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THE CITY AS ACTION

THE DIALECTIC BETWEEN *RULES* AND *SPONTANEITY*

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The dialectic between rules and spontaneity

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To the vesuvian territory

the place where my roots lie

Contents

Abstract

If we recognize the essential role of action in the city functioning (i.e. its creative role for innovation, the importance of localized knowledge, the need for perpetual adjustment and improvement of the built environment, the expansion and the growth of economies and services, etc.), we cannot plan and create the intentional and specific social-spatial configurations we like or desire (due to the unintentional effects of many actions interacting and the impossibility of collecting the dispersed knowledge); we can only create the conditions in which certain negative externalities are avoided and acceptable emergent socio-spatial configurations may occur and adapted over time. Such conditions regard (i) good planning on public spaces to grant certain infrastructures and (ii) good rules for private spaces that allow high degree of flexibility, experimentation and self-organization (i.e. rules that are simple, open, abstract and general, mainly negative, stable and easily enforceable).

After decades of comprehensive and technocratic planning, we can recognize certain limits and avoid them (i.e. the lack of flexibility, the problems and the costs of complex rules, the impossibility to forecast future emergent opportunities with detailed land-use plans). This doesn't mean that we may neglect the importance of public interventions in addressing cities' development, but that we need to revise some consolidated planning dogmas diffused all along the twentieth century, repositioning our attention on what effectively guarantees cities' survival and wealth: the action. From this perspective, the experimental experience of Oosterwold, as well as other cases of the so called "organic planning" in the Netherlands, are merely examples of how social-spatial emergent configurations can evolve even without the traditional zoning plan, relying on forms of spontaneous developments and self-organizing processes.

Concepts and ideas

Some concepts are taken from the literature, while others are introduced by the author as a result of long reflections. Among the former are worth mentioning the concepts of *complex system* (Batty, 2007; de Roo, 2010), *self-organization* (Portugali & Alfas, 2007i), *overall freedom* (Carter, 1999), *complexity/simplicity of ownership systems* (Slaev, 2014), *the trade-off between spontaneity and design* (Ikeda, Forthcoming), *action space* (Ikeda, 2007; Werlen, 1993), *emergent order* (Hayek, 1967; Polanyi, 1951), *controlled spontaneity* (Buitelaar et al., 2014; Lai, 2003), *urban code* (Moroni, 2015; Hakim, 2014), *rules as meta-condition* (Moroni, 1999; Brennan & Buchanan, 2008). All these concepts, combined with others that are not mentioned here, are fundamental for the thesis. However, in order to expand and deepen the ongoing debate, the thesis introduces some new ideas. Among them are worth mentioning the ideas regarding the *types of actions* (chapter 1.2), the *distinction between spontaneity and emergence* (chapter 1.3), the concepts of *action conditions* (chapter 2.1), *multiple/several ownerships* (chapter 3.3), *range of possible actions* (chapter 3.2), *invariants* (chapter 3.3), *overall spontaneity* (chapter 2.2), and the connection between *spontaneity* and *simplicity of rules* (chapter 3.1). The latter idea regarding simplicity or complexity of rules is the result of a conjunct work developed with Edwin Buitelaar, Niels Sorel, and Stefano Moroni. Furthermore, when back in 2014 I started to study the case of Almere Oosterwold only few documents and articles had been already published. The case was mostly unknown. Today it is discussed and known all over the world.

The thesis often refers to Jane Jacobs' contributions. This connection is inevitable, as is inevitable to speak of spontaneity, emergence, self-organization and complexity in planning without considering most of all her works. Lastly, the term action - on which the thesis is focused - derives from the Austrian school of Economics and the works of Ludwig von Mises.

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Acknowledgments

"In general there are two traditions of liberty. One is empirical, while the other is the construction of utopia. The first finds the essence of freedom in spontaneity and absence of coercion; the second believes that it can be rationally realized in the pursuit of an absolute collective purpose. One stands for organic growth and trial and error procedure, the other for deliberateness. Those are two different conceptions of how society works."

Hayek (1960: 55)

PART ONE:

Introduction

Reasons and backgrounds

"We all have our preferred ways of constructing order"

Jane Jacobs (1992: 56)

Planners address urban development in two ways. The first is a direct intervention that regards the plan of the *public city*. The second is an indirect intervention that regards the regulation of the *private city*. Although the former is inevitably of interest, the second is the one that needs to be deepened.

In general terms, we can think of urban planning as an intervention that tries to coordinate cities' socio-spatial configurations in the name of the *public interest* (Needham, 2006). This happens not only through strategies, visions, policies or large scale transformations, but also, and above all, through regulative statements that influence any ordinary individual action in space and, consequently, the evolution of future socio-spatial configurations. Nevertheless, it seems that the space occupied by the theme of regulation withn the academic debate is still inexplicably too little. Moreover, as already well evidenced by Jane Jacobs (1961), cities should not be considered as simple plannable objects but as complex and self-organizing ones. Cities are the emergent result of an interrelated whole (Cozzolino, 2015).

The thesis addresses the question of spontaneity in cities, a theme that is not new in the field of urban studies (Pennington, 2002; Webster et al., 2003; Moroni, 2005; Alfasi et al., 2007; Callhan et al., 2007; Urhahn Design, 2010; Gordon, 2012; Palmerg, 2013; Berteaud, 2014; Haas et al., 2016; Totry-Fakhoury et al., 2017; etc.). It does so at least for three main reasons: first, to better comprehend the concepts, often improperly used, of *spontaneity* and *emergence*;[1] second, to understand which are the *conditions* that influence actions in space and the evolution of *emergent spatial configurations*; third, to identify which *public conditions* are needed to exploit the benefits and try to avoid the risks of spontaneous developments.

The thesis explores the dialectic between spontaneity and rules, two concepts that, as I try to demonstrate, may easily and efficiently coexist in practice. In particular, it tackles the relation between the degree of socio-spatial control and the flexible space left for spontaneous actions and emergent socio-spatial configurations. In this perspective, planning

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[1] We often hear of spontaneous cities exclusively in reference to informal settlements. However, treating in the same way different things, or using the concept of spontaneity merely as a synonym of "informal", it does nothing but confuse different kind of phenomena. If we seriously consider the issue of regulation, informal settlements are first of all illegals. The thesis studies, first of all, the evolution of "legal" spontaneity. Obviously, informal settlements can be good examples to understand many limits of planning regulation as well as observing self-organizing processes.

rules are intended as the *meta-condition* (Moroni, 2010) that filters the evolution and the continuous adjustment of any socio-spatial configuration (Bertaud, 2004; 2014).[2]

In general, with the concept of *emergent configuration* is meant any socio-spatial configuration that is the result, over time, of countless number of actions but not the direct result of a single plan or design (Hayek, 1967). Configurations of this kind are detectable in any systems composed by a multitude of agents who pursue different plans and separate actions. The highest expression is obviously observable in and within the city: the place in which, currently, most of the world population live (Gleaser, 2011). However, except for anarchic systems, the evolution of emergent configurations is always constrained by law. Therefore, we can think of the evolution of emergent configurations in cities also as the results of the way in which individuals use the existing *action space* (Ikeda, 2007) granted by public rules (see chapter 2.3).

At the center of the debate there are three major interrelated ethical issues. First, the necessity to control certain urban aspects in the name of the public interest. Secondly, the need to leave enough space for spontaneous actions (i.e. the flexible space for experimentation, creativity and the use of the dispersed knowledge). Thirdly, the search of a just balance between public and private interests or, in other words, a proper degree of spontaneity and flexibility for the evolution of emergent socio-spatial configurations. As we will see, all this, in large part, is concretized in the way planning rules are conceived and written.

Today the problem to deal with *complex systems* through regulatory planning instruments is evidently arisen (Batty, 2005; Portugali, 2011 & 2012; Portugali, Meyer, Stolk & Tan, 2012). This is clear, for instance, by looking at the recent planning innovations visible in the Netherlands with the so called *organic planning*. With this practice planners avoid designing detailed and specific ordered final end-states and accept the idea to reach emergent step-by-step transformations relying on spontaneous actions (Buitelaar & Bregman, 2016).[3] In forms of organic planning urban development evolves within certain *framework-rules* (Moroni, 2015) that allows for the development of a wide *range of possible actions* and high overall flexibility.

In general, it is simply impossible to deal with the theme of spontaneity without considering the issue of regulation. In this regard, Emily Talen (2005: 53) openly denounces that in "In order to satisfy an increasingly paranoiac need to control, rules became more and

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[2] Such a perspective is shared also by Alain Berteaud (2014) who states that: "[Emergent configurations] appears in the absence of a designer's intervention. […] Top-down design is indispensable for the construction of infrastructure that spans urban metropolitan areas. […] However, as we move down the scale from metropolitan area to individual neighborhoods and toward individual lots, top-down design becomes less useful and should progressively disappear to let spontaneous order generate the fine grain of urban shape. […] Top-down design could be direct and explicit as in Brasilia, or it could be indirect and take the form of detailed regulations and zoning maps, as in most of the world's large cities".

[3] Some current researches promoted by the Delft University of Technology can be of interest. For instance, "Play the City" organized by Emily Tan and "Anarcity" organized by Winy Mass. This advancement is also visible in practice planning system.

more complex over the course of the twentieth century". From another point of view, also Richard Epstein underlines the problem of *complexity of rules* as one of the most relevant issue of contemporary societies. The author suggests that (1995: 21) "The proper response to more complex societies should be an even greater reliance on simple legal rules". The general idea is that the way in which cities have been regulated and managed in the last decades has brought the regulatory systems into a state of insurmountable complexity. Moreover, it is probably because city planning has rejected or misunderstood the concept of spontaneity in cities that contemporary regulatory frameworks became extremely complex (Hakim, 2014).

Robert Nozick underlines the friction between collective control and the level of spontaneity within social systems (1974: 160): "If you allow more liberty overall, your favorite pattern will be upset; if you want to keep your favorite pattern, you must allow less liberty overall". In the planning field, this logical assumption means that the more we want to protect or control specific socio-spatial patterns we consider preferable, the more individual freedom must be restricted by reducing the room for the evolution of emergent configurations. In other words: the more we want to protect certain specific patterns or orders, the more people's action in space must be regulated and prescribed in great detail with the risk to generate complex rules systems.

It is often given for granted that those who adopt such a perspective are simply aiming at reducing or eliminating bulky rules in the name of freedom, as if rules are only obstacles: nothing could be more wrong. Following Hayek (1960: 148) "It is possible to speak of the law as the science of liberty [...] life of a man in society is made possible by the individuals acting according to certain rules". So, it is exactly because freedom is so important that rules become a fundamental topic. Moreover, rules constitute the basic infrastructure which enables unknown people to interact with each other: "Rules transform simple individuals into a society" (*ibid.*: 144).

Rules are not per se an obstacle, but an essential instrument in civil societies. The main goal of rules is to keep people in peace with each other (particularly when they live and work concentrated in circumscribed spaces, like cities), and to allow people to interact and join together in common ventures for mutual gain (Epstein, 1995: 327). From this perspective, spontaneity in cities becomes desirable only if constrained by certain rules that facilitate people actions and interactions.

The starting point

The starting point of the research is the encounter, in 2014, with the extreme case of Oosterwold (Almere, The Netherlands), an experimental large-scale transformation that relies on spontaneous actions. In Oosterwold, since 2009, the Dutch government, together with the city council of Almere, has been trying to rely completely on forms of *organic*

development, a new form of planning practice that has recently started in The Netherlands as an alternative to the traditional comprehensive integrated development approach based on modernist principles diffused throughout the 20th century (Buitelaar, Galle, & Sorel, 2014). The main idea of organic development is that the state is not active, but it simply tries to facilitate private initiatives by opening the development to high socio-spatial flexibility and market feasibility. Even though Oosterwold cannot be considered yet a best practice yet, its case study is particularly relevant because it is an atypical ongoing experiment that, contrary to mainstream development control, has only few *simple rules* that assist future emergent developments. Moreover, with a development area of 43 km^2, the case of Oosterwold is also the biggest case of organic planning in the Netherlands (chapter 4.1).

By looking at this case I effectively started to wonder what spontaneity means in practice, and what kind of rules acceptable emergent configurations need in order to occur. However, as the example of Oosterwold shows, it is improbable to obtain fully spontaneous developments, rather it is more reasonable to accept the idea to reach only certain degrees of *overall spontaneity* (Carter, 1999).[4] This is relevant both from a theoretical and from a practical perspective.

Spontaneity is constrained by certain rules. Moreover, people need certain coercive/public rules to reach the highest overall degree of freedom; on the contrary, the absence of rules would make any individual less free. All this to say that completely "spontaneous cities", for instance, anarchic cities, are both undesirable and possess a lower degree of overall freedom (chapter 2.3). Quoting Hayek (1960: 21) "Coercion according to known rules becomes an instrument assisting the individuals in the pursuit of their own ends and not a means to be used for the ends of others".

The thesis takes a cue from some intuitions of Sanford Ikeda who, in particular, underscores three main aspects: firstly, the city is irremediably an emergent phenomenon; secondly, there is always a trade-off between imposed order (that he calls *scale of design*) and emergent configurations deriving from unpredictable actions (that he calls *complexity of spontaneous order*); thirdly, the more is the space for the evolution of emergent configurations, the more may be the use of the so called dispersed or polycentric knowledge (Ikeda, forthcoming). However, alongside these intuitions, the thesis adds a thorough analysis of the regulatory systems extending the discussion to planning rules and the flexible space they leave for future unexpected actions and emergent configurations.[5]

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[4] In fact, the simple presence of a night-watch state (Nozick, 1974) implies the existence of certain rules that restrict individual freedom in order to protect the private individual spheres. In this regard, for instance, if we simply recognize both public and private properties rights regime, the overall level of spontaneity would be surely conditioned and limited by the non-availability of public land in the market.[4] Other examples are possible. For instance, let's consider two well-known cases of places that par excellence are retained market oriented, such as Houston and Hong Kong (Webster & Lai, 2003): even though in such places public intervention is lighter or minimal compared to other places, we cannot affirm that their development is totally spontaneous, but rather we can say that they have a high degree of spontaneity.

[5] From this perspective, the act of building and transforming the land must be conceived as mere action (to be realized in compliance with, and within, the meta-legal conditions), while the city must be intended as the

The way in which the evolution of emergent configurations is described takes inspiration by Thomas Schelling and his book *Micromotives and Macrobehavior* (1978) and his place-based model called *self-forming neighborhood*. Schelling theoretically demonstrates how a process driven by individual preferences (in my case I would say actions) leads to the creation of emergent configurations. Even though the author studies processes of spatial segregation, his theory can be applied to describe any emergent and unintended phenomenon in cities. Especially, despite dealing with different kind of issues, his work points out very relevant aspects. For instance, Schelling makes a clear distinction between orders that are deliberately organized from situations that we may simply call emergent or unintentional.[6] Moreover, he stresses that economists are familiar with this kind of issues.

The structure

In addition to this first section (i.e. Introduction), the thesis has other three parts: Part Two, "Problems and proposals", Part Three "The Dutch experience", Part Four "Conclusion".

In *Part Two* three crucial concepts are presented and analyzed; in sequence: *spontaneity*, *emergent configuration*, and *rules*. The term *spontaneity* refers to individuals' action. *Actions* are intended as the generative component of any active spatial and social change (Werlen, 1993). In order to describe the main features of individual actions, I refer to the *theory of human action* diffused by Ludwig von Mises (1963). This is done primarily through a literature review of such a theory (chapter 1.1) and, secondarily, by applying it in the field of urban studies, underlying both opportunities and problems of spontaneous actions within complex social systems (chapter 1.2).[7]

The concept of *emergent configuration* is analyzed by making a clear distinction between the notions of emergent order, made-order, chaos and emergent configuration (chapter 1.3). The thesis explores the concept through two different perspectives: (i) the observations of emergent configurations (in this regard, many authors have already contributed to this topic), and (ii) the relation between rules and emergent configurations; this second aspect is mostly unexplored. To do so, I introduce the concept of *action conditions* (chapter 2.1) which

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aggregate result of all the actions in space over time which often shows clear orders or patterns (both emergente and designed). Therefore, although the issue of architectural flexibility is an extremely important one, within the thesis the main objects of study are the rules governing land transformations, and the process that leads to the formation of emergent configurations.

[6] "Some segregation is deliberately organized, some results from the interplay of individual choices", *ibid.*: 137; note that the same distinction is made by Hayek (1973) with the terms *taxis* and *cosmos*.

[7] In this phase the action is initially examined inductively, then the analysis is brought to a higher degree of complexity, namely the social system. This occurs congruously with the method suggested by Schelling, but also referring to others scholars who are not members of the Austrian School of Economics, such as for instance Max Weber ("collectivities must be treated as solely the resultants and modes of organization of the particular acts of individual persons"; 1922: 13) and Alfred Schütz ("the forgotten man is the actor in the social world whose doing and feeling at the bottom of the whole system"; 1962).

investigates the peculiarity of planning rules in influencing *the range of possible actions* (chapter 3.2).

The thesis also highlights the relation between land-use plans aiming at precise end-state by treating the city as a simple object and not like a complex one, and the occurrence of *complex rules* (chapter 3.1). Doing this, it discusses also the complexity and the *simplicity of rules* and the complexity and the simplicity of *ownerships system* (Slaev, 2014). As I argue, these two factors influence the range of possible action in space and the evolution of emergent socio-spatial configurations. Lastly, the thesis proposes some principles according to which it may be possible to include the idea of spontaneity in land-use planning (chapter 3.3).

Part Three presents the Dutch experience focusing on the extreme experimental case of Almere Oosterwold. Although Oosterwold is still an ongoing process, and only a small percentage of the whole area has been already transformed, many valuable insights and suggestions are already traceable. In particular, it is of interest to look at the quick *paradigmatic shift* from comprehensive/integrated planning to the idea of spontaneous developments occurred in Almere, "the newest" city in the Netherlands (chapter 4).

In the '80s the city of Almere was completely designed and created from scratch according to rigid blueprint master plans and large-scale/all-at-once transformations. In Almere everything was decided and built by the government without too much space for spontaneity and flexibility. Its rigidity and monotony is well known in the literature. However, after the 2008's economic crisis, the city has turned on the opposite approach, accepting the radical idea of spontaneity and minimum and light public interventions, favoring the development of small-scale actions and incremental adaptations. This example adds arguments and reflections to the ones advanced in Part Two. Although at first sight, these two parts might seem for certain instances unlinked, a careful reader will find deep connections. *Part Two* proposes general theoretical reflections that can stand even without the example of Oosterwold, while *Part Three* tests some of the concepts and the ideas of the former part with a practical example.

Aims and questions

In general, the topics that the whole research tries to deal with may be of interest to all those involved in issues such as planning law, land-use ethics, methods of simplification, complex systems, self-organizing systems, organic planning, urban design vs flexibility, and theories of emergent orders.

In particular, the thesis has three main objectives:

    (i)   delineate a comprehensive picture of the dynamic relationship between spontaneous actions and action conditions, proposing a deep understanding of the

different nature/genesis of the rules governing the development of cities, with a specific focus on those conditions introduced by planners;

(ii)   identify some guiding principles for the development of a planning approach able to accommodate, encourage, and promote the expansion of spontaneous actions and the evolution of emerging socio-spatial configurations;

(iii) investigate the shift from a comprehensive planning approach to the idea of organic planning occurred in Almere in the last years, and then examine the extreme example of Oosterwold through the main theoretical concepts developed in Part One.

The core questions of the thesis are the following: can two apparently contrasting ideas like planning and spontaneity, which most of the time are seen in contraposition, coexist in practice? And, if it is the case, which kind of planning conditions are more suitable to exploit the benefits of spontaneous actions and (at the same time) more effective in dealing with the emergence of undesirable negative externalities and certain collective public issues?

PART TWO:

Problems and proposals

1 ACTION

1.1 The theory of human action revised

"Cities are fantastically dynamic places, and this is strikingly true of their successful parts, which offer a fertile ground for the plans of thousands of people."

Jacobs (1961: 14)

What do we mean by the term spontaneity? Which kind of phenomena can be called spontaneous? What is the action? Why spontaneity in city is relevant? Is spontaneity only beneficial or a problem too?

The term spontaneity is one of the most overused words we use in describing the city. We often hear things like "spontaneous urban regeneration", "spontaneous re-use of buildings", "spontaneous places or neighborhoods", etc. We connect the term spontaneous to something that is vibrant, beneficial, progressive, fresh, and pure. In this regard, it can be that, for instance, the overuse of the word derives from its appealing sound. In fact, the term is often intended as a positive quality describing something that is "natural" or deeply rooted to bottom-up processes. We see this word in contrast to something that is regulated, institutionalized or imposed from the top. In general, only few (if not anybody) are or may be against spontaneity. More or less, when meeting such a word we all agree: spontaneity is a good thing! However, when we speak of liberty, above of all in the field of urban planning, we immediately raise some eyebrows. We do not consider these two terms (liberty and spontaneity) as two sides of the same coin.

Through a brief literature review of the general theory of human actions, the following chapters connect these two concepts and provide an overview regarding the values and risks of spontaneous actions (chapter 1.1.1), the features and factor of human actions (chapter 1.1.2), as well as the main issues concerning the interactions of spontaneous actions (chapter 1.1.3).

1.1.1 Values and risks of spontaneity

The term *spontaneous* derives from the Latin word spontanĕus which means "of one's free will". In general, the word describes persons and characters with a sense of "acting of one's own accord" or "occurring without external stimulus". Such a term is widely used also to describe phenomena that arise from a momentary impulse or reactions, considerable as "unconscious" or "instinctive". However, its use in the thesis strictly refers to human actions that occur freely, consciously and voluntarily, without external pressures and are not forced

by others. Hence, we can think of the word "spontaneity" as a particular quality of free actions.

In general, spontaneity has both intrinsic and instrumental values in the city functioning. First of all, spontaneity is good in itself, at the level of individuals. In fact, it is ethically relevant to respect individuals for what they are: thinking and independent agents with different ideas about what makes life worth living. In liberal democratic societies pluralism is a fundamental issue. If we agree on that, forms of radical pluralism become a primary value in our contemporary society.

Then, spontaneity is good also because it allows people to pursue their ends by means of their knowledge and creativity, also experimenting new solutions and actions. Doing so, society gets benefits from continuous processes of trial and errors, reaching a level of progress and innovation otherwise unachievable under a state of extensive overall control. Moreover, the recognition of spontaneity as fundamental value is good since helps avoiding the concentration of powers in few hands (favoring also the development of self-organizing systems). In self-organizing systems society can make a more efficient use of polycentric forces as well as the overall dispersed knowledge (Hayek, 1944). Moreover, self-organizing systems are not without rules: they produce certain rules and orders that make self-coordination possible thus to facilitate interactions (Hayek, 1976; see chapter 2.3).

In general, by preventing people to control or govern the actions of other people, spontaneity becomes relevant also because it makes individuals responsible for the consequences of their actions. This is clearly evident, for instance, in the case of Oosterwold where the idea of individual responsibility is extremely developed and applied in practice. As we will see in the second part of the thesis, in the case of Oosterwold people are responsible for everything concerning their actions: for instance, for the provision of energy or sanitation facilities, the construction of roads or the internalization of negative externalities.

Actions are inevitably located and embedded within a complex system of social and spatial relations. For this reason, we cannot speak of actions without considering the issue of interactions. Interactions are at the base for the creation and circulation of wealth. Nevertheless, many spontaneous actions interacting can bring the system also toward unpleasant situations that need to be regulated and governed. Therefore, spontaneity has not only positive values but also possible adverse consequences (a classical example regards, for instance, possible environmental issues like pollution or the abuse of certain natural resources). From this awareness derives the need to have certain legal rules in order to control spontaneity and diminish the possibility to generate negative externalities (chapter 1.1.3).

1.1.2 Definition and factors

1.1.2.1 Definition

Purposefulness

The first aspect to consider is that spontaneous actions are *purposeful* behaviors and not unconscious or unintentional ones.[8] According to Mises, actions that are the result of commands or coercion cannot be defined as spontaneous.

Spontaneous actions are the manifestation of man's will, which is the faculty to choose between different states of affairs, to prefer one rather than another. This implies the existence of certain preferences between different alternatives. In brief, actions are always a matter of taking and renunciation (Mises, 1949).

The theory of human action states that actions have profound meanings. For instance, Mises interprets the action as "a man will put into operation aiming at particular future states of affairs"; or as a "purposeful reaction" through which agents try to adjust certain environment or state of affairs according their will and desires. Generally speaking, the purpose of a man's act is its end. Therefore, spontaneous actions are motivated by the desire to achieve certain ends that people consider important (*ibid.*). The desire to reach certain ends is the main motive for instituting the action (Rothbard, 1976).

However, by maintaining that actions are purposeful behaviors the theory of human action doesn't say that the effects are in their turn voluntary or intended; or it doesn't say anything about the goodness or the rightness of the ends too (to say that one action is good or right implies a moral or a legal judgment). In brief, by claiming that spontaneous actions are purposeful it means that such actions are voluntary (and moved by subjective values) and aiming at precise ends.

Happiness

The second aspect to consider is that the achievement of *happiness* is the primary purpose directing human action (Mises, 1949). Uneasiness is not sufficient to make a man act. What drives the action is the expectation that a certain behavior may remove or lighten that perception of uneasiness. So, every action is an attempt to change the course of the events into more satisfactory state of affairs (Rand, 1964).[9] From this perspective, external observers could only see the actions taken by individuals, but not their desires or introspective motivations.

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[8] In these terms, Mises was influenced by Max Weber and his notion of purposefulness (Selgin, 1990).

[9] "The emotional payment for successful actions is only an incentive to continue acting" (Rand, 1964: 64).

Every action interferes with the course of events. However, once actions are over, the level of satisfaction would depend on the subjective experience of benefit or loss that agents individually perceive (*ibid.*). In this regard, Mises claims that nobody is in a position to declare what makes a man happier since people pursue happiness in their way (*ibid.*). Agents rank their preferences subjectively. In a strict sense, the scale of preferences represents a subjective judgment through which agents choose what value them more. The scale can be named in different ways: happiness, utility, satisfaction or in many others. How we call it is not relevant. What matters instead is that people subjectively determine if a new state of affairs is better or worse (Mises, 1949). What happiness means for one individual may mean something highly despicable for others. All this does not mean that someone's happiness may not also derive from the conditions of other individuals.[10] However, the pursuit of someone happiness must be stopped only in the case in which specific behaviours are trampling on others' people rights, not their happiness.

Individuality

From a methodological perspective, we can claim that spontaneous actions are always taken by individuals. If two or more individuals decide to act together according to a common plan is because they primarily and individually choose to collaborate with each other. Hence, according to the theory of human action, collective actions have not independent existence from the actions of their individual members (Rothbard, 1976). From this perspective, "Society is an unending sequence or the sum of actions which always remain actions of individuals" (Mises, 1963: 45). This primordial principle, central also to Max Weber's social thought, implies that collective representations like "state" or "society" are metaphorical constructs used to describe concerted actions of individuals[11] which simplify the complexity of the social world (for instance there are not governments as such but only individuals acting in concert in a "governmental' manner").[12]

Even though individuals may spontaneously collaborate or act in a concerted or coordinated way, the choice to do so remain always individual. Citing Mises (1951: 97), "All rational action is in the first place an individual action. Only an individual has a mind; only an individual can feel, see, sense, and perceive; onlyan individual can adopt values or make choices; only an individual can act". Stating that the action is always taken by individuals, however, does not imply that the society is atomistic, either that distinct individuals cannot

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[10] Think for instance about the concept of "reciprocity".

[11] Max Weber (1957) puts it clearly: "These collectivities must be treated as solely the resultants and modes of organization of the particular acts of individual persons since these alone can be treated as agents in the course of subjectively understandable action. For sociological purposes there is no such thing as a collective personality which acts". See also Rothbard" (1977).

[12] As Rothbard claims (1977): "Hayek has demonstrated that the fallacy of treating collective constructs as directly perceived social wholes […] the existence in popular usage of such terms as society or economy is naively taken as evidence that there must be definite objects corresponding to them".

act for the same cause or voluntary self-organize. In brief, the theory of human action accepts the complexity of social systems as an intricate ensemble of individual relations. The main point is individuals are at the base of any complex social system.[13]

1.1.2.2 Factors

Knowledge

Spontaneous actions depend on agents' knowledge and previous experiences. In this regard, the concept of "man on the spot" introduced by Hayek explains the existence of a specific knowledge which is owned by all agents in a particular situation of time and space. The main implication of this concept is that it is impossible to collect into one single mind all the dispersed knowledge of the society. Following Hayek: "Knowledge of the circumstances of which we must make use never exists in concentrated or integrated form, but solely as the dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess. […] To put it briefly, it is a problem of the utilization of knowledge not given to anyone in its totality (Hayek, 1945: 519). All individuals possess certain knowledge which is, by definition, strictly related to time and space conditions (Mises, 1949: 99-140).

Human knowledge has both explicit and tacit dimensions (Polanyi, 1966). The explicit knowledge is the "know that", that is a transmittable knowledge based on technical or procedural rules. While, the tacit knowledge is the "know how", that is a kind of internalized knowledge based on complex cognitive capacities (it is the result of individual experience, critical reflection on past events, intuition, specific context understanding, etc.) which is hardly verbalized and transmittable (Ryle, 1949). Although explicit knowledge can be easily transmitted, the ways in which individuals use it depends on their tacit knowledge.[14]

Knowledge and individual capacities are environmentally influenced. However, it may be possible to distinguish knowledge that is the result of "nature" from knowledge that is the result of "nurture". This means that, on the one hand, individual knowledge depends upon some circumstances clearly beyond human control; while, on the other, "Human knowledge is due to factors which we might be able to alter according to our will" (Hayek, 1960: 89).

Knowledge is a dynamic factor which is continuously altered as new experiences or findings emerge. However, if we accept the concept of "man on the spot", the level of individual knowledge is by definition limited. This means that, even though the degree of

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[13] Obviously, individuals are sometimes depending on others or confined by them when it comes to make decisions and form actions. This happens because people are embedded in social relationships (see chapter 2.1).

[14] For instance: in order to build a house an individual needs a certain amount of technical knowledge, but also deep contextual knowledge to decide whom to ask for, where to find the best land and price, when to start building, etc. Such knowledge mostly depends on intuitions and social interactions.

knowledge is expandable, we irremediably live in a condition of ignorance. Following O'Driscoll and Rizzo (2014: 52) "Individuals cope with the problems posed by real-time and radical ignorance". This has enormous consequences in undersetting the complexity of the city functioning.

Creativity

Actions are successful when they address the course of the events toward more satisfying state of affairs. In general, what drives the action is the expectation that through certain behaviors individuals may reach desirable ends (Mises, 1949). This can be done by means of repetition (in this case individuals already possess the right "receipt") or through the exploration of new solutions. In the second case "creativity" plays a fundamental role.

Knowledge and creativity are two factors that are strictly correlated, but still two distinct aspects. While, strictly speaking, knowledge is something individuals already possess deriving from their experiences, the concept of creativity emphasizes the ability of individuals to use or combine their knowledge in order to solve new situations or fulfill new needs. Experimentation is a salient aspect of creative actions (Bratman, 1985) and creative actions can only be spontaneous. The peculiarity of experimentation is that once agents put into practice their creative solution, they gain experiences and collect some new practical knowledge (Mises, 1949).

This kind of processes comes hand in hand with new desires and the need for innovation solutions. This practice represents an endless search for ways through which existing desires can be satisfied. In particular, this process conducts society toward the improvement and enlargement of existing know-how (Rothbard, 1962). From this perspective "ideas" are a kind of "bridge" that, starting from an initial need, drives the action of people toward new solutions.[15] In general, a trial and error process is the only way possible to guarantee the achievement of new innovative results, expanding previous knowledge and finding better solutions comparing to those already existing (Popper, 1959; Hayek, 1960).

Means

Every action (spontaneous or not) implies the use of certain means which may assist agents in reaching their ends. "Agent adopts goals and believes, whether erroneously or

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[15] Let's ponder around a simple example. Suppose that the residents of a small condominium no longer desire to waste potable water for courtyard cleaning or garden watering. In particular, they want to use only rainwater for these practices, so they start searching for new innovative solutions. The project regarding rainwater collection and utilization is a purely technological one. It obviously can be addressed in a creative and innovative manner. However, in order to find new solutions, an experimental phase is necessary. Only at the end of this phase, it will be possible to reach an innovative result. This simple example can be replicated for all circumstances and "problems" which imply the search for new technical solutions.

correctly, that he can arrive at them by the employment of certain means" (Rothbard, 1997: 59). However, by definition, means do not exist in nature; in nature only things do exist. Things become means only when people plan to employ them for their serviceableness (Mises, 1949). The way we look at things as means derives from long traditions, and our capacity to look at things as means depends on previous discoveries. Means may be material or immaterial (Menger, 1950). However, while material resources are scarce, "The level of knowledge [i.e. immaterial means] is unrestricted and opens to further discoveries that may expand the amount of material possibilities" (Hayek, 1960: 43).[16]

From this standpoint, the issue of property regime becomes extremely relevant since it defines the availability or not of things (Ward, 1973). If certain means are not available, however, there are ways and forms of organization that allow agents for their attainment (Beito et al., 2002).

The preeminent essential means for every type of action is of course "space". In fact, it is impossible to think of actions as a spaceless phenomenon. Space is an essential means for every human action (doing nothing too or sleeping, for instance, cannot avoid the need to use some space).

Time

There is a difference between changes deriving from actions and changes occurring without proper actions. For instance, getting older, for people, objects and built environments is a clear example of changes without actions. The thesis deals with changes deriving from actions. We can call them, for instance, active changes.

The notion of change is obviously linked to that of time. Change always implies the concept of temporal sequence. To put it simply, change is a process, and it can take place only after a certain action.[17] Changes show progressive temporal orders (Mises, 1949) and certain level of path dependency (Liebowitz et al., 1995). Like every action needs a certain amount of space, we cannot conceive a timeless action (Mises, 1949).

The relationship between time and action can be distinguished among three different periods: (i) the period before the action (i.e. we can call it plan), (ii) the time absorbed by the action in itself, and (iii) the period after its conclusion (i.e. the effects).

As time passes, while acting agents acquire new knowledge and can discover new opportunities or problems (Rothbard, 1962). Moreover, effects are visible only with the

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[16] As Jane Jacobs claims (1969: 120) "The economies of people are not like the economies of deer, who wax fat if their numbers are thinned". In other words, the more are the people who participate in trade and exchange, the more the possibilities to find new discoveries and solutions that can expand living standards and access to certain good and services. See also McCloskey, D. (2016).
[17] There is a difference between change deriving from actions and change occurring without proper actions. Getting older, for people, objects and built environments is a clear example of changes without actions.

passage of time and things like preferences, needs and values change as new circumstances evolve.

1.1.3 The interaction of spontaneous actions

1.1.3.1 Opportunities

Collaboration

Actions are always situated within a certain environment. Consequently, every action must be suitable for specific situations in which an indefinite number of people are attempting to work out their ideas and plans (Giménez-Roche, 2011). For this reason, to develop effective actions, agents need to interact systematically with other agents, exchange information, and acquire new knowledge (Hayek, 1948). In brief, "Their attempts at purposive action are embedded in concrete, ongoing systems of social relations" (Granovetter, 1985: 487).

In general, we can think of society as the outcome of purposeful behaviors which bring about a certain degree of social cooperation for the attainment of particular ends. In this sense, a "Sense of community can be defined as a particular state where individuals realize that all other human beings are potential collaborators and they are capable of recognizing the mutual benefit of cooperation" (Mises, 1949: 143-165).

Actions take place within social systems, but society exists nowhere else than in the actions of individuals. Therefore, society cannot be conceived as an entity which lives its own life, independent and separate from the various actions of individuals. Rather, it is useful to see society as the greatest means for the attainment of multiple and plural ends. In this sense, "The city is the place that enables the spontaneous collaboration among different individuals and makes humanity shine most brightly" (Gordon, 2012). In this regard, Jane Jacobs states that "Cities risk to decline when trades are few, and there is not a strong interdependence among different people and activities" (Jacobs, 1961: 114).

