastructure (Bissen, 2017). Institutional top-down approaches to make things function are often abstract and inefficient because they are written far from squatters and move from an objective and objectifying analysis. Such a way of understanding, the way in which top-down governing bodies support the creation of distance from the reality of people’s needs, suggests that bureaucrats do not understand the meaning of the need for a house. As Neuwirth has identified, if squatters know eviction may happen, then they will not build for themselves. Inevitably, such a condition of uncertainty adds a social distortion that fabricates negative anthropological change.

Feasibility based on survival is an important housing criterion that Neuwirth observed among squatters. The consequent way of building, Neuwirth says, is “one wall at a time, and sometimes simply one brick at a time” (Neuwirth, 2005, p. 310). In contrast, feasibility for developers and bureaucrats means the symbolic gathering of heads of state and NGOs at the bird’s eye view, showing what kind of housing is desirable according to them—a point of analysis often based on aesthetics, spectacle, and political return from those who appoint them rather than on saving lives. The fact that “not one government in existence is successfully building for the poorest of the poor” (Ibidem, p. 301) is an effect of this.

Conversely, *Shadow Cities* relies on the way Neuwirth understands and shares at the same time. This is foremost—if there is no trust, there is no truth. The Author listens, and his point of analysis is to relate. He fathoms the words of squatters to write in recognition of squatter knowledge rather than in denial of their right to exist and of what they have to say. Broadly speaking, this way of relating to words is even reflective of how squatters build their houses. That squatters need to stay and keep building for themselves becomes thus a grounded evidence—an evidence that may be inconvenient and often too piercing for many housing activists, urban thinkers, and development professionals because of a narrow and unrealistic mindset (Ibidem).

To discuss the foundation of cities and how “all cities start in mud” (Ibidem, p. 179), one reality within the variance that Neuwirth found relates to the work of Teodor Shanin, who in *Defining*

*Peasants*, analyzed the mystification of the concept of “peasant” by looking at its epistemological root. Considering cities from medieval times through today, peasants do not “break any continuity of smooth gradations” and their heterogeneity is “doubtless” (Shanin, 1982, p. 408). They are people who keep going, according to Shanin, “while gradually transforming and linking into the encapsulating capitalist economy, which pierces through their lives” (Ibidem, p. 417), like squatters. In questioning the notion of squatters in reality, Neuwirth states, “to me, they are all squatters. But their experiences reveal that there are many different types of squatters, with different needs, different incomes, different aspirations, different social standing, different stories” (Neuwirth, 2005, p. 14). As Neuwirth demonstrates through a historical confrontation with his own home of New York City and the squatting foundations of the USA, Shanin also shows that “history adds its dimension of diversity, for even ‘the same’ would not be the same in different years, decades and centuries” (Shanin, 1982, p. 408). In yet another place, Neuwirth met his own environment and traced the history of squatting in what is considered the developed West to defy conventional thought about cities and wasteland.

Although one reality, each city has its own standing and trade-offs. The Author found subtleties in the concept of property, title deeds, and rights around the world because he asked precise questions to those who live the nuances. This slices rigid ideological perception. More so, Neuwirth asked himself why he had once written more about developers, designers, and planners who had “produced relatively little” (Neuwirth, 2005, p. 13) instead of the squatters who were doing the opposite. Again, the criterion originated from questioning. The Author states that he “began to wonder about the morality of a world that denies people jobs in their home areas and denies them homes in the areas where they have gone to get jobs” (Ibidem, p. 12) which in actuality is the fundamental ideology of modern urban zoning. Neuwirth then set out to ask incisive questions by speaking to the squatters themselves, local governments, and the organizations that work on urban development.

Instead of designing and planning for the sake of abstractions, it is useful to learn from Neuwirth’s real words and methodology. We can read of free people since the beginning of *Shadow Cities*. They are the ones who said “yes to Rocinha and Rocinha said yes back” (Ibidem, pp. 25–29), and they stayed. Neuwirth has realized that squatters have much to say. They are bringing a shift to the meaning of today’s city. Therefore, he concluded his book with one final question: “The squatters are ready. Are we?” It seems squatters are still waiting to hear yes back. Listening to human factors, sharing life, and understanding the reality and dignity of people who create for themselves should be the criteria for designers, planners, and urban thinkers and practitioners who want their work to support humankind. Neuwirth brought forth the political way of squatters. Dismissing the reality that Neuwirth found means refusing the teachings that squatters bring and therefore their way of building. Stepping away from the fabrication of ideas and design is a start. Those working on cities should support, not hinder, the people that are securing their life while building what the Author refers to as the cities of tomorrow.

