

**Title – Environmental forms, from a theoretical perspective to concrete case studies in urban planning**

**Authors – Nathalie Blanc Director of Research, UMR LADYSS 7533[1], Frédéric Barbe, Assistant Professor, School of Architecture, Nantes[2]**

**Abstract** – Intersecting Environmental Humanities (HE) and the New Materialism (NM), this article proposes a specific approach to **forms**, **metamorphoses**, and **uncertain futures**. We favour an approach incorporating aesthetic dimensions, as well as theories from the NM, to propose the expression of “**environmental forms**”, in order to renew the often techno-centric environmental analysis and research in the field of humanities and social sciences. We intend to focus on the process of “**environmentalization**”, considered distinct from a usual definition of humanity as ontologically separate from other living beings, and ascribed in a traditional opposition between nature and culture. This process of creating environments means to build a system that unites the stakeholders with variations in time and space.

In a first section, we will discuss **the question of forms**, whose history is strongly associated with the history of art and aesthetics (Goethe, Kant, etc.). Secondly, we will try to highlight the contributions of authors referring to New Materialism literature regarding the issue of environmental forms. In a last section, we will highlight how spontaneous **environmental forms** such as community gardens, or animals in cities, as well as contemporary “green” urban planning is a way to co-produce “natureculture” in cities.

**Environmental forms, from a theoretical perspective to concrete case studies in urban planning**

This article spans the Environmental Humanities (EH) and the New materialism (NM) to offer an approach to forms, metamorphoses and uncertain futures. It favours an approach to forms that incorporate aesthetic dimensions and reflections and ideas from NM to come up with the expression of "environmental forms" that seeks to renew environmental analyses and research in the fields of the humanities and social sciences that are all too frequently techno-centred.

Today, we see that the notion of form can be confused, blurred by the **multiplicity of definitions**. Dominique Raynaud, in an article on forms, writes: "There are no less than eleven different roots for the Indo-European languages alone, three of them for Greek (*eidos*, *skhema*, *morph*) and three for Latin (*forma*, *figura*, *species*). The semantic analysis of these families reveals the diversity of approaches to the notion of form. " Briefly, he concludes that form is both the result of a manufacturing process, and is inseparable from a sensible act, from which both classificatory requirements

and normative axiological judgments proceed. In this article, we mean, by "form", any momentary (event) or lasting (entity) crystallization of a proposal of meaning and/or organized life. The forms thus conceived take shape via several processes: **creation**, **reception** (perception and appreciation) and **interpretation**.

Rich in its notional multiplicity, it is possible to think that the notion of form applied to the natural and constructed environment, subsumed by the expression of environmental forms, opens on the capture of phenomena as a co-production nature-culture, dynamic before being static and frozen, at the crossroads of meaning and meaning, theory and practice. The use of the expression of environmental forms (Blanc, Benish, 2016) opens up the metamorphoses of materials, collectives and individuals beyond bodies, as well as their plurality and diversity. Instead of returning to the oppositions inherent in modernity – nature versus culture for example, or local versus global – this reflection focuses on **social structures**, the "workaday" forms that turn inhabitants into genuine stakeholders in the political arena. This pragmatic approach focuses on what constitutes form, landscape, narrative, ambiance, when and how, in the sphere of an environment to be developed – what may be termed a "possibilisation of the world", or a policy set out in terms of creating life possibilities (Stengers, 2005 ).

The environment therefore takes on a new meaning. This alternative path **rejects a social constructivism** that confers a sort of pure power to conspire against the environment. **It also rejects a sort of naturalism** or realism that tends to entrust greater power on scientific objectivation to depict reality. This alternative approach borrows from research into agency and intra-agency. Therefore, the past and present relations of human beings to their environments lead them to co-design a world to which they can refer.

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## **Part 1 A brief history of forms**

Let us start with a few historical pointers. Although Aristotle and many others philosophers before him had tackled both natural and built forms from a philosophical angle, Goethe still remains a key philosopher of form. In particular, he dealt with this question in his key work, *Metamorphosis of Plants* in 1790. Goethean morphology relates to the way in which a plant is what it appears to be. This theory links the concept of phenomenal form (Gestalt) with formation (Bildung), formative force (Bildende kraft), drive (Trieb) and structures in the sense of relations between the whole and the parts (Petitot, 2010). The crux of Goethean morphology is that of an internal principle and

dynamic linking the whole and the parts in accordance with an unknown purpose. The problem is that the idea of connection between the whole and the parts still has to be shown and Goethe attempted to highlight internal principles that guide how plant forms. The idea of the spatio-temporal deployment of a basis of construction that obeyed both external and internal forces gradually took hold thanks to his work. Goethean metamorphosis therefore combined the regular and the singular, the generic and the specific, the collective and the individual, unity and diversity. In particular, metamorphosis helped explain the laws of variation between forms based on context.

The emergence of an analysis of forms also accompanies the thought of the autonomy of art and matters of the senses more generally. This conquest played on an aesthetic philosophy that had been partially thematised by Kant (*Critique of Judgment*, 1790). Traditional metaphysics considers that the sensitive is subordinated to the order of the intelligible. Works of art depict intelligible significations that give them all of their meaning. By contrast to this tradition, in his critical work *Laokoon, oder über die Grenzen der Malerie und Poesie*, [3] Gotthold Ephraim Lessing highlighted the **autonomy** of the graphic arts and asserted that they themselves were "arts of sensitive, spatially extended forms and qualities". The sensitive beauty of a work of art is in itself a metaphysical value just like good or evil.

## 1.1 Form and meaning

The argument goes as follows: all art, regardless of its underlying characteristics, harks back to a demonstrative form of the object concerned. The natural characteristics of the different arts, i.e., their perceptible and sensitive rather than their conceptual and intelligible qualities, cannot express general ideas as they have their own qualities - spatially extended in the case of the graphic arts and temporally constituted in the narrative and musical arts. This theory of **the immanence of art**, whereby art is endowed with meaning based on constraints imposed by transcendental aesthetics, results in a question that stands this approach on its head. How can we get from empirical (and perceived) forms to aesthetic forms rather than vice versa ?