In brief, the city is a potent enabler since the density, and resulting proximity among individuals narrow the gap between the potential opportunity and its actual discovery (Ikeda, 2007). In fact, "When agents act in the pursuit of their ends they can make use of more knowledge by profiting from dispersed knowledge of society" (Hayek, 1960: 22).

Market

A specific kind of collaboration is the market. The market is a particular social system where everybody's actions aim at the satisfaction of other people's needs as well as at the

satisfaction of his own.[18] But the market is not a place; rather it is an entrepreneurially driven process in which various individuals with limited knowledge cooperate under the division of labor. It can be analyzed by looking at the singular choices taken by individuals.[19] The market is a social body, and market phenomena are also social phenomena. In other words, the market is the resultant of everyone's active contribution. However, the market cannot be altered by only one individual, even though each individual is part of its dynamic process (Mises, 1949: 312).

Referring to the nature of the market, Karl Polanyi introduces the concept of "embeddedness". With this idea, the author maintains that rather than being a separate and distinct sphere, the economy is inevitably embedded in both economic and non-economic institutions. Economics takes place within the society and not in a social vacuum. So, any attempts to see economics as a distinct entity, isolated from its socio-cultural and political context, are irremediably erroneous (Polanyi, 1966).

Jane Jacobs well underlines the beneficial role of the market in cities.[20] In her view cities exist because people have always taken advantage in managing their social and economic relationships in a spatially concentrated arena (Gordon et al., 1997; Andersson, 2005; Gordon et al., 2011). Moreover, she states that "Economics is a process of complex mutual adjustments in which people use, combine, and transform existing resources producing new wealth" (Jacobs, 1984).

1.1.3.2 Problems

Uncertainty

The problem of uncertainty regards future events. In general, future events have, inevitably, a certain level of uncertainty. If we state the opposite, we will negate the meaning of actions. In other words, by saying that future events are certain, nobody will act since actions can change the future or interfere with the course of events. In this regard complexity science distinguishes between simple environments, in which expecting the likely results of actions is possible, and complex environments, where a turbulent order exists and how agents operate and move is unpredictable.

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[18] To put it simply, one can open a pizzeria or a cinema only if there is someone who is willing to pay for this service, contributing to mutual exchanges among people pursuing their own interests.

[19] It can be intended as the result of human actions or as a man-made process, but this doesn't mean that it can be replaced artificially since it is the outcome of many independent little actions which have a specific rationality (if anything. See Mises (1949: 258).

[20] For instance, she says that (1969: 121) "Poverty can be overcome only if economic processes are in motion and these processes are all rooted in the development work that goes on in impractical cities where one kind of work leads inefficiently to another".

More in general, one can say that the future cannot be easily forecasted since people's actions are unpredictable, and we have insufficient knowledge about social phenomena. Besides this, we may consider connection and interdependence of all real phenomena, and their casual concatenation as the ultimate fact. Hence, any forecast or hypothesis related to humans' behavior is always a risky speculation.[21] In fact, even if we know some of the factors which determine outcomes, there will always be some room for others determining factors that we don't consider at all.

In complex systems such as the city, anyone who seeks to anticipate future events may understand if he or she is right (or not) only at the end of the process. This is true because future events in complex systems are based on people actions and their spontaneous reactions to other events: "Once we are able to realize that individuals no longer behave objectively, they are no longer passive responders […] they actively engage in subjective choices" (Buchanan, 1982: 69). Actions are always tied in a very intricate system, and the more the environment becomes heterogeneous, the more future becomes uncertain. The more complex a system is, the more its level of overall uncertainty. Therefore, it is impossible to remove the question of uncertainty regarding future events. In brief, agents can perceive only a little part of factors influencing the evolution of the social system (Giménez-Roche, 2011).

Unintended consequences

The problem of unintended consequences regards the distance between what one agent intentionally does and the unintentional effects within the social system. Consequences can be expected or unexpected (for instance because, in the meanwhile, other actions modify the existing state of affairs). According to Giddens (1984: 14) "When one agent acts, his action modifies his environment, leading to a new set of effects that will modify his knowledge again. Actions have unintended consequences, and unintended consequences may systematically feedback to be the unacknowledged conditions of further actions". The so-called "unintended consequences" are typical of complex social systems such as the city (Moroni, 2012; Mises, 1960). For instance, Raymond Boudon (1977) states that intentional actions of individuals always generate numerous unintended consequences (which can be perceived as desired or undesired).

The production of unintended consequences can be the result of individual actions as well as the result of government actions. For instance, according to Sherden (2011: 146-147), there are cases in which planning interventions caused the decline of cities.[22] The existence

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[21] We may say that the concept of "probability" is the only acceptable when we try to speculate on future events regarding social systems (Mises, 1949: 105-120).
[22] Quoting Sherden again: "City planners' effort to improve old urban neighborhoods have unintentionally caused their decline… older cities that have grown organically are social ecosystems consisting of numerous

of localized or private knowledge implies the intrinsic complexity of rational social expectations. "If we try to look at what would happen as a result of our possible actions, we shall indeed not solve the problem of indefinite casual chains, since it is true that what would happen might consist in never ending chains of events" (Carter, 1999: 188).

Negative externalities

The problem of externalities regards the fact that people often (unintentionally) undergo the (undesired) effects (and costs) resulting from other people's actions. The tight interdependence among individuals in society implies the existence of externalities. In general, externalities have always represented an important phenomenon in societies: they illustrate the existence of interdependence between individuals. Every action produces externalities: some are perceived positively, others are not. The question is whether, collectively, it is possible to define objectively the values (positive or negative) of such externalities. The issue is a complex one. In the late 1950s, for instance, crucial articles on external effects were published (Bator, 1958; Coase, 1960; Samuelson, 1954). However, I consider the ideas of Buchanan in line with my reasoning. Buchanan sees externalities mainly as a matter of subjective values and, in particular, the definition of negative externalities as a constitutional problem.

Individuals evaluate things by attributing personal values, so a "Subjectivist approach is the consequence of the acknowledgment that individuals interact with other individuals and not with objects" (Buchanan, 1964: 218). For this reason, externalities can be hardly evaluated objectively. What happens in daily life is that externalities are evaluated subjectively, through the subjective benefits or costs individuals receive (or pay). "Externalities exist and occur, because individuals live in society among other human beings and because there are interdependencies between them" (Marciano, 2011). But, not all externalities are problematic, as not all interdependencies (or involuntary interactions) are problematic. In other words, there is not "A prima facie case for intervention in all cases where an externality is observed to exist" (Buchanan et al., 1962: 381).[23] The question is that of finding out which externalities are collectively problematic and avoid them through a certain public intervention.[24]

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individuals in pursuit of business, pleasure, and domestic matters. They have thrived unplanned and are self-sustaining, vibrant, safe, adaptive places.

[23] On the contrary, many authors believe that externalities are a social problem because self-interested individuals adopt free-riding behaviors and do not contribute to the provision of public goods or they try to benefit from positive externalities without paying for them. This kind of reasoning is typical of public goods and market failures.

[24] In this regard, Buchanan (1964: 220) claims that the activities that generate such external effects must be treated at the constitutional level only when "Individuals do not find voluntary solutions among them, and the problem is hardly solvable".

1.2   General types of actions in planning

"Space has to be both an object of research and a meaningful constituent of social processes, and processes can only be social if they involve human action at some point."

Werlen (1993: 1)

In the previous chapter, we provided a definition of "spontaneous action", we described the main features and we underscored the main problems and opportunities regarding the interactions of spontaneous actions in complex systems. This was done by revising the theory of human action. In the following pages, the thesis addresses the issue of action in the field of urban planning. To do this, the chapter attempts to identify *general types of actions* that may be relevant in planning. As we will see, this procedure is useful both to describe different types of actions occurring in city and provide certain general reflections regarding possible insights for rule making. This operation is not a simple one. The codification of general types of actions requires arbitrary choices which must be coherent with certain logical and empirical criteria.

The chapter is divided in four sections. First, it underscores the problems in defining or describing general types of actions and how it is possible to overcome such problems. The second section proposes two general types of action that may be relevant in planning. The third section introduces certain possible criteria to find sub-groups and distinctions within the two general types of action. The forth section offers some reflections on the concept of *scale of action* and the issue of complexity, knowledge, design and predictability.

1.2.1 Problems

Why do we need to identify general types of actions in planning? As seen in the previous chapter, the theory of human action provides very general and abstract definitions of what a spontaneous action is, or which are the main features influencing its development, or the main benefits and problem regarding the interaction of spontaneous actions. Being the thesis focused on urban planning and policy, and being my personal interests on the relation between rules and actions, I recognize the necessity to distinguish different types of actions by looking at their main effects on the social and physical systems. However, the identification of general types of actions in planning is not an easy task. I think nobody have tried to do that before. To start this reflection, I refer to the work of Ian Carter *A Measure of Freedom* and in particular the chapter on *Actions* (1999: 169-218).

The author maintains that there are three main problems in identifying general types of actions. The first problem is that there can be indefinite ways to describe the same action (Cody, 1967). The second problem is that the same action can be described and subdivided into an indefinite number of particular actions. In fact, actions evolve in particular spatial

and temporal sequence and therefore can also be subdivided in very specific situations (O'Neill, 1979). The third problem is that there may be indefinite casual chain between different actions. In complex systems, for instance, the effects of actions are uncertain and therefore their description can be analytically distinguished in "action in itself" and "consequences" (Carter, 1999: 175). To give you an idea, we often say something like "the action X is regenerating the context Y". Most the time we connect X and Y and say directly "we are doing Y". However, if we take this last problem seriously we should distinguish between the effects of the action (for instance the regeneration of one neighborhood) and the action itself (for instance the construction of the Guggenheim Museum). Actions are governable, their consequences less.

To overcome these three problems and identify coherent general types of actions, Ian Carter (1999: 177) suggests making a distinction between "basic-action" and "non-basic actions": "A basic action is an action that we do not perform by performing another action. A non-basic action is an action that we perform by performing a basic action".[25] Then, the author suggests also to identify a general "act-property" able to aggregate an indefinite number of "non-basic actions" (Goldman, 2015). That concern is related to the concept of actions compossibility: "If a set of actions is compossible, then there is a possible world in which they all occur" (Carter, 1999: 180). Following these ideas, it is possible to find two different and relevant acts-root in planning that helps us in identifying two general types of actions: the act of *building* and that of *using*. These two types are the precondition to recognize possible sub-groups of actions.

1.2.2 Building and using

The first type of action is that of *building*. This type refers prevalently to the dimension of the physical environment and the "immobile material artifacts" in which "Social world meanings are persistently expressed in patterns of spatial arrangements" (Werlen, 1993: 184). The act-root of this type of action concerns the transformation of the physical environment through the adaptation or the construction of the existing state of affairs (and consequently the alteration of relations between different built elements).

The second type of action is that of *using*. This type of action refers prevalently to the dimension of the social systems and the localization of human activities in space. Its act-root concerns the introduction of a new activity that modifies the way in which activities are distributed in space and the consequent alteration of their links and relations. The development of this type of action does not imply relevant changes in the physical environment, but prevalently the modification of the spatial correlation among different activities (Jacobs, 1969).

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[25] Annas (1997) says that "If there are human actions at all, and at least some actions are actions we perform by performing other actions, then there must be basic actions."

Both the act of *building* and that of *using* can be internally distinguished in sub-groups with the help of valid parameters. For instance, one of the possible parameters according to which the detection of sub-groups is possible may be that of *alienation* as proposed by Nurit Alfasi and Juval Portugali (2007). The concept of alienation expresses the degree of (relative) differentiation of new actions in comparison with their surrounding urban environment (*ibid.*: 176-177): "We could define the degree of alienation between a building and its surrounding". In particular they recognize the degree of alienation can influence two specific qualities: "first, the physical qualities, such as height, volume, and land coverage of a building with comparison to its surrounding; second, the building's usage and operation characteristics, again with comparison to its surrounding". Moreover, the authors identify two extremes degree of alienation: "the first case represents neighborhoods, where the majority of built elements used for the housing and urban fabric is highly uniform and [···] is low alienation and a low level of spatial conflict. In the second case, however, the marked houses create high alienation with their surroundings". In brief, although such a thing as maximum alienation does not exist, different degree of alienation can be traceable.

In other words, the concept of alienation describes the level of differentiation of an existing context after the development of new actions which transform the built environment or the way in which space is used. The same concept may well describe also things like the possible "impacts of actions" or the "level of easiness" of the assimilation of new actions within an urban environment having particular existing patterns. From this perspective, the distinction of action in sub-groups can be useful to understand if new actions are more (or less) prone to keep the stability of the existing state of affairs.

1.2.3 Possible criteria for sub-groups distinctions

In this regard, for instance, differences in sub-groups could be possible by following two main criteria.[26] The first criterion is *the scale of action*. This first criterion regards both the act of building and that using. For the second criterion the difference between building and using are relevant. In the case of building the criterion is *the type of intervention* (that goes from little adaptation to a complete anew construction). In the case of using the criterion is *the hierarchy of uses*. To evaluate the degree of alienation we should correlate the first criterion with the second.

The first criterion, i.e. the scale of action, regards the (relative) territorial extension (both horizontal and vertical) of a single action in comparison with its surrendering context. In this regards, the extension may run between two opposite extremes: small-scale action and

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[26] Different kind of distinctions can be made by referring to different kind of criteria. For instance, one can think to evaluate the level of alienation by measuring the environmental impact. Why not? Obviously, the way in which we look at the city (and the factors we would like to examine) filters our evaluation. However, I do believe that the distinction between "building" and "using" totally respects the indications provided by Ian Carter, while the distinctions concerning the environmental impact do not treat the action (in itself) but its effects.

large-scale action. In the case of the act of building we already use concepts like *small-scale development* or *large-scale development*. However, this distinction is valid also in the case of the act of using and it may regard the amount of space occupied by a single use and its level of specialization.

One of the possible implications deriving from this distinction regards the aggregation of multiple actions and the complexity of the final configurations or patterns.

Let's consider a given amount of urban land, for instance, a square of 1 km^2. By looking at how actions are aggregated within this territory, it is possible to distinguish "complex patterns" from "simple patterns". A simple pattern is one in which the total amount of land is the result of a single action (or few). On the contrary, a complex pattern is the result of numerous actions. In general terms, given a certain amount of urban land, the degree of complexity can be calculated by measuring the intensity and the number of actions that shape such environment: the more the number of actions, the higher the level of complexity. Therefore, a territory shaped by small actions (in theory) should be inclined to have more complex patterns (both regarding the form of the physical environment and its land uses). On the contrary, a territory shaped by large-scale actions should possess simpler patterns (obviously, the level of complexity also depends on the intensity of networks and links among activities, and not only on the number of actions).[27]

Now we move to the second criterion. As regards the act of building we can recognize different types of intervention which go between the *construction of new element* and the *adaptation of an existing element*. In the case of the act of using, the second criterion concerns the *hierarchy of uses*. In particular, referring to Jane Jacobs, we can distinguish between "primary uses" and "secondary uses" (1961: 161-162). Primary uses are the driving force for cities economies ("Primary uses are those which, in themselves, bring people because are anchorages"); secondary uses are smaller uses correlated to primary uses ("Secondary uses are the enterprises that grow in response to the presence of primary uses").

By correlating these criteria we can address different level of alienation. For instance, as regards the act of building we can think of high degree of alienation in the cases of large-scale urban development, above all if they start from scratch (table 1). While in the case of "using" we can think of high degree of alienation in all the cases in which there is the introduction of a new large-scale primary use (table 2).[28] On the opposite, we can think of

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[27] See for instance the works of Pierre Desrochers.

[28] For instance, see what Jane Jacobs says about renewal projects in Manhattan. In her opinion, one of the prominent (negative) examples is the new area in East Harlem: "1,100 stores have already vanished in the course of re-housing 50,000 people… a project made by monolithic houses and giant supermarket" … "Planners and architects are apt to think, in an orderly way, of stores as a straightforward matter of supplies and services…but stores in city neighborhoods are much more complicated creatures, which evolved a much more complicated function. Although they are mere holes in the wall, they help make an urban neighborhood a community instead of a mere dormitory" (Flint, 2011: 25).

situations with low level of alienation in the case of "small adaptation" of an existing physical element, or the introduction of a new small secondary use.[29]

Table 1: *Degree of alienation, sub-groups distinctions in the act of "building".*

New construction		High alienation
Type of intervention		
Adaptation	Low alienation	
BUILDING	*Small*	*Large*

Scale of actions

Table 2: *Degree of alienation, sub-groups distinctions in the act of "using".*

Primary uses		High alienation
Type of intervention		
Secondary uses	Low alienation	
USING	*Small*	*Large*

Scale of actions

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[29] For instance, see what Jane Jacobs says about the "self-regeneration" of the North-End in Boston. "Twenty years ago, its buildings were badly overcrowded, and the general effect was of a district taking terrible physical beating and certainly desperately poor… When I saw the North End again in 1959, I was amazed at the change. Dozens of dozens of buildings had been rehabilitated… mingled all among the buildings for living were an incredible number of splendid stores…" (Jacobs, 1961: 9).

1.2.4 General reflections regarding the scale of actions

The main issue regarding the scale of actions is about the use of dispersed knowledge. This issue is easily understandable: given a certain amount of land, the higher the number of different, plural, separate and distinct actions, the more may be the use of what Hayek calls dispersed knowledge. Starting form this issue we may derive others aspects concerning many complex issues; for instance, the issue of "responsibility" and its distribution in space in urban development, or the complex/simple "design" of the physical environment.

First, let's imagine that for a given action (for instance the construction of a new residential neighborhood) there is a certain overall level of responsibility[30] that is proportional to its territorial extension. The less is the scale of such an action, the minor will be the risks in case of failure.[31]

We may go more in depth reflecting on the territorial extension of actions. So, let's take again the example of 1 km^2 of buildable land, and imagine that the development of the whole area entails an amount of risk equal to 100.[32] We may think about two extremes cases. In the first case A, there is only one developer for the whole territory who assumes all the risks (i.e. 100/100). In the second case B, there are a hundred developers assuming one percent each of the total amount of risk. Now let's consider some possible implications. In the case of A, if the developer fails also the planned urban development fails. While, in the case of B, if one developer fails there will be other 99 developers who will try to work out their actions. On the contrary, in the case A, if the developer succeeds in a short time, also the desired urban development will be reached very quickly. While, in the case of B, in order to develop the same amount of land, there would be a higher level of complexity and, probably, the complete urban development will require more time and the acceptance of a higher level of uncertainty.

A second reason to distinguish small scale actions from large-scale actions regards the design of the physical space and its level of control. On the one hand, the built environment can be very simple if only one agent designs a large part of the territory. On the other hand, it may be that many agents working out their small-scale plans give rise to a more complex aggregation of actions. In other words, given a certain settlement, the less is the scale of actions that averagely shapes the final emergent configuration, the more will be the number of independent and separate design promoted by agents (Ikeda, forthcoming). In this regard a valuable and very simple example could be that of comparing the complexity of a unitary design project of a residential neighborhood (built for instance after the Second World War) with the complexity of any European historical settlements (Hakim, 2014).

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[30] For instance "economic responsibility".

[31] For instance, the Dutch planning practice suggests considering self-building as the smallest action scale possible. In particular, this practice is slowly spreading after the 2008's crisis when many large-scale developments projects where interrupted for economic feasibility issues (Buitelaar, 2010).

[32] This is, of course, an oversimplification of real processes. In fact "development risks" cannot derive only from two simple parameters. So, please, take this example as an abstract way to reflect on more general issues.

The reasons to distinguish small scale actions from large-scale actions are well argued also by Jane Jacobs (figures 1, 2, 3, 4 and 5).[33] Reading her contributions, we understand that the scale of actions is also a matter of power distribution in cities. In fact, if we consider that every action tries to reach certain future changes, and such changes produce effects also on other people life (see chapter 1.3), we could claim that the larger is the scale of a certain action, the higher may be the number of people who involuntary undergo the effects of such action. Moreover, as the author states, quite often happens that public institutions boost large-scale projects. At the local level, interventions of this kind often raise hardly governable unintended economic consequences that can compromise cities functioning and the use of dispersed knowledge (Ikeda, 2002; Jacobs, 1961: 291-317).

To conclude, with all these reflections regarding the identification of possible sub-groups within the two general types of actions, I'm not saying that some actions are a priori better than others (for instance, I'm not saying that large scale developments are worse than small actions or vice versa; this judgment changes from one situation to another), but I'm simply offering some descriptive implications that could be useful when it comes to assuming a regulative perspective (see chapter 3.3).

Figure 1: *An old view of the East Village with the new monolithic housings built between the '40s and the '50s. Jane Jacobs overtly discusses about the impact of this simple large-scale development, and its internal and external negative effects in terms of vibrancy and economic activities (source: online).*

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[33] As regards the scale of design see Jacobs (1961: 178-186). As regards the concept of responsibility see Jacobs (1961: 291-317).

Figure 2: *While the whole city of New York changed in the last decades, this area (like others similar projects) has remained unchanged. Photograph by the author.*

Figure 3: *The project consists of nineteen buildings, between six and 14 stories each, containing 1,191 apartment units. Photograph by the author.*

Figure 4: *The urban renewal project in East Harlem criticized by Jane Jacobs in 1955 during a conference at Harvard University (source: Flint, 2009).*

Figure 5: *East Harlem, renewal project. Photograph by the author.*

1.3 Emergent socio-spatial configurations

"A city does not present itself in the same way as a flower, ignorant of its own beauty. It has, after all, been composed by people. All the same, it has none of the intentional character of an art object."

Henri Lefebvre (1991: 74)

1.4.1 The city as the space and product of actions

Cities are settlements that consistently generate changes from place-based actions and interactions. They the expression of both urban planning interventions and a complex set of spontaneous actions which are, obviously, the preconditions for emergent (or unintentional) outcomes (Ikeda, 2007). In brief, spatial and social configurations in cities depend both on planning and the way in which people freely act and collaborate. Cities are the expression of countless numbers of people who act to make and carry out countless plans. From this perspective, the works of Jane Jacobs offers surely prominent examples.[34]

Alfred Schütz (1962) claims that to grasp the complexity of the social systems is necessary to go back to the "forgotten man", that is "The actor in the social world whose doing and feeling at the bottom of the whole system". On the contrary, "If social science lacks such foundations, it is likely to replace the world of social reality by a fictional nonexistent world constructed by the scientific observer" (Rothbard, 1977). Mises (1949: 45) posits that human life is an unceasing sequence of single actions which are in their turn strictly interrelated in a very intricate mode: "Its final configuration is more likely to be the result of human actions but not human design." From this perspective, the city can be intended as the product and result of actions over time (Cozzolino, 2015). The complex set of urban artifacts is the creation of human actions within a process of unending adaptations (Werlen, 1993).

The following chapter introduces the concept of "emergent configuration" as result of spontaneous actions. The term "spontaneous" refers to individual actions, while the term "emergent" refers to socio-spatial systems. This distinction helps us in differentiating spontaneous actions (i.e. intentional actions) from emergent situations that are the unintentional result of actions over time. This distinction is relevant but not clearly traced in the field of urban studies (Lai & Lorne, 2014). In fact, the term spontaneous is often used to describe the city as a whole as if the city is an object that lives is own life independently from the actions of individuals.[35] On the contrary, if anything, it is more pertinent to speak of the

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[34] Perhaps, nobody like Jane Jacobs has been able to keep linked and mingled both the physical and the social systems by underscoring the emergent character of the city. Her insights still have great success in the field of urban studies.

[35] In the field of urban studies, the term "spontaneous" is widely used to describe the city as a whole. Kostof (1991) distinguishes between "planned" and "spontaneous" elements. Nilufer (2004) describes the Medieval city as "spontaneous" or "organic". Leontidou (1990) analyzes "spontaneous" elements in Mediterranean

city as a complex set of emergent socio-spatial configurations that possesses a certain degree of internal spontaneity (Carter, 1999). Probably, what is included in the next pages is not completely exhaustive. Many other facets of this concept can be developed or extended.

The chapter is divided in three sections: in the first section, it presents the general theory of emergent orders.[36] The second section, proposes a stringent selection of three contributions that help us in understanding how to observe (and why) the city as a complex set of emergent configurations. In the third section, we discuss why more research are needed on the relation between rules and the evolution of emergent configurations.

1.4.2 The theories of emergent orders

Our exploration starts with the theories of *emergent orders* considering the idea that from spontaneous actions can emerge unintended (ordered) configurations that facilitate the functioning of the social systems.

Although the theories of emergent orders have a long tradition, for different reasons, they were almost forgotten during the twentieth century. In fact, for much of this period, they were trumped by various doctrines of constructivist rationalism (Hayek, 1979).[37] Only in the last decades, there has been a rehabilitation of such theories.[38] However, before showing what the theories imply in general terms, it is worth to analyze the meanings the provide about the concepts of *order* and *emergence*.

As regards the case of the word order I refer to Hayek's definition (1973: 36): «[Order is] a state of affairs in which a multiplicity of elements of various kinds are so related to each other that we may learn from our acquaintance with some spatial or temporal part of the whole to form correct expectations concerning the rest». In other words, order is a system of interrelated parts that shows a certain level of regularity which enables us to shape some expectations. In *The Sensory Order* Hayek writes that (1952: 47) "An order involves elements plus certain relations between them." Following Heath (2013) "The elements of an order might be physical, numerical, symbolical, verbal, or human; its relations might be temporal, spatial, causal, logical, mathematical, evaluative, hierarchical, or functional". In economics, a clear example of emergent order is the system of prices which co-ordinates aims and purposes of countless and unknown actors.

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cities. Donne (1992) identifies a "spontaneous Rome". Pace (2002) and Hamouche (2004) write of the spontaneous development of Mediterranean cities.

[36] As we will see, these theories are mainly applied to describe the evolution of socio-economic systems, and not directly to describe the physical evolution of cities. However, it unthinkable to separate the physical from the social system: both social and physical systems co-evolve as new actions occur.

[37] In this regard, Barry maintains that (1982: 7-58) "No doubt the attraction of this rival notion of rationalism stems partly from the success of the physical sciences with their familiar methods of control, exact prediction, and experimentation. It is these methods which have an irresistible appeal to that *hubris* in man which associates the benefits of civilization not with spontaneous orderings but with conscious direction towards preconceived ends. Particularly the effect of constructivist rationalism was clearly visible in the field of economics".

[38] For instance, after Hayek's Nobel Prize for Economics in 1974 (O'Driscoll & Rizzo; 2014).

Hayek distinguishes two kinds of order: *taxis* and *cosmos*. Taxis is the constructed or made exogenous-order which can be defined as *designed order*; whereas, cosmos is the *emergent order* (though, he compares planned and unplanned orders, intentional and unintentional orders, imposed and emergent orders, designed or undesigned order).

Michael Polanyi says that an emergent order "Is achieved among human beings by allowing them to interact with each other on their own initiative". The crucial point is that "The use of this spontaneous forces implies that many features of the process creating the order will be beyond our control" (Polanyi, 1951/1998: 195).

Orders of this kind show two fundamental relations. One is synchronic and regards the relation between the elements of a certain system in a particular time. The other is diachronic and regards the relation about the overall order and its evolution with the passage of time (in other words, the processual and evolutive relations between elements). The main issue is that, in orders of this kind, individuals may freely use their knowledge, while society may employ its dispersed knowledge (Hayek, 1945).

Emergent orders are neither a specific product of deliberate human action nor full natural phenomena independent from human action (Hayek, 1967), but the emerging product and result of the actions of individuals that, with the passage of time, shows a certain level of regularity.[39] In other words, it is the emergent product of aggregated actions of agents which show a certain level of coherence or patterns. Patterns are not mere aggregations of actions but systemic wholes (Harper et al., 2012).

Emergent orders differ both from chaos and constructed orders. On the one hand, they cannot be compared with constructed orders since they possess emergent and unintentional characters (nobody planned them in detail or may precisely predict their evolution). On the other hand, they cannot be compared either with chaos, since they possess a certain level of internal regularities or patterns which favor social interactions and collaborations. Thus, it is also possible to distinguish emergent situations from emergent orders; in fact, not all emergent situations can be labeled as ordered. To say that a situation is emergent means nothing but that it is simply the unplanned results of different actions over time. With this, one can say that a particular situation is emergent without necessarily saying that it is an ordered situation. Moreover, an emergent situation is not exclusively positive: emergent situations can also present very negative aspects.

The theories of emergent orders are often applied merely in the field of economics as if the market is the unique kind of emergent order we can notice. Nevertheless, economic

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[39] That the theory of emergent orders has a very long history is a known fact. Besides the various already cited authors as Ferguson, Smith, Polanyi, and Hayek, there are other relevant thinkers. Among them Bernard Mandeville (1670-1733) who, in its "The Fable of the Bees" shows that often wealth derives from the pursuit of individual vices: "Thus every part was full of vice, yet the whole mass a paradise". Here the author underlines an unintentional phenomenon derived from the aggregation of individual actions moved by individualistic motives. Another fundamental author is surely Carl Menger (1840-1921). Menger in his Problems in Sociology and Economics (1883) affirms that institutions as money, languages, and market are examples of what he defines organic phenomena (or results of "natural processes") to be contrasted with other kinds of institution result of human deliberation.

actions are only a certain type of action (chapter 1.1). Thus, it is possible to state that the market presents emergent orders but it would be insufficient to consider the general theories of emergent orders as if they address only economics. For instance, demonstrations of different kinds of emergent orders are the evolution of languages, the internet, or informal institutions in general (chapter 2.3). Emergent configurations, however, are noticeable in other numerous systems; one is surely the city: the spatial manifestation of uncountable actions of individuals.[40]

Besim Hakim (2014) sustains that orders of this kind are visible also in the creation and adaptation of the physical space. Clear examples are the historical patterns of European and Mediterranean cities. In this regard, besides the role played by spontaneous actions, he also recognizes the essential role played by *urban codes* and *private contracts* for the formation of the European and Mediterranean cities. Nevertheless, in his opinion, the production of ordered emergent configurations of old cities has never come up from a legal vacuum: "An underlying goal of all the codes was to deal with change in the built environment by ensuring that minimum damage occurs to preexisting structures and their owners, through stipulating fairness in the distribution of rights and responsibilities among various parties, particularly those who are proximate to each other" […] "The nature of these codes are not to be viewed as being similar to contemporary planning regulations that are written to enforce an adopted master plan [...] Traditional towns were conceived according to known incremental process of growth and change and rules known within the locality" (Hakim, 2014: 97).

Urban codes were most of the time made by very abstract and general rules emerged incrementally from the bottom with the passage of time (Ashmore, 1991; Logan, 1976; Talen, 2009). During the twentieth century, the occurrence of comprehensive and integrated forms of planning substituting the old urban codes was defined by Jamel Akber (1988) like "the contemporary) crisis in the built environment". The main shift was from *proscriptive approach* (i.e. "thou shalt not", e.g. "you are free to design and manipulate your property provided you do not create damage on adjacent properties") to a *prescriptive approach* (i.e. "thou shalt", e.g. "you shall setback from your front boundary by x meters, and from your side boundaries by y meters regardless of the local site conditions"). The proscriptive approach for a long time allowed the city to grow organically and dynamically from the bottom; whereas the recent prescriptive turn has standardized the production of the space

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[40] See for instance Partanen, J. (2015: 951-971). He claims that it is possible to observe "[emergent] configurations" by looking at "*Flow of energy"* and *"internal order". Flow energy* refers to the "constant flow of material, goods, people and information which continually reform urban system". Whereas, *internal order* refers the phenomena of aggregate economies: "actors have their microscale location preferences based on competition or synergy, reflecting and reacting to each other's location choices and thereby interacting at a local scale, which leads to agglomeration, and is analogous to pattern formation in natural sciences". Thus, in the first case, Partanen refers to patterns that are the result of movements in space (for example, the pedestrian use of sidewalks or public spaces in general); while in the second case he refers to patterns that are the result of locations (for instances the distribution of economic activities in space or the localization of certain types of buildings). In this regard, see for instance also Castells (2000) and Oswald, Baccini, & Michaeli (2003).

from the top and, therefore, reduced the space for spontaneity and diminished the room for the evolution of emergent orders.

1.4.3 Observing the evolution of emergent configurations

Historically, the concepts of *spontaneity* and *emergence* have been mainly used to describe the configurations of social systems, in particular, economic systems. Nevertheless, some attempts were also made to apply these concepts in relation to physical systems like the built environment. Recent studies[41] - for instance the main insights regarding complexity theory[42] - confirm this trend. In general, "The concept of [emergence] in cities conveys the notion of design by a huge number of anonymous individuals who do not know each other. Such outcome naturally emerges in the absence [or within] any conscious design by one designer" (Lai at al., 2013).

In the existing literature, many are the attempts to describe the city as a complex set of emergent configurations.[43] A stringent selection is inevitable. Therefore, the main idea of the chapter is to understand how the concept of emergent configuration is applied in the field of urban studies. In this regards, I believe that the contributions of Jane Jacobs, Tomas Schelling, and William Easterly raise some crucial aspects. First of all, the contribution of Jane Jacobs (1961) is indispensable to underscore "the kind of problem a city is" (she says that "the city is a problem of organized complexity") and the structural limits of scientific knowledge in grasping the complexity of cities. Secondly, the work of Thomas Schelling (1978) well demonstrates the evolution of emergent socio-spatial configurations that nobody intended to reach (such configurations are the result of different and rational actions but not collective intentionality). Thirdly, the research conducted by William Easterly about the history of a little block in New York City - namely, Greene Street - highlights how the existing state of affairs of a certain area, inexorably, depends on uncountable numbers of factors: most of them are unintentional and ungovernable (Easterly et al., 2015).

These contributions represent the first step to approach such an issue. In particular, they show that: knowledge about urban facts is always limited and dispersed among people; cities irremediably reach spatial and social configurations that are most of the time self-organized and emergent; every action contributes to the creation and adaptation of both

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[41] The theories of emergent orders are now diffusing also in the field of urban studies. The works of Alfasi, Batty, Bertreaud, Buitelaar, Callahan, Gordon, Hakim, Holcombe, Lai, Ikeda, Moroni, Pennington, Portugali, Webster, and many others are valid examples.

[42] Rauws (2015) affirms that "Complexity theories […] assume system configurations, for example, neighborhoods, cities, and regions, to be specific in time and place, and to evolve through a changeable and interrelated mix of processes. Complexity thinking […] assumes that transformations evolve with variable speed and impact, and originate from unstable configurations. This implies that processes of change often evolve non-linearly alongside linear paths of change. Uncertainties are therefore an intrinsic part of development. […] This changeability provides systems with the capacity to "survive" and adapt to volatile contexts."

[43] Christopher Alexander (1965), for example, extensively writes on issue of this kind: "I want to call those cities which have arisen more or less spontaneously over many, many years *natural cities*. And I shall call those cities and parts of cities which have been deliberately created by designers and planners *artificial cities*".

social and spatial systems (both systems are by definition dynamic); cities happen to be quite often the unintended result of an interrelated whole.[44]

The city is a problem of organized complexity

Jane Jacobs' works mainly regard the relation between the physical and social dimensions in economics and urban development, as well as the effect of planning interventions on cities processes.[45] According to Jacobs, two aspects, more than others, are relevant: the first is the concept of order; the second is the concept of knowledge.

