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Reflection

Restoring Systemic Proximities
Towards the re-territorialization of the Dutch Rivierenland

Abstract

Uncertainty posed by Climate Change brings control approaches to environmental processes and dynamics into question. In the Netherlands and particularly in the Dutch River area (Rivierenland in Dutch) narratives have already shifted towards an adaptive planning (Davoudi, 2013). However, there is still a need to go beyond the physical cultural and programmatic separation between rivers -active areas in flood management- and the urbanized territory -passive areas in flood management-. The definition of these dualities in the Dutch territory not only feeds a model based on vulnerability, but it also leaves the problem of a fragmented landscape unsolved. Aiming at the enhancement of adaptive territories and the embracement of uncertainty, the thesis proposes the operationalization of an approach based on enhanced connectivity throughout the territory, where every part of the urbanized territory takes a role in the active management of floods and ecosystem restoration. An approach aiming at restoring systemic proximities between culture and nature and between local land management and territorial water safety.

The main design outcome of the thesis is a transformation pathway towards the hybridization of the territory by increasing ecological densities and buffer capacities per land management unit. A pathway where synergistic coupling of functions are activated locally, triggering processes of innovation and cultural appropriation of the proposal, as opportunities for emerging ecosystem-based production models.

The graduation research is positioned within an emerging urban paradigm, one that re-defines the act of urbanization as an act of re-territorialization (Deleuze and Guatari, 2000), where land uses are associated to evolutionary land roles that different occupation patterns perform in the establishment of a more symbiotic relation with the ecology in which these are embedded.

Sources: Davoudi, S., Brooks, E., & Mehmood, A. (2013). Evolutionary resilience and strategies for climate adaptation. Planning Practice & Research, 28(3), 307-322. Guattari, F., & Deleuze, G. (2000). A thousand plateaus: capitalism and schizophrenia. London: Athlone Press.

Key words
climate extremes, flood risk management, adaptive planning and design, maintenance regimes, enhanced connectivity, watershed management

REFLECTION

The choice of my method (on the how and why)

The Thesis proposes/builds upon the elaboration of a research and design method in relation to the reading, re-programing and operationalization of the next territorial and urban model. The definition of a design-related question and the unfolding of its proposal is, rather than the end goal, the tool to test and further detail the reach of the method.

The method of research is rotted within a conceptual ex-ante positioning, defining a meta problem -on the desynchronization between urban and ecological systems as a result from planning and design approaches based on control- that the thesis casts light upon by learning from an exceptional case, the Dutch case.

The method is, above all, an inquiry on a different urban and territorial development based on the active role that occupation needs to perform in the establishment of a more symbiotic relation with the ecology in which it is embedded.

In order to reflect on the nature, scope, transferability and relevance of the thesis I will elaborate on 5 different aspects:

Aspect 1.- Relationship between research and design

The thesis is carried out by means of a research by design approach. Given the complexity and extensiveness of research already developed within this particular territory, the Dutch River plain, this approach helps on the one side establish a dialogue between problem and solution, while opening the research to inspiring readings of the territory. In other words, design is used as a vehicle to make wicked problems visual and spatial, exploring possibilities and generating solutions, and consisting on the systematic exploration of multiple scales and dimensions of the territory: horizontal, vertical and temporal.

The trans-scalar approach strategizes the analysis and design of the aimed transformation taking into consideration different time-scale conditions / processes and boundaries (administrative and geo-physical) intrinsic of each scale. The trans-dimensional approach is the tool meant to comprehend the complex territory:

The horizontal dimension (plan) is used for the design of large scales (macro, meso, micro) and gives the framework to design and plan the proposed transformation. Within the thesis, the horizontal dimension involves the design of spatial strategies and relations established on the same layer (substratum, infrastructure, occupation). Its scale-dependence is portrayed in the 1977 documentary film “Powers of Ten” written and directed by Charles and Ray Eames.