Aside from the emotion and pleasure experienced from a work or situation, Goethe indicates that aesthetic feeling arises from the functional correlations that operate between the whole and the parts. Nature and aesthetics come together in a completed form to combine the rule and absolute freedom. Like Kant's third Critique, *Critique of Judgment*, Goethe establishes a deep-rooted identity between the living being and work of nature, and the work of art – product of human nature and therefore of nature itself. Moreover, he made form and its internal dynamics a force for organisation and an "intuitive concept" (whereas in physics for example, the concept is abstracted from the sensitive world). Form became nature's main subjective and objective principle of organisation, obliging us to describe what appears. Forms, their structures and the meaning attributed are **intermediaries between something**

bio-physico-chemical and the subject they express. For Goethe, beauty was even a manifestation of secret laws of nature, however, such beauty needs subjects that are willing to host it.

We should remember that, for the first time in the history of aesthetic thought, an immanent and systematic analysis of the functional relations of the whole and the parts forged the link with artistic and natural forms. This analysis was based on the relationships identified by Goethe: differences, oppositions, contrasts, symmetries and gradations... a *schema* was needed [4]. This intelligence inherent in the work was the key, or rather the meaning. This aesthetic theory went against the opposition to a nature that was objectified and nature as perceived by the human being-subject. Goethe enlarged the notion of nature to the point of introducing the world of organization and forms that culminate in the sphere of the senses via *processes of semiotization* [5]. This representation of the interiority of nature eventually culminates in the depoliticizing of all things social as power should be wielded by those likely to be able to decipher natural forms, i.e., scholars.

## 1. 2 Critique of Judgment

Kant's *Critique of Judgement*, which was also published in 1790, made forms its guiding principle. Because the forms of nature are produced by causes that cannot be reduced to either a pure mechanism or a teleology of nature, we have to be able to see in forms, a discrete and non-generic means of appearance, a principle of understanding whereby the spirit manages to subsume the individual within the general. We therefore need to be able to think about the contingency of these forms. The key challenge consists of defining *the possible conditions for phenomenality* depicted in physical objects of natural mechanics.

Now, even if Kant is deeply involved in an objectifying reading of nature, he makes of it a real manifest, a sensible spatiality. For Baumgarten also, author of the founding text of *Aesthetica* [6], beauty is a perfection of autonomous sensible knowledge relative to conceptual knowledge. This manifest reality, spatially extended, is formed and gives to feel feelings of pleasure or pain. The aesthetic nature of the object is the relation to the subject. In other words, the aesthetic nature of the object allows the subject to become acquainted with it. Beauty is the meaning or the signifying value that gives to experience the object. The perceived finality of the artistic or natural object, by its structure or its organization, allows the sensible relation to the affecting feeling. This structure and organization which appears as morphology, in the absence of any possible conceptual knowledge, is converted into aesthetic knowledge. Feeling of pleasure is an expression of the pertinence of the form with regard to the subject. This is reflective judgment. In fact, the form of the object is experienced twice: in its immediate perception as well as in the appropriateness experienced in terms of its vision. Beauty from a Kantian perspective is indeed bound up with the perceived purpose of forms

of the object. Aesthetic judgement relates not to sociology but is freely exercised by the senses and bound up with subjective purposes.

To take things further, we need to stress the fact that form constitutes a threshold between the objective and the subjective, **between the order of causes and purposes**, between theory and practice. Kant treats this key question as part of a theory of different cognitive faculties and different types of judgement. In **art**, it is human genius considered in terms of human nature that is depicted. In **natural beauty**, it is self-determined nature that transcends its own mechanisms that plays its role. This phenomenality of form is crucial for solidarity between a biological organisation and semiotic structuring. As such, forms create their own space and temporality, i.e., the time needed to become aware – via other non-visual senses as well (vision lies at the heart of Kant's aesthetic judgement; it is unlikely that the question of beauty for blind people occurred to him). Basically, we could say that from the 18th century on, aesthetics became an autonomous realm of knowledge, a scientific field of exploration of forms of the environment that developed independently of the history of art. Jacques Rancière highlights this change of regime from the consideration of the sensible: *"By borrowing the name aesthetics from Baumgarten to talk about the theory of forms of sensitivity, Kant essentially rejects what gave meaning to his whole theory, i.e., the idea of the sensitive as confusing intelligibility. And Critique of Judgment does not accept "aesthetics" as a theory. It only accepts "aesthetic" as an adjective that designates a type of judgement and not a realm of objects. It is only in the Post-Kantian context of romanticism and idealism, through the writings of Schelling, Schlegel or Hegel, that aesthetics have come to discuss ideas about art... [...] it raises "confused knowledge" up from a lesser knowledge to thought that is not thought about... In other words, aesthetics is not a new domain for designating the realm of art [...] it marks a transformation in the order of thinking about art and this new order is the arena in which a specific idea of thought is forged..."*, Rancière, 2000, p. 13[7].

How does this morphological theory inherited from natural history and aesthetic philosophy enable us to conceive of **a theory of environmental forms**? We wish to advance three main arguments.

**First**, "by countering a reductionist approach, morphological theories tackle forms at the organisational level at which they appear (Boutot 1993)[8]." Adopting a morphological approach amounts to embracing a qualitative theory that opposes techno-scientific approaches more focused on problem solving than on understanding phenomena.

**Second**, the morphological approach combines social and natural dynamics that are far removed from nature-culture distinctions. Geographic, discipline-based approaches are notably defined by "naturalness" / spatiality interactions that may be broken down into different processes and in line with processes of humanisation. In terms of spatialities, the *Anthropocene* forces us to consider both horizontals, according to geographers (Pinchemel, 1988),

and verticals, i.e. the bio-geophysical dimensions. We will analyse this process of posthumanisations (non-anthropocentric) via the environmental forms created.

**Third**, the morphological approach empowers the idea of structuring arising from art as well as the invention of the everyday [9]; "formativity" or "operative power" may be defined as follows: "Human activities may only be carried out by taking concrete form in operations, i.e., in movements intended to culminate in works; however, it is only by assuming form that the work becomes a work *per se*, in its individual and unique reality, detached from its author with a life of its own, contained in the endoconsistency, open to recognition of its value and capable of demanding and obtaining this [10]." Forming means doing but in a way that involves inventing a way of doing. This formula does not just concern aesthetic activity, but also various different domains of human and non-human activity. In art, this "formativity" is an end in itself [11]. This theory of "formativity" explains that it is not so much a matter of copying form but revealing the operational effectiveness of the rule, coupled with the dynamic production of the work. The true invention is underpinned by new rules and their possible reproduction. The rules for creating forms must also include an ethical as well as an aesthetic relationship as they are inseparable (Blanc, 2013 ; Guattari, 1995) .