In general, Jane Jacobs mainly reflects on two issues: which kinds of orders exist in cities? Is scientific knowledge enough to plan and manage cities? The answers that the author gives to these questions derived from the investigation of the nature of urban problems. In doing this, Jane Jacobs refers to Warren Weaver's essay *Science and Complexity* (1948/1991: 449-456) in which the author points out that scientific knowledge has clear limits in dealing with the predictability of living systems.[46]

Jane Jacobs, in *Death and Life of Great American Cities* (1961: 429-448), raises three questions. First of all, she wonders if it is possible to treat the city as a *simple problem*. In this regards, she sustains that it is impossible to treat the city as a simple problem. A simple problem usually has two variables – cause and effect – which are easy to study, and scientifically governable, while the city possesses a higher level of complexity. In particular, she argues that with the diffused idea of the *Garden City* (Howard et al., 1965) planners are used to treat the city as a problem of simplicity proposing a planning model based on very simple variables of causes and effects.[47]

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[44] "For cities, processes are of the essence […] it follows that one must think of catalysts of these processes, and this too is the essence (Jacobs, 1961: 144).

[45] Jane Jacobs (1916 Scranton, Pennsylvania – 2006, Toronto) was a young girl when she moved to New York City in 1934. She started her career of writer and journalist dwelling in the Greenwich Village: the famous neighborhood she saved from demolition in 1942. Jane Jacobs frequently organized grassroots to protect existing neighborhoods from "slum clearance". In particular, she stopped Robert Moses' from the demolition of the Greenwich Village and the construction of the Lower Manhattan Expressway which would have passed directly through SoHo and Little Italy (figures 6, 7 and 8). One of her first publications was "Flowers come to town". In that article, she describes the processes through which flowers were brought in Manhattan and then distributed all around the city. At that time, she was already fascinated by the complex self-organizing functioning of the city. Her figure is controversial. Architects, sociologists, anthropologists, economists, planners indicate her ideas as a fundamental reference. Jane Jacobs acquired her knowledge about cities and their emergent equilibrium observing their social processes in space. She studied at Columbia University attending courses of economics, political sciences, law, biology, and geography. She got married to an architect, and at the beginning of her career wrote mainly about trade and economics. With the passage of time, thanks to the productive collaboration with the Rockefeller Foundation, she started about cities and planning.

[46] Jane Jacobs extensively uses the term "living system" when referring to cities. See Cozzolino (2015).

[47] In fact, with Howard's ideas, planners are able to indicate specific and detailed solutions aiming at a perfect state of affairs (for instance, planners can look at the number of inhabitants in order to grasp the exact number of jobs or green areas that a certain context needs).

After that, she wonders if the city can be a problem of *disorganized complexity*. Differently from a simple problem, the problem of disorganized complexity has a higher number of variables, but it can be still studied scientifically. However, differently from a problem of simplicity, there is no certainty about future events: probability is the only thing that planners can forecast. In this regard, mathematics plays a crucial role in defining planners' actions, and the city is treated as a mechanical problem; from this perspective, Jane Jacobs suggests the *Radiant City* of Le Corbusier (1967) as a pertinent example. The author also refuses this approach for two main reasons: first of all, it does not consider people as agents; secondly, the only kind of knowledge admitted in city analysis and planning is still and exclusively that of physical science.

Then Jane Jacobs goes a step forward and maintains that the city is irremediably a problem of *organized complexity*. She recognized the city as a complex system that reaches a level of internal organization that is always (with different degrees) beyond people's direct control. In other words, she admits that the city possesses emergent and unintentional characters that are the result of place-based processes of self-organization. Moreover, much of the knowledge of cities' processes is not scientific but tacit and practical. This knowledge cannot be grasped by planners since it is dispersed among the society (it is irreducible to one single mind). Moreover, she sustains that planners' interventions through masterplan and large-scale design often raise unintended effects which threat the self-organized order of cities (table 3).

While most of her predecessors looked at the city as constructed order or as a disorder which needed to be planned, Jane Jacobs describes the city as an emergent phenomenon. Moreover, she wanted to make professionals conscious about the fact that it is simply impossible to completely substitute the emergent functioning of cities with apparently perfect designed solutions. On the contrary, she affirms that the more cities work spontaneously[48], the better for their survival.[49] Far from believing that a perfect city is possible or desirable, Jane Jacobs was convinced that cities were often unpractical and inefficient places. In her view, it is exactly because cities are often unpractical and inefficient that people try to do things better and look for innovative solutions. From this inefficiency derives the economy of cities (Jacobs, 1969).

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[48] See also Fukuyama (1996).
[49] In this regard, see for instance the comments made by Jane Jacobs when, speaking of urban efficiency, compares the "efficient Manchester" (and its subsequent decline) with the "inefficient but competitive Birmingham", in *The Economies of Cities* (1969: 86-94).

Table 3: *The kind of problem a city is.*

| What kind of problem a city is?	*Problem of simplicity*	*Problem of disorganized complexity*	*Problem of organized complexity*
Science	Physical science	Physical science	Life science
Variables number	Few	Many	Uncountable
Analytical method	Cause and effect	Statistics	Path dependency and regularities
Knowledge about future phenomena	Predictable	Probability	Unpredictable
Role of planners and plans	Find the best rational collective solution	Public intervention is required to coordinate complexity	Enable self-organization, avoid negative effects
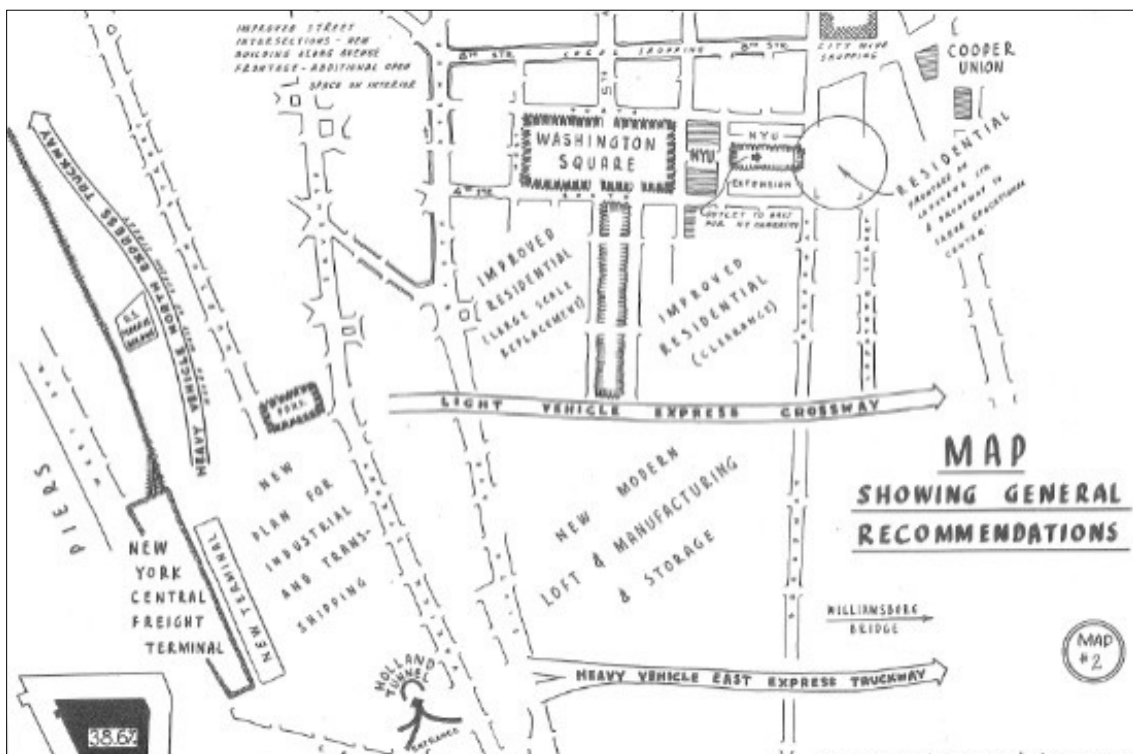
Figure 6: *The master plan promoted by Robert Moses regarding the demolition of the Greenwich Village. The opposition against the plan to bulldoze the Greenwich Village represents a prominent fact in Jacobs' life (source: Flint, 2009).*

Figure 7: *555 Hudson Street in the Greenwich Village was the place in which Jane Jacobs lived for many years before moving to Toronto . Photograph by the author.*

Figure 8: *An ordinary scene of Jane Jacobs outside her house in the '60s. Although in the '50s the area was considered a slum, with passage of time it became one of the most pricey place in the United States (source: Flint, 2009).*

The process "from microaction to macrobehavior"

In the book *Micromotives and Macrobehavior*, Thomas Schelling demonstrates how processes that are driven by spontaneous actions inevitably lead toward emergent and unintentional social-spatial configurations. Obviously, situations of this kind can be both positive or negative.[50]

As already seen in chapter 1.1, unintended consequences are outcomes that are not the ones foreseen and intended by purposeful actions and plans. They are typical of complex systems. From this standpoint, the author clarifies two crucial aspects. First of all, the aggregation of (uncoordinated) micro actions shows unintentional and emergent macro patterns, which in their turn influence others individual actions. Secondly, the aggregation of spontaneous actions can lead the system also toward very unpleasant situations. Starting from his intuition, it is possible to schematize an abstract model which highlights the relation between actions, time, and the evolution of emergent socio-spatial configurations. For some extents, his theory can be a good cue to justify planning intervention and the use of the law (see chapter 3.3).

One of the examples[51] proposed by the author is that of racial segregation (1978: 137): "People get separated or aggregated along many lines […] There is segregation by sex, age, income, language, religion, color, personal taste […] Some segregation is deliberately organized. Some results from the interplay of individual choices".[52] With this example, the author demonstrates the evolution of emergent segregation through an agents-based model called "the self-forming neighborhood" (table 4 and 5). In particular, he proves that, even if nobody explicitly wants to live inside segregated neighborhoods, people unintentionally can create a state of extensive segregation based on subjective preferences. Schelling proves that with a simple game made with a checkboard and some pennies (pennies represent agents' localization in space, while the checkboard represents the city).

The model proposed by the author well illustrates the evolution of emergent configurations. Moreover, his findings demonstrate why cities are typically places where unintentional emergent situations are visible: it may be in the uses of public spaces (Whyte, 1980), the agglomeration of market activities (Andersson, 2005), or others kind of issues. His

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[50] "Economists are familiar with systems that lead to aggregate results that the individual neither intends nor needs to be aware of, results that sometimes have no recognizable counterpart at the level of the individual" (Schelling, 1978: 140).
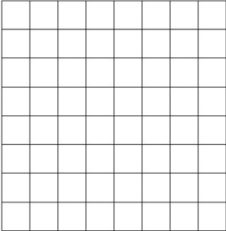
[51] Another example is that of traffic jam (*ibid.:* 65-66): "Accident on Boston's Southeast Expressway, effects on the northbound […] large numbers of commuters have spent an extra ten minutes driving for a ten-second look […] It is a bad bargain. As a collective body, the drivers might maintain speed, but the result is another". This example illustrates a situation in which the aggregation individual decisions compromise collective interests. Nevertheless, it is not the aim of this chapter that of discussing the issue of collective interests, but exclusively that of underscoring how the aggregation of conscious individual decisions can causing the emergence of certain state of affairs in which everybody is unhappy.

[52] Note that, for our purposes it is irrelevant to treat the issue of racial segregation rather than others themes: what counts is methodology proposed by the author; in fact, it is possible to use the same method for any kind of spatial emergent processes. Good examples can be that of commercial activities distribution in space.
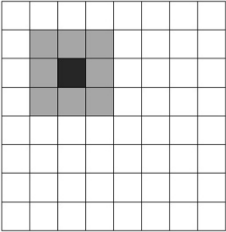
contribution can also be a good starting point to reflect on public intervention in the case of "cumulative" or "aggregated" negative externalities (see chapter 3.3).

Table 4: *Rules for the self-forming neighborhood.*

I. Create your city: the boundary of the city is given by a checkboard (8x8)
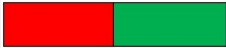

II. The neighborhood consists of 3-by-3 square. Its center depends on agent's position.
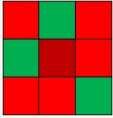

III. Imagine two opposite groups of individuals, X and Y (for instance male and woman, vegetarian and carnivorous, clubbers or churchman, bike lovers or car lovers, rich and poor, etc.). In his model Schelling suggests that X are white people, and Y are black people.

The number of individuals in groups X (white) and Y (black) can be equal or not (there can be a majority and a minority). Let's consider two groups: Red and Green.
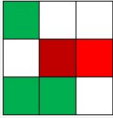

V. Individual preferences:

Members of group Red want to live at least with 1/2 of its neighbors of the same group (in case the neighborhood doesn't satisfy the individual preference, he or she will move to the nearest empty square that meets his demand).

Members of group Green want to live at least with 1/3 of its neighbors of the same group (in case the neighborhood doesn't satisfy the individual preference, he or she will move to the nearest empty square that meets his demand).
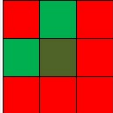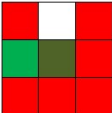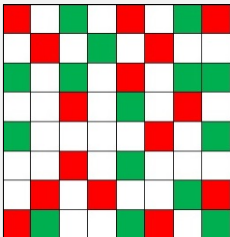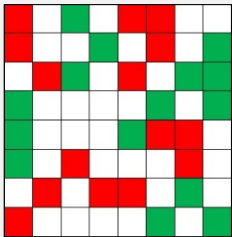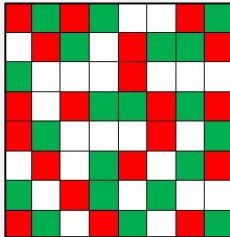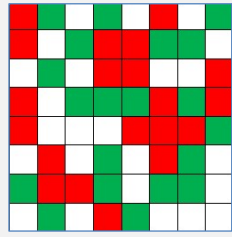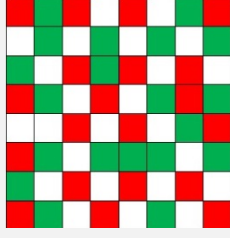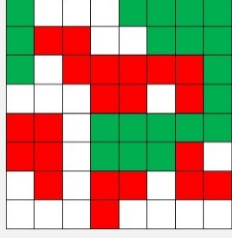
yes   no

Place randomly on the chessboard a predefined number of individuals of both groups, and start moving them, one box at time, according to their preferences.

VI. The game is over when all individual preferences are satisfied.

Table 5: *Three examples of Schelling's model.*

Example	Initial state of affair	Emergent unintentional configuration
I.		
II.		
III.		

The unintended result of an interrelated whole

What can be the future of a small urban area? A story from downtown Manhattan shows how, in the long run, a little block in Greene Street (New York City) has faced unintended and emerging cyclical processes of decline and regeneration (figure 8). The research presented by William Easterly in 2015 analyzes the emergent evolution of Greene Street over an extended period of time (four centuries), showing the drastic changes - regarding for instance uses, reputations, and populations - occurred in that small block. However, such

changes did not come up from scratch but emerged incrementally following the effects of global and local socio-economics trends (see table 6).

With this example, the author underscores two main issues: (i) planners should, above all, ensure certain conditions which enable long run gradual adaptation, in ways through which the physical system can be step-by-step adjusted along with the emergence of social changes; (ii) changes primarily occur from people in search of new opportunities.

Table 6: *The evolution of Greene Street.*

Around 1630 the Dutch colony (namely, New Amsterdam) brought slaves from Africa, and in 1641 it gave them parcels of 6 and 12 acres in order to cultivate the food for the city during the war against the Indians; four of these parcels included the block of Greene Street. After decades the Dutch colony sold the land of "New Amsterdam" to a British colony. The Dutch colony moved to Suriname (they thought New York to be less valuable than Suriname). Until 1850 only upper-class families lived in the area of Greene Street, but as new houses and buildings were constructed during a period of extreme growth, wealthy families moved to the upper north area of Manhattan. From 1851 to 1860 the 75% of buildings had residential uses. In 1860 the area became the place of prostitution in New York. Brothels were located there interacting with the nightlife economy of Broadway. However, when the nightlife economy of Broadway moved upper north, the block was not as "strategical" as before for brothels. Later on, the area of Greene Street hosted the New York manufacturing garment boom. Then, starting from 1910 (respecting new regulations as regards fire and safety) garment industries moved up town in search of bigger and modern space, passing from an average of 6 stories to 24, and from 4.000 m² to 30.000. Real estate prices of the block fell. From 1880 to 1919 23 million people moved to New York, and in 1910 the block had prevalently small manufactories (90% owned by German, Russian, and Italian). At that time real estate prices were very low, less than the prices in 1870. The decline was in act, and in 1930, at the north end of the block, a squatter's camp appeared. From 1922 to 1946 the land value decreased about 50%.

In 1953 the planning commission affirmed that the area was in a state of urgent deterioration: "The depreciation is so widespread that improvement cannot take place except by concerted action". For this reason, a large-scale development and replacement of the whole area was advanced by the planning commission. In the view of the public authority, demolition and re-planning were the only possible solutions. According to Robert Moses, the whole area was in a "state of depreciation and obsolescence". However, the development never took place (it was stopped by civil grassroots guided by Jane Jacobs). After that, even though the area (now famous as SoHo) was not zoned for residence, artists started to move there, living in secrecy in the re-adapted loft. SoHo soon became an iconic place in New York. In 1971 the planning commission legalized the residential use of loft, and in 1973 SoHo was zoned and preserved as "historic district". This intervention caused unintentional effects, increasing the real estate value of Greene Street. In 1980 the block became the center for art galleries, and artists moved to Brooklyn. Today the area is mainly occupied by luxury designers and retail (figures 9, 10 and 11).
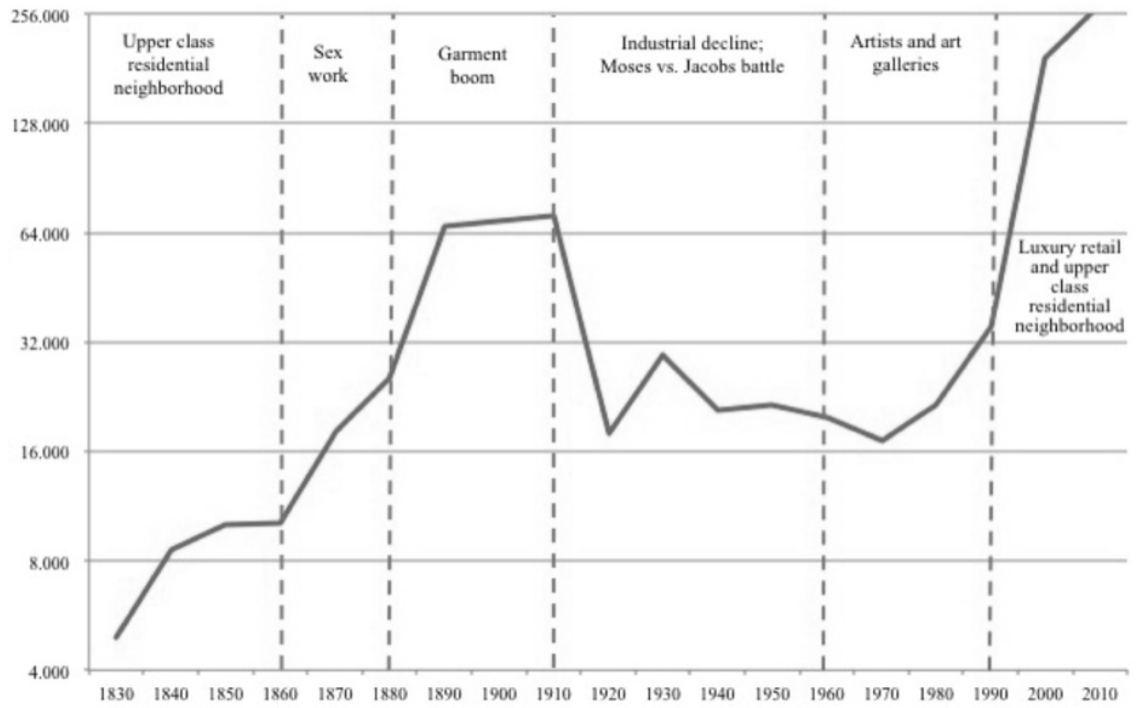
Figure 9: *Market value of real estate, 1830-2010, millions of 2012 dollars (source: Easterly, 2015)*

Figure 10: *Greene Street, New York. Photograph by the author.*

Figure 11: *Greene Street, New York. Source: online.*

The example of Greene Street is particularly interesting since it demonstrates that urban development involves many changes in production as comparative advantage evolves.[53] Moreover, it underscores that most of the changes in the area were unexpected: "The development of Greene Street is a succession of surprises deriving from local and global shocks that lead to rapid changes that are best seen at the very micro level".[54]

In general, the case poses some insights that are worth considering. First of all, changes take place within a framework of some basic and "unmovable" or "invariant" public provisions like streets layout, sewer, public transportation, highways, etc. (this idea will be reapplied in chapter 3.3). Secondly, while some elements are unmovable or hardly variable (for example, streets), others are progressively adapted as new actions occur (for instance, buildings, uses, prices, users, technology, etc.). Moreover, as regards the planning activity, this little story demonstrates that it is difficult for prescriptive planners to anticipate emerging changes in comparative advantage; while it is easy for regulations to stifle creative destruction and to create misallocation.[55]

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[53] comparative advantage in this case are for instance: "existing structures inside the block; relative price of trade and non-traded goods that could be produced on the block; the relative supply of mobile factors such as types of skilled and unskilled labor used for production; etc." (*ibid.*).

[54] "Actors were always reacting to others actors […] all of these actors were, in turn, reacting to yet other actors farther away, elsewhere in the nation or the world".

[55] For instance, in the case of land-use preservation 1970 (see Table 4).

From this perspective, planning approaches differ according to the kinds of response provided to micro-level inefficiencies: one the one hand, planners may provide a prescriptive approach to moving the area from obsolete to productive; on the other hand, they may rely exclusively on emerging situations. According to the author, both approaches are extremes.

1.4.4 Why the relationship between planning and emergent configurations needs to be deepened?

The proposed contributions are surely prominent examples of how the concept of emergent configuration has applied in the field of urban studies. However, if so far in the literature great attention has been paid in describing and observing emergent spatial configurations, less attention was given to the conditions that acceptable emergent socio-spatial configurations need in order to be generated and perpetuated. In fact, in the existing literature, many are the cases in which the city is described as an emergent configuration, whereas only a few attempts were made to explore the possible ways to regulate its evolution including such ideas.[56] Therefore, nowadays the challenge is to test the concept of emergent configuration not only to describe the city but also to regulate its evolution.[57] In fact, the idea to plan, design, or regulate the city including the concept of spontaneity seems to be still largely counterintuitive in the planning field.

Planning plays a crucial role in the extent to which emergent configurations may occur in cities and, consequently, their propensity to host unexpected adaptations over time. Thus, in a strict sense, a reliance on emergent configurations might mean to guarantee enough room for people to act on their creative impulses (Holcombe, 2011) in such a way that the independent and differentiated members of a system may self-coordinate into an ordered configuration that activates the dispersed knowledge (Moroni, 2007). From this perspective, the recent theoretical and practical innovations, visible for instance in the Netherlands, seem to offer valuable insights (see Part Three).

The main question is: which "planning conditions" cities need to rely on forms of emergent developments? In order to answer this complex question, like Jane Jacobs when she says that the city is not a work of art (1961), the general advice is to abandon the idea to intend the city as something that, as an art object, can be designed and realized from scratch according to one mind, in favor of the idea of the city as an emergent configuration (both

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[56] Note that when speaking of "evolution of emergent configurations" or "plan for spontaneity" I also refer to a branch of research that works on "self-planning" or "self-organization". Moreover, from this perspective, the paper sustains that we can both observe the city as an emergent configuration constrained by certain rules and, vice versa, we can also be able to regulate it in such a way that evolution of emergent situations is both possible and desirable.

[57] This shift has been of interests also in the field of urbanism.[57] In this regard Mark Pennington (2002: 56)[57], writes that: "the myriad interdependencies that link the patchwork of land uses of both urban and rural environments are classic examples of emergent social and economic orders, the complexities of which cannot be overseen synoptically. […] The fundamental human character of land-use processes makes the form, pattern, and place of development unpredictable and beyond the scope of planners, whether technocratic experts or members of citizens' juries."

result of spontaneous actions and planning interventions) that may show certain levels of regularity and patterns and also, why not, emergent beauty.[58]

Therefore, the proposal is to overturn the perspective and pay attention exclusively on the conditions that influence *action space* and, consequently, the evolution of social and physical configurations. In other words, we cannot easily and positively define what a "good order" is, but we can focus our research on those *action conditions* that constrain the level of overall spontaneity. Thus, it is preferable to speak of controlled spontaneity (Buitelaar, Galle, & Sorel, 2014): "Spontaneity is not runaway spontaneity, but constrained spontaneity" (Webster and Lai, 2003: 4). From this perspective, the role of planners is first of all that of indicating certain action conditions that constrain spontaneity in order to avoid the emergence of undesirable situations (we will go more in depth in the next chapters). Doing so, inevitably, the debate is not so much in defining when an emergent configuration is ordered or not, but that of reasoning on how it is possible to control the negative effects of spontaneity. With this we are not going to exclude the fact that emergent configurations can also show clear functioning patterns and regularities. On the contrary, we can consider such an eventuality naturally practicable; situations of this kind can be observed case by case (Alfasi, 2017).

In brief, to conclude, the general suggestion is that we can both observe the city as an emergent configuration (constrained by certain rules) and, vice versa, we can also be able to regulate it in such a way that the evolution of emergent situations is both possible and desirable.

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[58] In fact, if we assume architectonic or aesthetic perspectives, it is absolutely tricky - if not impossible - to indicate the specific features that cities should possess for being defined as "well ordered"(Not even Jane Jacobs has never explicated the physical features that make cities "ordered", at most she underscores which physical conditions favor cities' dynamics and self-organizing processes). Attempts of this kind could assume subjective values that, by their nature, are irremediably plurals. However, even though definitions of this kind (i.e. what an ordered city is) can also be largely and collectively accepted, they irremediably change with the passage of time as long as changes in lifestyle occur. For example, during the twentieth century, for a long time, people looked at the idea of the "garden city" as ideal-type of order, while today we are witnessing the revaluation of very dense and mixed urban environments.

2 RULES

2.1 Action conditions

"Although aspects of the physical environment do play a role, it is not the physical dimension alone that determines the choice: the greater significance of one physical feature over another is a matter of subjective perception."

Ikeda (2007)

If we intend the city both as the product and space of actions, space, consequently, becomes a set of contextual and specific *conditions*. In other words, space becomes a frame of reference for new actions, as well as a grammalogue of problems (i.e. constraints) and possibilities (for instance, means or resources) related to the performance of actions (Werlen, 1993: 3). Space is the condition which can favor or obstacle actions' fulfillment.

The general idea of the chapter is to invite the reader to reflect on the complexity of spatial conditions through the variable perspective of agents.

Conditions may be of different kinds. Moreover, they change from place to place influencing social interactions and the use of space. Given these conditions, independent and differentiated individuals act and self-coordinate within an adaptive system which activates and provides the use of dispersed knowledge. The general theory of the emergent orders highlights the link between such conditions and the dynamic dimension of complex systems. From this perspective, every action, in order to be effective, must be adapted to specific circumstances which condition what agents can do (or not). Nevertheless, this does not mean that spatial conditions directly determine individuals' action in space (space, at the most, may only partially condition agents' actions but hardly their totality).[59] The subjective sphere (i.e. idea, needs, creativity, means, etc.; see chapter 1.1), as well as the way in which individuals interpret such conditions, is undoubtedly crucial too. The importance or not of certain contextual conditions strictly depends on the kind of action that the agent is promoting and, consequently, if these conditions positively or negatively influence such action.

In the following pages the thesis maintains that is possible to identify different types of conditions. Their distinction depends on two main variables: firstly, by their social or material nature; secondly, for their genesis which can be natural, unintentional (i.e.

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[59]   An extreme case may be that of a prisoner who is constrained to spend his days in a little jail. Although his contextual conditions highly determine his daily movements, in the end, he can still decide between infinite ways of spending time. For instance, he can choose between "stay in bed waiting for release" or "writing a novel".

emergent), and intentional (i.e. planned). This classification helps us in understanding the peculiarity of planning rules compared to other kinds of conditions.

2.1.1 Social and material conditions

A first distinction concerns the differentiation between intangible conditions (for instance the relationships between people or institutions), from the tangible conditions (the set of objects or material artifacts). In other words, conditions can be physical or social (Popper, 1979).

Imagine for example an immigrant who is going to open a new restaurant, and he or she is exploring for the first time the city where he would like to locate his or her business. Now, let's try to understand which kind of contextual conditions could hinder such action.[60] As regards some physical conditions, banally (among many others) we can imagine: the opportunity to find a suitable building that can accommodate his or her business (or, if not already existing, to find a piece of land where to build a new restaurant); good accessibility (for example the presence of roads, car parks, and etc.); the insertion of the restaurant in a dense urban environment or into a barycentric and strategic place; the possibility to easily obtain all the necessary ingredients; the possibility to have an outdoor terrace for the summer; etc. As regards some social conditions, for instance, we can imagine that the agent will wonder if there are problems in interacting and learning a new language; if the local demand for a new restaurant is good or not; if there is the possibility to obtain the license; what are the hygiene standards required for such activity; if forms of racism against foreign traders are present; if the neighborhood is relatively tolerant of possible noise coming from the restaurant; if taxes are high; if the rent is cheap and affordable; etc.

What is worth underlining with this very simple example is the distinction between *material conditions* (that is: the objects and their complex relationships), from *social conditions* (that is: the subjects and their complex relationships). Any agent must deal with these conditions if he or she wants to ensure that his or her action will fit within existing state of affairs. As we will see, social and physical conditions present different kinds of implications in the planning field (see chapter 2.1).

2.1.2 Natural, unintentional and intentional conditions

Friedrich von Hayek (1982) overtly discusses the *genesis* of spatial conditions, that is all those conditions that affect actions in space. Following my own interpretation, it is fundamental to distinguish two macro-categories of spatial conditions: *natural* conditions independent from human action and *artificial* conditions depending on human actions. In particular, a specific feature of artificial conditions is that, besides being distinct (as we will

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[60] This is a very simple example that helps us to underscore the main differences between social and physical conditions. Such type of example can be repeated with every action that aims to use or build some space.

see) among physical and social, they can also be distinguished by looking at their genesis which may be intentional or unintentional: Hayek's main point is that there is a third category that is neither natural or intentional.

Natural conditions

In the case of *natural conditions*, agents deal with conditions that have an evolutive character and are independent from human action. It is possible to speak of natural conditions in all cases in which such conditions are pre-existing and change evolutionary falling outside human wills and power. Illustrative examples are, for instance, natural streams, mountains, the soil, the sea, the growth of forested areas, etc. The peculiarity of these conditions is that they are given, or they occur independently from agents' actions (at the most, agents can modify and alter them, but natural conditions remain unavoidable).[61] However, human perception makes these natural conditions valuable or not. Natural resources only become so through human agency.[62]

Unintentional artificial conditions

We are now entering in the sphere of artificial conditions; that is, all those conditions that are created and perpetuated through human agency. In the case of *unintentional artificial conditions* (note that they could also be called emergent), we speak of conditions that are not the result of a single action, rather are the (unintended) products of a uncountable number of actions over time. That is, all that has been created independently from a single mind or plan and is the emergent and unintentional result of distinct individual actions (their existence is emergent). In general, this kind of conditions is the intricate sum of a plurality of objects, subjects, and their complex relationships. Such conditions, with the passage of time, change incrementally as a result of a uncountable number of actions.[63]

Within this macro-category, we can make a clear distinction between social and material conditions. Specifically, we may speak of *unintentional social conditions* in the case of all those conditions that are handed down over time and structure the interactions and relationships among people. Clear demonstrations are, for instance: culture, religion, traditions, the market, customs, language, rules of behavior, etc. On the contrary, we may speak of *material unintentional conditions* in the case of the overall existing artifacts and objects, as well as the relationships between them, that are the result of human action over

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[61] The relationship between nature and human beings represents one the most open question of Western societies (see for instance Jacobs, 1961: 444-445). The topic would deserve deeper explorations.

[62] Also, such things as harbors are sites for cities but how a city is situated on that site, at least in the beginning when it is a small settlement, is the result of intentional action.

[63] What is worth emphasizing is that such unintentional conditions can be observed and interpreted by looking at their evolutive process of formation.

time but do not correspond to any specific plan or design. In other words, those conditions are definable as the material result of the aggregation of countless micro-actions in space which singularly possess their own rationality, while they do not reflect an overall plan. Some examples are, for certain aspects, the city as a whole, processes of activities agglomeration in space, the distribution of the urban fabric, the local construction types; the evolution of roads networks, etc.

In general, it is significant to emphasize that in the case of unintentional conditions it is impossible to identify a single agent (or a group of agents) who has direct responsibility for their creation; rather, spatial conditions of this kind reflect certain emergent circumstances that are the product of uncountable actions over time. Therefore, in the case of unintentional conditions, we cannot attribute to anybody a direct responsibility for their existence. In brief, what we see, by looking at this kind of conditions, is the emergent outcome of a complex system.

Intentional artificial conditions

Now we turn to intentional artificial conditions. In this case, we speak of agents' voluntary actions that are the result of a specific will, plan or design. Also in this case, as for the previous, we make a clear distinction between intentional material conditions and intentional social conditions. However, it is crucial to underscore that any intentional action produces (potentially and with different degrees) a variation on the overall existing and emergent state of affairs. Such a process occurs by inserting new conditions (both social and physical) that are the result of a particular design, within an existing emergent configuration.

In the case of intentional material conditions, we may imagine all those conditions that are the product of a specific action which purposefully alter the material space through the construction (or modification) of new objects and artifacts (for examples: the construction of a new house, a road, a residential neighborhood, a simple fence, a park, etc.). In the second case, namely the case of *intentional social conditions*, we may imagine all those conditions that contribute to the modification of the social infrastructure. A particular kind of intentional social conditions is the law. One peculiarity of this kind of conditions is that they affect the compositions of rights and duties between agents. Some examples intentional social conditions are, for instance, civil codes, taxation, formal government institutions, ownership, contracts, etc. In particular, within this group of conditions there are also land-use plans and building codes (table 7).

Table 7: *Types of action conditions and the peculiarity of planning.*

| Action condition | Artificial | | Natural |
	Intentional	*Unintentional*	
Nature *Social*	I	III	V
Material	II	IV	

2.1.3 The example of New York City: reflections on different kinds of action conditions

New York City is a perfect example to reflect on the different types of actions conditions. The land in which New York (originally New Amsterdam) is built was once natural. it had become a resource only when around 1660 was chosen by the Dutch colonialists for strategical and commercial reasons.

The construction of the firsts dwellings inside the borders of New Amsterdam gave rise to irregular streets layout and an overall organic configuration. Since then, a uncountable number of unpredictable changes occurred within this historical layout. For evident reasons, most of them couldn't be predicted four centuries ago by the Dutch colony who considered New York to be less valuable than Suriname (Easterly, 2015). Today, despite the presence of numerous modern skyscrapers that gradually have replaced the old buildings, this "historical" part of the city (namely, Lower Manhattan) still offers a unique character (figure 18).

Lower Manhattan is easily distinguishable from the rest of the city built during the nineteenth and twentieth century. The great growth of New York City came with and after the realization of the famous grid planned in 1811 which had highly structured the evolution of New York City (Ballon, 2012). Despite its rigid character, most of the development occurred within the grid - let's say "the fine grain of the blocks" - have been evolving unintentionally showing clear emergent and unpredictable features that anyone could forecast when the grid was simply designed on a map (Koolhaas, 1998; figures 12, 13, 14, 15, 16).

The grid can be considered as an unmovable condition that, with its blocks, still structures the entire city from the 14th street to the South Bronx. Product of the same monotonous spatial repetition, however, the growth of the city gave rise to unique orders and characters regarding both the city in se, and its internal districts which show different urban environments, cultures, economies and population. This diversification has been possible

because of the large room left to spontaneous actions and the high flexibility inside the blocks.

Obviously, with the passage of time, the growth of New York was continuously influenced and corrected by numerous planning interventions. This happened (and happens) through the direct construction of new public infrastructures (e.g. subways, bridges, public buildings, etc.) as well as the introduction of new building and planning rules.