The vertical dimension (section) allows for the understanding of the inter-relation among different layers of the territory (dutch layer approach). Within the Thesis, this dimension reveals the intrinsic relation between occupation and substratum, a dialogue between different spatial-temporal scales (from decennial to millennial)

that allows for the classification of different urban-landscape types –blue corridor, productive forest, productive wetland- in the definition of the proposed re-territorialization regimes.

The temporal dimension is a transversal one that is used in plan and section to track the functioning and change. It applies to the plan in the sense that it sets the pathways for transformation (meso scale), and to the section, involving the understanding of the immaterial and hidden flows, exchange and possible streams of biological and physical / material resources between land and territory (watersheds, sheds, bioregion), between ground, water and atmosphere over time. It is the dimension allowing for the portray of cultural adaptation, and the evolutionary aspect of the proposal.

The design thinking approach, is focused on invention, on the development of new knowledge by synthesis and spatial translation (Nijhuis, 2015)

Aspect 2.- Relationship between graduation topic, studio topic, master track and master programme

Graduation topic: Restoring systemic proximities. On the re-territorialization of the Dutch Rivierenland
Studio topic: North Sea Landscapes of Coexistence. A Topography of Chance
Master track: Urbanism
Master program: Msc 1-2-3-4

[Graduation topic & Studio topic]

The studio topic “North Sea. Landscapes of Coexistence. A Topography of Chance” focuses on the agency of design in territories at risk between land and water (maritime, riverine, delta landscapes), and the inseparable relation between nature and culture. Closing a three year-long cycle on the North Sea, and after having represented and analysed its past, present and future geography over the past two years, the studio topic sets in motion a conversation between six lines of inquiry for the future of the North Sea region. A conversation about the coexistence between different claims in the sea, ranging from extractivism, energy, fishery, ecology, logistics and migration to carbon storage and climatic shifts and the specific relational power of each individual project.

Within this framework, my graduation topic on the re-territorialisation through the re-programming of a hybrid integrated and responsive landscape builds upon the notions of territorialization (Deleuze and Guattari, 1980), natural occupations (Geddes, 1909), landscape ecology (Forman, 1995), environmental risk (fluctuating river discharges) and complexity (Holling, 1986) synthesizing and re-defining them within the narrative of the proposal. A proposal that establishes a conversation with the different claims of the territory of the North Sea, highlighting the assonances with:

“Dual nature of externalities” in the sense of embracing the extreme weather and new climatic frequencies not as vulnerabilities to protect ourselves from, but as

opportunities to adapt and change translated into new land management and maintenance regimes. Opportunities to adapt while restoring better relations with our quickly changing environment.

"Crisis of representation" and the need to design a different palimpsest of land programs that allow for cultural appropriation and higher degrees of cooperation among individuals and communities, among people and nature, among local, national and international scales.

"Flux, erasure, terraforming" as the intrinsic characteristic of a dynamic territory whose program defines different regimes of occupation or *natural occupations* (Geddes, 1985)

Concurrently, the thesis is as well crafted by the understanding of dissonant voices, in particular one-dimensional voices coming from "the pervasive ecology of flows" in the understanding of rivers as logistic routes, where processes of change (flux, erasure and terraforming), are detrimental and therefore designed to be avoided.

In this sense, the thesis positions itself within holistic approaches, distancing itself from one-dimensional/dualistic ones. Only from holistic perspectives the economic and socio-cultural feasibility of the proposed framework can be enhanced.

[Graduation topic & Urbanism]

The graduation research is positioned towards the definition of the next Urbanism paradigm, one that re-defines the act of urbanization as an act of re-territorialization, where land uses are associated to evolutionary land roles that different occupation patterns perform in the establishment of a more symbiotic relation with the ecology in which these are embedded.

[Graduation topic & Master program]

Coming from the knowledge provided by Msc 1 -oriented towards the construction of a rich theoretical base aligned with my personal inquisitiveness in Landscape Urbanism and Environmental Design- and Msc 2 - oriented towards the construction of a solid and thorough knowledge in infrastructure design, water and soil systems and complexity- the project is conceived as the continuation and synthesis of the learned knowledge, in such a way that defines my positioning towards the profession and approach to future projects.