Thus environmental forms open up possibilities for rehabilitating qualitative and aesthetic understanding of environmental problems.

## Part 2 New Materialism and Environmental Forms

The New Materialisms are a theoretical current associating researchers with diverse interests (theory of the actor-network, artificial intelligence, biophilosophy, evolutionary theory, feminism, neuroscience, post-humanism, queer theory, quantum physics and Spinozist momism...) preoccupied by relationships of matter and capacities for action shared or not by a multitude of humans and non-humans. The authors (Braidotti, 2002, van der Tuin & Dolphijn, 2010) refer to new ways of dealing with the issues of power and the structure of matter associated with socio-ecological dynamics and all kinds of ongoing hybridizations (Haraway, 2003).

### 2.1 From historical materialism on

Historical materialism has focused on the structured quality of materiality - its ability to freeze into economic classes, stratified work patterns, and practices of domination rather than exchange. Its political strength lies in its ability to expose hidden class wounds, global economic inequality and other unfair flows and sedimentation of capital. Thus, researchers working on the issue of the territorialization of individual and collective action and processes of environmental transformation have much to say about the scale and power relations as well as the deterritorialization processes associated with capitalism (Deleuze, Guattari, 1972).

A second phase of materialism concerns the taking into account of the human and non-human body and collective practices (Ingold, 2013, Abrahams, 2013). These works highlight the sensitivity of nature and biology to culture and expose how cultural notions and ideals are themselves incorporated entities and therefore materialities that can be reshaped through politics. In this sense, many artistic projects, involving the bodies, invite to reconstruct the idea of the subject and the relations subject-object and nature-culture, thus transforming the situated and incarnated experience into a reflexive process. In line with this evolution, research in the humanities and social sciences gives a more important place to artistic methods and techniques with renewed interdisciplinarity and in situ practices that take the name of research-creations (Blanc, Legrand, in prep).

As a result of historical materialism, the New Materialisms inscribe the elucidation of material collectives, of environmental forms, as new topos of action. Louis Althusser in the book "Ideology and ideological apparatuses of State (Notes to an investigation)" written in the 1960s (Cheah, 2010) that the ideology is not a false consciousness, but develops a material existence renewed daily in the practice of social practices and the existence of institutions. Ideology is a sum of ideas that structures the existences in society and governs the relations of the people to their environments. In this sense, materialism does not concern only the economic bases of the structures of production, nor even a sensual or material relation, but constantly renewed relations that we maintain with the materials that we produce and that produce us. Researchers committed to the redefinition of new materialities want to understand how landscapes, objects, objects, atoms, etc. (all material elements) are inextricably linked to lifestyles, sometimes without the actors themselves becoming aware of them.

## **2.2 Three major preoccupations**

For us, concerned with the question of the environmental forms and the metamorphoses, the meeting with the works resulting from this current was made around three major preoccupations.

First, our main concern is no longer about things and their definition, but about the environmental forms that will be considered in their sensitive and dynamic dimensions. Secondly, the place given to agencies and intra-agencies also refers to the preoccupations at the origin of a reflection on the environmental forms. In this sense of agency, ie of an ability to act that takes into account all living beings (and not only human beings), but also things and events according to the powers that we recognize that agency is a conceptual expression defined in particular by Gell (1998) who explains (p.13) that "the material part, the material index (the visible, physical thing) authorizes a singular operation of knowledge". This operation of knowledge makes it possible to produce causal inferences, or an inference concerning the person or the thing at the origin of it, as well as deductions on the events linked or

caused and explanatory reasoning. The study of these phenomena makes it possible to analyze individual and collective relational configurations.

Prolonging the reflection on agency, and transforming this idea into the conceptual expression of intra-agency Karen Barad in *Meeting the Universe Halfway: quantum physics and the entanglement of matter and meaning* (2007) criticizes the tradition of metaphysical individualism, in favour of the exteriority of relations. The author considers that objects, on the contrary, emerge from intra-actions :...*the primary ontological unity to be phenomena, rather than independent objects with inherent boundaries and properties (...) Phenomena are the ontological inseparability of intra-acting agencies. That is, phenomena are ontological entanglements.* (p. 333)

The question of forms thus evoked refers to a conceptual vision of the unprecedented environment: the taking into account of the sensitive, and the intra-acting evolution of environmental forms, temporarily updated and perpetually renewed. This is why environmental forms are not apolitical assemblages of humans and non-humans (as in the Actor-Network Theory including its recent developments, Jacobs, 2011), but the material-discursive virtualities of political individuals and collectives, ie the result of a choice in terms of organizational forms : « object and subject **emerge** through and as part of the specific nature of material practices that are enacted. (p. 359)» In this sense, environmental forms refer to knowledge and know-how, as well as to intentions and natural process. They proceed from the thought of the sensible and the manifest, which leads to rethinking what is to be shared from the natural and constructed environment and the modalities of this sharing.

The result of intra-action - as opposed to interaction - is not merely to qualify in terms of materiality, but also forms with potentialities, crossings of meaning and senses (Massumi, 2008[12]). Consequently, environmental forms inevitably refer to both the material-discursive intertwinings at their origin, and to the potentialities and evolutions, even metamorphoses.

Thirdly, these environmental forms must be analyzed in their multi-scalar and multidimensional, geographical, sociological, biological, economic and political complexity. It is a question of echoing the work of K. Barad on "diffraction", an example of a methodology which consists of reading the phenomena through each other, and reading the entanglements of scales more than a reading. wisely spatialized according to a metric that has become insignificant. Authorizing a multiplicity of entries and scales in the analysis of the phenomena, it is a question of giving an account of the way the current practices, that of the mushroom gatherers who think themselves free while they are subordinated to a capitalism (Tsing, 2017), as well as pests and farmers who continue to spread pesticides, knowing they are dangerous to their health, are part of multidirectional stories, and their emerging qualities. These stories are those of these people and their reasoning, but also those of logics of exploitation, alienation and economic accumulation in which they are inscribed. The dynamic nature of these stories undermines any conception of a decisive socio-economic structure that shapes bodies or subjectivities. The



ways of exercising power must be examined from a variety of situations and contexts that stress time and space (Fox, Alldred, 2015).