During the twentieth century, Manhattan gained a mythological status in urban studies because of its unstoppable growth and never-ending rapid changes, but also because it was a city offering infinite opportunities to poor, artists and creatives. Certain areas have drastically changed in the last decades. For instance, places like Harlem or South Bronx, once considered depressed and dangerous, gave room to a tremendous number of newcomers, and became also the places in which jazz and hip-pop were born. Nowadays this character seems to be lost. What once was a "delirious", today has turned into a meticulously planned city (Gleaser, 2011). An example is the enormous increase of *special zoning districts.* Introduced by the Planning Commission in 1969, the legal status of *special zoning district* allows planners to "achieve specific planning and urban design objectives in defined areas with unique characteristics" through specific and detailed regulations that protect the city from unwanted changes.[64] Since then there has been an unstoppable increase in the number of *special zoning districts.* Today the city has about 80 special zoning districts. Among them, for instance, there are famous areas like *Little Italy* "to preserve the charming historical district", the *125th street district*" in Harlem "to stimulate creation of local performing arts spaces", the *Garment district* in midtown Manhattan "to preserve the garment-making industry", the *Special Mixed Use District of Williamsburg* in Brooklyn "to encourage investment and enhance the vitality of existing neighborhoods", and others (Gasper et al, 2013: 37). The extended use of special zoning district is irremediably conditioning the evolution of New York limiting its level of internal self-organization.

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[64] http://www1.nyc.gov/site/planning/zoning/districts-tools/special-purpose-districts.page

Figure 12: *Today's skyline of Lower Manhattan city from the Hudson River. Photograph by the author.*

Figure 13: *View of the 2nd Avenue, looking up from 42nd St (1861). Museum of the city of New York (source: Ballon, 2012).*
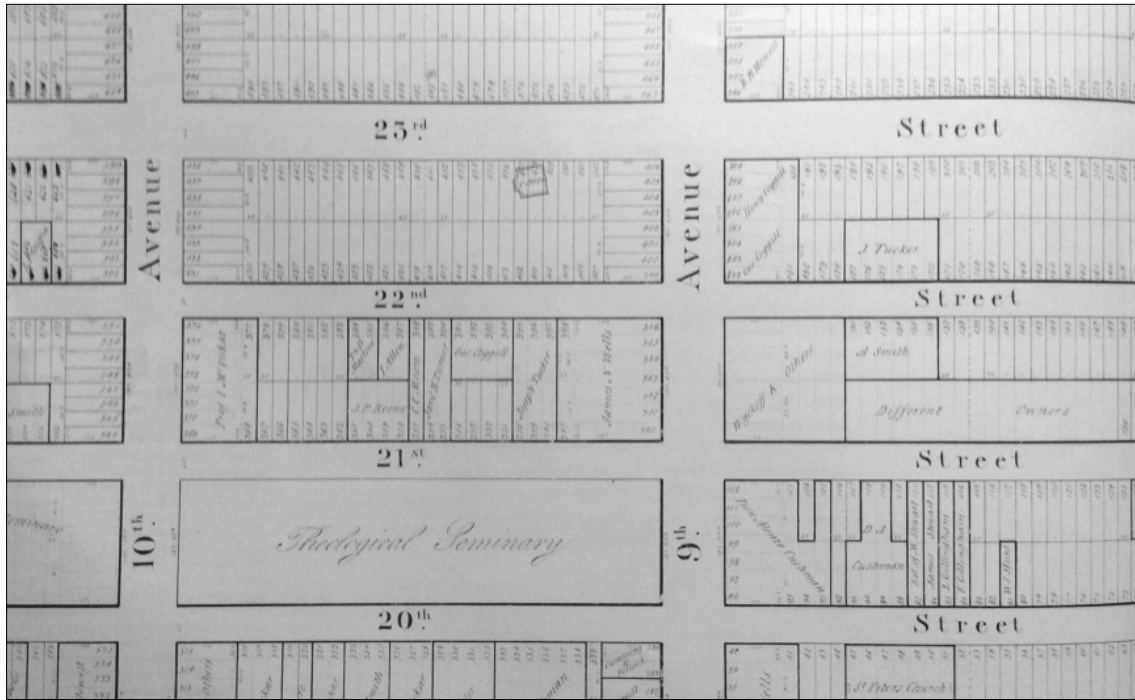
Figure 14: *Division of the Lands between 9th and 10th Ave. and 20th and 23rd St. in 1835 (source: Ballon, 2012).*

Figure 15: *1884, West 73rd Street, looking northwest (source: Ballon, 2012).*

Figure 16: *2015, 7th Ave. 23rd St. Photograph by the author.*

Figure 17: *2015, view from the Empire State Building. Photograph by the author.*

Figure 18: *The Castello Plan in 1660 represents the historical layout of New Amsterdam (source: online).*

2.2   How rules constrain spontaneity

"For us, truth is made up of many bits and pieces of reality. The flux and change in itself is of the essence. Change is so major a truth that we understand processes to be the essence of things"

Jacobs (1992: 191)

We cannot think of the city as a fully emergent configuration, rather it is more appropriate to see the city as a configuration that may reach different degrees of overall spontaneity (see chapter 1.3). This is clearly visible by looking at the concept of the trade-off between spontaneity and the scale of design. Such a concept emphasizes the relationship between constructed (and intentional) orders and the flexible space that is open for the evolution of emergent configurations.[65] In other words, the degree of spontaneity of cities (or part of them) is directly influenced by the scale of design (or control) and the flexible space for unpredictable actions that such design (or control) allows. The potential for the evolution of emergent configurations lies in the possibility to adapt over time the physical and social world in ways that none could predict in advance, leaving to the system the opportunity to efficiently react to various contextual needs: "as long as ordinary people are free to apply their intelligence, knowledge, energy and resourcefulness where they see the opportunity to do so, people will adjust to or change the built environment; or, more important, they will adjust to or change the invisible social infrastructure" (Ikeda, forthcoming).

From this perspective, it is affirmable that the level of overall spontaneity in cities inexorably depends on the uncountable numbers of agents' action in space. However, actions are constrained by two types of intentional conditions: *the material dimension* of the built environment, and *the social dimension* of rules. Therefore, we speak of two trade-offs: the first has a spatial dimension; the second has a regulative dimension. Both levels, in different ways, influence the flexible space for the evolution of emergent configurations. In other words, the overall degree of spontaneity rests on the interaction among three different and distinct levels: first of all, the institutional level of the framework-rules which constrains the range of possible actions in space (Moroni, 2010); secondly, the level of people, and their uncountable actions in space (for instance the decision to use or to build the land in a certain way; see chapter 1.4); thirdly, the physical city in itself, that is the emergent result of uncountable numbers of actions over time.

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[65] About the concept of flexibility see for instance Roggema, R. (2014).

2.2.1 Spontaneity within the urban fabric

This section examines the issue of spontaneity within the dimension of the built environment (Manewa et al., 2009; Roggema, 2014). In particular, it examines the relationship between the design of the physical space (i.e. the intentionally imposed spatial order) and its flexibility for the evolution of emergent configurations. The main aim is to demonstrate that any physical element that has been deliberately designed and built always provides a certain degree of flexibility depending on both internal and external factors (Easterly, 2015). A common feature of any work of "architecture" (i.e. designed elements) is that, with the passage of time, it (potentially) starts to differentiate itself from its initial design. This process happens for two main reasons: first of all, some actions occur inside; secondly, it undergoes the effects of all the actions and changes that happen outside. As regards the physical dimension of the built environment, two important implications concerning the degree of flexibility are worth considering: the first regards the *scale of design* and its level of detail; the second regards the *passage of time* (Ikeda, Forthcoming).

The scale of design and its level of detail

The first implication is easily understood: the higher the level of the detail provided by a particular project or plan, the less will be the flexible space for spontaneous actions and unexpected emergent future arrangements. Moreover: the greater the scale of design that is subjected to a unitary plan, the greater will be the geographical area subject to the control of that plan. Therefore, we can consider two factors: the level of design detail and its scale (Ikeda, *ibid*.).

For example: imagine the unitary design (or master plan) of a new residential area which includes a hundred condominiums. Architects could face this design in different ways, with varying levels of scale and detail. To demonstrate that, we may address the issue moving from a first plan/design that guarantees a high degree of flexibility, to one in which the flexible space is narrowed down and nearly canceled. For example, a first way to design the new residential area may be that of solely draw the open public spaces, and then leave to other architects, builders, and inhabitants the possibility to define over time the evolution of the area. Such development could emerge according to a succession of spontaneous actions constrained by the presence of open public spaces (for instance roads, green areas, etc.) and certain rules. In the second case, for example, could be that the architect does design not only the open public spaces, but also the size and footprints of all buildings; in this case, the architect designs unitarily the open public spaces, the buildings, and also their spatial relationships. The differences between the firsts two approaches are remarkable.

Let's go further. Suppose that the architect doesn't want to design only the size and the footprints of all buildings, but he/she decides to determine also their interior subdivisions as well as their uses. At this point, the design will begin to assume a very rigid character. However, its level of detail could be still increased. In fact, we can imagine that, in addition

to the design of open public spaces, buildings, and their internal divisions and functions, the architect may decide to design (in a unified and detailed way) also the interior furnishings. At this point, only a little flexible space would remain for spontaneous adaptations.

In brief, this first implication concerning the scale and detail of design regards designers' will to impose a particular order on specific areas which, in its turn, may be more or less extended and accommodate more or less flexibility.

To better comprehend it, we can think of highly planned cities like Brasilia, or the Chinese "ghost city" (but also the typical neighborhoods of the Soviet era) as relevant examples of large scale design with high level of detail of the built environment (Ikeda, Forthcoming). On the contrary, in the case of a high degree of flexibility, for instance, we can refer to forms of organic developments diffused in the last years in the Netherlands (table 8; see the examples of figure 19, 20 and 21).

In this regard, a prominent example is the large-scale development of Almere Oosterwold which is discussed in chapter 4 and 5 of the thesis (Cozzolino et al., forthcoming; Needham, 2014; Oosterma et al., 2015; Rauws & de Roo, 2016).[66]

Table 8: *Degree of spontaneity*

Detail of design	High		low degree of spontaneity
	Medium		
	Low	high degree of spontaneity	
		Plot	Neighborhood	City

Scale of design

Figure 19: *The empty Ghost cities in China represents the bad result of top-down planning (source: online).*

Figure 20: *The city of Amsterdam represents a case in which city's evolution emerged incrementally and organically. The main "public intervention" concerned the construction of canals (Feddes, 2012; source: online).*

Figure 21: *Lagos, Nigeria: an extreme case that shows the consequences of zero planning interventions (source: Gadanho, 2015).*

The passage of time

The second implication regards the passage of time. Whatever the scale and detail of the design are, its (imposed) order will not remain stable over time; rather it will be subjected to emerging processes of unintended adaptations and adjustments. All this because once the construction is realized it will begin to be exposed to constant stress and actions (both internal and external, and most of the times unpredictable) which will lead the built environment toward future emergent modifications and changes. Therefore, with the passage of time, all that is designed will be subjected to (more or less) certain alterations that designers could not foresee in advance (as none of us can today perfectly foresee the evolution of social needs and changes in the next decades). As Jane Jacobs claims, every urban element, even the least adaptable, tends to undergo (with different dynamic) unintentional progressive adaptations. This process occurs since it is impossible to think of an urban element as an isolated element; rather, we should think of a single urban element as part of a complex interrelated whole. Therefore, every element is affected, over time, by

what happens in it and around it too.[67] Moreover, how people demand space to be used or built is unpredictable in a world of imperfect knowledge.

A valuable example is offered by Jane Jacobs (1961: 92-93) when she presents the process of differentiation of four parks in Philadelphia, namely Rittenhouse Square, Franklin Square, Washington Square, and Logan Circle (figures 22, 23, 24 and 25). Located in different areas, these four parks were the replication of the same identical design. Nevertheless, as Jane Jacobs claims, with the passage of time, each park has undergone the influence of the peculiar features of its surroundings, adapting and differentiating its internal appearance according to the different spatial circumstances and conditions.

With this simple example, the author shows two relevant issues. On the one hand, a designed element (in this case a park) possesses in itself a certain degree of internal flexibility. On the other hand, she shows that designed elements, with the passage of time, undergo unexpected process of differentiation also derived from involuntary external circumstances (see the example of Park Avenue in figures 26 and 27).

Figure 22: *Philadelphia, Washington Square (source: online).*

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[67] From this perspective, for example, we can think that the designers of the New York's grid in the nineteenth century could never imagine in detail how the city would have been evolved along all the last century (Ballon, 2012). In this regards, it is of interest also the case of Greene Street in Manhattan (Easterly et al., 2015).

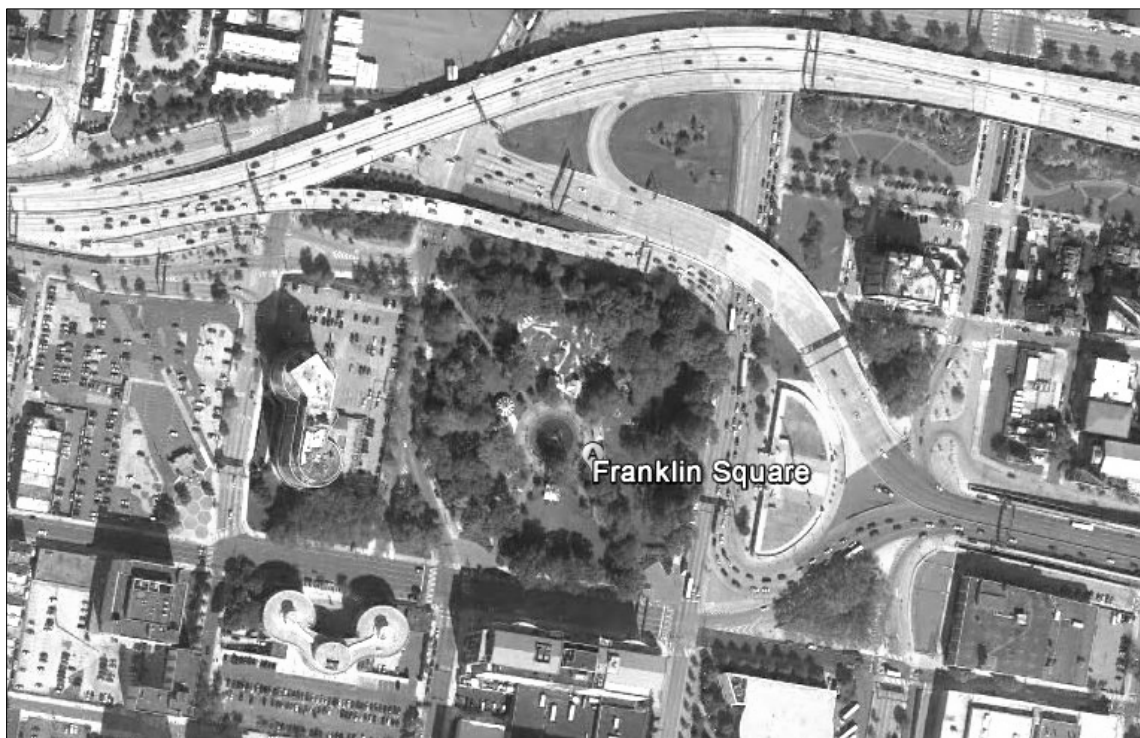Figure 23: *Philadelphia, Rittenhouse Square (source: online).*

Figure 24: *Philadelphia, Franklin square (source: online).*

Figure 65: *Philadelphia, Logan Circle (source: online).*

Figure 26: *Park Avenue and 94th St., 1882 (source: Ballon, 2012).*

Figure 27: *Park Avenue and 94th St., 2016 (source: online).*

2.2.2 Spontaneity within the rules

Now we look at the built environment and the flexible space for the evolution of emergent configurations deriving from the presence of rules.[68] What has pointed out above, about the overall degree of spontaneity within the built environment, is fundamental to the following discussion. However, a further observation must be set as crucial pre-condition for any agents' actions. In fact, more than the physical space in itself, what primarily influences "agents' actions space" (Ikeda, 2007; Kim et al., 2016) within the built environment are the rules: the inescapable meta-condition (Moroni, 2015). To show this, I suggest three comparative empirical examples which describe imaginary spatial differentiation processes, showing how the rules (more than the design of the space in itself) are the main condition for the adaptation of the physical space. This statement is not an attempt to diminish the importance of the design of the physical space (which is obviously a fundamental condition)[69]; rather, it is an attempt to distinguish two different levels of the discourse in which rules are the meta-condition, while the built environment is the material concretization of actions that, in their turn, are always conditioned by certain rules (Moroni, *ibid.*).

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[68] With the term "rule" we refer to all the intentional social conditions such as the land-use plan, building codes, taxation, etc. that discipline action space and are imposed by a public authority (Moroni, 2015).
[69] The idea of architectonic adaptability proposed by Alejandro Aravena (2012) is an interesting example. However, Aravena's ideas would be nothing without a legal framework that leaves enough room for flexibility and spontaneous actions.

The first two proposed examples compare two initially identical urban settlements but with different rules. As we will see, with the passage of time, they will be subject to different actions that will lead the two identical areas toward a clear process of differentiation. Instead, the third example shows that it is not so much the initial design to determine in absolute terms the flexible space for the evolution of new emergent configurations (i.e. it is not important so much to know if the city, or part of it, evolved spontaneously or not to). Rather, what influences the extension of the flexible space are first of all the rules which discipline agents' actions in that particular area. In fact, as it is shown, it could be that cities, or part of them, evolved with a high degree of spontaneity, at some point, may have little flexible space for the evolution of emergent configurations. While, vice versa, highly-designed environments, paradoxically, at some point, may host a high degree of flexible space for the evolution of emergent configurations.
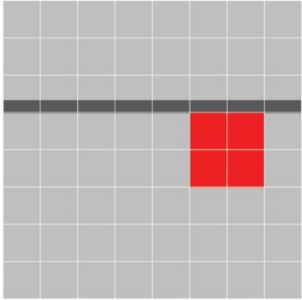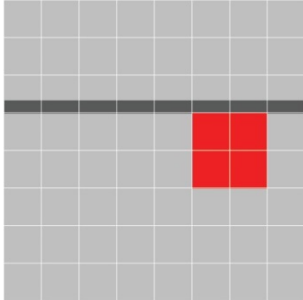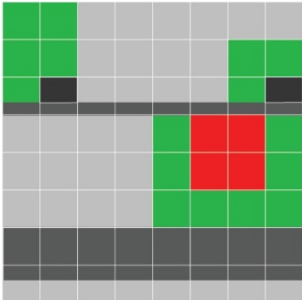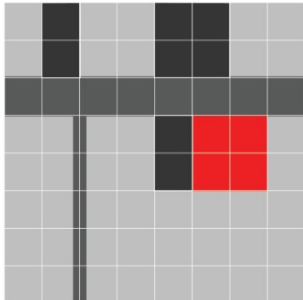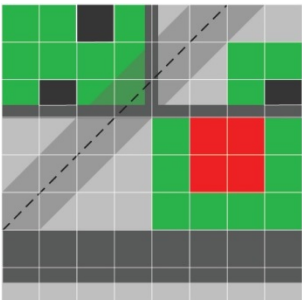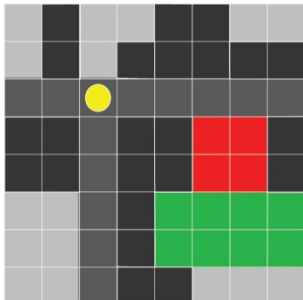
Example 1: two identical buildings with the same framework-rules, inside two identical neighborhoods with different framework-rules

The following example demonstrates that even in the case in which an urban element (such as a building) is designed and regulated in a very detailed manner (at the point to scale down at the minimum level the flexible space), the way in which its surrounding area (for instance its neighborhood) is regulated inevitably influences future internal adaptations of such element.

Imagine two identical buildings B (with the same design detail), as well as their respective neighborhoods X and Y, in their turn identical but with different rules. Specifically, to put it simply: these buildings could be two identical old farms now restored as restaurants, and located within an expanding and growing urban realm.

Now imagine an incremental transformation process set in three steps: t1, t2, t3. With the passage from t1 to t2, and from t2 to t3, neighborhoods X and Y (not the buildings) will be subject to different kinds actions. These actions will alter the initial spatial configuration of both BX and BY, firstly in BX '' and BY'', and then in BX''' and BY'''. Despite the two buildings B will keep unchanged their design and function, the hypothesis is that what happens during the process respectively in X and Y will lead the buildings toward substantial differences (for instance: property value, the state of maintenance, number of possible costumes, presence of correlated activities, accessibility, etc.).

Example 1

Evolution	BX	BY
T1		
Actions	- New expressway behind the building - Construction of two single family houses with private garden	- Widening of the existing road - Construction of three multistory buildings along the main road - New local road
T2		
Actions	- New electric high voltage line - Construction of double family house	- Construction of multistory buildings - Neighborhood park - Subway station
T3		

Even though the buildings maintain unchanged over time their initial function and design, to some extent we may assume that they have been subjected to a process of differentiation derived from the actions undergone in their respective neighborhoods X and Y which were in their turn regulated and planned in different ways. For instance, we can imagine that, at the end of the transformation process undergone in both neighborhoods, the building in the neighborhood Y has become more attractive than the building in the neighborhood X (or vice versa). In other words, the process of differentiation has been flawed from the outset by the existence of different rules that must be considered as the precondition of any changes occurred in time T1 and T2 in both neighborhoods. We may imagine that at the initial state of the process T1, X and Y possessed completely different rules regarding, for instance, the list of possible land uses and the maximum FAR.[70]

Nevertheless, with this simple example, we understand the importance of rules, but we still cannot fully understand their level of overall spontaneity. In fact, in both cases BX and BY, despite their final differentiation, the degree of overall spontaneity may be still very low; for instance, their respective rules could be thought to be instrumental toward a predetermined constructed order. If this is the case, in both areas, the flexible space for spontaneous action provided by the rules could be considered almost absent. It might be that – we cannot exclude this chance – the rules correspond to precise planners' will to reach a prefigured end state (for instance the neighborhood X may be a hypothetical garden city, while the neighborhood Y could be a city in expansion where the government wants to concentrate public investment). If this is the case, there would not be almost any degree of spontaneity since everything would have been planned from scratch.

In brief: what we see with this example is that identical buildings which are the product of the same design may be subjected to an extreme process of intentionally and arbitrarily conditioned differentiation if their neighborhoods (or surrounding areas) are regulated in different ways.

Example 2: two identical and unitarily designed neighborhoods with different rules

The following example demonstrates that urban settlements that are the result of a unitary design (as in the case of residential neighborhoods that are designed all at once) may host more or less flexible space for future changes and adaptations, in relation to the rules provided for them. Moreover, the example emphasizes that the initial architectural design does not necessarily coincide with the existing rules that discipline future spontaneous actions and the overall evolution of its spatial configurations. The two levels do not

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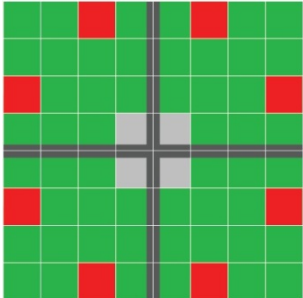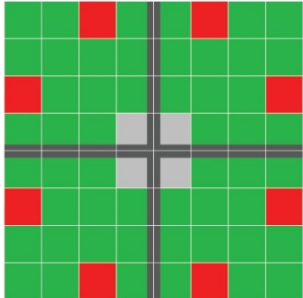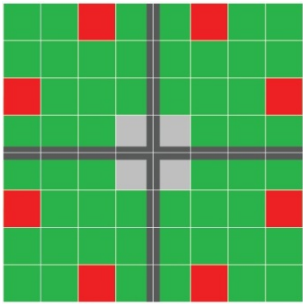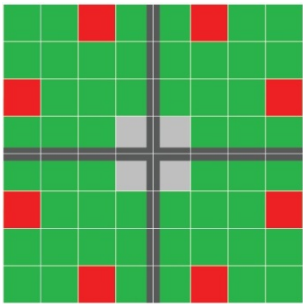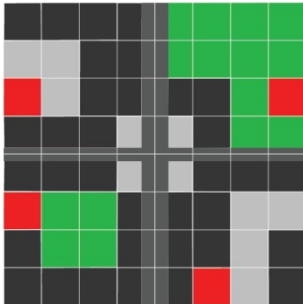
[70] For instance, the allowed FAR in X was very low compared to that of Y (we put, for example, that in the case of X it was possible to build only isolated buildings in the middle of the plot, while in the case of Y was possible to build up to 15 floors with a maximum land coverage of 80%). Moreover, X and Y differ also for the list of permitted land uses: for instance, in the case of the neighborhood X the land-use plan wants to preserve an agricultural landscape, while in the case of the neighborhood Y the land-use plan promotes high-density development.

necessarily coincide; or, better again, they can even be clearly distinguished. In other words, the rules play a key role in the process of future modification and adaptation of any designed space. Moreover: if we completely evade the question of rules, we cannot understand that the architectural design is only a starting point for the evolution of new emergent configurations. In fact, architecture and material artifacts are simply modifiable conditions open to future adjustments.

We can look at this example imagining different elements at different scales: for instance, we might imagine that W and Z are two entire residential suburban neighborhoods that are the product of an identical design composed mostly of one or two-family houses with private gardens. We also imagine that the level of design detail of both W and Z is very high. However, W and Z differ in the degree of detail provided by their rules. In W the initial state of affairs cannot be altered (only residential uses are permitted, and there is no possibility to have additional FAR). On the contrary, in Z there are no specific prescriptions as regards possible uses, and owners may expand their proprieties by purchasing and then build additional FAR.

Example 2

Evolution	W	Z
T1		
Actions	- Ordinary maintenance	- Widening of the existing road - Construction of multi-story buildings along the main road - Opening of new neighborhood shops

T2		
Actions	- Ordinary maintenance	- Construction of multi-story buildings with different uses and substitution of three old houses - Creation of two squares
T3		

As we see with this example, although W and Z were initially identical (both are the product of unitary design, and both were built all at once), with the passage of time, due to extremely different rules, they have undergone a significant process of differentiation. If W at time T3 is still the same residential neighborhood, on the other hand, Z has reached a considerably "urban character". Therefore, although this is an extreme case, we clearly understand that the architectural design is not the only determining factor for the evolution of emergent configurations. Rather, planning rules in the first instance may expand or restrict the *range of possible actions* that can bring the physical space toward unexpected adaptations. Naturally, there are architectural constructions that are more adaptable than others. However, rules are the primary condition for unpredictable future spontaneous actions.

Example 3: an urban settlement that evolved with high degree of overall spontaneity now subject to stringent rules, and a highly designed urban area now flexible for spontaneous actions

To comprehend how flexible space is for the future evolution of emergent configurations, it is not so important to study whether certain settlements evolved spontaneously or not; rather, we should firstly look at the existing rules. The following example demonstrates two main issues: firstly, it is not only the initial design of the space that matters for the evolution of emergent configurations; secondly, rules play a major role regardless the fact that an area evolved with different degree of spontaneity or it has been designed and built all at once.

This example helps us to distinguish urban areas developed with a high degree of overall spontaneity (or not) from their capacity to host future emergent adaptations. In fact, due to the introduction of very prescriptive rules, it may be that a formerly highly emergent urban environment no longer has room for the evolution of emergent configurations. While, on the contrary, highly detailed and designed settlements may turn in areas that have flexible space for spontaneous actions and the evolution of emergent configurations. This eventuality is demonstrable by taking into account two cases of the previous examples.

To do this, we compare the case "BY" (example 1) with the case "W" (example 2) both at time t3. The case BY may hypothetically represents a case of high overall level of spontaneity (or, in other words, a case in which the final configuration does not correspond to any particular master plan, but to an emergent configuration with a high degree of spontaneity). On the contrary, the case W represents a neighborhood built all at once with a very low degree of spontaneity (in other words: it is a case of imposed order that has not undergone through substantial adaptations over time). Thus, differently from the two previous examples, we do not compare two areas with identical features, but completely the other way around. Now imagine that, at a certain point, W and BY are subject to very different regulative measures. On the one hand, planners decide that BY has reached an intrinsic historical value, and consequently they choose to put it into a state of absolute protection and preservation. On the other hand, at the same time, planners consider that it is necessary to densify W (for instance to contrast the phenomenon of soil consumption) giving the opportunity to the various landowners to densify the area. Then, suddenly, an inversion leads W to be more flexible than BY and consequently more open to future emergent adaptations. This eventuality is evident in the following example.

Example 3

Evolution	W	BY
T3		
Actions	- Widening of the existing road - Construction of multi-story buildings along the main road - Opening of new neighborhood shops	- Ordinary maintenance
T4		
Actions	- Construction of multi-story buildings with different uses and substitution of three old houses - Creation of two squares	- Ordinary maintenance
T5		

According to what has just been shown, it is empirically irrelevant to distinguish areas evolved with a high degree of spontaneity from other that are the result of unitary design. In

both cases, the flexible space for the evolution of emergent configurations strictly depends on the existing rules which discipline agents action in space. For example, it may be that, as often happens, typically emergent configurations (e.g. the medieval settlements typical of the European cities) are now almost comparable to immutable objects with no space for future adaptations or spontaneous actions (see figures 28 and 29).

However, besides the issue of planning rules, it is relevant to underscore that also the distribution, subdivision, and composition of ownerships in space is a crucial aspect that can influence the evolution of emergent configurations (Ellickson, 1993; Heller, 1998; Slaev, 2014). In fact, following Hayek and his concept of "several properties" (1988: 30-33), the higher the number of different owners, the higher would be the number of possible spontaneous actions and the propensity of the system to be adapted in ways that are by definition unpredictable (chapter 3.2).

Figure 28: *The city of Bergamo, Italy, and one historical medieval pattern (source: online).*

Figure 29: *The land-use plan of Bergamo provides very prescriptive rules regarding its historical medieval settlements. According to land-use plan these parts of the city recognized as "Borghi storici" cannot be altered but only restored.*

2.3   Differences in rules

"We shall later have to consider more fully the precise relation between the various kinds of rules which the people in fact obey and the resulting order of actions. Our main interest will then be those rules which, because we can deliberately alter them, become the chief instrument whereby we can affect the resulting order, namely the rules of law."

Hayek (1982: 45)

As seen, the flexible space for the evolution of emergent socio-spatial configurations mostly depends on the rules that discipline agents' actions in space. Rules are the prominent action-condition and must be considered the crucial aspect of the *institutional level*. They represent a very complex object of study.

The idea of the chapter is to comprehend which role rules play within social systems, how they emerge and their main differences. That the topic of rules is a complex one is easily comprehensible by the fact that rules can be of different kinds and have a different genesis. For instance, they can be *informal* (i.e. tacit or contextual) or *formal* (i.e. explicit or legal). In the first case, they often emerge unintentionally; while, in the second case, they are deliberatively introduced by specific authorities. Another difference is that rules can be *public* or *private*. The general goal of the chapter is to reflect on their nature and start reasoning about how rules influence the *range of possible actions*. The latter concept is discussed in detail in chapter 3.3.

2.3.1 Rules as institutional fact

Social mechanisms are based on the attribution of collective meanings to social facts. This complex practice allows perfect strangers to interact. Institutions are what fulfill this need. Institutions, however, are not to be considered as given or statics structures, but as social products that are actively created, changed and maintained through action, according to progressive social changes (Buitelaar et al., 2007). Such changes, by their nature, are often slow and incremental. Moreover, they correspond to a process of adaptation toward new emergent interests. In particular, in the case of land-use planning, institutions are fundamentals: they affect the way cities are created and changed as well as affect economics and welfare.

In order to be classified as *institutional*, social facts must have three key features. First of all, the fact must be collective, which means that it must be broadly recognized by the society as a whole. Secondly, it must have a social function or a collectively assigned function. Thirdly, it must create a deontic power in virtue of collective acceptance by the community (Searle, 2005). (Consider the following as a simple example: (i) those white lines are pedestrian crossing; (ii) they are needed to help pedestrians in crossing the street safely; (iii) they oblige drivers to stop in the case in which pedestrians are going to cross the street).

Institutions are social as opposed to personal. "They are shared among the members of society or group to which they apply" (Hargreaves Heap, 1989: 4). To put it simply, one fact is called institutional when it has a certain collective meaning such that "X counts as Y in context C" (Searle, 2005). Therefore, an institutional fact is by definition contextual. According to Skoog (2005), an institutional fact depends on local circumstances (i.e. the logic of situation). From this perspective, it is possible to clarify what a rule is: "When the practice of counting X as Y becomes regularized (i.e. stable) it becomes a rule. Rules of form X counts as Y in C are then constitutive of institutional structures. This is the glue that holds society together" (*ibid.*: 16).

Institutions provide behavioral rules for social interaction and create deontic powers, increasing the human capacity for action and interactions. Institutions can also be intended as a framework of rules within which actors operate and interact in the pursuit of their aims. Their presence in society prescribe behavior for actors in recurrent situations of interaction with other actors, and thereby solve social interaction problems (Knudsen, 1993: 296).

2.3.2 Distinctions between formal and informal rules

Interactions among agents are influenced by formal and informal rules which determine power relationship among people. Clear distinctions between formal and informal rules must be made (North, 1990). The first distinction, banally, is that formal rules are written and enforced by the legal system (examples are the law, constitutions, ordinances, local land-use plans, building codes, etc.). While informal rules are less explicit (for instance, unwritten), tacit and emerge contextually (for instance, good examples are codes of behavior, taboos, traditions, moral values, etc.). Nevertheless, both kinds of rules, with different implications, affect people action in space (Buitelaar et al., 2011).

Rules are a salient factor of any social systems: "Rules create structure and stability to society; in other words: they facilitate the creation of order" (Kasper et al., 1998: 30). However, it is central to underscore some others relevant differences between formal and informal rules.

Most of the time people conform to patterns of conduct showing regularities that are not the result of commands or coercion but derive from habits and traditions. For example, Walter Benjamin in his book "Städtebilder" (2007: 4-16) to some extents speaks of informal rules when describing the uniqueness of the city center of Naples, and the way in which Neapolitans use the street for domestic habits - for instance to hanging out the laundry - mixing private and public life (behaviors of this kind were, and still are, widely accepted in Naples, while they are not admitted in many other cities; figures 31 and 32). Another good example is provided by Lai in the case of "spontaneous time zoning" from 5.00 to 7.00 AM in Goldfish market along Boundary Street in Hong Kong. Boundary Street is one of the busiest street corridor of the city (Lai, 2004; figure 30): "In normal time, during the day, Boundary Street is a major urban road with heavy traffic and on-street parking is prohibited. At 5:00 AM every day, vans arrive at a section of this road and offload foam boxes onto the

pedestrian pavement […] All transactions are complete by 7:00 AM when the sellers clean up the pavement and leave with the vans."

Rules of this kind are by their nature variable, and their flexibility is the result of gradual evolution and adjustments over time emerging from the actions of individuals. They are neither coercive or deliberately imposed, but emergent and observed by the majority of individuals placed in a certain environment. However, informal rules are subjected to unintended adaptation, since they change gradually as long as new circumstances evolve (for instance the emergence of new values in society). This happens because informal rules are not enforced by the law: "This allows open scenarios of perpetual adaptation within their structure" (Hayek, 1960: 63). In order to protect the best conditions under which individuals or groups of individuals can act, however, informal rules can be codified and transformed in formal rules. This transition - from informal to codified rules – should (in theory) guarantee higher level of expectations and certainty (Searle, 2005).

Generally speaking, informal rules work better in small groups because: "Within small groups, almost each member knows a lot about other people and their knowledge makes it possible to anticipate what others are likely to want and how they are likely to respond […] These small groups rely on informal mechanisms of social control to keep themselves together" (Epstein, 1995). The move from small voluntary groups to complex social systems such as the city implies the existence of impersonal relationships and, consequently, the need to enforce certain rules prescribing undesired actions. Nevertheless, informal rules are not present only in small groups. Informal rules also represent a large part of the existing social order within cities, but the distinction with formal rules is crucial.