Aspect 3.- Elaboration on research method and approach chosen in relation to the graduation studio methodological line of inquiry, reflecting upon the scientific relevance of the work.

The studio is founded on the notions of complexity, territorialism, infrastructure space, (landscape) ecology, environmental risk (extremes), geo-philosophy, bio-politics, transition and policy analysis.

The "Transitional Territories" methodological line of inquiry proposes a holistic

approach where humans and nature, cities and countryside, infrastructure and urban form, ecology and economy, risk management and inhabitation are not sides of a dualistic approach, but the integrant components in the definition of the hybrid urban condition that re-defines the planning, design and imagination of the next urban phenomenon.

Based on the notion of "altered natures", the studio proposes a proactive approach that goes beyond the mitigation of climate change effects and causes. It proposes the understanding of extreme conditions as the primary conditions of life from where we have to establish the urban project.

In this regard, my research attempts to position itself within this line of inquiry, following the research on the integration of natural processes within the design and planning of the future urban condition within the complexity and fluidity of riverine-deltaic conditions. By defining a design-related question within the Dutch Riverplain, the thesis is able to further detail the reach of the method by proposing the site-specific interrelation among flood adaptation, ecosystem restoration and land management.

Aspect 4.- Elaboration on the relationship between the graduation project and the wider social, professional and scientific framework, touching upon the transferability of the project results.

[Societal relevance]

The thesis aims at contributing and benefiting to society by improving the safety and robustness of their living environments, resilience provided by more endogenous socio-economic systems, and individual and collective capacity to adapt to change, one that is inevitable and uncertain.

The idea to transition from the current static/fragile systems to dynamic/adaptive ones is strongly dependent on a cultural shift that is currently still rooted in a worldview based on control and prediction, and that leads to virtually safeguarded and (consequently) threatened territories and communities.

As a thesis centred on the idea of local adaptation and cultural appropriation, the research provides with guidelines and insights in how the urban project can trigger a different cultural relation with nature (and its intrinsic uncertain and extreme condition).

The hypothesis of interrelating flood adaptation and ecosystem restoration with land management as the formula for the re-territorialization of the Dutch Riverplain proposes how different maintenance regimes have an impact on program and culture.

[Scientific relevance]

The scientific relevance of the work is related to the framing of the next urban paradigm, one that re-defines the act of urbanization as an act of re-territorialization, where land uses are associated to evolutionary land roles that different occupation

patterns perform in the establishment of a more symbiotic relation with the ecology in which it is embedded.

The thesis builds upon the recent adaptive approach to planning and design as a tool to deal with uncertainty (environmental, social and economic), identifying its current challenges -in the implementation, in the inclusion of culture and in the definition of vulnerability narratives- and proposing a pathway to go beyond the current scope:

- (in the implementation) up-scales the scope of adaptive planning and design by down-scaling the strategies to more manageable actions.
- (in the inclusion of culture adaptation) defines different maintenance regimes with an impact on program and culture.
- (in the definition of vulnerability narratives) erases the duality between protecting and protected areas through a gradient of new land roles

[Transferability]

Generic:
The logic behind the transformation of land uses into localized land management units of these extremes through the hybridization of the countryside regarding increasing ecological densities and buffer capacities, together with the logic behind enhancing new forms of connectivity with the main water streams, is aligned with the necessity to provide with an extensive network of storage and buffer areas, the necessity to restore the natural capacities of soils, wetlands and forests to delay, absorb and mitigate these extremes. But specially, the thesis logic is aligned with the necessity to integrate people and their livelihood to the new conditions (rainfall frequencies) of the place they inhabit (Wahl, 2017)

The urgency for adopting this logic that the thesis puts forward could be expanded to the whole water catchment (upstream, middlestream, downstream) within mid-latitude geographies and territories, where an intensive urbanization has been translated in the erosion of its soils (unable to store rainfall or not even moisture). But particularly, the urgency is striking for mid-latitude downstream Delta areas already with a history in floods where control approaches have constructed a physical, cultural and programmatic separation between blue and green corridors and highly urbanized areas.