The expression of environmental forms is therefore the heir of many theoretical and empirical traditions. In this case, it is necessary to understand the forms as bio-physico-chemical arrangements borrowed from local history and policies, but also from the intentions and know-how of actors and local residents. Whether one speaks of the pack ice or of the earth, of a shared garden or a landscape, a story about nature or an ode in the sight of a flower, all of these environmental forms make sense of what the environment means, in the sense of non-linguistic semiotics, i.e. significance, and its relational character.

### **Part 3 Two case studies: bottom-up and top-down environmental forms**

We now wish to present two case studies intended to illustrate this question of forms. The first is located in Montreuil, one of Paris' inner suburbs, and the environmental forms **resulting from popular mobilisation**, a bottom-up movement, while the second focuses on greenways and wetlands, an environmental form that **emerged from the heart of a top-down public policy**. **The following case studies have tested these theoretical remarks**. Our work to evaluate the environmental forms of the city of Montreuil inscribes the latter in a **co-production** from which emerge environmental forms of all kinds, spatialized, but also narrative, cultural from which proceed know-how and visions of the world. The latter, green and blue, are **the result of public policies** and are part of an expansion of the register of connectivity.

#### **3.1 Montreuil, a suburban city**

Montreuil is currently the second-largest city in Seine-Saint-Denis *département* with over 100,000 people living in nearly 900 hectares. It is an inner suburb with a strong horticultural and industrial past that has densified and been radically transformed since the deindustrialisation of the 1970s. The different names for Montreuil are a testimony to this multi-faceted construction of an extensive and complex social and urban fabric in Eastern Paris straddling major motorways and lying at the end of Line 9 of the Paris metro. Montreuil-sous-Bois, Montreuil-aux-Pêches, a traditional "red" communist bastion, the 21st *arrondissement* of Paris (there are only actually 20!), the second capital of Mali, as well as Bas-Montreuil and Haut-Montreuil, just Montreuil or, at various other scales a slew of local neighbourhood names (Morillons, Croix-de-Chavaux, Lanoue-Clos Français, Bel-Air, Murs à pêches, La Boissière) and street names (rue de Paris, rue de la Montagne Pierreuse, rue Saint-Antoine, etc). So it is definitely a very distinct city suburb in terms of certain socio-economic features: working class, creeping gentrification, multi-

cultural, young, precarious and strongly linked to artistic and cultural professions.

This city has developed a strong environmental policy that has allowed the recent landscaping developments of its urban space in its horticultural history. Apart from language (a vocabulary and its own expressions) and street names or neighborhoods (inspired by the names of gardeners or sites), the landscape of the city is strongly marked by this past, notably by its fragmentation of the plot in length, as well as by its multiple paths and walls. Under strong land pressure because of its proximity to Paris, the city nevertheless managed to obtain an urban landscape charter during public workshops from 2011 onwards, and has put in place various tools for protecting ordinary natural in particular, through the call for citizen consultation and participation. Thus, the city of Montreuil has set up a **photographic observatory** of the landscape with the help of the Ministry of the Environment which aims to constitute a background of photographic series allowing to analyse the mechanisms of transformation of the spaces since 1997. This a photographic game that invites you to take a step back from everyday life has enjoyed great public success and was published by the Musée d'Histoire Vivante in Montreuil under the title "Consciousness of a landscape". Landscape immersion through sometimes naturalist photographic walks or school trips has made it possible to highlight the sensitive dimension of the urban space. The views were marked, as were the green public spaces. The greening program has been broken down into two types of proposals: the creation of shared gardens (collective gardens supported by an association, a charter signed with the town, which commits to gardening that respects the environment and a regular opening of the land) for fallow land and open spaces of more than 150 m<sup>2</sup>, or allow inhabitants to maintain so-called "residual" spaces (small spaces awaiting development, unmanaged planters, foot of trees) by planting seeds, flowers... The city can, depending on the case, dig bleeds in the pavement macadam.

These approaches and this municipal voluntarism explain, in part, **the idea of analysing the environmental forms of this territory to understand the mechanisms of valorisation of the environments**. The contemporary policies of ecological urbanism give an increasing place to the idea of **participation** of the inhabitants, **consultation**, but also **co-production**. The aim of the study was to devise a more comprehensive approach to cultural ecosystem services based around environmental forms and their contribution to territorial "habitability" – i.e., removed from a purely pecuniary approach – in all the geo-historical richness of a diverse, changing Parisian suburb. The questions initially put in the field and to stakeholders (inhabitants, elected representatives and professionals, but also to non-humans) can be written as: **how does nature make culture in Montreuil?** How does nature make Montreuil inhabitable? We have considered the environmental forms observed on the ground, which have evolved in recent years under the pressure of ecology, as constituting moments and landmarks in the fabric of an ecological urbanism. We will examine, in succession, the wastelands transformed into communal gardens,

the pots of plants deposited here and there in the public space, the fruit and vegetable stalls often ignored as forms of nature in the city, and the forms of intermediation that are the living animal species in the urban area of Montreuil.

These comprise primarily wasteland transformed into communal gardens. A significant quantity of "pending" wasteland (awaiting designation) is dotted around the landscape of Bas-Montreuil. Many built plots have been demolished because they were insalubrious or dangerous or to prevent squatting pending a development project – Montreuil is and was prime squatting territory. These surplus spaces worry residents and are a blot on the overall appearance of well-planned neighbourhoods. The city "unravels" in such places. Certain derelict plots look like islands inserted into an expanding urban fabric. Plots with no design whatsoever emerge in the heart of built developments. Hybrid fringes – somewhere between nature and a built environment – create rural spaces that straddle land that has been colonised by major urban projects. Wasteland with their novel species, old stonework and waste are sometimes forgotten objects in the middle of patrimonial or renovated developments. Abandoned wasteland scattered throughout the national territory is often legally invisible. Consequently, tens of thousands of hectares disappear from the maps and coffers of institutions as a result of the powerlessness of a system that is a prisoner of its own abstraction (Degeorge, Nochy, 2009).

Some of this wasteland is used for communal gardens at the initiative of the City or inhabitants themselves but many plots lie idle to be recolonized by uncontrolled vegetation. The temporary communal garden solution appears to have been considered as a means of participative management as well as a social demand for nature in the locality and outdoor sociability in a place that is **neither public** (fenced off and usually locked) **nor really private** (access may be obtained and is usually organised by the City), but which is "outside". We may imagine that one or the other of these actors (i.e., the City and its inhabitants) leads the other in a joint initiative that is at least temporarily in the interests of both.