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**NEWS**





## IN RECOGNITION OF THE FIRST HONORARY MEMBERS TO THE INTERNATIONAL SOCIETY OF BIOURBANISM

by **Stefano Serafini**

One cannot reduce biourbanism to design techniques, a tool, or a style. Biourbanism aims at a deep understanding of culture and nature as a whole, which allows for designing accordingly. It is about the human intentionality of the built environment.

Since its foundation in 2010, the International Society of Biourbanism (ISB) has had an honorary president—Prof. Nikos Salingaros, whose seminal works and insights inspired the establishment of our institution. Seven years later, the governing body of ISB—Antonio Caperna, president; Marco Casagrande, vice president, and Stefano Serafini, secretary general and research director—agreed to award the first honorary membership to three distinct scholars and practitioners for their contributions to both the understanding and realization of a biourban practice.

We are honored to welcome Prof. Arch. Besim S. Hakim (USA), Arch. Marwa Al-Sabouni (Syria), and Prof. Arch. Sergio Los (Italy) to our Society.

### **Prof. Arch. Besim S. Hakim**

Besim Selim Hakim, FAICP, AIA, graduated in Urban Design from Harvard University. He taught for 13 years at the Technical University of Nova Scotia, Canada and then in several Faculties of Architecture in the U.S., North Africa, and the Middle East. As an authority on traditional and vernacular design, he has worked with and consulted different cities. Prof. Hakim contributed to the 2014 ISB summer school on “Neuroergonomics and Sociogenesis” and has been a member of the scientific committee of the *Journal of Biourbanism* since its first publication.



His fundamental research on the codes that underlie the traditionally built environment of the Mediterranean region, namely Northern Africa, Spain, Italy, and Greece, has fundamental relevance. On this subject, he has published several seminal works. Among them: *Sidi Bou Sa'id, Tunisia: Structure and Form of a Mediterranean Village* (Hakim, 1978); *Arabic-Islamic Cities: Building and Planning Principles* (Hakim, 1986), and the ponderous volume *Mediterranean Urbanism: Historic Urban/Building Rules and Processes* (Hakim, 2014). The reader can find other valuable papers by Prof. Hakim at [historiccitiesrules.com](http://historiccitiesrules.com), a Web site worth several visits.

Prof. Hakim's work has received great appreciation from several scholars worldwide. Yet it has not had the large audience it deserves due to two elements as Abu-Lughod (1987), who had immediately noticed the high value of Hakim's work, foresaw more than 25 years ago. First, his

solid, objective research did not match the Orientalist fashion that had taken over the modern study and practice of so-called “Islamic” architecture (see discussion on this subject by Al-Sabouni, above). Further, his results were totally at odds with Modernism and its related real estate interests, which rather preferred to forget and even destroy the heritage of ancient Mediterranean building wisdom, calling it “barbaric”. An Author paddling against two significant fashionable currents at the same time, such as Orientalism and Modernism, and working on what most people think of as a niche subject, is not likely to become popular among mass publishers and average academics—no matter the value of his findings. The editions of Hakim’s books have thus lacked proper distribution or have been made too expensive for individuals. Paradoxically, while Prof. Hakim has been nearly left alone in his effort to understand and save the hugely precious heritage that is at risk of being lost, someone has even ventured to label him as “Orientalist” (Alsayyad, 2015, pp. 23–24). Such superficial judgment apparently does not understand that the Author’s admiration for the ethical ground of Mediterranean urbanism, which includes the important contribution of Islamic civilization, has nothing to do with what Edward Said stressed to be a Western projection (Said, 1978) and, on the contrary, has always been accompanied by genuine historical and philological rigor. One must say though, that despite every difficulty, the work of Prof. Hakim is finally becoming more and more renowned among a larger public, especially in Italy, where his ideas are receiving an especially warm welcome.

The codes pointed out by Prof. Hakim are a kind of “urban entelechies”. They come before the patterns proposed by his colleague Christopher Alexander, which rather are “formed forms”, structures after a goal (Alexander, Ishikawa, & Silverstein, 1977). Alexander too has a clear morphogenetic vision of the built environment, but he looks rather at the designed side of it (Alexander, 2002, vol. 1 pp. 371–402; vol. 2 pp. 508–510), while Hakim focuses on the underlying vectorialities (social, ethical, and functional) that may produce a certain formal order (Hakim, 2014). In fact, codes represent the link between the actual, social life of a city and its physical design. Urban codes are the invisible logic of a civic community that manifests itself through built forms, thus connecting the *civitas* to the *urbs*.

One of the most fascinating discoveries of Prof. Hakim relates to the fact that, for centuries, Mediterranean people shaped their own built environment bottom-up without blueprints by means of these powerful tools. They were capable of translating into urban forms the (changing, fluid) ethics and customs of their communities.