Let's imagine a Mediterranean village in which all the windows are blue, and the building walls are white. At a first sight, one can think that residents voluntarily took this decision without any imposed rule. If it is the case, it can be sustained that in such village all the inhabitants share a tacit or informal rule. In particular, such rule can be intended as a sort of tradition which is respected by the whole community. However, this informal condition doesn't prevent inhabitants from choosing different colors by taking a non-conforming decision. In fact, it could be that, contrary to the tacit rule in principle shared by everybody, one nonconformist inhabitant may decide to alter the white and blue aspect of buildings with new exotic colors. However, even though most of the inhabitants wouldn't accept such action, they will not have any legal instrument to prevent other agents from taking this change. On the contrary, it can be that, for instance, some other inhabitants would appreciate such change and will start to emulate the nonconformist agent, altering the colors of their buildings too. From this perspective, actions of this kind will quickly change the landscape of the whole Mediterranean village changing its overall aesthetic appearance.

Processes like the one described above are possible essentially if there are not formal rules that prevent people from self-determine the content of their actions (in the previous example, for instance, the decision regarding the color of buildings). In brief, even if informal

rules constitute a very important role in social systems, they cannot prevent people from taking nonconformist behaviors. [71]

By looking at this example, it is possible to grasp certain differences between formal and informal rules. However, differences become even more clear if we answer to two simple questions: (i) who is responsible for rule making and rule modification? (ii) which kind of problems rules show with the passage of time?

Responsibility in the case of formal and informal rules

Kasper & Streit (1998: 29) claim that "The institutional system undergoes more or less constant change, and humans are the one who changes the rules. Rules are created and altered by human behavior: the actions of individual and organizations". In the case of formal rules, changes normally require decision making (ibid.: 395), in which a crucial role is played by legally recognized competent authorities (i.e. changes in formal rules depend on specific subjects). In other words, in the case of formal rules there are always some individuals that are directly responsible for changes; whereas, in the case of informal rules, it is practically impossible to identify individuals or specific groups of individuals that are directly responsible for changes in rules: "Informal rules tend to emerge organically, spontaneously, as the unintended outcome of individual behavior and social interaction" (ibid.: 142-155). Therefore, we can think of formal rules as intentional social conditions introduced or changed over time by authorities through specific institutional actions (i.e. the power for this change is in the hands of some individuals). While we can think of informal rules as unintentional social conditions that are the emergent result of an uncountable dispersed number of actions (i.e. nobody has the power to change the rule directly since power is distributed among people).

In the case of formal rules, we can make another distinction between single rules and rules systems (see also chapter 3.1). This to say that in the case of a "single rule" (or a single normative text) we can think of it as "finite object", the result of one action. While in the case of "rules systems" (i.e. the combination of many separate normative texts) they are composed of many "single rules" and many normative action. Therefore, in the case of rules systems, the final (and probably complex) aggregation is the result of many rules that are not designed in a specific moment by one individual, but by many individuals at different times. Although this process would seem to present (as in the case of informal rules) incremental, organic and unintentional aspects, the main difference between formal rules and informal rules is that the formers are introduced by specific rule makers who are responsible for their design and, above all, for making them working within already existing rules systems. On the contrary, in the case of informal rules nobody has the authority to introduce and design new rules. In other words, formal rules are controlled by rule makers, while informal rules simply emerge from uncountable number of actions and in ways that

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[71] The term nonconformist is not negative in itself.

are completely unpredictable. In the case of informal rules it is impossible to identify direct responsible. In this regards, it is crucial to observe that the emergence of informal rules is subordinated to the presence of existing formal rules. In other words, formal rules can be intended as a legal framework within which informal rules can emerge and be adapted over time in ways that do not depend on human design.

Lastly, if actions are taken outside the legal framework, they are not simply informal but, first of all, illegal (think for instance about the so-called informal settlements). Naturally, the more formal rules are prescriptive, specific, and detailed, the easier is to get into illegality.

Problem in the case of formal and informal rules

Formal and informal rules have different kinds of problems. In general, in the case of informal rules, there may be the need to codify a particular rule in order to make it more enforceable - for instance because people do not spontaneously respect a particular informal rule anymore (think about the previous example of the Mediterranean village). Furthermore, even in the case in which informal rules are respected, it can be that some unexpected negative externalities would emerge and new legal rules may be necessary.

Imagine for instance one neighborhood in which every day, at the same time, when it comes the time to pick up kids at school, most of the parents are used to parking their cars along the street, provoking for a few minutes traffic inconveniences that in many cases everyone in the neighborhood knows and accepts.[72] Now, let's consider for example that a new supermarket has been built near the school, and the traffic situation gets worse as more cars go to the same area. One of the uncountable possible solutions that the local municipality can take to solve such problem, for example, could be that of banning cars from parking in front of the school. Doing so, the municipality would alter the ancient informal rule preventing people from doing what they were used to do for years.

In the case of formal rules, instead, there may be the so-called *institutional contradictions*. Institutional contradictions happen in a particular situation in which the existing legal rules are no longer able to respond to social needs. In other words, a gap between social interests and the legal framework emerges. This happens since, as the society starts to change, the rules are not enough open (or flexible) to accommodate such changes. Generally, such a situation represents an opportunity for modifications and adaptations of the institutional level. However, this is not automatic: human recognition and action are needed for that to occur (Buitelaar & Sorel, 2010).

Institutional contradictions can emerge both internally within institutions (Kingdon, 2003), or externally in case of unexpected social and economic changes (Waterhout, 2008). In general, this is a moment of sufficient pressure in which individuals are willing to change existing institutional structures following the emergence of new praxis (Seo et al., 2002).

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[72] This example is similar to the one of informal time zoning in Hong Kong proposed by Lai (2004).

"Praxis can be seen as a process of social transformation in which one set of arrangements gives way to another" (Benson, 1977). In this regard, the recent shift from comprehensive to organic planning in the Netherlands offers a clear example of institutional contradiction between the need for organic development and the existing planning instruments which do not facilitate small-scale actions (see chapter 4). As Edwin Buitelaar says, in the Netherlands "Contemporary institutions do not always allow for such a shift" (Buitelaar, 2014).

So, in brief, institutional contradictions are visible when individuals start to perceive that the institutional infrastructure creates more problems than benefits. This contradiction, in theory, should stimulate public authorities in assuming their responsibility and solve problems.

2.3.3 Distinction between public and private rules

With the term "legal rules" Hayek (1976) defines all the formal rules that members of a particular group have to comply with and are intentionally created by individuals. However, rule-making is a multi-level and multi-agency activity: we cannot think of the state as the only rule maker. This is evident, for instance, in the case of building codes and land-use plans.

In this regard, it is possible to make a clear distinction between private law and public law: rights can be created from both sides. The distinction between public and private law is central to all legal systems (Needham, 2006). From this perspective, it is worth underscoring that three main types of law exist: (i) public law, (ii) private law, and (iii) law of the private entities (i.e. covenants, contracts; see Lai, 1998; 2005; 2010). First, in the case of public law the state directly regulates actions and interaction between public and private individuals. Second, in the case of private law, the state defines rules of interactions between private individuals. Then, within the framework of public and private law, the law of private entities emerges, like in the case of contracts among privates. The specificity of the law of private entities is that it is voluntary and freely created by private individuals. With this last type, people usually decide how land and buildings are specifically and effectively used or transformed. In short, the entire legal system is structured by this classification which sharply distinguishes *imposed law* from *the spontaneous law* (i.e. contractual). However, both imposed rules and contractual rules influence rights in land, that is the way in which people can use their proprieties.

Rights are not natural conditions but are socially created conditions (Alchian & Demsetz, 1973) which discipline the relationship between people: "Whenever a person is enjoying a right, there is another person with an associated duty. For example, if I have the right to occupy a building in a certain way, all other people have the duty to permit me to do that [...] the relationship of right/duty needs to be regulated" (Needham, 2006: 31). Rights define a deontic relation between individuals. Deontic relationships (for instance permission, prohibition, and obligation) can be of three kinds: public on public; public on private (for example in the case of agreements, partnership, etc.); private on private (for example in the

case of contracts). Starting from these general distinctions, the thesis explores the way in which planning rules (i.e. public rules on private individuals) influence actions in space (see chapter 3.2).

From now on, the thesis will be focused prevalently on public rules, while underscoring the fact that "rules of private entities" are also of interest to understand the evolution of emergent configurations in cities. Especially, in the case of self-organisation, private law is omnipresent (Andersson et al., 2014). In the first case, rules are the result of coercion, while in the second case they are the result of voluntary choices and spontaneous agreements.

Figure 30: *The Goldfish Market in Hong Kong (source: online).*

Figure 31: *Naples, domestic scenes outside the entrance of an underground Roman amphitheater. Photograph by the author.*

Figure 32: *Private and public life mixed in streets according to very specific and contextual informal rules. Naples, Rione Sanità. Photograph by the author.*

2.4 The reasons of public rules

"Oh, Jasper, you're so roundabout", said Hortense. "It's the social contract. Citizens surrender their use of force for the benefit of civil peace."

Jacobs (1992: 73)

Due to the complexity of the social system, and limited availability of dispersed knowledge, people's actions inevitably occur within a context of structural ignorance (Langlois et al., 1992; O'Driscoll & Rizzo, 2014). Moreover, spontaneity offers both opportunities and risks (see chapter 1.1). The general idea of the chapter is to underscore the reasons why state intervention is required to create a legally binding systems. In particular, the chapter discusses why public rules are fundamental in complex system. First of all, public rules are needed to reach the highest use of *dispersed knowledge*. Secondly, to promote and guarantee *individuals' protection* from negative externalities. Thirdly, to enable *individuals actions* and *social interactions* (in this perspective, the term enable means also to protect the private sphere of action from external threats). In brief, the main thesis is that, at the same time, rules must guarantee a large degree of *action space* (Ikeda, 2007, 2012), and clear *public conditions* able to protect individuals from negative externalities.[73] In this, the state is supposed to protect each of us from everyone else including, paradoxically, the state itself.

The goal of the chapter is to underscore the main reasons why society needs public rules and, above all, which should be the main reasons of rules.

2.4.1 The best use of dispersed knowledge

Spontaneity and liberty are two inseparable concepts; however, not all actions and collaboration among individuals are spontaneous: two profound different kinds of interaction are distinguishable. The first is the result of voluntary choices, while the second derives from coercion or commands (Mises, 1949: 195-200). "Liberty is a state in which agents are not subject to coercion by the arbitrary will of others" (Hayek, 1960: 11). Thus, in our case, actions are definable as spontaneous when agents voluntarily decide how to use or modify a certain space on which they have specific property rights, and nobody from the top imposes them what to do and how (see chapter 1.1).[74] In general, the word liberty always

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[73] Quoting Stefano Moroni (2011): "We need rules not in order to achieve certain predetermined, specific common ends, but to enable the peaceful co-existence of various individuals pursuing totally different ends. The law must be interpreted not as an instrument for achieving some specific outcomes/configurations but rather as an abstract and stable framework for the peaceful co-existence of many different individuals with incommensurable and continuously changing goals".

[74] Nevertheless, few are the case in which it is possible to speak of complete freedom; rather it is more appropriate to speak of degrees of freedom (Carter, 1999).

means the possibility of a person to choose according to his own knowledge. In this regard, the sense of the word liberty is one, and exclusively refers to relations among people: in short, the *freedom from*. Liberty is a starting condition that can become positive only through the use that individuals make of it (that means, how people act in certain circumstances in which they find themselves). In this sense, liberty is essential because every individual possesses a little part of the whole dispersed knowledge, and "Only through the utilization of dispersed knowledge a society can attain unforeseeable achievements greater than any single mind can predict" (Hayek, 1960: 31). Moreover, liberty is important because we do not know how people will use it. If it were otherwise, great achievements could also be reached by a little group of people deciding what should be done by all individuals. Therefore, in general, "The argument for liberty is against the use of coercion to prevent others from trying to do better" (*ibid.*: 37).

Coercion means the control of specific circumstances of a person by another. Coercion eliminates an individual as a thinking and valuing person (i.e. individuals are not free to use their knowledge), and makes him/her a tool for others people's ends. However, civil society cannot avoid the use of coercion since the only way to inhibit it, paradoxically, is by the threat of coercion. Thus, "Coercion according to known rules becomes an instrument assisting the individuals in the pursuit of their own ends and not a means to be used for the ends of others" (*ibid.:* 21). The use of coercion is the only way to guarantee the space within which individuals may act without other individuals' threats. Liberty (or absence of coercion) means that people decide for themselves since they are in the best position to know the circumstances surrounding their action. So, the legal framework should permit them to use their knowledge.

We can think of liberty and responsibility as two inseparable concepts: "A free society probably demands more than any other that people should be guided in their action by a sense of responsibility" (*ibid.:* 76). This means that people are responsible for both the success and the failure of their actions or, in other words, that people should pay the costs of their wrong choices. As Hayek claims, the main issue is to find a way that allows social systems to maximize the utilization of the dispersed knowledge which, in principle, is possessed by all individuals and cannot be centralized in a single mind.

From this perspective (as already underscored in chapter 1.1) two kinds of knowledge are deeply distinguishable: one is scientific, the other depends on particular circumstances of time and place. Quoting Hayek (1945) "So far scientific knowledge is concerned, a body of suitability chosen experts may be in the best position to command all the best knowledge available – so the main problem is selecting the experts." Vice versa, by admitting the existence of dispersed knowledge "The common idea seems to be that all such knowledge should be readily at the command of everybody".

2.4.2 Enabling social interactions

It is specifically because actions always produce unintended externalities and have a certain degree of uncertainty regarding future effects (see chapter 1.1) that public rules are required. In general, "The essential function of rules is to prevent individuals from inhibiting one another's actions: rules have the essentially negative function of preventing disastrous harm" (Brennan & Buchanan, 1985/2008: 17). For this reason, the law assumes a predominant role, and public intervention (which is meant to limit individuals' freedom) is required in order to guarantee more freedom (Carter, 1999).

Liberty demands the use of coercion by the government for the purpose of enforcing known rules intended to protect the best conditions under which the individual or group of individuals can act. The acceptance of such rules enables each member of society to shape the content of his protected sphere. Moreover, rules are established to provide useful guidance and reduce uncertainty. "Rules provide to each actor predictability about the behavior of others. This predictability takes the form of information or informational boundaries about the actions of those involved in the interaction" (Brennan & Buchanan, 1985: 11). Delimiting the protected sphere also means that the morality of action within the private sphere is not an object for coercive control: "The bare fact that an action is disliked by some cannot be a sufficient ground for prohibiting it" (Hayek, 1960: 144-146). For that reason, public intervention must be in its turn limited by accepting some principles. For example, one principle is that of *self-limitation* to avoid that unlimited democracy becomes subjected to the arbitrariness of majority groups (and minority groups soon can become unprotected).[75] Another important principle is that of the *rule of law*, that means that coercion must be applied equally[76] to all people, to the government as well as the governed (Hayek, 1960: 143), and that nobody should have the power to grant exceptions.

The law can be intended as "The science of liberty since the life of a man in society is possible only if individuals act according to certain rules which should always become more abstract and general" (*ibid.:* 148). Abstract and general rules are firmly in contrast with specific commands. Thus, it follows that specific ends of action, being always particulars, should not enter into general rules. "Individual are recognized to possess their own privately determinate objectives, their own life plans […] In this setting, rules have the function of facilitating interactions among persons who may desire quite different things" (Buchanan, 1985: 10). In brief, the central problems of any legal system are fundamentally two: to maintain social harmony (particularly when people live and work in circumscribed spaces like cities), and to allow people to interact according to their knowledge (Epstein, 1995: 327)

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[75] According to Hayek (1960: 117) "It is not anti-democratic to try to persuade the majority that there are limits beyond which its action ceases to be beneficial."
[76] Quoting Hayek (1960: 87): "The boundless variety of human nature-the wide range of differences in individual capacities and potentialities-is one of the most distinctive facts about the human species. Individuals are very different from the outset. From the fact that people are very different it follows that, if we treat them equally, the result must be inequality in their actual position, and that the only way to place them in an equal position would be to treat them differently.

3 IMPLICATIONS

3.1 Simple rules

"The more the public goal is detailed and complex, the more will be the demand for government intervention"

Rothbard (1995)

The role of rules should be that of increasing the use of dispersed knowledge in society and enable the development of individual actions and interactions. All this avoiding the emergence of negative externalities. However, as often happens, the presence of rules is not only beneficial: rules can also limit (exceedingly) the use of localized knowledge as well as discourage people's actions, and constraint creativity and innovation. Complex rules are in place for many reasons. One of them (surely the most relevant) is the expansion of detailed and prescriptive regulations aiming at specific socio-spatial configurations.

Currently, in the field of urban studies little space is given to the issue of regulation and what planners can do in order to provide *simple rules* that rely on forms of *spontaneous development* and the emergence of *self-organizing systems*. This issue becomes even more relevant in great cities where the complexity of the system gets inevitably higher and higher. The goal of the chapter is to indicate the features that rules should have in order to be defined as *simple*. The main idea is that spontaneity needs simple rules. Above all, complex systems need simple rules.

Part of this chapter is the result of an ongoing research started in 2015 in collaboration with Edwin Buitelaar, Stefano Moroni and Niels Sorel.

3.1.1 Complex and simple rules

During the twentieth century, in many countries, the entire system of laws has become more and more complex, in terms of the (debatable) notion that law must mirror the growing complexity of society (Mumford, 1938; Tugwell, 1939; Mannheim, 1965). As Ratnapala (1997: 341) observes: "The popular theory is that complexity of the law is the natural consequence of the complexity of society: as society becomes larger and more technologically advanced, the old simple laws become inadequate". Also Zywicki (1998: 143) states that: "Conventional wisdom holds that as a system becomes more complex, the rules governing that system also must become more complex. Thus, it is argued that as the [...] economy and society becomes more complex, legal rules and regulations must become more complex as well in order to reflect the new realities." New problems and risks are being addressed by an immediate legal response. This has been referred to as the "response state of law" (Nonet et al., 1988) and the "risk-rule reflex" (Buitelaar et al. 2013).

Effectively, in today's societies the law tends to accumulate into an increasingly complex legal system (Schuck, 1992; Epstein, 1995; Larsson, 2013). What we have been witnessing for some time now is what is known as "hyperlexis" (Manning, 1997), and an apparently unstoppable "regulatory accretion" (Ruhl & Ruhl, 1997), which has led to what some have called the "regulatory state" (Majone, 1994). The same regulatory accretion is visible in many other areas. This process has created confusing and complex institutional regulatory frameworks. The general approach was that of responding to the emergence of new problems and changes in societies with the introduction of new specific laws.[77] Moreover, during the twentieth century we have been witnessing to an uncontrolled expansion of *bureaucracy* due to an increasing number of activities regarding social, cultural and economic aspects carried out by the state (Poggi, 2013): "The expansion of bureaucracy was the unavoidable consequence of the progressive restriction of individual freedom and the substitution of government control for private initiative" (Mises, 1949: 44). Urban planning is surely one of the field in which, over time, public intervention has been considerably expanded to determine in detail land uses and land transformations. According to Lewis Mumford (1961: 344 – 360): "In the last century we saw a concentration of urban power […] Increasing importance of the process of administration in every type of enterprise. The growth of the big city is a by-product of the growth and widening influence of the bureaucracy, which pushed into every sphere the controls and regimentation […] The final goal of the process is unified, homogenous and completely standardized".

However, it has been argued that "The proper response to more complex societies should be an even greater reliance on simple legal rules" (Epstein, 1995: 21). This point is stressed also by Webster and Lai (2003: 211), "The more complex the system, the greater the need for simple rules to achieve order", and by Zywicki (1998: 144): "Complex systems *demand* simple – not complex – rules."[78]

In response to complex societies, simple rules are generally desirable for five main reasons: (i) are more likely to be enforced than complex rules (Sutter, 1998); (ii) reduce "administrative costs" (Schuck, 1992; Epstein, 1995);[79] (iii) reduce the risk of unscrupulous

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[77] To give an example, in Italy, from 1962 to 1997, the number of *implementation plan instruments* (the so called *Piani Attuativi*) has considerably increased, passing from one (the *Piano Particolareggiato*) to nine, each of them with very specific objectives and procedural requirements. Today, most of them are outdated, unnecessary and not used at all. The first was the *Piano particolareggiato* in 1942, while all the others were introduced between 1962 and 1997, so less than 35 years. Specifically they are: (1) *Piano Particolareggiato,* (2) *Piano di zona per l'edilizia economica e popolare,* (3) *Piano di lottizzazione,* (4) *Piani per insediamenti produttivi,* (5) *Piani di recupero,* (6) *Programma integrato di intervento,* (7) *Programma di recupero urbano,* (8) *Programma di riqualificazione urbana,* (9) *Programmi di riqualificazione urbana e di sviluppo sostenibile del territorio.*

[78] For instance, as the research AnarCity maintains (MVRDV, 2012): "The more density and congestion the more tensions will appear, and in order to overcome them society has implemented a complex system of regulations. In Manhattan for example despite its fame of American freedom and wild capitalism we witness instead a city form that is the result of a complex superimposition of rules that gets updated and expanded every day.

[79] According to Epstein (1995: 30-31), administrative costs cover all costs necessary to run a certain legal system correctly. Outlay of this kind includes both costs that *public* parties must bear to enforce the legal rules (e.g. the costs of monitoring, inspection, and supervising), and those that *private* parties must bear to comply

public officers taking advantage of ambiguous legal framework (Jacobs, 1992; Chiodelli and Moroni, 2015); (iv) increase the capacity of the social-economic system to take advantage of dispersed knowledge (Hayek, 1982); (v) are more stable and diminish the possibility of institutional contradictions. Complex rules, in fact, tend to become obsolete more quickly and, therefore, they must be rewritten many times in order to keep up with changing situations (Zywicki, 1998; Buitelaar & Sorel, 2010).[80] According to Schuck (1992) and Epstein (1995), *simple rules* are the opposite of *complex rules*. They argue that complex rules have four distinct features: (i) density (they are many, detailed and try to cover all aspects of certain actions or activities); (ii) technicality (only understandable by experts: ordinary citizens are not able to directly know whether they are in compliance with the rules); (iii) differentiation (multi-level government rules at stake, plurality of different overlapping sources of law concerning a given situation); (iv) indeterminacy or uncertainty (hard to apply a rule unambiguously, outcomes are hard to predict: to be able to decide whether a given action is illegal, it is necessary to deal with several factors provided for, none of which is decisive).[81]

Although these four variables are indeed relevant for understanding rules, *individual rules* and the aggregate *rule system* must be distinguished more clearly. A rule system emerges when rules are related to each other. Therefore, in an attempt to further develop the scheme proposed by Schuck and Epstein, it is necessary to draw a sharper distinction between simplicity (and complexity) *of rules* and simplicity (and complexity) *of rules systems*. Some features apply to rules, others to rule systems.

3.1.2 Features of simple rules

In their most extreme form, simple rules have three cumulative features: (i) they are *accessible*; (ii) responses to them can only be *binary*; and (iii) they are *general* in nature. Consequently, at the other end of the spectrum we have complex rules that are indeterminate and uncertain, with a continuum of responses, and specific in nature. These extremes of the spectrum are archetypes, however, as in practice simplicity and complexity are always relative: one rule is simpler or more complicated than the other (Schuck, 1992). The idea is that these three features may favour spontaneous actions and be more apt to solve interactions problems. I say may, because simple rules can be also very restrictive and, consequently, eliminating any space for spontaneous actions. However, as we will see later in chapter 3.3 "Planning for spontaneity", these three features combined with other important aspects, represent a guiding principle for rules making.

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with these rules (i.e. the costs of understanding which rule applies to their situation, finding out what they must actually do to comply with it, and demonstrate their compliance to the public authorities).
[80] See also Leoni (1961).
[81] For other attempts to define "complex rules", see Kades (1997), and Katz and Bommarito (2014).

First feature: accessibility

Accessible rules are rules understandable and determinate; that is, written in a clear language that does not generate unnecessary uncertainty (Stephens, 2010). In general, "If ignorance of the law is no excuse for citizens, then it would seem to follow that they should be able to understand it" (James and Wallschutzky, 1997). In brief, the aim of simple rules is that to be easily understandable by the largest number of people, not only by professionals or experts.

Four examples of *non-accessible* rules.

(i) An example of non-accessible rule from an Italian land-use plan adopted in 2013 by a municipality in the Lombardy region:

"The reference framework of the development of the future Detail Plan forms an integral part of the overall context aimed at the urban and environmental reorganization of the territory as a whole. One key aspect of the proposed intervention is the aim to re-interpret in a contemporary key the thematic basis of the setup of a specific portion of the city, inserted in a context that is impacted by natural environmental and/or anthropic and cultural outcomes, according to the morphological and compositional principles linked to interventions characterized by settlement principles that generate amenities with an urban structure devised in advance and according to transformative principles that affect modest portions of the territory, defined according to an ordered scheme from the outset of study of the area involved in the said transformation. In particular, the urban form can be orchestrated on the basis of morpho-typological principles that regulate functions and end-uses according to a structured design and hierarchy of the spaces constructed, the opens spaces, and interconnecting fabric, with the aim of defining the architectural precipitate, and hence of the building instrument itself. A vital and determining aspect for the proposed intervention is the underlying intent."

(ii) An example of non-accessible from an Italian land-use plan adopted in 2009 by a municipality in the Lombardy region:

"In the urban areas of high, medium density residential building, areas of consolidated construction for production activities, to the exclusion of nuclei of long-standing formation, into which the Plan is divided in the case of new buildings, the increased coverage of existing buildings or the construction of basements external to the projection of buildings, reserved for unbuilt green space shall be a percentage of the lot amounting to no less than 20%, except as provided by the specific zoning by-laws."

(iii) An example of non-accessible rule from a City Code adopted in 2016 by a U.S. municipality in California:

"The approval of a vesting tentative map by the city council shall confer a vested right to apply for permits needed to proceed with development and have the city exercise its discretion to approve, disapprove, or approve such permits with conditions, on the basis of ordinances, policies, and standards in effect at the time the application was determined to be complete pursuant to Section […] of the Government Code".

(iv) An example of non-accessible rule from an Italian land-use plan adopted in 2011 by a municipality in the Lombardy region:

"Should it prove unfeasible to create the private parking spaces and/or car-parks cited in the previous clause, and in exception of indications at the letters 'b', 'c', and 'd' above, in the areas accorded to the buildings in question, owing to lack of spaces, features of the terrain, inaccessibility of public spaces, it may be acceptable to utilize – either wholly or in part – areas outside the zone of the buildings, provided that the use of the land therein does not clash with the regional transport regulations in force, and that the said areas are equipped with adequate access routes, and are located in a suitable position for the said purpose, and contained within a radius of 100 meters, which can be expanded only in case of effective unavailability of areas, up to a maximum radius of 300 meters, and that they are assigned as parking areas for the entire duration of the building which they serve through signed contracts registered with the public authorities at the expense of those holding the deeds."

Examples of more *accessible* rules.

(i) An example from an Italian land-use plan adopted in 2012 by a municipality in the Lombardy region:

"The minimum distance between the walls with windows of buildings facing each other shall be equal to the height of the taller building."

(ii) An example from a *Land Development Code* adopted in 2015 by a U.S. municipality in Colorado:

"The following uses are prohibited in all zoning districts: […] Disposal facilities involving radioactive materials […] Sale of fireworks. Outdoor shooting range".

Second feature: binary response

Schelling says that (1978: 59) "The man who created the traffic signals had a genius for simplicity [...] He needed neither tickets nor schedules, nor did he have to make any traveller

apply in advance for a reservation to cross the intersection. All necessary instructions could be reduced to a binary code in red and green lights."

Responses to simple rules are essentially dichotomous in nature: you either comply or do not comply with those rules. In other words, "There is a clear-cut, binary *yes/no* answer, like an *on/off* switch" (Epstein, 1995). Widely speaking, with simple binary rules there shouldn't be any need to meet council officers to understand if you can do something or not. Rules of this kind don't require any consultancy with officers or particular permissions. On the contrary, if rules are more complicated, compliance comes in varying degrees.

Simple binary rule is not necessarily non-stringent. Instead, such rules can be very restrictive. For instance, rules prohibiting a hazardous substance or a particular land-use in an entire city, because of their negative externalities, are examples of what binary and yet restrictive rules may be. However, as Epstein claims (1995: 29): "The proposition that simple rules are best for a complex world does not imply that any simple rule could do the job. A rule that prohibits […] work is very simple in form, but disastrous in its social consequences". The importance of this features lays on the possibilities for people to act directly and without any interactions with officers. Clear cuts between what people can do or not favor the protection of private action space avoiding unnecessary frictions.

Examples of *non-binary rules*.

(i) An example from an Italian local building code adopted in 2006 by a municipality in the Lombardy region:

"The surface area of a private courtyard … must not be less than a fifth of the surfaces of the walls delimiting it. … In the case of irregularly shaped courtyards, or those with walls of greatly unequal lengths, the local Council Planning Office will establish which criteria are to be applied for calculating the surface areas of the same."

Note that the concept of "irregular" and "greatly unequal lengths" are vague to say the least; in any event, the criteria to be applied in these cases are left to the discretion of some council officer.

(ii) An example from an Italian local land-use plan adopted in 2014 by a municipality in the Lombardy Region (emphasis added):

"The relevant areas of buildings regulated by art. 7.4 must normally be kept green and allocated, when possible, to recreational activities."

Note how the terms "normally" and "when possible" make it impossible to know in advance what will happen and if the action complies with the rules.

(iii) Examples from a U.K. local plan adopted in 2005 (emphasis added):

"The change of use of temporary sleeping to permanent residential accommodation will normally be permitted within identified residential areas, where housing and amenity standards are met".

"Temporary sleeping accommodation can help to meet the accommodation needs of business visitors and will normally be considered suitable within identified residential areas"

"Proposals for change from offices will normally be refused if the building or site is considered to be suitable for long-term viable office use".

Two examples of *binary rules*.

(i) an example from the code of rules designed for the development of Oosterwold in the city of Almere, The Netherlands (see Part Two):

"In areas indicated as "forest", real estate development is prohibited".

(ii) An example from an Italian land-use plan adopted in 2010 by a municipality in the Lombardy region:

"Pitched roofs may not have a slope greater than 45°."

Third feature: generality

When rules become very detailed and specific they are complex, not simple. According to Louis Kaplow (2000: 503), for instance, the complexity of legal rules refers to the number and difficulty of distinctions that the rules make.[82] On this logic, general rules refer to general types of situations or actions, not to specific ones, and they apply equally to

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[82] This point is clearly recognised by Weisbach (1999: 867): "The more complex the law, the more accurately it distinguishes between different individuals or transactions. … We can think of this type of complexity as the number of lines or the degree to which the lines match the underlying terrain in a topological map."

everyone, or, at least, to an indeterminate class of uncountable individuals (in short, they contain no reference to a particular piece of land, landowner, etc.). All this obtains without any specific purpose or spatial arrangement in mind, but merely in order to provide the means with which to fulfil the varied purposes of many different people (Moroni, 2015). Observe also that complex rules which dictate specific actions in great detail reduce the capacity of each individual to use his particular knowledge about his circumstances of time and place. In general, complex rules reduce the capacity of the system to take advantage of the collective's diffuse knowledge (Hayek, 1982: vol. I).

Regarding urban transformations, the generality of rules has two main aspects. The first aspect concerns the degree to which a given rule is *locationally-specific* (i.e. map-dependent) or *locationally-generic* (i.e. map-independent).[83] From this perspective, a clear example of non-generic rules are the written and graphical rules typical of orthodox zoning ordinances, while an example of general rules are those considered in urban codes (Moroni, 2007; Alfasi and Portugali, 2007; Portugali, 2012; Holcombe, 2013).

The second aspect concerns the extent to which a given rule is *permeable* to trying out different solutions (Moroni, 2011; 2013). In this case, the non-generic rule defines specific solutions in some detail. Conversely, a general rule should allow individuals (citizens, developers, architects, designers) to respond to new circumstances through innovative action prompted by their particular knowledge of the circumstances of time and place. In other words, rules of this kind should be prevalently performance-based, rather than technology-based or solution-based (Baker, Sipe and Gleeson, 2006).

Two examples of locationally-specific rules.

(i) An example from an Italian land-use plan adopted in 2009 by a municipality in the Lombardy region:

The current land-use plan of Bergamo (a city about 120.00 inhabitants) has a list of 73 different "classes of patterns" (in Italian *tessuti*) through which the municipality identifies and distinguishes the whole territory into a myriad of different zones. Such classes of patterns specifically regulate three aspects of urban development: (i) the admitted uses, (ii) the maximum FAR and (iii) the types of possible interventions. These classes are specifically assigned to each zone of the zoning map (zones extension goes from a single plot to an entire neighborhood). Among the 73 classes of patterns provided by the municipality of Bergamo are worth mentioning very specific and complex types, such as: "pattern of historical villages", "first formation historical urban fabric", "relevant contemporary neighborhoods", "peripheral

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[83] For the terms "locationally-specific rules" and "locationally-generic rules", see Needham (2007: 20). For the terms "map-dependent rules" and "non map-dependent rules", see Alfasi et al. (2012: 875-876).

historical nucleus", "contemporary replaced urban fabric", "closed high-density urban fabric", "semi-open medium-high density urban fabric", "open low-density urban fabric with non-uniform morphology", "scattered and isolated buildings", "overgrown areas", "wooded meadows", "urban gardens", "urban-scale commercial areas for selling", "prestigious industrial buildings", and so on. Obviously, this long list of 73 classes of patterns leads the city of Bergamo to a high degree of legal spatial differentiation in which every zone is treated differently from the other.

Furthermore, if we look at the list of admitted uses (i.e. one of the three aspects regulated through the assignment of a certain pattern), we discover that Bergamo has a very specific list of 96 ambiguous uses which includes, for example, "eco-compatible experimental agriculture", "agro-touristic activities", "agricultural activities linked to services for weak people", "experimental laboratories linked to artisan and small production", "productive activities for experimental research", "constructions for scrapping activities, or garaging vehicles and / boats", "cultural, recreational, political, labor associations and similar", "travel and leisure agencies", "activities related furniture restoration and objects of art", "activities related to aesthetics and body care", "activities related to hardware and software programming, graphic design and communication, advertising and marketing, and similar", "activities dedicated to entertainment improvement", "bed and breakfast, guesthouse, vacation rental", "farmhouses and rural tourism", "meals and / or beverages supply, including alcoholic drinks of any gradation", etc.

The result of this is that in the city of Bergamo there is a high level of discretionality in imposing (or banning) very specific uses from very specific areas. In practice, the city of Bergamo is regulated in a very detailed manner, using the land-use plan to determine very specific configuration. Like Bergamo, most of the Italian cities are regulated in such a way.

(ii) An example from the land-use plan of New York City:

Since 1969, the New York City Planning Commission has introduced the possibility to recognize specific areas with the legal status of *special zoning district.* This legal status has been introduced to "achieve specific planning and urban design objectives in defined areas with unique characteristics" through additional regulations which modify the underlying district regulations[84] (in short, this legal status is used in certain areas to plan their development with further details reinforcing their images or "vocations"). Since then, however, there has been an unstoppable increase in the number of *special zoning districts.*

Today, in 2016, New York City has 79 special zoning districts.[85] Among them, for instance, there are famous areas like *Little Italy* ("to preserve the charming historical district), the *125th street district*" in Harlem ("to stimulate creation of local performing arts spaces"); the *Garment district* in midtown Manhattan ("to preserve the garment-making industry"), the *Special Mixed Use District of Williamsburg* in Brooklyn ("to encourage investment and enhance the vitality of existing neighborhoods"), etc. (C. Gasper, M. Torrey, J. Mangin, 2013: 37). The extended use of special purpose district highlights the fact that rules are becoming always more instrumental to

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[84] http://www1.nyc.gov/site/planning/zoning/districts-tools/special-purpose-districts.page
[85] 42 "Special purpose district", 1 Special Limited Commercial District, 10 Special Natural Area District, 1 Special Planned Community Preservation District, 15 Special Mixed Use District, 9 Special Enhanced Commercial District, 1 Special Scenic View District.

design, address and protect specific ideas or images of the city and its neighborhoods.