This dynamic interacts with other lesser forms of greenery present in Bas-Montreuil, mainly comprising: potted plants on footpaths and the terraces of cafés and restaurants, flower beds and vegetable plots ("amazing edible" type<sup>[13]</sup>), creation of collective composting initiatives by associations, planting flowerbeds along sidewalks by taking out 20 cms along garden walls (with the City's permission), performative / educational use of wooden fences to regenerate a large number of small natural spaces, sometimes created by road improvement schemes ("PEPA", a French acronym standing for alternative small public spaces), road closure and green pedestrianisation. These environmental forms of social mix in Bas-Montreuil have been driven by the sociological transformation of the neighbourhood.

Referring to street hawkers' fruit and vegetable stands both restores the place of a certain form of little-observed "nature in the city", albeit a moribund nature on the verge of being devoured or decaying (or a new life). It also refers to nature dealt in by small business (or even very small informal vegetable selling businesses that are far less popular with the authorities). In order to treat our small businesses seriously, we asked them the appropriate series of questions. **Do these tradespeople make Montreuil a more liveable place by giving such prominence to fruit and vegetables in public spaces? Is this nature turned into culture by virtue of a professional activity?** When asked (very brief) questions about their stalls, street-sellers talk about tradition and something obvious that does not have to be justified. It's their job: "this is what we have always done". Does public health awareness threaten these ways of presenting natural produce?

We must also take into account the numerous living species present in the urban spaces which constitute intermediary environmental forms from a relational standpoint, somewhere **between "wild" and "domestic"** (parks, squares and gardens, pets and farm animals). These are common species in their commensal and well-accepted form: cats and pigeons as well as "wild grass" in its maximum extension, i.e., the *tiers-paysage* (third-landscape) seen as a combination of spaces comprising free nature and its movements bounded by anthropocenic constraints. The "free" animal is a "mongrel" category, meaning the accepted animal, frequently tamed (or tameable), but neither completely domesticated nor returned to a "wild" state. In other words "free" but possibly "alienated" from man (commensal, vaccinated, tattooed, sterilised, ringed, fed, housed, arrested, released and sometimes violently eradicated, etc.). Wild animals in the city, wild grasses, so-called "invasive species", an autonomous biodiversity, etc. conflict with modern standards of management, particularly all forms of public health awareness, cleanliness and order together with **mineralization and waterproofing of contemporary urbanism**. Indeed, these products of modernity are always visible. For example, in contrast to trends observed elsewhere with regard to Montreuil's urban policy, renovation of the town centre has resulted in a new Place Aimé-Césaire that is highly mineralized and "nature-poor", surrounded by store franchises that contain much more artificial plants (in the pizzeria for example) than natural ones. Rue Lumières the nearby pedestrianised shopping street has been developed in a similar manner.

The work carried out by associations focusing on "stray cats" which have now become "free cats" under the law (Article L211-27 of the French Rural Code rural, 1999) and due to changes in representation and practices, as well as on pigeons is more diverse and creates less of a fuss. But it is still just as important, given the role of pigeons and cats within the city. Part of this experience with associations is based on a long-standing professional investment in animal shelters backed by the strong grass-roots practice (measured pleasure during a long trajectory) of people and of animals. Native

involvement appears strong in terms of spatial grounding, Bas-Montreuil, a *Montreuil* childhood, a neighbourhood; and social in terms of commitment to voluntary activities, political outlook and enthusiasm for equal dignity for all stakeholders. The two associations are renowned throughout part of the Paris suburbs (a population centre of around 500,000 people) for providing local authorities with a range of services for "well accepted" and "well organised" animal populations to facilitate emotional ties instead of gung-ho hygienist initiatives (eradication, "cat disinfection"). For example, for cats, they offer actions to regulate populations (sterilisations) and track spatial redistribution (tattoos, animals released near the place of capture, network of feeders, cat shelters, welfare surveillance, awareness initiatives).

For pigeons, the task involves first becoming more familiar with and promoting awareness of populations and their living conditions, before coming up with solutions adapted to each territory along with local stakeholders (building nesting boxes and dovecotes, sterilisation, pigeon spikes, organisation of feeding). The terms "ecology reconciliation" and "**urban ecology**" are used in flyers. In Montreuil, we took a trip around the cat shelters: first an "invisible" and no doubt illegal shelter and then another that has been negotiated with great difficulty with the local council. Conventional relations with Montreuil Council fell victim to the arrival of the administration of Mayoress Dominique Voynet which has resumed traditional eradication practices according to the association. From the outside, these two associations along with *la bergerie de Bagnolet* would appear to point up conflicts between the quality of certain local initiatives and the difficulty in gaining recognition *in situ* from the institutional stakeholders of the commune in question, which for us is a contributing factor in the whole question of "lack of social trust". The question posed could be, in our opinion, cats and pigeons are they too popular for biodiversity? The latter sheds interesting light on the positions of the two associations – "**elitist** biodiversity vs. **popular** biodiversity" – and the necessary blurring of the hygienist/harmful versus useful dichotomy. The association notes that it works much more with the hygiene service than with the environment department of the various communes. The experience also shows that these animals are helped especially by people from modest social backgrounds, particularly elderly working class and immigrant people. This example appears to highlight a cultural ecosystem service that has been rendered invisible by the socio-spatial conditions of its reproduction. The bonds with animals go back to duration (time) and to journey (space and distance), harking back to categories of **ethno-psychiatry**.

On the side of species reintroduced into urban space under environmental pressure in particular, there are sheepfolds and herds of domestic animals intended either for consumption or for new forms of maintenance of urban spaces. The urban sheepfold of *bergerie urbaine des Malassis de Bagnolet* and the two associations, Chats des Rues (street cats) and *Association Espaces de Rencontres entre les Hommes et les Oiseaux* (association that provides a forum where people and birds can meet) based in Montreuil, sponsor local, immediate initiatives in each commune, but

they also intervene elsewhere in accordance with joint ventures and conventions signed with private or public partners. It appeared that these associations worked mostly in working class neighbourhoods and advocated a coherent approach to popular ecology through the importance they accord to inhabitants, while standing up for values that are not always dominant in these places. They offer a very useful and involved mediation service in order to create change and convergence.