Prof. Besim Hakim’s work sheds light on a fundamental category of spontaneously built cities, as studied by biourbanism, i.e. their connection to the cultural layer of life. Nowadays we can find such a quality in slums more than contemporary cities, as also found by Alexander from an aesthetic point of view (Alexander, 2002, vol. 1 pp. 58–60) and by Neuwirth from an anthropological and political perspective (Neuwirth, 2005).

*The “graffiti meets fine art” portraits of Prof. Arch. Besim Hakim, Arch. Marwa Al-Sabouni, and Prof. Arch. Sergio Los for their International Society of Biourbanism honorary membership are by Artist James Wilson (2017, courtesy and copyright Stefano Serafini). The idea is to have the graffiti of Besim, Marwa, and Sergio on a wall from the people of the dispossessed cities of the world—i.e. from those who can appreciate their work more than developers, urban planners, and architects.*

*On James Wilson, see: Bissen, S. (2017, August 29). James Wilson—Newark, “when it’s your hood then you’ve never felt more at home”. *International Society of Biourbanism*. Retrieved from <http://www.biourbanism.org/james-wilson-newark-hood-youve-never-felt-home/>*

## Arch. Marwa Al-Sabouni



Arch. Marwa Al-Sabouni was born in Homs, Syria, where she lives and practices. She achieved a PhD in Islamic architecture and focused her research and disseminative activity on the stereotypes that affect Islamic design, among others, hosting the online *Arabic Gate for Architectural News* ([arch-news.net](http://arch-news.net)), which won the 2010 Royal Kuwaiti Salem Al-Subah Award for best media project in the Arab World.

The most interesting aspect of Arch. Al-Sabouni's work, according to ISB, is her capability of enduring the horror of the war that has destroyed her city, reflecting on it, and formulating a convincing analysis on how urban design played a role in such an outcome. *The Battle for Home* (Al-Sabouni, 2016) is the book that collects her questioning and thoughts on how architecture and urban design can destroy or strengthen a community and its sense of identity, and how this can lead to greed, selfishness, indifference, and eventually hatred—or rather, support inclusiveness, sociality, and compassion.

She has stayed in Homs for six years watching the war tear her city apart, and believes that architecture and a century of thoughtless urban planning played a crucial role in the slow unraveling of Syrian cities' social fabric, preparing the way for once-friendly, now-fragmented groups to become enemies instead of neighbors.

"The harmony of the social environment got trampled over by elements of modernity," says Al-Sabouni. "The brutal, unfinished concrete blocks and the divisive urbanism that zoned communities by class, creed or affluence." (Cook, 2016)

Her housing project for rebuilding the destroyed city district of Baba Amr, Homs, Syria won the UN-Habitat competition for the revitalization of Mass Housing.

Not by chance, Marwa Al-Sabouni is a fierce enemy of the external imitation of features and forms currently sold as "tradition" by too many designers. She knows that considering design a matter of mere aesthetics and decoration is all but a naïve and innocent stance. In fact, this means denying the social and political life of the city, substituting it with the apolitical agenda of profit and consumerism that will inevitably hollow the city leading it toward conflict and decay. Buildings have reciprocal relations and this produces cities. Cities shape our interactions and have an effect on our lives and destiny. Thus, their forms are a matter of substance, not of external features. Using *mashrabiah* and arches in order to allure people into a fake representation of identity is a further step towards the abyss of the loss of identity. The same can be said about whatever form we use for the sake of style—in short, when we use design to "dress" a reality rather than embody it, a deception that means division.

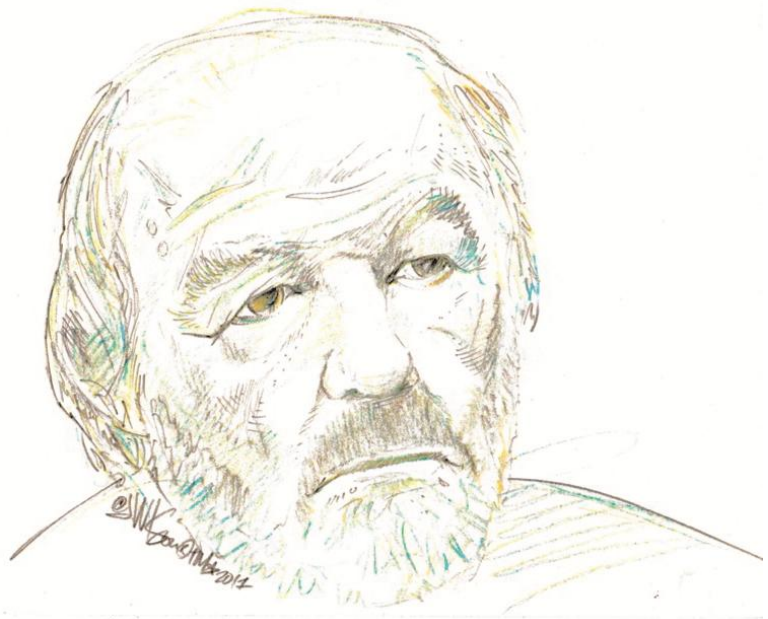
What is the right option for architects, then? Being themselves and connecting to the deep substance of the city they work in. In order to achieve such a goal, they must be locally rooted rather than international artists or show business stars, as many architects are nowadays, because understanding needs time, communication, love, study, and hard work.