Special zoning districts in New York City[86]
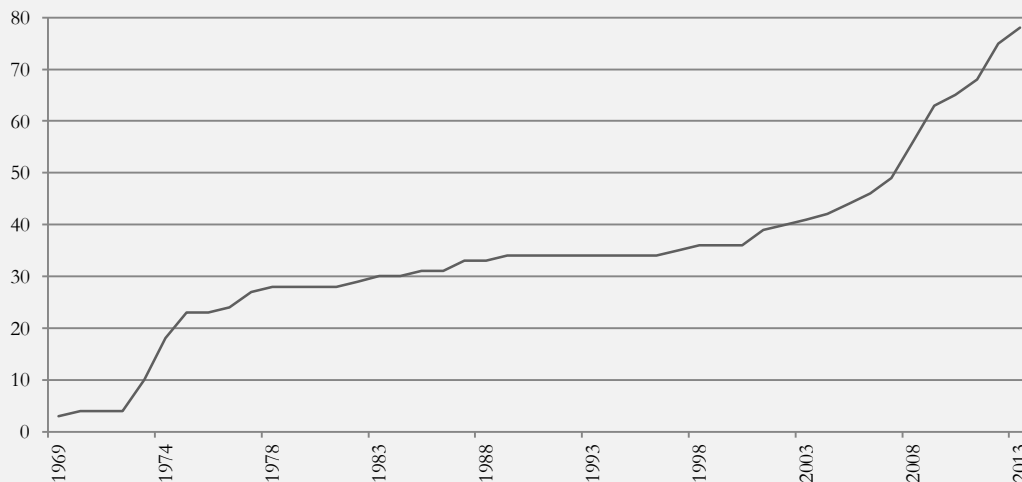
Contrary to locationally-specific rules we say that there are locationally-generic rules. Here two examples regarding locationally-generic rules taken from the rules code of Oosterwold in the city of Almere, The Netherlands (see Part Two):

"In Oosterwold all edges of a plot are publicly accessible and at least 2 meters wide".

"In Oosterwold large-scale shops (bigger than 2000 m²), intensive livestock farms, casinos, and brothels are forbidden".

Now we move to the issue of *permeability* of rules. First of all, we consider an example of non-permeable rule (i.e. a rule that gives specific solution to a certain problem and do not allow for innovative solutions) from an Italian land-use plan adopted in 2014 by one municipality in the Lombardy region. Then we look at same rule re-written in a more permeable form, leaving more flexible space to try out different solutions.

(i) The "official version" of a non-permeable rule:

"In order to reduce the consumption of drinking water […] when the surface area of a building's gardens or courtyards exceed 200 sq.m. it is obligatory to provide for the collection of rainwater from the said building's roofs, for the purpose of watering the lawns, flower-beds,

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[86] Number of special zoning districts in New York City. Source:
http://www1.nyc.gov/site/planning/zoning/districts-tools/special-purpose-districts.page

and or washing down the courtyards and pathways. To this end, the roofs must be equipped with a system of rainwater collectors and conduits leading to reservoirs that store water for recycling. … Hence the size of the cisterns must be large enough to store the year's rainfall in order to provide sufficient water for irrigation and cleaning (min. volume) or for other envisaged uses (such as supplying water for W.C.s, laundry-rooms, air-conditioning units, etc.). In particular, the overall capacity of the rainwater system … must not be less than 35 litres per square metre of residential roof (even partial)."

(ii) The same rule re-written in a more permeable way:

"It is prohibited to use drinking water for the purpose of irrigation, or for cleaning courtyards and pathways."

Note that the way in which the rule has been rewritten still guarantees that no drinking water will be waste for irrigation or cleaning courtyards and pathways. However, at the same time, the rule leaves the possibility to find better technological solutions for rainwater collectors according to people's knowledge and resources.

3.1.3 Features of simple rule systems

The presence of simple rules does not directly create simple rules systems. Single rules are always related to other rules: their coexistence should be simple as well. In general, simple rule systems consist of few elementary rules adopted from a handful of different sources. More precisely, they tend to present three features: (i) simple rules as components; (ii) low density; (iii) low differentiation.

First feature: simple rules as main components (and simple relationships among them)

Simple systems consist of simple rules as main components. Although simple rules are a necessary condition for simple systems, they are not sufficient. The fact is that many simple rules, especially where they variously interact, can ultimately lead to complicated systems. Logically, having many complicated rules leads to increasingly complex systems. We can therefore say that a simple system cannot be guaranteed by simple rules alone, but also requires *simple interactions* between those rules. All things being equal, the greater the number and variety of ways in which the components of a rule system interact, the greater its complexity and its intricacy.

Second feature: low density

A low number of rules or a low rule density is a necessary condition for simple rule systems. All things being equal, the greater the number of rules, the greater the complexity of the whole. For instance: the more rules there are in a given system, the more likely they will interfere or conflict with each other, making the system even more complicated. As Ruhl and Salzmann (2003: 766-767) observe: "Paradoxically, even in a system comprised of individually simple and clearly formulated rules, accretion can radically change the very nature of how the overall system of rules functions. In a quantum effect, the sheer number or mass of rules may itself create conditions that, despite good faith efforts, hinder full compliance and impede the ability of government to demonstrate its efficient delivery of regulation's purported benefits. Doubling the number of rules may more than double the efforts needed to ensure compliance."

Third feature: low differentiation

Rule-making today is a multi-level and multi-agency activity, particularly in the field of building and land-use planning. This gives rise to what Hodgson (2004) calls a *layered ontology.* In short: "Regulations tend to get layered on one another over time in response to particular demands or crises. [...] New organizations are often created as new regulations are added or new provisions developed. The result can be a patchwork of different agencies haphazardly administering a variety of different regulations" (May, 2005: 214). Inevitably, the more government tiers and the more (government) agencies impose rules, the more complex the system gets. As a result, it is more likely that there are conflicts between rules and less likely that there is (full) compliance with those rules.

3.2 Range of possible actions

"Why haven't entrepreneurs move to front stores? Because the title to most stores is unclear and many actors had different rights on them."

Heller (1998)

Rules are a salient aspect in planning. Planning rules are the meta-condition for every action in space influencing the overall evolution of cities. However, when it comes to regulate action space, we cannot think of the whole city in the same manner and a sharp distinction between rules for the *public city* and rules for the *private city* must be advanced.

The chapter addresses the distinction between rules for the publically-owned city and the privately-owned city by reflecting on issues such as *typology of spatial ownerships* (public and private), *types of planning* (nomocratic and teleocratic), complexity and simplicity of *ownerships system,* and, lastly, the concept of *range of possible actions.* In particular, the latter concept underscores the relation between simplicity (or complexity) of rules systems and complexity (or simplicity) of ownerships systems. By looking at the encounter of these two systems (i.e. rules and ownerships), we can analyze how much a given territory is open or not to spontaneous actions and the evolution of emergent socio-spatial configurations.

The idea is the following: given a certain territory, the more its rules system is simple and its ownerships system complex (i.e. with a high level of multiple properties), the more such territory may be apt to rely on the evolution of emergent configurations. In brief: the higher the range of possible actions (and actors) in space, the higher the possibility to rely on self-organizing systems. Let's try to explore this relationship.

3.2.1 Typologies of ownership

The issue of ownership is a central factor for factual land uses (Ellickson, 1993). In fact, "Property ownership is a powerful tool in the regulation of the space" (Staeheli & Mitchell, 2008): it involves relations among persons with respect to things (Needham, 2006). These relations include specific boundary, claim (the right of someone to certain things) and the control of space by owners (Shaffer, 2009). Owners, in the last instance, decide within certain restrictions, how actually the land is used and by whom.

The issue of ownership is complex, in fact "Property regimes are effectively more articulated than the traditional division between private and public spaces" (Chiodelli & Moroni, 2013: 171). For instance, private property can also take very different forms, including many kinds of collective but private property (Lottieri, 2010). In this regards, for example, Chiodelli and Moroni (2013) distinguish between six different types of property regimes: (i) strictu-sensu public spaces (for instance open public spaces such as squares and plazas, streets, pedestrian areas); (ii) special public spaces (i.e., public spaces assigned to

special functions, such as schools, hospital, libraries, parks, etc.); (iii) privately run public spaces (publicly owned spaces temporary leased to private subjects, for instance as in the cases of lidos, temporary outdoor market, etc.); (iv) simple private spaces (typically for individual/private uses); (v) complex private ownership (private spaces used only by specific groups, for instance clubs, cooperatives, contractual communities); (vi) privately owned collective spaces (private spaces relevant for the public, such as bars, hotels, restaurants, shopping centers, cinema, etc.). By looking at this articulated distinction, we can see that, in the end, the authors still refer to two main ownership models: the *private model* (i.e. private legal persons own the land), and the *public model* (i.e. "the state is the owners, at various level"). This distinction becomes even more relevant in planning because it differentiates what the state can directly control and plan, and what it cannot (if not indirectly).

3.2.2 Differences in regulating the public and the private ownership

If we consider in depth the definition of human action given in chapter 1.1, we should intend *planning* as an activity that is meant to be rational and preceding every voluntary/spontaneous action. Plan and action are strictly related: planning is thinking before acting. Taking this assumption for good, we see a drastic difference between planning and regulation, and it is related to the fact that "Planning means bring a certain state of affairs into a new one, while regulations do not aim at a specific point but set some action condition" (Kaza and Knaap, 2011).[87]

From this standpoint, it is crucial to distinguish between *state properties* and *private properties* (Blomey, 2004). In the first case, a state agency can directly plan how to use or transform the land (for instance, for the provision of public facilities) and therefore regulate public ownerships for particular purposes. This is possible because the rule maker, i.e. the public, and the owner coincide. In other cases, i.e. private properties, public bodies cannot directly plan factual land-uses. In fact, in the case of private ownerships, state agencies can simply introduce certain rules imposing conditions for private action in space. In brief: in the case of the private city, through rules, the public constrains the range of possible actions that individuals can take or not in the pursuit of their goals.

In practice, public rules cannot directly plan privates' actions but, at most, restrict the possible numbers of unexpected plans and actions developable by private individuals.

Public rules do not directly change or transform the socio-spatial configuration of cities but are the filter for the overall emergent changes and the condition for people's actions in space. It follows that, in the case of private ownerships, the final spatial product of many

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[87] The land use planning is an intervention promoted by a state agency to realize collective ambitions by influencing the exercise of rights in land, namely how properties are used. In general, the land use planning restricts private rights in favor of public interests providing certain rules to pursue collective efficiency (Needham, 2006).

uncountable individual spontaneous actions interacting (spontaneous with different degrees) is irremediably emergent since agents have the possibility to choose from a *range of possible actions*. For instance agents can choose also between acting or not. Obviously, emergent configurations may have different degrees depending on the level of prescription or detail of public rules. In fact, the more the rules are used instrumentally to achieve specific socio-spatial configurations, the less will be the range of possible actions developable by agents.

Hence, strictly speaking, planning rules can be intended as a *plan* that can directly determine future end-state only in the case of public ownerships. While, in the case of private ownership, what we call planning is not a *plan* in a strict sense, but a set of public conditions within which different individuals can develop different and separate plans.

Table 9: *Differences in regulating the public and the private city.*
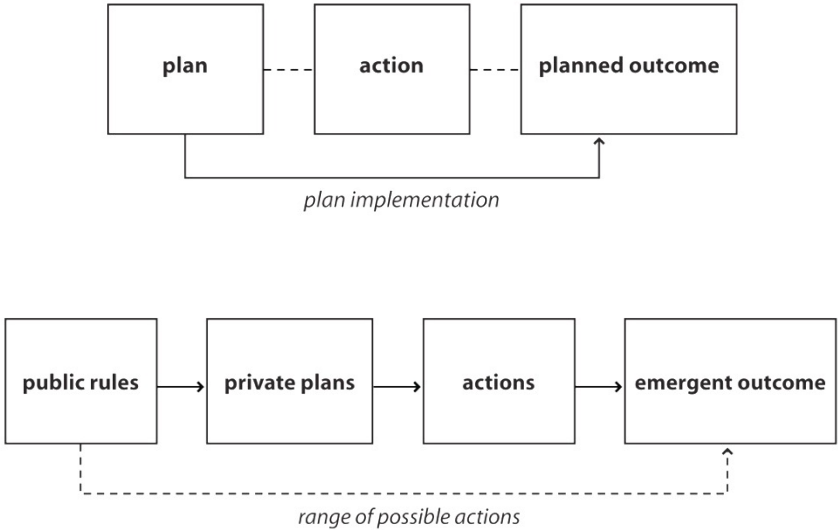
If we believe that public rules directly constitute a specific plan we cannot think of private actions as spontaneous actions but, on the contrary, as the result of specific commands (see chapter 1.1). Consequently, the public law determines the framework within which certain emergent outcomes can evolve or not. Obviously, such frameworks can also be very restrictive by limiting the range of possible actions and the evolution of emergent configurations.

In the "private city" to say that public rules can perfectly prefigure a particular future outcome is reductionist (Moroni, 1999). Public rules are interpreted by people who, through their behavior, incrementally change and adapt the overall existing state of affairs. In this sense, emergent configurations are unpredictable exactly because they are the results of people's voluntary actions and, in this, private law instruments are decisive in determining the features of the emergent outcome (Needham, 2006).

3.2.3 Complexity and simplicity of ownerships systems

Space is an unavoidable factor for all actions. We cannot think of actions as spaceless phenomena. Excluding exceptional cases, every single piece of land has a specific property regime that introduces some rights to use the land in a particular way. "A property right is a socially recognized right of action" (Alchian & Demsetz, 1973). In this regards, we can think of full property rights as a sphere within which owners can act directly (Ward, 1973) and without external interference: "In the end, it is the owner of the right the main stakeholder for the use of things" (Slaev, 2014).

The distribution of proprieties in space is relevant. Its spatial articulation is the criterion by which to distinguish simple and complex ownership systems: "A simple system is one in which property is owned by an individual (person or entity), whereas a complex system is one in which property or properties are owned by *multiple owners*" (*ibid.*). The city, as a whole, is usually a complex system (and not a simple one) where numerous owners plan and carry out uncountable numbers of private plans which, in the end, make the city a living and unpredictable emergent system.

The complexity of ownerships systems depends on the fragmentation of property regimes: the higher the number of different, distinct and plurals owners, the higher the complexity of the system will be. This assertion also implies that, potentially, the higher is the complexity of the system, i.e. the diffusion and the fragmentation of private ownership, the more will be the room for spontaneous actions of agents which cannot be directly and centrally controlled by the public in detailed and specific ways.

To put it simply: imagine the same urban settlement composed of ten buildings in different situations in which there are various degrees of complexity. For instance, think of a very simple system in which one individual owns all the buildings, and then think of a more complex situation in which all buildings are owned by different private entities. In a very simple system (i.e. one owner for all the buildings) it is (potentially) easier to plan (centrally) the overall use of the buildings, their functions and their internal order. The main problem, for example, can be that of implementing one single plan made by one single mind. On the other hand, as the number of owners increases, also the situation becomes progressively more complex and "less controllable" (see chapter 2.2). The increase in complexity can be observed, for example, by looking at the potential number of combinations between owners in different hypothetical cases.[88]
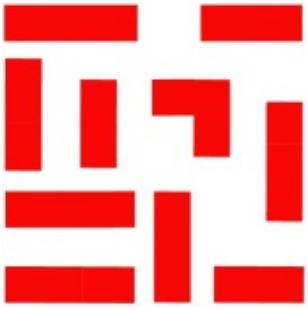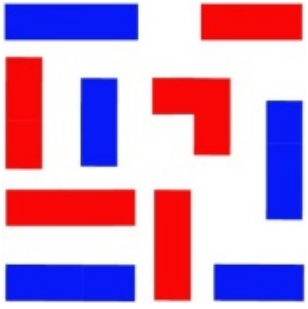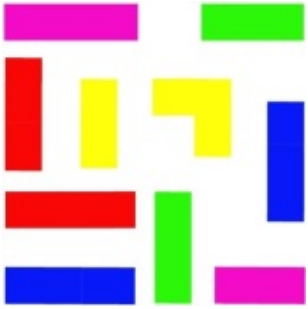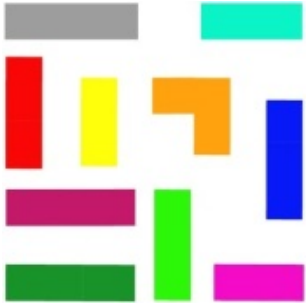
Imagine that, in the first case, all buildings are owned only by a single owner (let's call him owner A); in this case, there is the room only for one possible combination. Imagine a second case in which there are two owners, A and B, who own five buildings each; in this case, there are two possible combinations A with B, and B with A. Then imagine a third case in which there are five owners, namely A, B, C, D, E, who own two buildings each; in this

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[88] The calculation is made the open source system "webfract."
 http://www.webfract.it/MATJAVA/Combina1.htm

case, there are 120 possible different combinations. Now imagine a fourth case in which there are ten owners A, B, C, D, E, F, G, H, I and L who own one building each. In this case, there are 3.628.800 possible combinations.

Table 10: *Complexity of ownerships configuration and number of possible combinations between owners.*

Case	Ownerships system	Buildings	Number of owners	Possible combinations
I		10	1	1
II		10	2	2
III		10	5	120
IV		10	10	3.628.800

In brief, with this simple example, we see that the number of possible combinations among owners gets exponentially higher if their number increases. Although this is a very abstract and probably even not very pertinent example, it shows how a system becomes progressively more complex as long as the ownerships system becomes more fragmented and plural. This process increases exponentially the number of possible groups or relations between owners. Or, in other words, this process increases exponentially the number of (emergent) possible configurations.

In general, as demonstrated in chapter 1.2, coherently with the theory of human action and accepting the concepts of several properties and extended order provided by Friedrich von Hayek (1988: 89), complex ownerships systems have two main values. The first value is intrinsic and regards the fact that in a complex ownerships system more people have their independent action space in which they can develop their plans. The second value is instrumental and regards two main aspects (Hayek, 1944). First, complex ownership systems (potentially) diminish the risk of power concentration in the hands of few agents (complex systems are more incline to distribute the power in the hands of more actors, ensuring a more democratic system less prone to undergo the wrong choices of few agents). Second, complex systems increase the use of dispersed knowledge. This second aspect seems particularly of interest. In fact, according to Hayek (1988: 30-33), the use of dispersed knowledge in society is directly connected to the issue of property: "[An emergent order] serving a multiplicity of private purposes could in fact have been formed only on the basis of *several property* […] the freedom of different individuals or sub-groups to pursue distinct aims, guided by their differing knowledge and skills […] The crucial point is that the prior development of several properties is indispensable for the development".

3.2.4 Between teleocratic and nomocratic planning

The way in which public rules are written can expand or restrict the range of possible actions of individuals. The more public rules are used instrumentally to design predefined and specific overall socio-spatial configurations of the city, the less will be the room for action space of individuals. In this regard, Moroni (2010) distinguishes forms of *teleocratic* planning and forms of *nomocratic* planning. In the case of teleocratic planning, rules determine specific future socio-spatial configurations (i.e. rules are instrumental to plan imminent actions). While, in the case of nomocratic planning, rules become the framework for spontaneous actions and the evolution of emergent configurations: in other words, the rules become the public filter for unknown future actions.

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[89] "Protection of several property, not the direction of its use by government, laid the foundations for the growth of the dense network of exchange of services that shaped the extended order" (Hayek, 1988).

From this, it follows that forms of teleocratic planning are possible and desirable only in the case of *simple ownership systems* (with only one or few owners) and not complex ones. Thus, planning may adopt forms of teleocratic approaches only in the case of simple public ownerships. On the other hand, nomocratic approaches are desirable to set the public conditions for private actions in cases of *complex ownership systems*. All this means that in the case of the *private city* forms of teleocratic planning are developable and appropriate only at the lowest level, i.e. by private individuals and within their full ownerships; while at the higher-level forms of nomocratic planning leave wider room for the use of dispersed knowledge. When speaking of the city as whole, predefined and known in advance outcomes, results of public plans and interventions, are desirable and may be designed only in the case of the public city. While in all other cases planners should provide a simple framework of rules (see chapter 3.1) able to deal with the complexity of the system. Quoting Friedrich von Hayek (1988: 85): "What cannot be known cannot be planned."

3.2.5 A possible way to evaluate the range of possible actions

Considering all these aspects, it is of interest to hypothesize a way to evaluate the range of possible actions (*RPA*). The RPA can be evaluated both at the lowest level concerning only one individual, or at the higher level comprehending for instance neighborhood or the city as a whole. This kind of evaluation may be useful to estimate the existing flexible space for the development of spontaneous actions and, roughly speaking, to underscore the propensity of a certain system to rely on forms of self-organization and on the evolution of socio-spatial emergent configurations). Moreover, the same evaluation, for example, can also be useful to represent the degree of overall complexity of a certain urban system or the degree of unpredictability of future developments. Obviously, acknowledging the complexity of the research field, the following proposed method is not to be intended as exhaustive but merely as a first attempt to get in into an underexplored topic.

In this regard, in order to evaluate the *RPA*, my suggestion is to keep into account two main factors. First, the degree of *simplicity of the rules system* (*sR*) to comprehend the existing action space granted by the law. Second, the degree of *complexity of ownerships system* (*cO*) to calculate the level of fragmentation and diffusion of private properties.

For an overall evaluation of the *RPA*, for example, the following could be a valid method:

(i) select a territory X (the scale can go from a small area, neighborhood or also the whole city);

(ii) evaluate the degree of simplicity of the rules system (sR) in X. To evaluate sR(X), we might use an index able to synthesize the degree of simplicity by respecting the criteria of "simplicity of rules" and "simplicity of rules systems" (see chapter 3.1).

(iii) evaluate the degree of complexity of ownerships system (cO) in X. To evaluate cO(X), we might use an index able to synthesize the degree of complexity. First of all, we should calculate the relationship between public properties (the public

city) and private properties (the private city) by identifying the relative percentage of private areas in X (the higher the percentage of private properties in X, the higher the possibility to have a complex ownerships system). Secondly, we should calculate the number of different owners within the private city (the higher the number of different owners, the higher the possibility to have a complex ownerships system) and then calculate the degree of differentiation between them in terms of property extension (the higher the differentiation, the less the system is apt to be complex).

(iv) relate these two indexes and calculate a synthetic value representing the RPA in X. Hypothetically, this could be the formula: RPA(X) = sR(X) * cO(X).

In order to demonstrate how this method could work in practice, consider the following comparison of six hypothetical cases as an example of the presented method (table 11). In this example, Case 4 possesses the highest degree of RPA, while Case 5 the lowest. On the other hand, consider Case 1 and Case 3 as cases of asymmetry between the two parameters.

Table 11: *Hypothetical cases of RPA evaluation.*

	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Simplicity of rules system (0-10)	2,4	4,5	8,3	8,9	1,8	5,6
Complexity of ownerships system (0-10)	8,4	3,8	1,7	9,4	2,4	6,2
Range of possible actions (0-100)	20,2	17,1	14,1	83,7	4,3	34,7
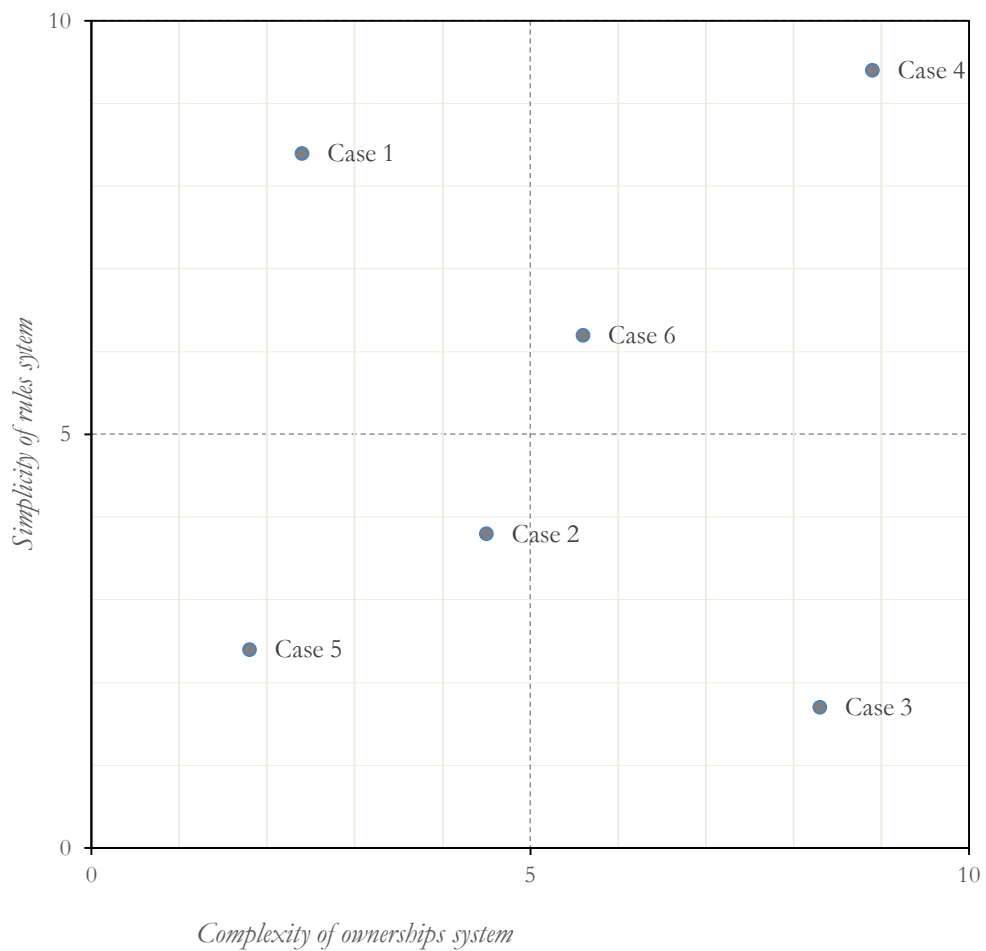
3.3   Planning for spontaneity

"Top-down design is indispensable for the construction of infrastructures […] as we move down the scale it should progressively disappear to let emergent order generate the fine grain of urban shape".

Alain Bertaud (2014)

The aim of the chapter is to identify the principles according to which the introduction of certain *public conditions* may be favourable to the development of spontaneous actions and the evolution of (acceptable) emergent socio-spatial configurations. Such conditions regard (i) good *planning* on public spaces to grant certain infrastructures, and (ii) good *rules* for private spaces that allow high degree of flexibility, experimentation and self-organization.

For this purpose, the thesis introduces the concept of *invariant*.[90] Such a concept emphasizes the contraposition between stable or unmovable conditions (Easterly, 2015) and a flexible and dynamic world made of infinite possibilities emerging from unpredictable spontaneous actions: "Invariants remain stable [with different degree of stability] under transformations [i.e. they keep alive their main properties] that can be an actual dynamical change or alteration of things through time" (Nozick, 2001: 79).

In general, we can think of invariants as stable conditions "common" to all agents. Their main function is to raise the level of systems' predictability toward some preferred collective situations. Invariants can be either emergent conditions or intentionally introduced conditions promoted and reinforced by the state (see chapter 2.1). In the latter case, the proposal is to distinguish between two levels of invariants: (i) invariants for the public city, and (ii) invariants for the private city. These ideas are in line with the distinction between teleocracy and nomocracy (see chapter 3.2). This approach is observable also in the case of Almere Oosterwold (see Part Two).

3.3.1 Invariants: plans for the public city, rules for the private city

In the first case, invariants deal with *public spaces*. In public spaces top–down planning could be developed to grant all the needed infrastructures, spaces and services that a civil society requires.[91] However, the contents of public interventions should respond only to certain and specific collective needs that are largely shared, accepted and reinforced with the passage of time. In this regard, it is appropriate for public administrations to respect the principle of self-limitation and circumscribe their interventions in clear and definite fields or

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[90] Nozick for instance uses (for other purposes) the concept of "invariance" (2001:78): "It is important for people to know these invariances, for they often mark continuing facts that we can use to predict the behaviors of entities, and upon which we can base behavior toward them".
[91] Note that how public infrastructures, space and services are defined and granted is, first of all an institutional problem (see chapter 2.3).

sectors. This principle is recommended for four main reasons: (i) to avoid excessive market price distortions or the negative effects related to extended public interventionism (Fukuyama, 1996; Ikeda, 2004); (ii) to favor the creative actions of private actors in all the other fields, allowing for plural competitions and trial and error processes and discoveries (Hayek, 1982); (iii) to rely as much as possible on self-organizing systems based on spontaneous actions that are not the result of coercion and commands (Mises, 1949); (iv) to avoid unlimited democracy subjected to arbitrariness of majority groups (Rothbard, 1962).

In short, it is preferable that the fields within which public "direct intervention" is required are few, clear and as much stable as possible. Moreover, it is also desirable to have a well-publicized plan of the public city able to guarantee long-term expectations based on really feasible plans. Long-term expectations are fundamental to have systems that can make the best use of dispersed knowledge, as well as systems able to self-organize around certain stable conditions.

However, within the public city, it could be of interest to distinguish two different levels of "public priorities" that the plan might deal with. The first level is about certain indispensable infrastructures that the state must necessarily grant (for instance: healthcare, education, transportation, green areas, etc.). The second level regards a flexible space in which private organizations, in agreement with the public, can provide certain (not strictly fundamental) common services and facilities to respond to specific circumstances and very contextualized needs (Hayek, 1982). This attitude is now emerging in the planning field and, in more and more cases, private actors directly participate to public services making and management (Caldarice, 2013). Lastly, in order to avoid under-utilization or economic wastes, it would be a good thing to limit the expansion of public ownerships only in cases of actual needs.

In private spaces invariants are, first of all, a clear set of framework-rules. Public plans on private ownerships are not needed (see chapter 3.2). With this we are not saying that development plans may take place only in the case of the public city, but that in the case of the private city there will be as many plans (also micro) as the number of agents who are willing to act and develop new actions. Although in the private city plans are individually developed, in the end they should be characterized by an overall coherence deriving from the presence of certain consolidated invariants. First of all, spontaneous actions are placed and bounded within certain public infrastructures. Secondly, spontaneous actions are filtered by the same framework-rules that all other agents share. All this should ensure enough space for self-organizing systems and path-dependent developments (chapter 1.3).

The privately-owned city should not be conceived as the result of a rationally planned society, nor the image of a stringent technocratic order imposed from the top. On the contrary, it should be the dynamic result of an order emerging organically from the bottom. From this perspective, planners should not design or regulate the city as if they are able to grasp in advance all the complex needs and desires of ordinary people. Planners should limit the imposition of top-down design. They should rely on spontaneity, enable social interactions, and avoid the emergence of negative externalities. This represents an idea of

the city that is the result of people acting voluntarily and collaboratively, adapting the physical environment from the ground.

Socio-spatial configurations should emerge with the passage of time. People should be free to determine the contents of their actions. In other words, planning should be the manifestation and the presupposition of equality, that is the possibility for each of us to plan for ourselves and in collaboration with others. As Hayek says: "All activities are in this sense planning, and this is based on knowledge which, in the first instance, is not given to the planner but to somebody else. It is a dispute as to whether planning is to be done centrally [...] or is to be divided among many individuals" (Hayek, 1945). The real issue is to set certain simple rules and then let spontaneous actions fill the fine grain of urban shape. This idea is not so far from the codes that historically shaped the evolution of old cities (Hakim, 2014; Totry-Fakhoury & Alfasi, 2017; Moroni, 2015).

### 3.3.2 Framework-rules: how to rely on spontaneous developments

Emergent configurations evolve with the passage of time from agents' actions in space which are constrained by certain rules. This idea can be schematized using four correlated concepts: *framework-rules*, *actions*, *time dimension*, and *emergent configurations* (see table 12).

Framework-rules for emergent socio-spatial configurations are simple. First, rules are permeable enough to guarantee broad scope for experimentation. In this way rules allow agents to act according to their knowledge and choose the technical and design solutions that they prefer (note that rules of this kind may be also very stringent). Second, they are as generic as possible, in the sense that they should not refer to any specific situation or land. Third, they focus on possible and impossible actions, trying to avoid the emergence of negative externalities rather than on comprehensive end-states.

Framework-rules discipline *action* in space, conditioning the range of possible actions that individuals may take or not. In this sense, every action contributes to a complex emergent and path-dependent process of space modification and adaptation; i.e. every action can influence or provoke other actions.

Emergent configurations are by definition demand driven rather than supply driven. Private initiatives, in respect of the framework-rules, play a vital role in shaping the environment into a process of real self-organization. Therefore, public interventions aimed at deliberately constructing specific orders are kept to a minimum level. The *time dimension* is crucial in this regard. Spontaneous actions shape incrementally the existing state of affairs, over time (step by step), within a process of adaptation and mutual adjustments among agents. In this perspective, the framework-rules cannot predefine the final detailed outcome; rather, they leave the future open to a wide array of solutions, within a process of long-term transformation. The main point is that rules are not used instrumentally to obtain or preserve specific spatial configurations.

Table 12: *A dynamic perspective on the relationship between rules, action and emergent configurations.*
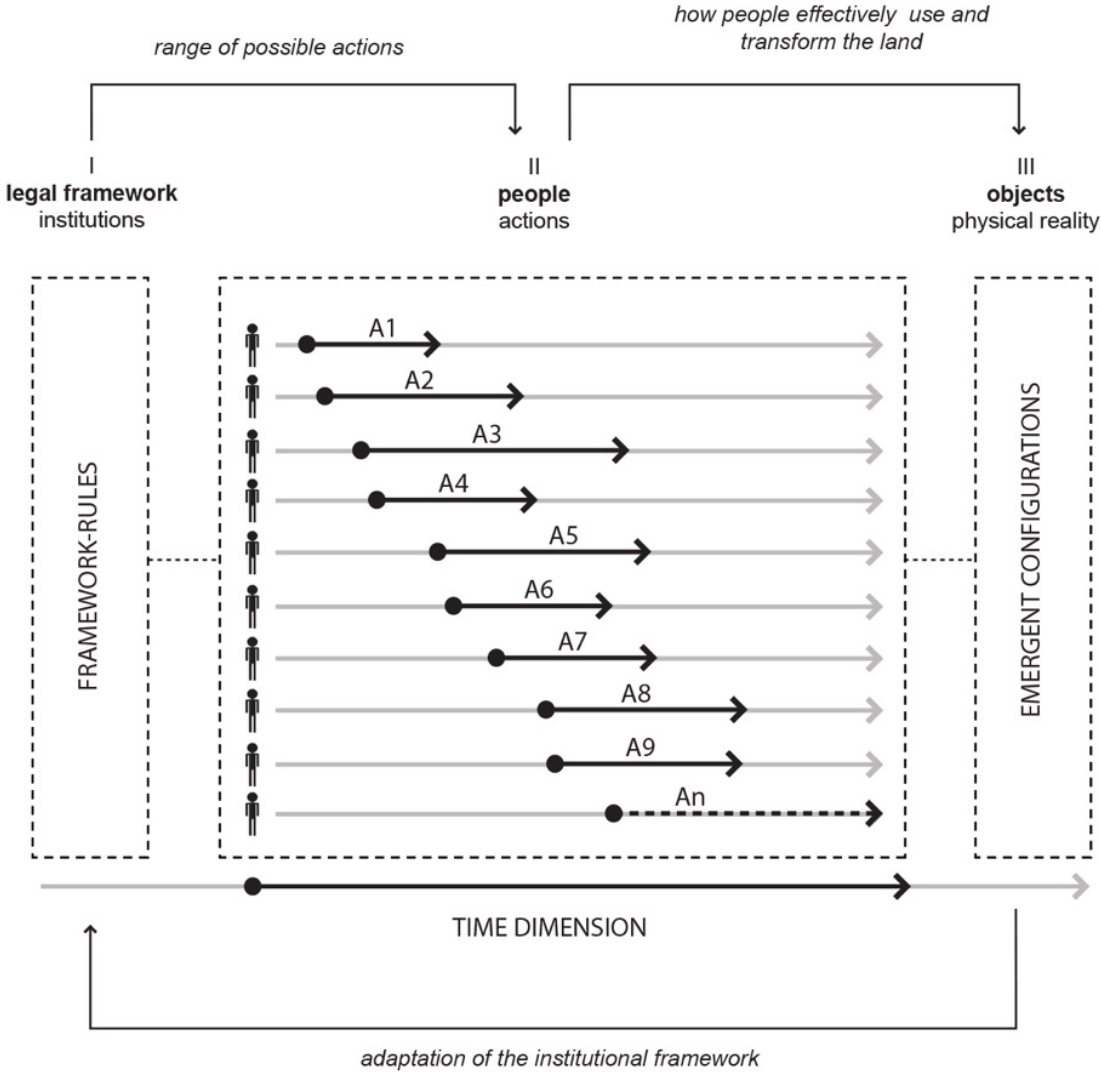
As already mentioned, framework-rules should comply with all the features regarding "simplicity of rules" and "simplicity of rules system" (as seen in chapter 3.1). In particular, they shall be able to deal with two main issues:

(i) *time* and *space*, having a stable framework-rules which allow open-ended future spatial configurations (not detailed spatial arrangements) and long term development;

(ii) *action*s and *interactions*, giving to agents the opportunity to self-determine the contents of their actions while, at the same time, avoiding the emergence of negative externalities or conflicts.