*Bergerie urbaine de Bagnolet* is firstly urban entertainment in terms of the effect of surprise on the person discovering the spaces and relations for the first time. Located in the heart of the "physical" city where it was built without a permit during a period in which the municipal authorities were not really on top of things (the end of the previous political-legal administration), it is adjacent to a nursery school which gives it a lawn and access to water. A little further away, the grass lawns of the low-cost housing office (HLM) have been fenced off with its permission and a number of paths lead to and from the sheepfold. This phantom space in the shadow of a demolished tower block was in full use when we pay our second visit. The sheepfold is open during the day and lots of people come by, particularly after school.

All parts of *Bergerie de Bagnolet* appear to be places of great sociability, respected by people living around (no reported incidents of injuries to the animals) and, according to the shepherd, people see him working every day which helps forge respect. The shepherd also explains that certain inhabitants come from places with a much greater animal presence in the street or in the family than in French suburbs. Therefore, there is both a mental and a technical closeness that mean for example that, rather than making cheese, he is more interested in selling goats milk to women who want to transform it in their own homes.

Faced with all these processes, we could tend to believe that "appropriating nature (or "serving" or defending or even "messing it up" because this is our place) is an ordinary act of indigenisation that has put down strong roots in everyday Montreuil life. The head of one environmental association declares in an interview, in relation to the annual festive closure of the A83 Motorway, that "each ethnic group in Montreuil could have its own garden" as part of a big communal garden. Students are often presented with the example of the garden run by Malian women in Bas-Montreuil. Another association uses the vegetable garden (a "farm") in Murs-à-pêches to support the installation of a halting site for Rom immigrants (Écodrome).

Occupying a garden and having the keys based on permission accorded by the Council is possibly the same thing as squatting and working plots, acts that consume a huge amount of time and energy, (e.g., discarding and piling up waste), a singular means of appropriating nature indeed, much like smashing up a footpath in front of your house or feeding colonies of pigeons. In the working class areas visited, a municipal cleaning agent (off duty and looking just then like one of those "inner city youths) told us they had been working that same morning in a particularly clean street in a smart terraced

neighbourhood and that he had felt uneasy. He had felt as if he was suddenly in Paris. Everything was too clean, it wasn't right, it wasn't like here, it wasn't like Montreuil. Several times, better off respondents, expressing a mixture of doubt and pride, told us to go and take a look at the state of the streets at the juncture of Vincennes/Montreuil. This relatively less well-kept appearance and this abundant vegetation running free could also be part of Montreuil's identity. Is it possible to lay claim to this while giving out about the municipality's failure to "look after" things?

The attention paid to these different forms of nature in the city draws attention to the division between learned and acceptable environmental forms in terms of public policies and other more informal ones referring to a qualified population of marginalized. Thus, it is true that one can not analyze the status of these environmental forms without wondering about the city as a human space and a crucible of one's own species and spaces desired, even controlled, at the expense of other forms. described as unwanted.

After these few examples of environmental forms arising from popular ecology and a territory undergoing transformation under the influence of environmental policies, we now wish to briefly examine a public policy that involves creating environmental forms in order to effect socio-cultural urban transformations.

### 3.2 Greenways, a public policy

The green and blue ways are examples of new spatial planning policies under pressure from environmentalists. Although they have been part of the urban planning tradition for more than a century for a variety of reasons (Arrif et al., 2011), such as their aesthetics or public health qualities (Ahern, 1995) they are still to become an integral part of urban policies in many countries. Environmental forms aim to organise the reproduction of genetic, specific and ecosystemic diversity, i.e., biodiversity, by means of a territorial grid (Forman, Godron, 1986). Aside from their professed contribution to citizen welfare in numerous different ways, they can also help to balance temperatures and greenhouse gas emissions and/or pollutants by cooling the atmosphere and trapping polluted particles. This is why EU countries have published rules and directives to encourage public policy to integrate Greenways at European level (Strategy for a European-wide Green Infrastructure in the context of post-2010 biodiversity European Commission Policy). French deployment of Green Infrastructure is reflected in the policy of creating greenways and it is one of the key points of the French Government's Grenelle round table on the environment: a national debate that took place in late 2007, culminating in the Grenelle I and Grenelle 2 laws (Law 2009-967 of 08-03-2009, and Law 2010-788 of 07-12-2010). These laws oblige each local government – from administrative region to urban municipality – to reflect on ways of integrating greenways into their local urban planning (*PLU*<sup>[14]</sup>) and metropolitan (*SCoT*<sup>[15]</sup>) in order to respect/create corridors that preserve links between natural spaces and help put a stop to biodiversity erosion.

Do blue and green ways comprise the "meta-form" of a social shift towards a **generalised connectivity**? We need to break out the components of green ways and wetlands that tend to support an ecological connectivity in a broad sense. First, developing blue and greenways relays a landscape ecology that nurtures a "landscape-type vision" of biodiversity. Second, blue and greenways benefit from a natural link forged between human communities in space and time by means of the protection of nature. Third, from a visual perspective, mapping blue and greenways imposes a policy of relations between natural beings over and above administrative and national boundaries. Maps, drawings and diagrams that visually define greenways contain colour schemes linked by coloured lines. Indeed, deploying networks of natural spaces in the name of biodiversity preservation requires preliminary formalisation by means of an image. **Generalised connectivity is contingent on the drawing of a form of a specifically defined network that transforms the concrete landscape and sets out the ordinary natural and built environment.**

Consequently, the blue and greenway landscape, which appears diagrammatic at first, plays on abstraction in order to participate in a policy of forms. The call for papers for the March 2013 multi-disciplinary conference, "Greenways: The interconnected Pathways of Communication and the Environment"[\[16\]](#) at the University of Tennessee-Knoxville, that brought together planners, writers and ecologists, highlighted the metamorphic aspect of this new policy:

*Following the natural contours of the landscape, greenways are man-made paths that work to link human communities to the surrounding environment. In the same way, this conference seeks to promote connectivity between various disciplines and their approaches to the environment.*

But what is **the relationship between a politically orchestrated planning policy and the reality of this form on the ground?**

The French research programme "Urban Greenways" (50 researchers, 11 social science and ecology research teams) conducted an evaluation of green urban infrastructures and proposed the development of a policy framework to guide the deployment of green infrastructure policy at local level. As well as other case studies, three French cities with very different urban cultures and environmental contexts were studied: Paris (Northern France), Marseille (Southern France) and Strasbourg (Eastern France). We examined three spheres of stakeholders involved in green infrastructure building: **planners/inhabitants/scientists**. We sought to ascertain which greenways citizens really dreamed of. Citizen discussion groups were organized [\[17\]](#). The debates between participants showed us what they see as being part of an environmental aesthetic and point up a relationship to nature that is different from one city to another. Moreover, the opinions of inhabitants show that the green infrastructure they project (as natural networks within the urban fabric) are part of a particular ethic and hark back to the specific values of situations and urban forms, stories and cultures.