Al-Sabouni shows that tradition is not mimicking. Rather, one has *to be* tradition, an active attitude that has nothing to do with imitation from the outside. On this subject, the Christian Orthodox Saint Silouan the Athonite offered a great answer to the hypothetical question: what would happen if all the written records of the Christian tradition were destroyed? The *staretz* said that there would always be saints capable of rewriting them when conditions permit because the written tradition springs from the depth of a real life experience (Markides, 2001, ch. 2). What would happen if all the architectures of the past were destroyed, as it happened in Homs, first with the French colonial urban plans, then with modernistic real estate development, and finally with war? The courageous answer of Marwa Al-Sabouni is: there will be people able to rebuild it because the human, ethical, and social substance of architecture is alive in us.

### **Prof. Arch. Sergio Los**

Born in Marostica, Italy, Sergio Los is the father of Regional Bioclimatic Architecture and one of the most interesting European thinkers and practitioners at the intersection of design, ecology, and politics. He is a retired professor of Architectural Composition, Interior Architecture, and Urban Planning at the University IUAV of Venice. He has served as the scientific head of several researches on sustainable design for the Italian Ministry of University, the Italian National Research Council, the European Union, and the International Energy Agency as well as directed Passive and Low Energy Architecture (PLEA), an organization promoting sustainable architecture worldwide, which honored him and his wife Natasha F. Pulitzer with the 13<sup>th</sup> PLEA International Award in 1993. Los also won the Wren Pioneer Award (Florence, 1998) and the Eurosolas Prize (Berlin, 2003).

Los studied at the IUAV University of Venice and worked with Carlo Scarpa, to whom he devoted four important books (Los, 1967; 1985; 1993; 1995). In his search for an epistemological criterion of design, he had inquired into the early Christopher Alexander, Lionel March, and Philip Staedman, and introduced their work in Italy with the first translation ever of *Notes on the Synthesis of Form* (Alexander, 1967) and *The Geometry of Environment: An Introduction to Spatial Organization in Design* (March & Staedman, 1974).



Prof. Los' ideas about bioclimatic architecture were first presented in "Un approccio bioclimatico al regionalismo architettonico", an introduction to the Italian translation of the homonymous work by

the Hungarian pioneer of bioclimatism and Princeton professor Victor Olgyay (1910–1970) (Cook & Los, 1981). He then unfolded and deepened his thoughts through several works, especially tackling the problem of complexity (Los, 1976; 2013; Los & Pulitzer, 1977; 1984; 1998).

Los has focused on developing an architecture that, like vegetation and fauna, adapts to the local environment and climate and takes advantage of natural energetic sources such as solar exposition, wind, and water streams. Hence, his idea of “building as farming”, and the attention towards the heritage of localism and regional traditions in architecture, which he sees from the point of view of their seminal, inspiring intuitions, and practical solutions (Los, 1990). Along his career, Los designed buildings and urban plans characterized by sustainability and resiliency from both the environmental and the civic perspective. Small, self-sufficient, and environment-preserving towns that can produce enough food and energy by themselves are, according to Los, the right places where deliberative democracy can flourish because their size and the necessary engagement of inhabitants in the daily urban management and design allow for the construction of a common language and an authentic share of values and responsibility. This reappraises the role of over-size profit that has hijacked modern and contemporary metropolises, where society fades in the heterodirect anonymity of individuals’ selfishness and solitude. The city envisioned by Sergio Los is incompatible with the actual capitalistic system because it does not sustain a never-ending production and consumption cycle but rather nourishes a “learning community”, which in turn is the only real subject entitled and capable of designing an alive and sustainable city.

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## ISTITUTO NAZIONALE DI BIOARCHITETTURA

by Stefano Serafini

With the aid of important colleagues such as Francesco Marinelli, the late Arch. Ugo Gaetano Sasso (1947–2009) founded the *Istituto Nazionale di Bioarchitettura* (INBAR) (National Institute of Bioarchitecture) in 1990 with the goal of revolutionizing the model of “ecological architecture” born in northern Europe during the 1970s. Such a model was mainly aimed at saving energy by means of design (*Passivhaus*, *ClimateHouse*, et cetera). According to Sasso—who was a disciple of Carlo Scarpa—a project cannot be considered truly ecological if, besides limiting consumption, it does not support an effective belonging of inhabitants to their physical, cultural, and social landscape. He thus envisioned an “Italian way” (or maybe better, “Mediterranean”) toward an architecture keen to life, which focuses on historical neighborhoods and rural towns, opposed to the “machine for living” proposed by LeCorbusier (Sasso, 2007).