Specific:
Coming from the understanding of bioregional design and planning approach pioneered by Geddes, regional and town planning is specific to the place. Therefore, the design (pathways of transformation) and planning (or operationalization) of the proposal are rather specific, accomodating to the particular biogeophysical, socio-cultural and governance conditions:

Place – The biogeophysical conditions coming from the specificities within upstream, middlestream and downstream catchment areas introduce a series of variables -topographic, geologic and climatic- influencing the type of ecosystem, therefore ecosys-

tem-based economies. Even within the downstream catchment and Delta areas, the proximity to the sea introduces additional variables -salt intrusion, tidal influence- with a great impact in the specific water safety and ecosystem restoration transformation pathways.

Work - The *place* conditions above described are associated with site-specific land management and maintenance regimes -associated to site-specific sedimentation and disturbance regimes associated to different succession processes- determining the conditions for ecosystem-based economies.

Folk – The cultural approach to risk is of great significance when it comes to the co-definition of connectivity, modifying the design, its implementation and feasibility (see previous section).

Finally, the operationalization of the proposal is rather specific for the existing platforms from which the proposal can be implemented. In the case of the Netherlands, a country very advanced in adaptive planning, the implementation of this proposal can be more easily be included and appropriated than in territories where adaptive approaches are not yet taken.

Aspect 5.- Ethical issues and dilemmas encountered in (i) doing the research, (ii) elaborating the design and (ii) potential applications of the results in practice

(i) ethical issues arised while doing the research

By ellaborating the research, some dilemmas have arised regarding its involvement with areas of knowledge beyond my academic expertise such as agriculture, water management, or ecology, and the need for an equilibrium escaping from superficiality or (on the contrary) technocratic design. This equilibrium has been possible through a systemic approach aiming at the comprehension of systemic relations rather than the design of specific solutions for agriculture, water management or ecology.

(ii) ethical issues arising from elaborating the design:

By elaborating the design, some decisions regarding what could be the regional design of flood streams (connected uptream with the main rivers) arises ethical issues in relation with possible initial withdraws of the proposal, specially in its initial phases by putting areas at risk areas that are currently under different protection standards.

(ii) ethical issues arising from the potential application of the results in practice:

From the potential application of the proposal, I foresee ethical issues regarding the current cultural understanding of risk and protection that the proposal puts in question, effects on people and land properties (as described in the previous

paragraph), effects at a governance level in the sense of measuring the costs on investing in this proposal as opposed to investing the development of more traditional planning, and lastly effects on the mental and cultural cost of adapting to the new proposed condition.

Aspect 6.- On what I have learned from the making of the thesis

During the process of elaboration of the thesis I have certainly develop my analytic, critical and conceptual approach to design. But most importantly for me, I have learned how to use the project as a knowledge producer (Vigano, 2016) by means of cartography, system analysis, narration, and systems thinking (uncertainty).

The journey of the making of the thesis as the end stage of the masters has altered my perception on the next urban question, shifting in the course of these two years:

From a question of dealing with the adaptation and mitigation of social, economic and environmental uncertainty, a question of accommodation to changing conditions; to a question of understanding the opportunities coming from this changing conditions in the restoration of a better relation with our environment.

A question on the active role that occupation needs to play in order to be part of the change (and not the solution of a problem).

Final remarks

As a final reflection I will come back to Haahtela, who quotes:

> *"The critical question is why urbanized populations respond with inflammation in contact with natural elements such as pollen, food or animals? They seem to be increasingly allergic to nature, the evolutionary home of Homo sapiens"*

As urban designers, we hold a big responsibility in the design of territories that restore different degrees and forms of porosity with an environment from which WE ARE becoming increasingly vulnerable.

This thesis was an attempt to explore ways of enhancing this porosity, particularly by restoring he proximity with the river and the subsequent opportunities coming from there.