Parisians are preoccupied with fauna and refer primarily to undesirable animals with strong links to humans (doves, rats). They demand that building managers limit their spatial development because they consider fauna as a potential parasite. Next, they speak of desirable animals such as squirrels, fish and rabbits. Even though Parisians would like more greenways, they cannot see how there could be place for these corridors or developments in a compact city. One Parisian remarked, "I guess that urban greenways are supposed to form grids and something that links the country to the city, but I cannot visualise that. I don't know what form that could take in a city like Paris."

In Marseille, the issues are different and revolve primarily around public health problems. Green spaces mainly evoke questions relating to the treatment of waste (waste and animal excrement removal) and keeping dogs on a lead. Environmental projects are not yet a priority for the inhabitants of Marseille who first need to deal with anti-social behaviour. Urban greenways refer mainly to the tramway built. Next, it is a potential link between the neighbouring hills and the town centre.

In Strasbourg, people are familiar with the concepts related to urban greenways (corridor, biodiversity). The Strasbourg environmental groups explicitly refer to the expression 'greenway' (sometimes spontaneously, at the beginning of discussions). For non-ecologists, although the term itself is not specifically cited, the description of natural spaces clearly demonstrates this strong idea of continuity for the movement of plants and animals. However, it is when city dwellers use greenways in their day-to-day lives that they are best known, usually for "human" uses. Moreover, nature is a necessity and fulfills a key objective of urban living as revealed in the following comment: "I see nature in two ways: first in terms of observation – look at that space! Second in terms of "health". To observe and contemplate nature and by making everyone part of this observation, it creates an urban fabric. The return of city to life." As regards Strasbourg, urbanisation is not incompatible with the preservation of nature. Inhabitants are willing to change their transport mode and rethink the design of their city.

In these three cases, the environmental forms comprising greenways and wetlands show that they are more or less capable of transforming human lives.

## Conclusions

Environmental forms highlight the **meaning assigned to places**, i.e., the **values incorporated into determined forms**. Regardless of whether we are talking about ordinary environmental forms (e.g., a communal garden), or extraordinary ones (e.g., the Earth, greenways and wetlands, remarkable mountains and valleys), the representations place the parties and the entire environmental form within an important relationship for given individuals or groups.

Therefore, the aesthetic experience constitutes a mode of intermediation between the requalification of the environment by the individuals or the civil society and the construction /reconstruction processes of collectives or local communities, whereas the exogenous forms of revalorisation (redevelopment, transformation of the image of the neighborhood, social support, etc.) do not generally recognize the universes of meaning and relationships that citizens connect with their environment (Blanc, Emelianoff, 2008). Civil society organizations mobilize relational universes to environments that are likely to set in motion territorial transformation. They make possible a circular production between the territory and the collective, and generate an engagement that makes sense as much in the transformative actions of the milieus as in the collective itself. However, this commitment can have a democratic scope by increasing the competence and legitimacy of the actors, the taking into account of the experience, the inclusion of local residents in the direction given to the action. The forms of the environment in this sense offer a complex, socio-natural take on these transformations.

Hence, some environmental forms give rise to an ethical-aesthetic value that produces a specific configuration on which many agree, or disagree, producing temporary consensus as well as dissensus or dynamic conflicts [18]. Landscape and heritage, for example, comprise these environmental forms that give rise to social and legal conventions. **Environmental forms are intermediaries in the governance of social and environmental relationships.** Forms convey complexity as they integrate, organize and coordinate whole and parts within their surroundings (Kwinter, 1998).

Lastly, talking about forms means introducing the ingredients of a rebellion against contemporary approaches that favour techno-centric processes and a productive approach to nature. Nature could therefore be defined, in terms of tradition and from the perspective of its acceptance and definition, as being all of what unintentionally or not produces environmental forms in overlapping material-discursive practices (Dolphijn & Van der Tuin, 2012, p. 50), i.e., a crucible of metamorphoses and exchanges between practice and representation, matter and image, perception and concept.

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**[1] Biography - Nathalie Blanc works as a Research Director at the French National Center for Scientific Research (CNRS). She is the Managing Director of the CNRS-related LADYSS laboratory and is based in University Paris Diderot 7 in the Geography, History & Social Sciences Department. A pioneer of ecocriticism in France, she has published and coordinated research programs on areas including habitability, environmental aesthetics, literature & environment and nature in the city. A founding member of the French Environmental Humanities Portal, she has also been from 2011 to 2015, the French delegate of the European COST research project *Investigating cultural sustainability*, and is now the delegate of the European COST program on New Materialism '*How Matter Comes to Matter*'. She has recently published the book *Form, art, and environment: engaging in sustainability*, by Routledge in 2016. Other selected publications include : *Litterature and ecology. Towards an eco-poetry* with T. Pughe and D. Chartier, in *Écologie et politique. Ecoplasties. Art and Environment*. with Julie Ramos, 2010, Manuella. *Towards environmental aesthetics*, 2008, Quae. She is also an artist and an art commissioner, currently working on the theme of ecological fragility.**

**[2] Biography - Frédéric Barbe is an artist and doctor of geography, researcher-associate at UMR 1563, Ambiances Architectures Urbanités. His doctoral research (2012) focuses on the geography of the world library and the scales of literacy in globalization. It also works on issues of ecology and socio-ecological transition, precariousness and urban development in their relations with actors and public policies.**

**[3] Lessing, Gotthold Ephraim, (1990) [1766-1768], *Laocoon or The respective limits of poetry and painting*, French translation by De Courtin, preface by Hubert Damisch, Paris, Hermann.**