Sasso unfortunately died prematurely in 2009, but his inspirational work and activities have kept flourishing thanks to his fellow colleagues and through his Institution, which has quickly grown to more than 40 regional branches, from northern Italy’s Veneto to the most southern region of Sicily.

Bioarchitecture aims to care for the health and happiness of human beings by means of design. It opposes modern real estate practices and their negative effects on the environment and the quality of people’s lives.

Nando Bertolini, Giulia Bertolucci, Anna Carulli, Paolo Fatticcioni, Federico Morchio, Erminio Redaelli, Serenella Salgarelli Mortani, Giovanni Sasso, and Stefano Tonelli recently edited the book *Bioarchitecture: The Thesis of Ugo Sasso Inherited throughout the Italian Way of Building Sustainably* (Istituto Nazionale di Bioarchitettura, 2017) that collects ideas and memories of the master.

The International Society of Biourbanism (ISB) has started a cooperation with INBAR. After giving a series of lectures on biourbanism for INBAR in Verona, Florence, Padua, and Alcamo, I joined the scientific committee of the Istituto and a research group that includes Arch. Nando Bertolini, Arch. Carmelo Celona, Arch. Giorgio Origlia, Arch. Cristiana Rossetti, and Arch. Roberto Tognetti with the goal of further expanding INBAR activity into the study of urban forms and landscape architecture.

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## FIRST MASTER IN PSYCHOLOGY AND ARCHITECTURE IN ITALY

by Stefano Serafini

After advocating neuroergonomics as a needed discipline for urban design (Serafini, 2013), the International Society of Biourbanism cannot but praise and support this new and important educative initiative. *Psicologia Architettonica e del Paesaggio* (Architecture and Landscape Psychology) is the name of a one-year Master course held by the Department of Psychology at the University of Padua, in cooperation with IUAV University of Venice and CIRPA (Inter-University Center for Research in Environmental Psychology, Sapienza University of Rome). The school is directed by Francesca Pazzaglia, tenured professor of Psychology at the University of Padua, with the aid of Arch. Oriana Giovinazzi. Specialized in spatial cognition, Prof. Pazzaglia is, with the other members of CIRPA, one of the pioneers of environmental psychology in Italy. She has the merit of exploring the interplay between the organization of space and the way our cognitive system extracts data from its surroundings (e.g. Pazzaglia, 2012; Carattin, Meneghetti, Tatano, & Pazzaglia, 2016; see also Baroni, 2008; Costa, 2009).

This Master course focuses on how the built environment affects people's cognition, emotions, behavior, and drives by providing students with theoretical knowledge in environmental psychology, practical design tools, and testing methodologies.

Internships are offered to students—one of them with the International Society of Biourbanism. The course is held in Italian in Padua, Italy and accepts a maximum of 27 students. Cost: €2,854.50. Students with disabilities pay €590.50.

For more information: [masterpsicologiaarchitettonica.psy.unipd.it](http://masterpsicologiaarchitettonica.psy.unipd.it)

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## A SCHOOL OF ARTISTRY IN SICILY

by **Ciro Lomonte**

Monreale, the UNESCO World Heritage site founded by the Normans during the 11<sup>th</sup> century, is one of the most beautiful places in Sicily, Italy, located a few kilometers from Palermo, the island's capital.

The Monreale School of Arts & Crafts has been established by Arch. Ciro Lomonte and Arch. Guido Santoro under the medieval Latin label *Magistri Maragmae* (“the master masons of the vestry”) with the goal of keeping the transmission of local art and craftsmanship skills alive.

The laboratories of the school are hosted in the former convent of Saint Cajetan and gather an impressive group of Sicilian *maestri* from several disciplines, such as: metalsmithing; stone setting; chasing; glass wall creation; plastering; marble cutting; sculpture; carpentry, et cetera. “It is urgent”, say the founders of the School, “that expert masters teach future masters those arts and crafts that have reached vertiginous peaks in Sicily”.

Intensive courses last one month, while the bone of the school is represented by its one- and three-year courses in gold and silversmithing; jewelry design; plaster; production and restoration of wood furniture; production and restoration of textiles; pottery; mosaics, and glass wall creation. Courses in CAD, 3-D printing, and photography are also offered.