Dealing with time and space

Framework-rules deal with time and space. On the one hand, framework-rules need to be as much stable as possible; on the other hand, framework-rules shall guarantee a large degree of flexibility for the evolution of emergent configurations. Agents need clear and stable collectively shared rules. Such rules must be as simple as possible in order to facilitate people actions and interactions as well as encouraging the creative use of dispersed knowledge. In brief, to be flexible are not the rules but, instead, the space that rules leave for spontaneous actions. As Buchanan and Brennan (2008: 13) aptly underscore: "If rules are viewed as providing information to enable the players to predict each other's actions, it follows that any change in the rules destroys information. If the rule is determined afresh each morning by the toss of a coin, there is no rule at all. In order to function, rules require stability. If rules are continually subject to change, the information they provide becomes negligible."

Framework-rules are written in such a way that constant changes are both undesirable and unnecessary. To do so, framework-rules shouldn't aim at solving specific (social or spatial) problems but simply discipline a limited number of general priorities (e.g. social, environmental, spatial, etc.) and protect them from serious unwanted situations. It is simply impossible to have a stable regulative framework if rules are written to solve every specific problem; if it is the case, inevitably, rules would be apt to be changed and adapted continually responding to any unexpected emergent problems in society. This approach creates very unstable and uncertain framework, above all in the case of complex systems. In contrast, by accepting the idea of spontaneity, framework-rules allow for the emergence of social and spatial changes while the regulative infrastructure is kept (almost) intact. In other words, framework-rules are designed to become a long-term institutional invariant: if on the one hand framework-rules must be stable, on the other they might ensure an adequate flexibility of the system avoiding the emergence of institutional contradictions (see chapter 2.3).

In the case of urban transformations, like for instance the cases of large scale development areas, the time dimension for the creation of emergent configurations should consider the necessity for open ended scenarios, avoiding to build all at once and accepting forms of organic developments. To rely on spontaneous actions means that emergent configurations are not only per se unpredictable, but also that the same concepts of spatial and social configurations must be intended as perpetually evolving, i.e. open to infinite and unpredictable future adaptations. However, not any configurations should be right or possible. In fact, although in theory an infinite number of configurations could emerge from the framework-rules, the opposite does not hold true since not every order meets the criteria of the framework rules. Therefore, although a specific configuration is not determined from scratch, the outcomes are not completely left open because of the constraints imposed by the framework-rules which limit the *range of possible actions*. Contrary to this, all along the twentieth century forms of technocratic control have been promoted and diffused, and rules started to be used instrumentally to coordinate and

address people actions in space toward predefined configurations. All this happened through master plans and highly detailed and prescriptive land-use plans that become quickly obsolete as well as subject to multiple revisions and deviations (Buitelaar, Galle & Sorel, 2011). Moreover, the choice for location-specific decisions gave room for discretionary decision-making which creates legal uncertainty (Chiodelli et al., 2015). To conclude, framework-rules shall be as abstract and general as possible avoiding to pursue any specific spatial arrangement (Moroni, 2010). From this perspective, interesting examples could be the old urban codes (Moroni, 2007; Alfasi & Portugali, 2007; Portugali, 2012; Holcombe, 2013; Alfasi, 2017).

Dealing with actions and interactions

Framework-rules deal with people's actions and interactions. The key concept is that agents' actions shouldn't be prevented or stopped as long as they do not damage or compromise other people rights. The main role of rules is to set clear behavioral boundaries avoiding the emergence of certain negative externalities. Once such limits are in place, the guiding principle of rules writing might be that of "individual responsibility" giving back to agents the freedom to choose the contents of their actions. In brief: rules writing should be guided by the principle of *nuisance* to avoid conflicts in case of interactions and by the principle of *self-determination* in all the cases in which individual choices do not hamper other people rights.

Imagine building your own house. From the point of view of *interactions* certain rules are obviously required. For instance, rules prohibiting "to build on other people property without a legal authorization", or "to obscure a certain view", or "to pollute the environment", or "to respect a certain noise threshold", or "to avoid the production of bad smells". Instead, as regards the content of your *action*, there shouldn't be any rule that directly and positively impose the use of your building or its design. Rules of this kind are prevalently negative; in fact, it is easier to prohibit certain precise externalities rather than list all the possible actions that people can carry out. Positive lists could be irremediably infinite exactly like the infinite list of possible differences in describing also very similar actions (see chapter 1.2).

Rules of this kinds are relational instead of directional (Moroni, 2014) and have two main features: first of all, they guarantee a large degree of experimentation and the development of plural technical solutions; secondly, they are prevalently negative thus to avoid the emergence of unwanted situations and solve possible conflicts between agents. Such a way of regulating has three main positive aspects: (i) rules are easier to be enforced by the state (Sutter, 1998); (ii) planners pay attention prevalently on circumscribed relevant "collective aspects"; (iii) individuals have wider creative spaces for technological experimentation and innovation.

Let's take as an example the building code of Milan (consider that in Italy all local administrations have their own building code with a total amount of 8.000 different codes in the whole country). The code establishes a minimum standard equal to 14 m² for double bedrooms (also consider that the same example of the "double bedrooms" may be done with other specific elements such as bathrooms, kitchens, etc.). We can suppose that, in rule makers' minds, such standard is provided and needed to guarantee certain basic hygienic conditions.[92] However, according to the former enounced principles of *self-determination* and *nuisance*, certain critical issues are easily detectable. For instance, public rules shouldn't discipline a minimum standard regarding the "act of sleeping". All individuals, in fact, inside their apartment, could have a different and legitimate idea regarding where and how to sleep without even interfering with neighbors. Moreover, many creative solutions demonstrate that a good design can provide livable spaces also in case of tiny apartments. However, rules of this kind determining both the physical space of the built environment and its functions are habitually introduced to regulate many technical and specific aspects, also on a larger scale.

In the planning field, for example, similar rules are frequently used. Two well-known examples, for instance, are the minimum standards for parking lots and the provision of green areas. Even though in the city we clearly need some green areas and parking lots, often the imposition of prescriptive standards gives rise to certain negative and unintended effects. For instance, minimum standards may add costs for housing production or contribute to urban sprawl, soil consumption, and the development of car-dependent cities: "Urban planners typically set minimum parking requirements to meet the peak demand for parking at each land use, without considering either the price motorists pay for parking or the cost of providing the required parking spaces. By reducing the market price of parking, minimum parking requirements provide subsidies that inflate parking demand, and this inflated demand is then used to set minimum parking requirements. […] Eliminating minimum parking requirements would reduce the cost of urban development, improve urban design, reduce automobile dependency, and retrain urban sprawl" (Shoup, 1997). In brief: if we accept the idea of spontaneity, the point shouldn't be that of providing specific rule-based solutions but that of enabling people to find on the spot the best design and solution. On the contrary, often planning rules impose both fixed costs that are hardly reducible and spatial layout that are barely adaptable (this is valid also in the field of architecture). The expansion of rules of this kind produces different problems. In particular, rules of this kind limit exceedingly designers and people creativity. As Ben-Joseph (2005: 2) writes: "Through the years, the design and layout of urban developments have become increasingly regulated.

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[92] This rule was introduced for the first time in 1975 by the National Government.

Professional and governmental bodies have developed standards for the built environment that dictate all aspects of the form and shape of urban communities. Obviously, development standards can assure a level of quality in performance as do those plans and construction standards designed to protect our health and safety. The problem arises when standards intended for health and safety overstep their bound and lose grounding in the objective measures of their benefit or break the connection with the original rationale for their existence. This disconnection has overtaken many standards and regulations today".

The main issue is that rules - at any scale - shouldn't provide or impose detailed technical solutions but ensure a flexible and permeable space within which individuals, spontaneously, may always find their better solutions. Public rules shouldn't stop individuals from trying to improve their situations.

3.3.3 Final remarks

Planners need to cope also with other two important issues. The first issue regards the scale of actions in relation to their specific contexts. As seen in chapters 1.2 and 3.2, if we accept the idea of spontaneity, and we assume that is a good thing to have self-organizing systems emerging within flexible but path-dependent configurations, one goal of planners might be that of protecting the system from cataclysmic destabilizations. To do this, planners should above all favor the development of small actions, not large ones. All this doesn't mean to reject large-scale actions (interventions of this kind are often necessary, for instance to build new infrastructures) but that the state should not be active[93] - as often happen - in boosting large-scale transformations, even though certain areas are considered strategically relevant or problematic. In most of the cases, in fact, areas for large-scale developments are specifically identified and boosted by planners. As Jane Jacobs argues (1961), this approach creates market distortions and monopolies that may have very negative effects on self-organizing systems. To have a framework-rules that rely on emergent configurations and spontaneity means that no exceptions or different treatments may be granted in favor of specific areas or people. Urban transformations should be demand driven and not the other way around. No favoritism toward specific ownerships or entrepreneurs is acceptable. In other words, public bodies must be the "referee" and not the selector of the "best players".

The role of planners should be that of encouraging and expanding the range of possible actions. This can be done, for instance, through the development of multiple ownerships (see chapter 3.2). In such a way, the responsibility for urban transformations and

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[93] "Trying to achieve a desired land use only by prohibitions and incentives can be called passive since state agencies wait until a private person or organization wants to do something. Vice versa, a state agency can in addition take an active part in bringing about the desired change. For instance, by building a road or a bridge, or by supplying serviced land where it wants development. In this way the state agency is not just trying to influence the actions of people in the market, it is itself active in that market" (Needham, 2006: 23).

maintenance may be shared among more actors, and the system can make a larger use of the dispersed knowledge. However, multiple ownerships must not be diffused through direct interventions, but indirect ones; for instance, through the protection of private ownerships, low taxation, and minimum standards that are appropriate also for the participation and the actions of those with less wealth or the poor.

The second issue regards the emergence of undesired or "unacceptable" configurations. In this case, we can look at framework-rules in two ways. One is synchronic, while the other is diachronic. So far we have been reflecting on framework-rules mostly as a synchronic fact. In other words, we didn't consider that, with the passage of time, certain modifications or adaptation of the framework-rules are required or necessary. On the contrary, if we adopt a diachronic perspective, we can imagine cases in which rules are no longer as effective as we would like, and certain adjustments might be needed. Such limits may regard, for instance, the emergence of institutional contradictions (chapter 2.3) or the negative effects deriving from the aggregation of many uncountable small actions (see chapter 1.3). This last eventuality is particularly of interest. In fact, it can be that, although all actions within a certain system comply with the framework-rules, their final emergent aggregation may give rise to certain unintended configurations that are largely perceived as critical or negative. For example, consider the existence of a rule that imposes a certain noise-threshold to which all people, independently from the contents of their actions, should comply with. Given these conditions, it could be that from the final aggregation of all small noises a negative situation far beyond the accepted threshold emerges, and a certain public intervention is required to modify the framework-rules (this kind of examples can be developed for many other issues or problems). Situations of this kind are often place-based and relative to very specific circumstances. However, if the framework-rules require modifications, these should concern the entire territory and not refer to precise areas or situations. This attitude in fact could lead the system, progressively, toward discretionary power, space differentiation and, therefore, to the evolution of complex rules. Planners must be cautious: the main point is to avoid continuous changes in rules and keep the legal system as simple as possible.

PART THREE:

The Dutch experience

For large part of the twentieth century planners have been developing detailed and comprehensive plans which tried to coordinate the overall order/evolution of cities. Prescriptive approaches were first needed and then consolidated with the passage of time neglecting the relevance of spontaneity. Public interventions expanded. The comprehensive public planning did not regard only the construction of public spaces, but it attempted to have an active and prominent role in many others relevant aspects of the city functioning. Recently, however, all around the world, more and more people are starting to believe that the cities we planned and built in the last century (often through rigid and hardly adaptable large-scale/top-down master-planned developments) have had negative consequences on cities (Akbar, 1988; Bertaud, 2014; Hamouche, 2004; Moroni, 2012).

Today we see a paradigmatic shift in which professionals are trying to revise certain approaches in rules making, planning interventions, and public investments developed in the last century. The idea of spontaneity in cities is becoming more accepted. A clear example is surely the newest city in the Netherlands: Almere. Built during the 80's, in Almere everything was planned and built by the central government without too much space for spontaneous actions, further adaptations and the flexible spaces. Its rigidity and inflexibility represent one of the clearest examples of comprehensive developments and blueprint approach in Europe. However, in the last years, the city has turned on the opposite approach, accepting the radical idea of spontaneity and minimum/light public interventions.

This Dutch experience is a valid case to comprehend the dialectic between rules and spontaneity in planning, as well as to appreciate some of the main reasons why planners are turning on spontaneous developments in times of crisis.

The chapter is divided in three sections. In the first section, it underscores the main aspects regarding the rise of organic planning in the Netherlands after the economic crisis in 2008. The second section describes the paradigmatic changes occurred in Almere from comprehensive planning (phase 1), to self-building (phase 2) and, lastly, to spontaneous developments (phase 3). The third section presents and discusses the case of Oosterwold.

4 ALMERE OOSTERWOLD

4.1 The rise of organic planning

4.1.1 The Dutch tradition

The Dutch have a long history of actively steering and coordinating land use by public bodies also in cooperation with private parties. The internationally well-known results of the large-scale land reclamations (the so called *inpoldering*) are a clear example of this old attitude. Active land use planning in the Netherlands goes further than the passive planning which is practiced in most other countries by merely steering and coordinating, through the powers of the planning system, the initiatives taken by citizens and firms to change the use of land (Needham, 2014: 19). Instead of only avoiding the coexistence of incompatible land uses (WRR, 1998; Van der Cammen & De Klerk 2003), Dutch public bodies were involved in regulating, financing, organizing and constructing integrated and comprehensive developments (Buitelaar et al., 2014). This approach is a distinctive feature of the Dutch style of spatial planning in comparison to other countries (Nadin et al., 1997). Disregarding land ownership, the whole areas are designed by planners, including housing, infrastructure, green and public services. This *planning by projects* (Needham, 2014: 20) is well seen in the large-scale development of suburbia from the early 1990s onwards. The country is acknowledged for its "high degree of spatial ordering" (Healey, 2004: 63). This high ambition for ordering is often tightly connected to an extensive system of rules and regulation, eloquently summarized by the title of Faludi's and Van der Valk's (1994) book "Rule and Order".[94]

4.1.2 The economic crisis as a turning point

In the Netherlands, like in many other cases in Europe, the financial crisis at the end of 2008 and the economic recessions that followed, which had great effects on (re)development plans at the local level. Many plans were postponed or even canceled as

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[94] Throughout the years urban land use planning has become more legalistic as there is a growing number of legal requirements. New rules have been implemented with regard to flora and fauna, air quality, soil contamination, noise nuisance, external safety, archaeology and heritage, water quality and quantity, and more (e.g. Beunen & Van Assche, 2013; Buitelaar, Galle & Salet, 2013). The preparatory stage of land-use plans has become very complex and time-consuming to meet all these, sometimes contradictory requirements. Local planners have to ensure the plan is 'court-proof' should it be appealed (Buitelaar, Galle & Salet, 2013).

property developers faced a drop-in demand for new houses, office space, and retail space. The losses that resulted led them to retreat from public-private partnerships, leaving local governments with undeveloped land and growing interest costs (Buitelaar, 2010). A more *organic* development process that relies on spontaneous actions is now seen by many as a feasible alternative approach. With this approach, the role of the municipality is enabling instead of active and risk-prone, and the type of management could be characterized as *process management* rather than project management (Buitelaar et al. 2012; 2014; Gerrits et al., 2012). Urban development in this respect is less dependent on a public-private partnership between the municipality and a property developer. The municipality tries to invite end-users enabling their initiatives. This development processes gradually shapes the development. The role of municipalities is less that of planning final spatial configurations and more that of organizing and facilitating private initiatives. Organic development are often accompanied by less complex rules In this regards, with the case of Oosterwold, the city of Almere is one of the Dutch municipalities that is trying to organize forms of organic development. Moreover, compared to other examples, Oosterwold is the most extreme case because of its extension (43 km²) and simplification of the rules system (table 13). However, some other examples of organic projects are spreading all over the Netherlands. Some of them were already built while others are in the phase of construction.

4.1.3 The extreme case of Oosterwold

Almere is the youngest city in the Netherlands; the first house was built only in 1976. The city has been built mostly from scratch in less than twenty years according to detailed and specific master plans, leaving little flexible space for spontaneous developments. However, in the last years, Almere has witnessed a paradigmatic shift from a comprehensive/integrated form of planning to form of organic planning. Today the city is probably one of the most extreme case in Europe which re-discusses the role of planners and planning, accepting the principles of spontaneous development.

Almere Oosterwold is an experimental large-scale transformation, which will be developed mostly on a greenfield surface of 43 km², generating a low-density countryside (with space for between 15,000 and 18,000 new dwellings). Oosterwold has no master plan or zoning map, but only a limited number of *framework-rules* (Moroni, 2015). It will, therefore, be developed in the next twenty years by largely relying on self-organization. According to the strategy promoted by the Municipality, this is an *experimental garden*[95] as there is a little experience of this kind in the Netherlands, but also elsewhere (Municipality of Almere, 2009).

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[95] The term "experimental garden" was used by Esther Geuting in September 2014. At that time Esther Geuting was the area director of Oosterwold, working for the municipality of Almere.

The next chapters explore the paradigmatic shift from comprehensive planning to organic/spontaneous development (chapter 4.2) the rules that discipline the development of Oosterwold and the current state of affairs (4.3).

Table 13: *List of significant examples of organic development projects in The Netherlands (source: Rauws, 2015).*

City	Project	Dimension (ha)	Type of development
Almere	Oosterwold	4.300	Urban extension
Utrecht	A12	1.150	Urban extension
Amsterdam	Amstel III	250	Redevelopment
Assen	Havenwartier	125	Redevelopment
Bunnik	Vinkenburg	120	Urban extension
Almere	Homeruskwartier	106	New neighborhood
Rotterdam	Coolhavenelland	36	Urban regeneration
Amsterdam	Cruquiusgebled	17	Redevelopment
Deventer	Havenkwartier	15	Redevelopment
Nijmegen	Vossenpels	15	Redevelopment
Groningen	Ebbingekwartier	9	Redevelopment
Amsterdam	Oostenburg	?	Redevelopment
Beuningen	Winssen	?	Urban extension

4.2 The paradigmatic change in Almere[96]

Almere is located in the province of Flevoland about 30 km from Amsterdam. The city counts approximately 196.000 citizens and, as declared by the official documents (Municipality of Almere, 2009), it has the ambition to double in size by 2030. The city is part of the Amsterdam Metropolitan Area, and it is located within the so-called *Randstad Holland*: a conurbation composed by the cities of Amsterdam, Utrecht, The Hague and Rotterdam (Newman, 2010), currently the most competitive cluster in the Netherlands (OECD Territorial Reviews). The municipality of Almere counts six polynuclear neighborhoods: Almere-Stad (built in 1980), Almere-Haven (built in 1975), Almere Buiten (built in 1984), Almere Hout (built in 1991), Almere Poort (under construction), and Almere Pampus (under construction).

The existence of Almere is the result of a coincidence of two major national plans: (i) the development of the IJsselmeerpolders[97] and (ii) the new towns plan during the 60s. The land (formerly three meters below the sea level) was reclaimed in 1968 in parallel with the plan that designed from scratch the city of Almere (Zhou & Commandeur, 2009; Newman, 2010)*. The general aim was that of relieving population pressures in Amsterdam and Utrecht.

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[96] From a methodological point of view, to reconstruct the case, in addition to the study of official documents (for instance the land-use plan, the strategy plan, and so on), and of particular websites (e.g. http://maakoosterwold.nl/), I went three times to Almere (September 2014, October 2015 and May 2016) to see the place and interview key actors, initiators and the area directors of Oosterwold Esther Geuting, and Ivonne de Nood (new area director since November 2015). In 2014, a meeting with Jeroen Zuidgeest (responsible for the strategic project carried out by the MVRDV design firm) was organized to understand their choices and motivations.

[97] A group of four polders reclaimed from the lake Ijsselmeer.

Starting from its early development, Almere was built by the National Government with a blue-print/top-down approach, creating a new low-density town with all the features of a common garden-city (Newman, 2010). Only after the introduction of the National *Right to Build* in 1998 and the policy *I Build my House in Almere* (Geemente Almere, 2015) the development of Almere became more flexible and open to private initiatives (figures 34 – 45).

This shift was strengthened in 2008 with the publication of *Almere Principles* which reinforced the image of Almere as a green-ecological city. In particular, this policy admits the necessity to rely on more spontaneous developments (Feddes, 2008). This shift from comprehensive and integrated planning to spontaneous development can be represented in three main phases: (i) *comprehensive and integrated planning*; (ii) *self-building* (concerning the development of small-scale buildings); (iii) *spontaneous development* (concerning also the development of large-scale areas).
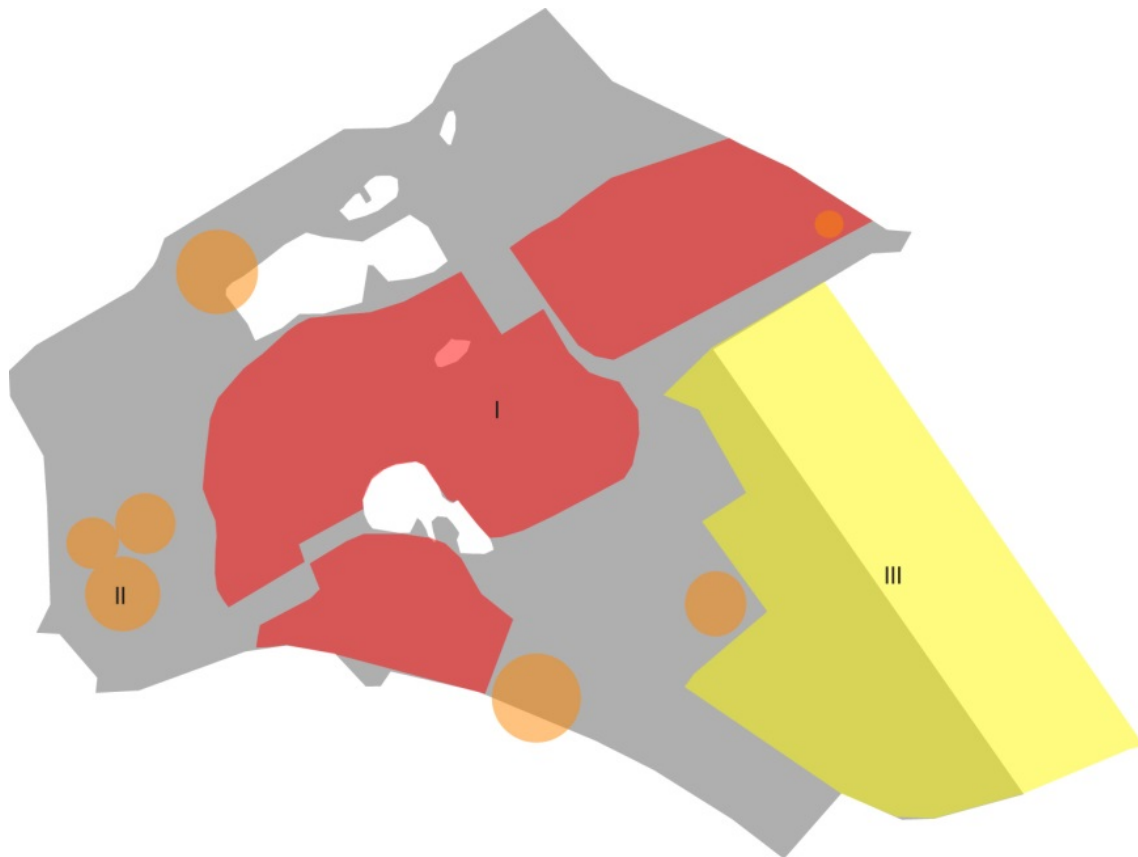
Figure 33: *The three development phases of Almere: (i) red, integrated development; (ii) orange, self-building; (iii) yellow, spontaneous development.*

Phase I: *Comprehensive and integrated planning* (1960/2000)

Design: large scale master plans and detailed land-use zoning (open spaces, buildings, land-use are all defined in advance).
Construction: everything (i.e. street, facilities, green areas, parking lot, buildings, etc.) is built all at once from scratch by public agencies.
Private action space: private actors mainly buy or rent houses and apartments.
Market: supply driven.
Risks: the state anticipates all costs of large-scale transformations and infrastructures.
Predictability: everything is planned beforehand.
Time: short-term development.
Areas: Almere-Haven, Almere-Stad, Almere-Buiten.

Phase II: *Self-building* (since 2000)

Design: large-scale master plans (land uses and plots size are usually indicated).
Construction: public agencies build the main infrastructures (e.g. streets, sewers, energy provision, facilities, etc.).
Private action space: private actors buy plots and then self-build what they like according to the rules.
Market: the public agency addresses the market (the development is more supply driven than demand driven).
Risks: shared among public and private bodies. The public body anticipates certain costs (also for large-scale investments) that facilitate and reduce the costs of private actions; while initiators assume risks of their action within plots.
Predictability: there are some unmovable physical conditions (i.e. main infrastructures) that structure the development of the area; other conditions (within the plots) are unpredictable and left to private initiators.
Time: long-term development.
Areas: Norderplassen, Homeruskwartier, Columbuswartier, Europakwartier, Overgooi, Vogelhorst.

Phase III: *Spontaneous development* (since 2010)

Design: no zoning map or master plan, but only certain limited number of rules.
Construction: the public agency doesn't build anything on its own initiative, but it simply organizes the land and enables initiators actions.
Private action space: initiators buy the land and build what they like in compliance with the rules. Initiators also build the needed infrastructures.
Market: mainly demand driven (nothing happens without private investments).
Risks: all costs and risks are internalized by initiators within their property.
Predictability: the overall development relies on emergent socio-spatial configurations. The development is by definition unpredictable. The rules are the only predictable condition.
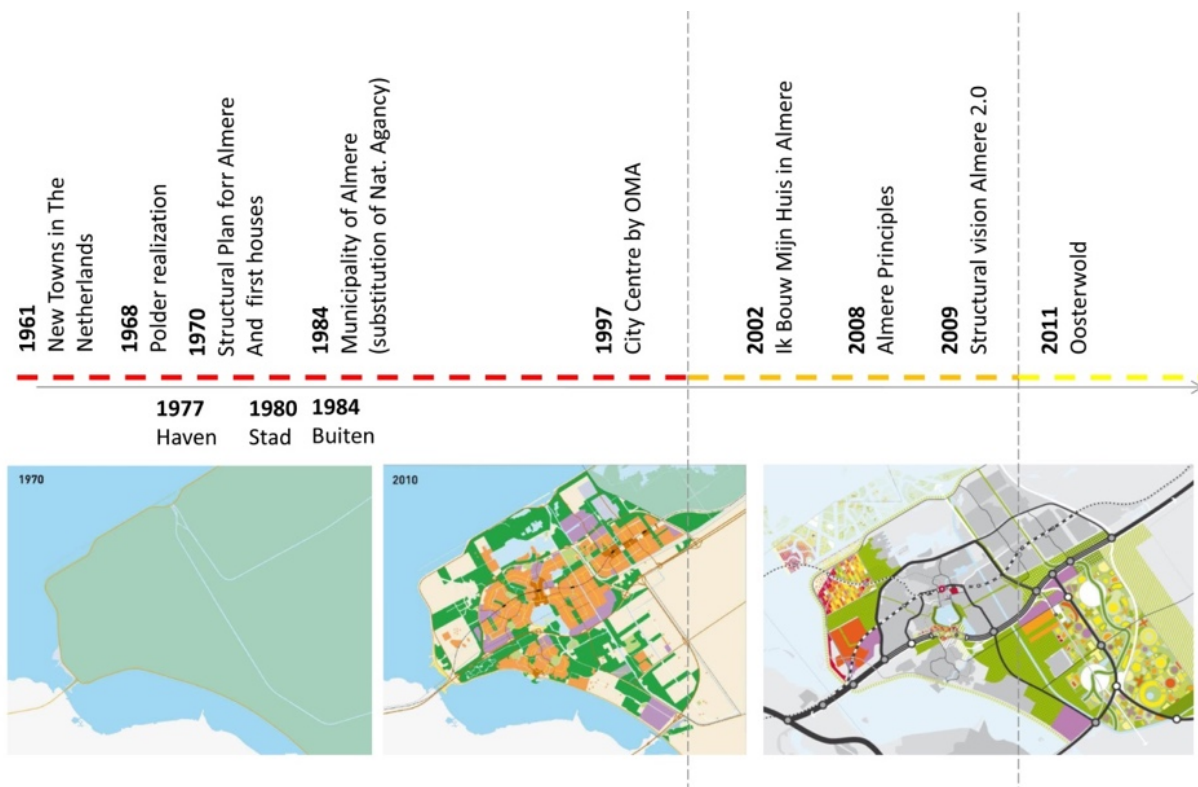Time: open-ended development.
Areas: Oosterwold.

Figure 34: *The evolution of Almere and the three phases.*

In the next pages there is a selection of photos illustrating the main features of the city Almere.

Figure 35: *The commercial activities in Almere are all concentrated and planned in the central part of the city. In night time the area is bleak. Photograph by the author.*

Figure 36: *This is a monofunctional and empty area behind the central railway station. Photograph by the author.*

Figure 37: *View of the Ijsselmeer along a cycle-path. Photograph by the author.*

Figure 38: *One of the newest area of Almere along the Ijsselmeer. Photograph by the author.*

Figure 39: *An empty area along the Ijsselmeer. Photograph by the author.*

Figure 40: *A suburban residential area of Almere. Photograph by the author.*

Figure 41: *A suburban residential area of Almere. Photograph by the author.*

Figure 42: *One of the numerous cycle paths in Almere crossing and connecting green areas and neighborhoods. Photograph by the author.*

Figure 43: *Water-front living in Almere along an internal canals. Photograph by the author.*

Figure 44: *Water-front living in Almere. Photograph by the author.*

Figure 45: *An extravagant example of self-building. Photograph by the author.*

4.2.1 Phase 1: comprehensive and integrated planning

The early conception of Almere

Almere is the newest city in the Netherlands. Its history can be enclosed in less than 55 years. Until 1968 the land where Almere is located didn't exist, but it was artificially created by the national government. The municipality of Almere was officially established only in 1984. Its early development can be divided into three different steps: (i) the development of *IJsselmeerpoiders* (the polder), (ii) the publication of the *new towns national structural vision* for the Netherlands in 1961 (figure 46), (iii) the *plan* of the city of Almere in 1977.

The development of the IJsselmeerpoiders is the result of a national project concerning the enclosure of the Zuiderzee and the consequent creation of the artificial lake called *Ijsselmeer*. The Dutch government designated part of the reclaimed land for the construction of new towns (Van Duin, 1986). The Structural Vision for new tows was approved in 1961 (Zhou & Commandeur, 2009). The land was exclusively owned by the state and its development was strongly centralized and top-down (Constandse, 1988; figures 47, 48 and 49). The plan for the creation of Almere was elaborated in 1970 by Van Duin and Otto. The main goal was to give to the city a green character (Van der Waal, 1997), focusing on the amount of open landscape and green stripes penetrating into and between the neighborhoods (Newman, 2010; Mirela 2003; Rijksdienst voor de IJsselmeerpolders, 1978). This first plan shaped the city in five separate and distinct neighborhoods. This spatial order is still clearly visible (Zhou & Commandeur, 2009).