**[4] Thanks to Andrej Radman who most interestingly reviewed this paper we can add two references. See Kwinter, Sanford, (1998) 'The Genealogy of Models: The Hammer and the Song': "Goethe, it may be argued, was the first to have rejected the( apodictic) Kantian-Newtonian model in favour of the modern genetic interpretation of form. With respect to the form problem, in other words, Goethe placed his wager on the side of development, lodging**

the explanatory device in the space of abstract interactions taking place over time, so that form was always moving and represented only a visible, frozen section through a more fundamental organizing logic that itself could be intuited, analytically described, but never actually held in the hands. Goethe is the father of the modern concept of diagram insofar as he insisted on formation as the locus of explanation, not simple appearance. This ecological approach can be found in all of Goethe's work on Natural Philosophy and on intuition, but it is most explicitly elaborated in his scientific writings, especially those on botanical subjects. (...) Goethe is also rightly credited with having invented the term morphology." See also: Who's Afraid of Formalism? Sanford Kwinter from *Phylogenesis: FOA's Ark*, ed. Michael Kubo and Albert Ferré with FOA (Barcelona: Actar, 2003), pp. 96-99. "Ernst Cassirer once said of Goethe that his work completed the transition from the generic view to the genetic view of organic nature. He was referring to the break from the tabular space of the genera of the Linnaean classifications with their emphasis on what is constant and fixed to a generative space where the processes of coming-to-be are given shape. Goethe's formalism, like all rigorous and interesting ones, actually marks a turning away from the simple structure of end-products and toward the active, ever-changing processes that bring them into being. With any luck, twenty years from now, one will be able to make the same claim for certain architects that Cassirer made for Goethe's science. And should this in fact not come to be, it will be far more the fault of the one dimensional semioticians and ideologists who propagate the cliché of the "social construction of meaning" than of second-rate poor formalists who merely trivialize a powerful method and inadvertently lend credence to the airless arguments of the former group."

[5] See Serpil Oppermann, « Sites of Narrativity: Storied Matter and Narrative Agencies », présentation donnée à la 7ème conférence annuelle sur les nouveaux matérialismes, « Performing Situated Knowledges: Space, Time, Vulnerability », Varsovie, Institute of Philosophy and Sociology, Polish Academy of Sciences, organisée du 21 au 23 septembre 2016 par Networking European Scholarship on 'How Matter Comes to Matter', European Cooperation in Science and Technology (COST), Action IS 1307, p. 6 : « If 'all things have the capacity of speech', as David Abram claims, then there must be a creative materiality around us with an incipient tendency to be a narrative agency dense with stories. Narrative agency is a nonlinguistic performance inherent in every material formation from bodies to their atoms making them telling or storied».

[6] "Baumgarten, 1988, §533, cited in Jimenez, Marc, (2004), *What is Aesthetics?*, Paris, Gallimard). The 18th century also witnessed the first key contributions to an aesthetic of nature. In *Observations on the Feeling of the Beautiful and Sublime* (1764) and *Critique of Judgment* (1790), Kant developed a subjective approach to aesthetic satisfaction as a free exercise of learning faculties and possibilities and developed a new perspective on nature.

[7] "This system of sensitive proof that simultaneously depicts the existence of something in common and the boundaries that circumscribe the respective places and parts," Rancière, Jacques, (2000), *Sharing sensitive experience. Aesthetics and politics*, Paris, La Fabrique, p.12.

[8] Boutot, Alain, (1993), *L'invention des formes*, Paris, Odile Jacob, p. 69.

[9] de Certeau, Michel, (1990), *The Practice of Everyday Life (L'invention du quotidien)*. *Arts de faire*, t. i [1980], Paris Gallimard; de Certeau, Michel, Giard, Luce et Mayol, Pierre, (1994), *L'invention du quotidien. Habiter et cuisiner*, t. ii [1990], Paris, Gallimard.

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[11] This theory of "formativity" goes back to Goethe and Schelling, but also to Paul Valéry to whom Luigi Pareyson would devote two articles on the virtue of rules.

[12] Form is full of all sorts of things that it actually isn't - and that actually aren't visible. Basically, it's full of potential. When we see an object's shape we are not seeing around to the other side, but what we are seeing, in a real way, is our capacity to see the other side. We're seeing, in the form of the object, the potential our body holds to walk around, take another look, extend a hand and touch. The form of the object is the way a whole set of active, embodied, potentials appear in present experience: how vision can relay into kinesthesia or the sense of movement, and how kinesthesia can relay into touch. The potential we see in the object is a way our body has of being able to relate to the part of the world it happens to find itself in at this particular life's moment (Massumi, 2008, p. 4).

[13] Nine plots of the 15 installed in 2013 are currently managed by the inhabitants and aid from the City is limited to providing mulch/mash.

[14] PLU (*plan local d'urbanisme*, in French) = urban planning map

[15] SCot: (*schéma de cohérence territoriale*, in French) = metropolitan plan

[16] 2 Greenways: The interconnected Pathways of Communication and the Environment. A nexus interdisciplinary Conference <http://web.utk.edu/nexus/cfp.php>. Consulted online on 22 May 2014

[17] In the three cities, 24 "discussion groups" comprising between 6 and 9 people each were set up. The discussion method group did not highlight the diversity of representations but the significant number of citizen participants (total of 160), the sampling technique and a certain redundancy in the comments encourage us to think that, despite the lack of representativeness, our findings may still be significant.

[18] Thanks to Andrej Radman who most interestingly reviewed this paper and added some comment referring to the work of Chantal Mouffe : <http://www.artandresearch.org.uk/v1n2/mouffe.html> : "What is at a given moment considered as the 'natural' order - jointly with the 'common sense' which accompanies it - is the result of sedimented hegemonic practices; (...) An agonistic conception of democracy acknowledges the contingent character of the hegemonic politicoeconomic articulations which determine the specific configuration of a society at a given moment. (...) According to the agonistic approach, public spaces are always plural and the agonistic confrontation takes place in a multiplicity of discursive surfaces. (...) My approach is therefore clearly very different from the one defended by Jürgen Habermas, who when he envisages the political public space (which he calls the 'public sphere') presents it as the place where deliberation aiming at a rational consensus takes place. (...) according to the perspective that I am advocating, the impediments to the Habermasian ideal speech situation are not empirical but ontological and the rational consensus that he presents as a regulative idea is in fact a conceptual impossibility. Indeed it would require the availability of a consensus without exclusion which is precisely what the agonistic approach reveals to be impossible."