For more information: [magistrimaragmae.it](http://magistrimaragmae.it)



*Cesello, Monreale School of Arts & Crafts. Photograph by and courtesy of Guido Santoro, 2011.*

## NEWARK WITHHELD

by Sara Bissen

Kevin Blythe Sampson introduced the *Newark Withheld* Artist discussion series with the International Society of Biourbanism in January 2017. This dialogue brings forth the sensitivity, perception, and multiple viewpoints of Newark's autochthonous artists as they witness the transformation of their city, Newark, New Jersey, USA. This process of understanding transcends the viewpoint of urban planners, designers, and strategists who rather tend to produce a finance-driven city.

The series extends from the photographic work authored by Cesar Melgar in "Newark" from the rural issue of the *Journal of Biourbanism* (Vol. IV, 1&2/15). Melgar's artistic work looks into the years of urban decay in Newark with the sense of an oncoming development that draws borders yet knows no bounds. At the same time, Melgar's "Newark" highlighted that these specific changes are not confined to Newark but in fact embody a logic that takes form in different times and places.

Kevin Blythe Sampson's interview includes a brief history of Newark since its founding just over 350 years ago. This history explains how his artwork belongs to Newark and is about reclamation. Kevin Blythe Sampson's art is made in the presence of reified social relations. He is aware of the exploitation of Newark artists by the same people who are waiting for the power to change the city. Recently, Kevin Blythe Sampson participated in "Rebel Clay", a clay as language exhibition at Cavin-Morris Gallery in New York City. The Artist is also working on an Art Wall with PSEG and the City of Newark Fairmont Station where he is building an 8 x 12ft boat. This project will include Manuel Acevedo, Jerry Gant, and other artists from Newark and around the world.

Gladys Barker Grauer (b. 1923) is thought of as the "mother of Newark artists" and has continued the series. She explained how Newark has long been a city of art and is a humane place to create. Barker Grauer's work is about the ingenuity of the homeless in their struggle to survive and has an important social drive. She highlights how the presence of two different conceptions of art, one based on market and the other based on local artists, creates conflict in Newark today.

Cesar Melgar is recording Newark before history repeats itself. Melgar has shown the calculated design of the symbolic character of capitalism that pretends as if nothing was ever in Newark. A Master Plan that markets Newark as a destination for consumption becomes similar to razing it to build parking lots.

James Wilson is a voice for the voiceless through matching graffiti and fine art. His work comes from a dispossessed youth and he defends his artwork against the hollowing of a community that is empty if working without compassion and empathy. Growing up around poor urban design decisions, Wilson has shown how to purposefully keep going despite parasitic politics and inauthentic viewpoints.

Manuel Acevedo's forthcoming interview will discuss Newark of the 1980s. Acevedo reads derelict landscapes and by seeing into them, he keeps part of what has been there and visualizes a new structure. From a place in limbo and from a place that is more than a city, Acevedo also observes today's ecstatic, out of place development. The Newark Museum recently purchased Acevedo's *Altered Sites* series from Newark's Military Park, 2004. In October 2017, he participated in *Art in Odd Places: SENSE* in New York City. The Artist is also working on an architectonic mural that represents the word "Newark".

In the months ahead, German Pitre will continue the *Newark Withheld* series that will conclude with a reflection on art and Newark by Lauren Sampson.

*Newark Withheld* series interviews: Kevin Blythe Sampson—“Newark is in danger because of its realness, power, and history.”; Gladys Barker Grauer—“Newark sensed it.”; Cesar Melgar—“Razing history to make surface lots is a famous Newark administration pastime.”; James Wilson—Newark, “when it’s your hood then you’ve never felt more at home.”. The series, plus a further study of Newark—on *Heterogenesis of Urban Decay* have been published on the International Society of Biourbanism Web site: [biourbanism.org](http://biourbanism.org)

*Next two pages, 4-image sequence as follows:*

Manuel Acevedo, *Military Park*, 2004, 11 x 14in print. Signed and dated (back of print). Gelatin silver print (Gift). *Revisions: Military Park #1, 2 & 3*, 2004, 11 x 14in prints. Signed and dated (back of print). Graphite, metallic pencil and ink on gelatin silver print. Courtesy of Artist Manuel Acevedo.









## ***The Last Dive***

*On that last dive  
do you remember  
the sea anemones?  
There was one that burned  
at the stake, burned  
with ignorance, repeating,  
repeating: I was meant to be,  
I was meant to be  
a cell carrying life.  
I convened with the priest of the deep,  
opening and closing,  
and when I opened up,  
bubbles of besieged fire  
conversed between us  
in wreathes of eight beats, in presto,  
and we shone in multiplication of breath  
we breathed in adagio,  
and when the second anemone opened you  
suckled from the sea.  
You said the sea, the sea  
you said is dwindling  
and you raised your arms,  
flung back to the oxygen of the people.*

## **הצלילה האחרונה**

בצלילה האחרונה  
זוכר את שושנות הים?  
היתה אחת בוערת  
על המוקד באי-הדיעה  
היתה חוזרת חוזרת:  
נועדתי להיות  
נועדתי להיות  
תא נושא חיים;  
עם כהן מצולות היתה מתוועדת  
נפתחת נסגרת.  
וכשהיתה פותחת היו  
בועות של אש מכתרת  
מכתבות בינינו נזרים במקצב  
שמיניות בפריסטו,  
והיינו זוהרים ברבוי נשימות  
ונשמנו באדג'ו,  
וכשבאה השניה לפתח  
היית יונק מן הים  
אמרת הים  
הים אמרת עומד להגמר  
ונבלטת חזק אל סמצן האנשים

## CITTÀ PASOLINI

by Ruth Pérez-Chaves

Since July 2001, I have tackled the subject of Pier Paolo Pasolini's filmmaking from the same critical perspective as I did for the work of Joseph Beuys in my PhD dissertation, which is to say: through a re-reading that leads to revisiting aspects missing in the current reception. To be specific, in the case of Pasolini, I proposed a methodology which addresses key aspects of the post-war socio-political context, by taking into account the experience of the reconstruction of Germany—particularly that of the era of the *Wirtschaftswunder* (economic miracle), when Konrad Adenauer was chancellor (1949–1963)—and the generalized historical amnesia associated with it. Because these features were generally ignored, in Italy as well as in Germany, Pasolini clearly intended to throw a significant light on them. He dealt with these matters in his film *Pigsty* (1969).

Due to the success of the *Pasolini Roma* exhibition in March 2014, I began to share some findings via social media, such as Facebook and Twitter. In 2016, I created a blog to make some of Pasolini's fundamental political and challenging newspaper texts, published the very same year of his murder, available online in an adequate English translation: [cittapasolini.blogspot.com](http://cittapasolini.blogspot.com)

My current research focuses on how to develop a new, better reading of Pasolini's last film, *Salò, or the 120 Days of Sodom* (1975), in order to identify his place within the controversies of the “concentrationary-cinema” genre and other visual representations of the Shoah.

*Città Pasolini* is thus a project, born March 2014, which aims to coordinate and conceptualize for the adaptation of the critical legacy of the Italian writer and filmmaker Pier Paolo Pasolini (1922–1975) to social media. It is about Pier Paolo Pasolini's intellectual legacy revisited from three fundamental themes and angles that are found in his work: Poetry, Politics, and Poverty.

Facebook: [facebook.com/CittaPasolini](https://facebook.com/CittaPasolini)

Twitter: [twitter.com/CittaPasolini](https://twitter.com/CittaPasolini)

*Next page: Wood. Photograph by and courtesy of Sara Bissen, 2017.*





## A CENTER FOR SPATIAL JUSTICE IN ISTANBUL AND BEYOND

by Sinan Logie

In recent decades, the megapolis of Istanbul has witnessed an impressive urban spread driven by neoliberal transformation processes. In this frame, a large part of the population, especially the ones living in shantytowns (*gecekondu*, in Turkish), which represent 60% of the urban fabric, have been put under pressure. Many governmental tools serve real estate developers' interests. As an example, we can note that in 2013, 60% of laws voted on within Turkish parliament were dedicated to land tenure. Even if financial elites are supporting these urban operations, more and more dissident voices in Istanbul are raising against these mutations.

Founded in 2016, the Center for Spatial Justice (*Mekanda Adalet Derneği*, or M.A.D., in Turkish) is one of them. This non-governmental organization, which counts 20 founding members, is composed of planners, architects, and lawyers dedicated to spatial justice issues. The center's main activity consists of publishing historical and contemporary news on related issues through its Web site: [beyond-istanbul.org](http://beyond-istanbul.org)

Moreover, the Center for Spatial Justice, led by urban activist Yaşar Adanalı, is developing different research and documentation activities that aim to support future studies on urban issues. In this optic, the Center has developed a public library that is open to scholars and activists.

Urban walking is one of the main methodologies of M.A.D. Every week, members walk in districts of Istanbul that are under threat of eviction. Video recordings of interviews with the inhabitants will soon be provided online to trace the historical memory of these neighborhoods.

Urban walks are also at the center of M.A.D.'s Summer School: "Urban Political Ecology on the Road", held every year in July. The Summer School mixes urban walks with lectures from academics working on urban and social justice topics and is open to students from all around the world seeking to mature their critical sight on urban issues.

The Center also provides assistance and courses to the inhabitants of areas in difficulties in order to help them develop their urban resistance processes. This part of the activity goes from teaching how to access and diffuse controlled information and extends to developing people skills to read and understand urban planning documents delivered by authorities.

Beyond its critical approach on urban topics, M.A.D. is working on an open access archive named "Hope Archive", which will soon be online. This archive will collect examples of positive urban transformations, mainly involving local actors in a participatory process. The Web site will be composed of a world map giving access to video archives featuring the processes and results of these positive examples, in the hope that they will spread around the globe.

*Next page: Photograph 1. Beyond Istanbul is documenting Istanbul's wild urban transformation. Photograph 2. Beyond Istanbul team with the inhabitants of the informal settlement area of Rumeli Hisar Üstü, archiving the neighborhood's mutations. Photographs by and courtesy of Sinan Logie, 2017.*





## A LETTER FROM 1067 PACIFICPEOPLE

by Andrea Haenggi

Dear Sara,

You ask what's new with 1067 PacificPeople. After 4 years and 8 months here, I'll tell you what I can. I have been thinking about what it means to keep up with the "body" of a location and how much it has changed and how much I have changed and how much more we could change even further and I'll tell you the new changes.

If you visited 1067 PacificPeople today, on this hot summer day in New York in 2017, you would enter the gate and the loud dynamic plants would look at you with a lordly air. These spontaneous urban plants grow stronger and every year, the novel ecosystem has more species than the year before. You would discover new weedy islands—areas where the plants have rooted themselves in cracks in the asphalt, establishing tiny new colonies. In these islands, *Artemisia vulgaris* (mugwort), with its hardy and adaptable rhizome root, remains the community organizer—but in a softer way, only growing to the height of a foot. And on these islands, it accepts being joined by *Artemisia annua*, *Bromus tectorum*, *Poa annua*, *Cirsium vulgare*, *Cardamine hirsuta*, and some mystery plants that I cannot identify yet because their seedlings are so young.

The weeds have told me that they are here because they can deal with human destruction. We—the plants and the humans—are in a symbiotic relation. We devastate the earth. They tolerate it, work with it, cleanse it. It is a process. We have an ecological friendship rooted in pollution.

Together—the urban weeds and me, I mean—we have also determined that 1067 PacificPeople does not just mean this one place. It goes out into the street, encompassing the cracks in the sidewalk and the dirt around fences, the people who live and work in the area, and more.

Sadly, if you visited today, you would find that almost all the auto repair businesses on the block—most of them Caribbean or African—have been evicted. Soldier—who had a thriving 24-hour tire repair business—was kicked out last year. Milton, a truck mechanic who was on the block for 15 years, had to leave his cabin and auto yard a month ago. For now, he is a block away, sharing space with others who have lost their leases, in a cramped lot without any shelter. Long range, I fear, there is no place for him in Crown Heights. Before Milton left, I went into his open yard and unearthed one of his spontaneous plants. I replanted it in our yard at 1067 PacificPeople. I have been thinking and researching if weeds can serve as a bio-cultural indicator of gentrification and inhuman systems. If weeds can be a decolonizing field, bringing embodied knowledge to the marginal landscapes they inhabit. If they, as immigrants, can join with us, as immigrants and outsiders.

1067 PacificPeople is also facing the same reality. Our lease runs out at the end of this year. The landlord will not renew it. I ask myself: are there any structural changes I can implement? To find the answer, I consulted the community leader plant *Artemisia vulgaris* for advice. *Artemisia* told me to be together with others in my research in the same way that plants have a close communion. So I held a series of meetings with other artists who have an interest in human and non-human relationships. Our gatherings resulted in the formation of a new collective called EPA—Environmental Performance Agency. We appropriated our name from the federal EPA, the Environmental Protection Agency that President Trump seems to want to kill. We are individuals who have come together. We are not a government agency. Our team is beyond humans, our team is the spontaneous urban plants, Carrie Ahern, Catherine Grau, Ellie Irons, Christopher Kennedy, and myself. Our slogan is be sensual, be scratchy, be persistent, show up. Our primary goal is to shift

thinking around the terms environment, performance, and agency—using artistic, social, and embodied/kinesthetic practices to advocate for the agency of all living performers co-creating our environment, specifically through the lens of spontaneous urban plants, native or migrant.

Things have already shifted since we all together take responsibility for the previous space of 1067 PacificPeople. This shift is exciting. So please come visit us. You can find out when we have our doors open at our Web site: [envrionmentalperformanceagency.com](http://envrionmentalperformanceagency.com)

It is true, as philosopher Isabelle Stengers has said, that the catastrophe is here. There is no way to put it back into the background, no way to imagine we can return to any “normalcy”. There is no recovery. Except to find multiple and diverse ways to re-imagine, re-inhabit a world where bodies, human and non-human, can find co-existence.

In weedy sociality.

Andrea



*1067 PacificPeople*. Photograph by and courtesy of Andrea Haenggi.