Figure 46: *The construction of Almere-Haven (1976).*

Figure 47: *National Plan for New Towns (1961).*

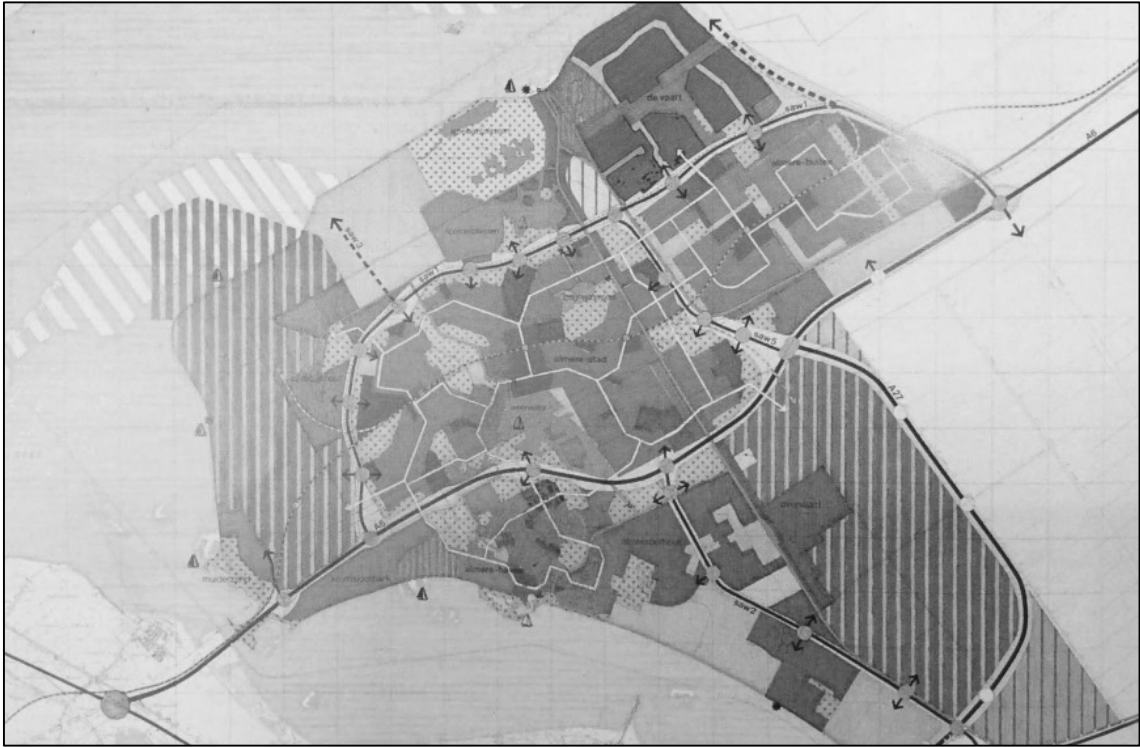Figure 48: *The structural plan, Flevoland (1970).*
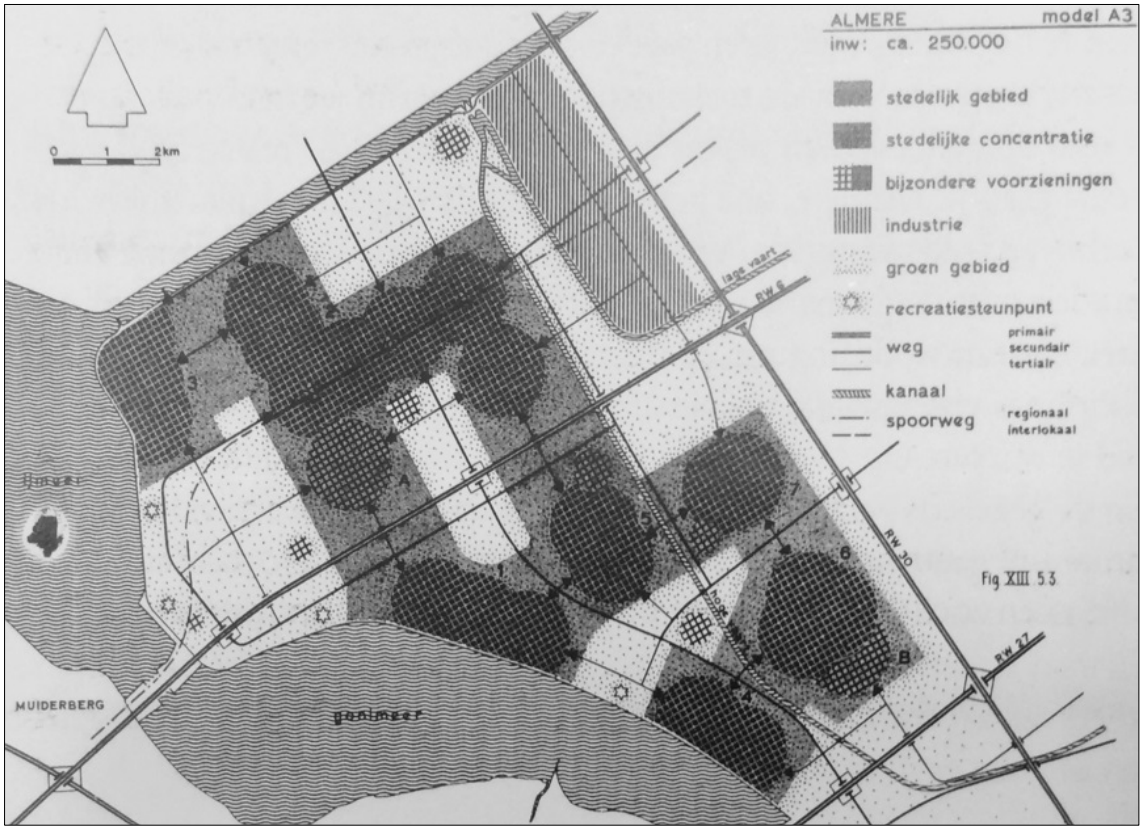
Figure 49: *The structural plan, Almere (1970).*

Figure 50: *Verkenningen (1970).*
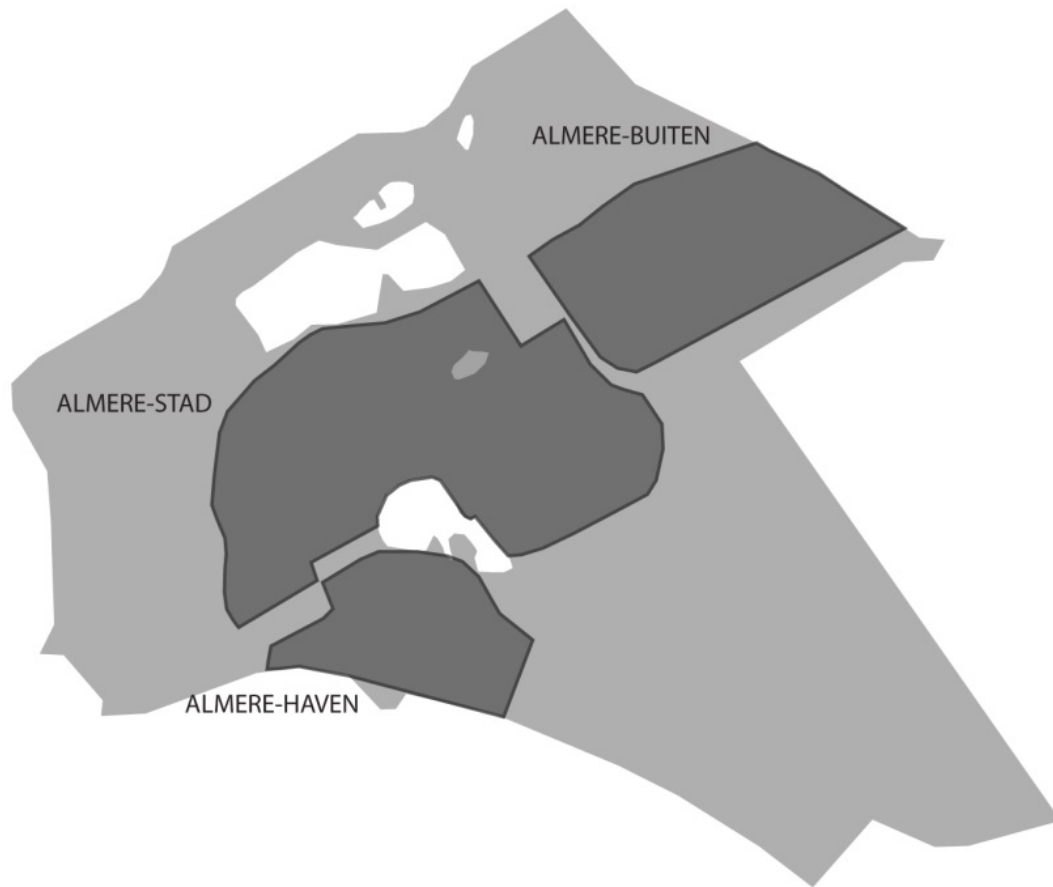
The construction of the first neighborhoods

Figure 51: *Phase I, neighborhoods planned and built with blue-print approach.*

The development of the city of Almere was primarily focused on the production of houses by means of strong top-down interventions which emphasized on quantity rather than quality. The first neighborhoods were planned and then built following rigid and detailed blueprint designs.[98] The general strategy was to have firstly one plan for the whole city indicating neighborhoods and infrastructures; secondly, highly detailed and specific designs for each neighborhood, which were then built all at once from scratch.

The construction started with Almere-Haven (the first inhabitants came in 1976; figures 52-55). Four years later, in 1980, was designed Almere-Stad (in contrast with the first settlement, Almere Stad was conceived with a higher urban character including shopping malls, car parks, and office buildings; Constande, 1988; figures 61-65). Almere-Buiten (which means "on the outside" or periphery) is the third nucleus of Almere and, in 1983, was located in the north-eastern part of the city. The plan provided new housing for 40.000 (figures 56-60). The first neighborhoods were conducted by the *IJsselmeerpolder*

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[98] The plan was the result of agreements between the municipality of Amsterdam and Gooi, reseriving 80% of new housing stock to their inhabitants: 64% from Amsterdam and 16% from Gooi.

Development Authority. Later, in 1984, the municipality of Almere was officially established. At that time Almere had only 33.000 inhabitants (*Ibid.*).

Figure 52: *Almere-Haven: master plan.*

Figure 53: *Almere-Haven under-construction.*

Figure 54: *Almere-Haven today.*

Figure 55: *Residential building in Almere-Haven (source: online).*
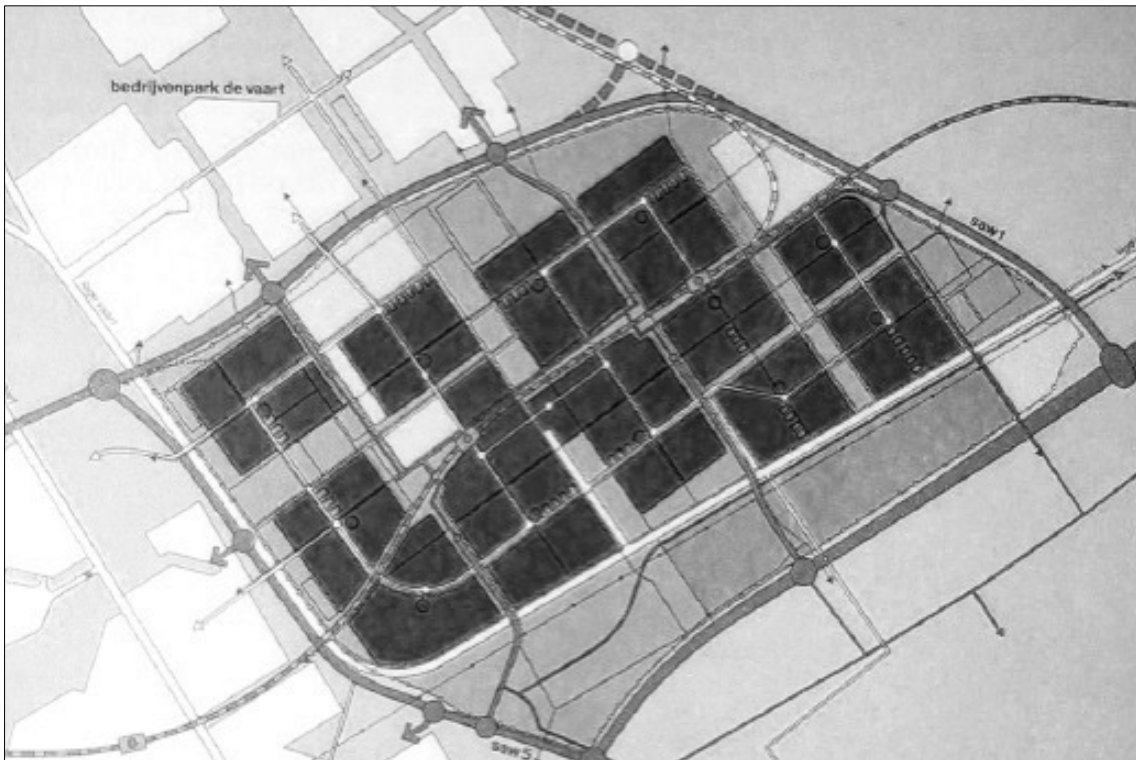
Figure 56: *Almere-Buiten: master plan.*

Figure 57: *Almere-Buiten.*

Figure 58: *Almere-Buiten.*

Figure 59: *Almere-Buiten (source: online).*

Figure 60: *Almere-Buiten (source: online).*

Figure 61: *Almere-Stad: master plan.*

Figure 62: *Almere-Stad.*

Figure 63: *Almere-Stad.*

Figure 64: *Residential building in Almere-Stad. Photograph by the author.*

Figure 65: *Residential buildings in Almere-Stad. Photograph by the author.*

Figure 66: *Residential buildings built with blueprint approach. Photograph by the author.*

Figure 67: *Residential buildings built with blueprint approach. Photograph by the author.*

Figure 68: *Residential buildings built with blueprint approach. Photograph by the author.*

Beyond the suburbia

In 1983 a new master-plan for Almere was approved. The central government desired to increase buildings density in the core area of Almere-Stad. Such revision, however, did not modify the greenbelts around the neighborhoods neither the green strips: the municipality considered such areas important ecological and natural "invariant" of the city (Rijksdienst voor de IJsselmeerpolders, 1984). In the '80s relevant public investments were made to improve the mobility and the territorial infrastructures. For example, the realization in 1987 of the railway/station of Almere Centrum and its connection with the national railway system represented a first big leap in scale for Almere (figure 69). Another significant investment was the construction of the ring road around Amsterdam that directly connects the city to Schiphol Airport.

The development of Almere went ahead, and the municipality planned the regeneration of the city center along the lake *Weerwater*. In 1997 the Municipality supported the realization of a modern center. The project was signed by O.M.A. (Office for Metropolitan Architecture) imagining a new business center with shops, housing, cultural facilities and entertainments (Zhou & Commandeur, 2009). The master plan aimed to "break the

suburban uniformity by providing architectural landmarks as a beacon of high quality in a vibrant recreational city's heart" (figures 70-71).[99]

[99] With that new urban transformation, the city center increased the number of dwellings from 1.400 units to 2.400, the number of parking spaces from 2.200 to 6.5000, shopping space passed from 50.000 m2 to 85.000 and a new bus-lines were provided to facilitate city access (Planum, 2005).

Figure 69: *Master plan Almere Centrum (1997); Almere city centre.*

Figure 70: *Almere Centrum, railway station. Photograph by the author.*

Figure 71: *The new commercial area of Almere located in the city centre (source: online).*

4.2.2 Phase 2: self-building

The shift from *comprehensive and integrated planning* to *self-building* turned the city of Almere from a top-down designed city without too much space for private initiatives into a place in which private actions could emerge more organically (figure 72). Private actions were developed within certain conditions created by the municipality which, beforehand, prepared the land for private investments. In particular, in this phase, the government was not as active as it was in the first phase. In the second phase the role of the state was mainly focused on the construction of some basic infrastructures (for instance street grids or sewers) and the provision of framework-rules to enable the action of small private actors.

This shift from *comprehensive and integrated planning* to *self-building* is the result of two main policies: (i) the agenda "I Build my House in Almere" (2002), in which the municipality "empowers people to make the city more freely" according to the Dutch "right to build"; (ii) the document "Almere Principles" (Feddes, 2008) in which the idea to rely on spontaneous and green developments was advanced to address long-term transformation (2008-2030) of the city (Feddes, 2008).
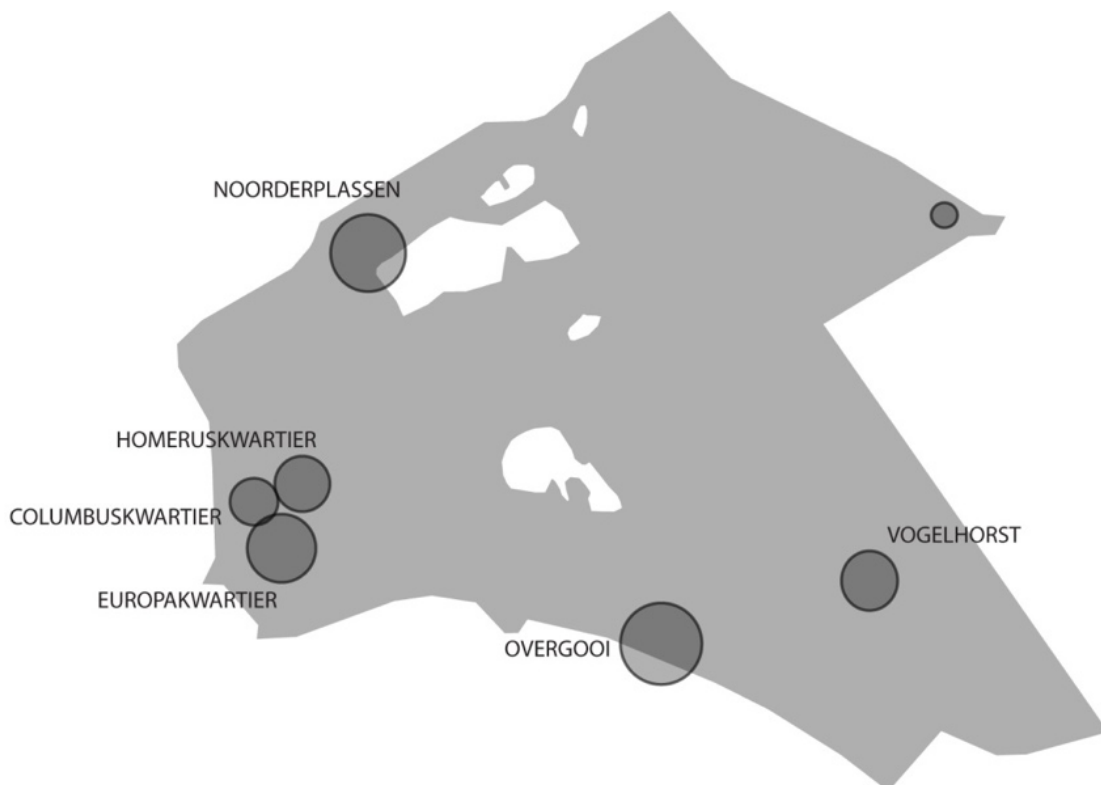

"I Build my House in Almere"

Figure 72: *Phase II, neighborhoods developed with "self-building" approach.*

The right to build was introduced in 1998 by the Dutch Parliament to stimulate self-building. Esther Geuting (innovative director of Almere City Council) in this regard maintains that: "In the Netherlands the right to build is comparable to the American right to build [...] the only fact that someone owns a piece of land gives him a specific right to build a certain percentage of land according to the land-use plan which establishes where the right can be used or not". In Almere, the introduction of the right to build was applied with a specific political agenda named *Ik Bouw Mijn Huis in Almere* (Geemente Almere, 2015), which literally means *I Build my House in Almere*. This policy was launched in 2002 to stimulate the development of neighborhoods like Norderplassen, Homeruskwartier (figures 73, 74, 75 and 76), Columbuswartier, Europakwartier, Overgooi (figures 77, 78, 79, 80, 81 and 82), Vogelhorst. The Deputy Mayor Adri Duivesteijn, a former member of the parliament and one of the principal advocate of self-building who has contributed to this shift, stated that "Self-build housing is a huge untapped potential" (Oosterman & Retegan 2015; Oosterman 2015). Between 2002 and 2011, self-builders in Almere have erected more than 800 homes (Collison, 2011).

One of the numerous examples is *Almere-Overgooi*, a neighborhood located in the southern-western part of the city along the *Gooimeer*. In this case, the main aim of the agenda was to "empower people to make the city giving them the right to buy buildable land instead of big corporations and real estate favoring smaller landlords" (Municipality of Almere, 2002). Other examples are *Noorderplanssen West* (2006), and *Homeruskwartier* (2007). In both cases, privates needed only to comply with certain rules regarding for instance buildings height, gaps between properties, energetic performances, and sanitation principles, while they were highly free to build what they desire. Although the areas were master-planned unitarily (in all the cases the municipality built the infrastructure in advance), it is of interest to underline that their internal transformations were thought to be incremental and emergent according to contextual market feasibility. Moreover, what emerged was also widely appreciated for "a high mix of architectural diversity with good results in terms of costs reduction". For example, in the case of *Homeruskwartier* plots vary in size from 86 m² to more than 1200 m², but generally people opted for small homes. Plots were sold at the standard price of 375,00 €/m² and buildings costs varied from 750 €/m² to 1700 €/m² according to the construction choices made by initiators. Furthermore, not all homes were built individually by single self-builders, but also by groups of people. The average price - land included - was about 72.000 €/m² (Collison, 2011).

Figure 73: *Homeruskwartier: master plan for the construction of the main infrastructures (built between 2006 and 2015).*

Figure 74: *Homeruskwartier.*

Figure 75: *Self-building in Homeruskwartier (source: online).*

Figure 76: *Self-building in Homeruskwartier (source: online).*
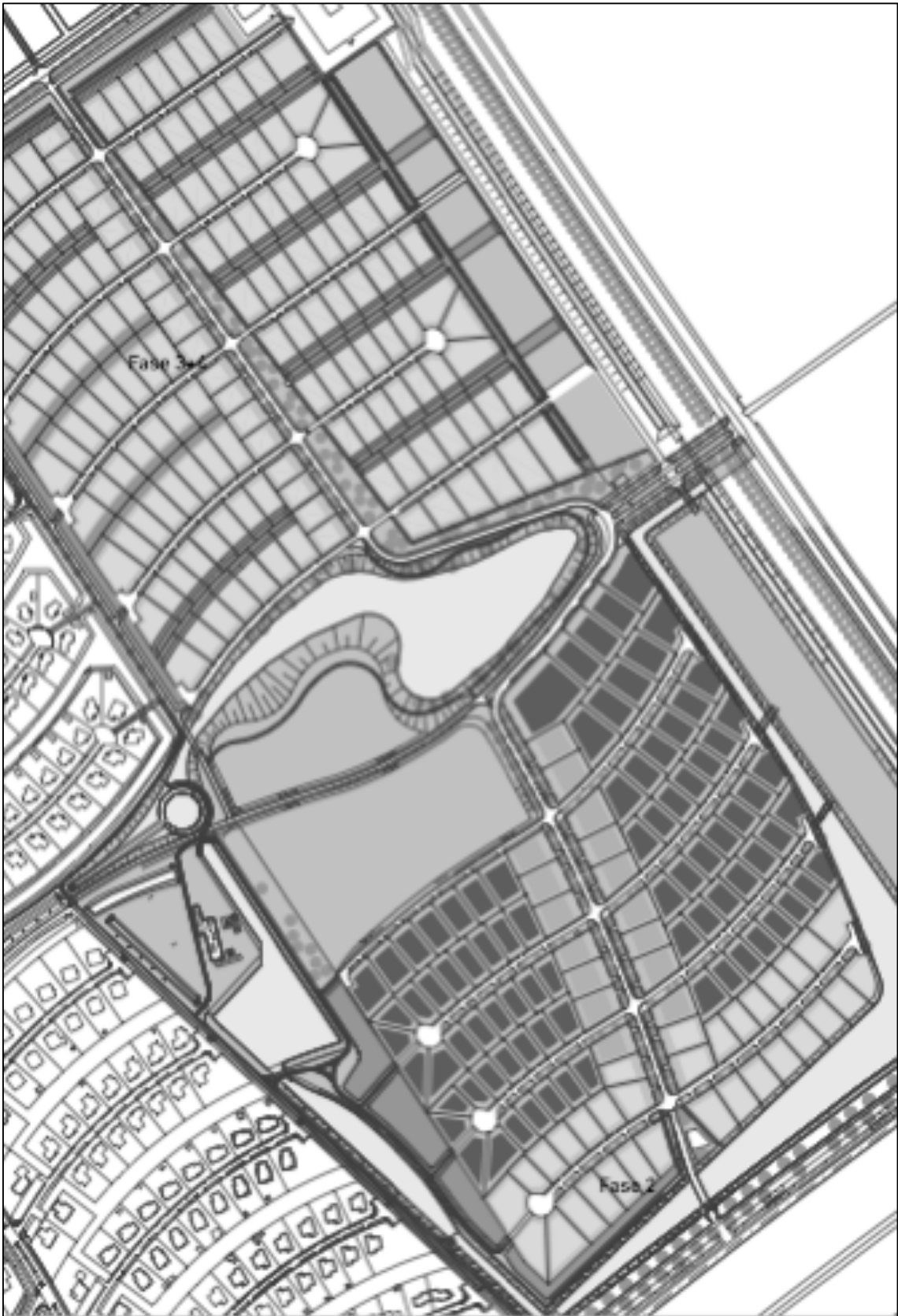
Figure 77: *Almere-Overgooi: masterplan for the construction of the main infrastructures.*
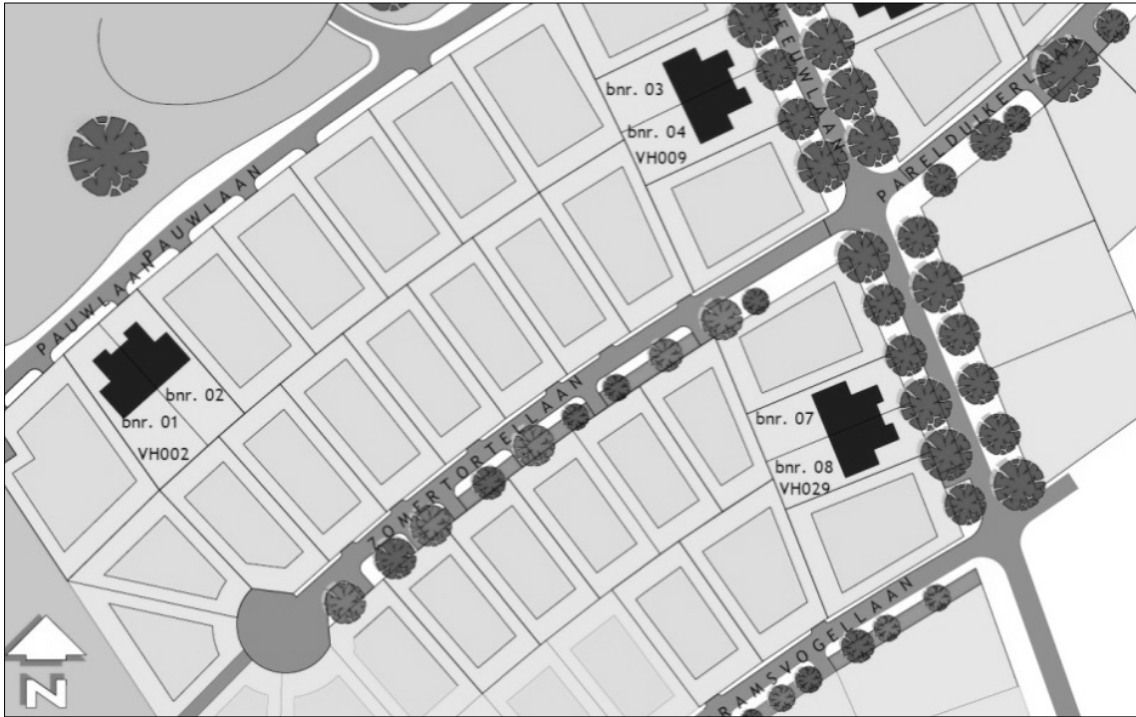
Figure 78: *Almere-Overgooi: land subdivision.*

Figure 79: *the development of Almere-Overgooi was divided in two phases. The first is completely finished, the second is now on the development phase.*

Figure 80: *Almere-Overgooi: already developed area. Photograph by the author.*

Figure 81: *Almere-Overgooi: undeveloped area. Photograph by the author.*

Figure 82: *Almere-Overgooi: empty lots and residential buildings. Photograph by the author.*

Figure 83: *Example of self-building in Almere (source: online).*

Figure 84: *Example of self-building in Almere. Photograph by the author.*

Figure 85: *Example of self-building in Almere (source: online).*

Figure 86: *Example of self-building in Almere. Photograph by the author.*

Figure 87: *Example of self-building in Almere. Photograph by author.*

Almere Principles

Beyond the "self-building revolution", in 2008 the Ministry of Housing Regional Development and the Environment adopted the so-called "Almere Principles": a strategy that set long-term objectives for 2030. As the documents declare: "The aim of the national government, the provincial government of Flevoland and the municipality of Almere is to position Almere as a national demonstration site for the large-scale implementation of sustainable systems […] The joint desire is to turn Almere into an icon of sustainability". And again "Almere will continuously renew and transform itself, thereby strengthening the qualities of its polycentric structure and its environment. Almere will be a vital community with diverse living and working opportunities, within a beneficial abundance of open space, water, natural and cultivated landscapes that can grow and change over time" (Feddes, 2008; figures 88, 89 and 90).

Figure 88: *Natural landscape in Almere. Photograph by the author.*

Figure 89: *Natural landscape in Almere. Photograph by the author.*

Figure 90: *Natural landscape in Almere. Photograph by the author.*

4.2.3 Phase 3: the spontaneous development of Oosterwold

The strategic plan "Almere 2.0"

Since 2008 the city of Almere has been working to design a conceptual infrastructural vision to accommodate, by 2030, new 60.000 houses, 100.000 jobs and facilities, and around 160.000 new inhabitants (MVRDV, 2011; figure 91). Currently, Almere is one of the four main cities of the Amsterdam Metropolitan Area and the seventh largest city in the Netherlands but, according to the national government, also "the one with more considerable space for growth" (Municipality of Almere, 2009). Contrary to the blueprint growth faced by the city during its early development, the strategic plan "Almere 2.0" has in mind organic developments in compliance with the document "Almere Principles": all this, giving more room for bottom-up actions based on discernable market demand.[100] How the document states, "Almere 2.0 is not a blue-print or a traditional structural vision neither, but rather […] a flexible development strategy which is illustrative in nature and it challenges people to take personal initiatives" (*ibid*.: 42). Among many declared objectives, two are of great interest: "changes will come gradually over the years based on the needs of future inhabitants" (*ibid*.: 11); "Almere will be a leading innovator in the field of as regard systems of energy production with energy-neutral producing districts, mobility, water and sanitation" (*ibid*.: 13).

In addition to general principles, the structural vision identifies three strategic areas in which the municipality of Almere will provide space for actions and developments: (i) the first area is *Almere City Centre* (*ibid*.: 32) that will be "the cultural heart of the city by transforming the existing Central Station into a high-grade transport junction"; (ii) the second area is *Almere Pampus* (*ibid*.: 29), an area in the extreme northern part of the city that, taking advance of the excellent connection with the city of Amsterdam and Almere, will provide the space for 20.000 new dwellings and "urban beaches" with the idea to become a "harbor for large-scale recreation in which there will be the possibility to locate 500 floating houses experimenting new way of living" (*ibid.*); (iii) the third area is *Almere Oosterwold* (*ibid*.: 36), a large-scale urban-agriculture transformation "That will take place incrementally respecting its historical pattern and according to individual needs and investments". According to the area director Esther Geuting "Here the municipality has not provided a final design or a general plan, but instead, it has only introduced few principles as well as some

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[100] "Almere 2.0" is set to be primarily a "qualitative undertaking instead of its future quantitative growth", considering the need to "cultivate diversity" as a key asset as regards variation in housing styles, employment opportunities and city's population in order to "break with its current homogeneity" due to its early bleu-print approach typical of new towns and garden cities (Municipality of Almere, 2009).

clear rules of the game, introducing into public debates concepts and values which embrace ideals such as self-sustainability and self-organization".

Figure 91: Strategic Plan Almere 2.0 (MVRDV). The strategy aims to accommodate, by 2030, new 60.000 houses, 100.000 jobs and facilities, and around 160.000 new inhabitants. In particular, it indicates three areas in which the development will take place. One of them, in the southern part of the city is Oosterwold.

The strategy for Almere Oosterwold

Oosterwold is the concretization of "Almere Principles" and "The Right to Build" combined. On the one hand, the municipality tries to give the maximum freedom to private developers (from families to big companies); while, on the other, it is a manifesto for a new agriculture utopia for a "productive landscape" (MVRDV, 2011). The municipality, in addition to the national law, promotes some principles to "keep the planning framework as clear as possible" and "find a balance between total freedom and responsibility for others and the environment, experimenting forms of spontaneous development" (*ibid.*).

The idea of Oosterwold is that the whole area will be developed gradually, in an unpredictable and bottom-up way: the final result will correspond to the aggregation of all initiatives. "The area is open to infinite solutions and initiatives" (*ibid.*). One peculiarity of Oosterwold is that initiators have to provide all the needed facilities of the area (for instance streets, public green areas, cycling paths, etc.), organizing everything by themselves "under

the supervision of the municipality". The role of the government is minimized: it will mostly "Enable private investors to undertake new actions" […] "A totally users oriented and flexible strategy" (*ibid.*).

4.3 The case of Oosterwold
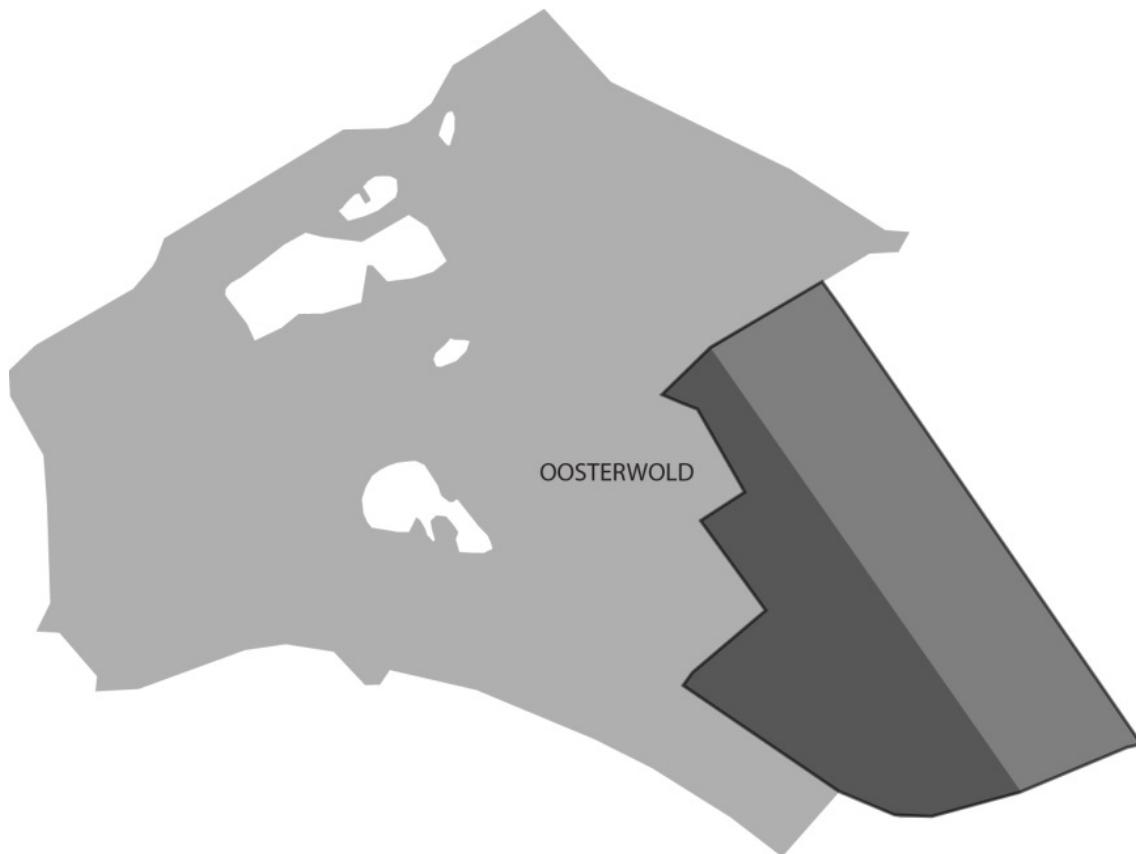
4.3.1 An extreme case

Figure 92: *The area for spontaneous developments in Almere: Oosterwold.*

Almere is an interesting example of moving from one side of the spectrum to the other. As seen, the city of Almere was literally designed on the drawing board as a New Town. From 1977 onwards, over 75,000 dwellings have been built, providing housing for over 190,000 residents. The former blue-print city, developed without much citizen involvement, becomes a frontrunner in facilitating private initiatives and smaller landlords and the city's development became more diverse and flexible.

The latest plan for the development of a new part of Almere – Oosterwold – goes a step further than 'just' issuing plots for self-build homes. Oosterwold's development relies on a "radical strategy of self-organization" (RRAAM et al. 2012). It is probably the most organic development in the Netherlands, certainly the largest.

Oosterwold covers an area of approximately 43 km^2, mostly undeveloped (agricultural) land. It is situated in two municipalities: Almere and Zeewolde. In the long run around

15,000 houses, 20 hectares of office space, 135 hectares of industrial sites, 1,800 hectares of urban agricultural land and 450 hectares of new public green could be developed (Gemeente Almere & Gemeente Zeewolde, 2013: 23). Could, because there is no predefined program. Based on the regulations for Oosterwold the figures are maximums for the long term (twenty years), which could be developed or nothing at all could be developed. Both extreme scenarios – and all the results in-between– are as favorable, according to the development strategy of Almere.

A first main difference between the approach chosen for Oosterwold compared to the traditional comprehensive integrated approach is its emphasis on demand rather than supply. In the comprehensive integrated approach, planning (and sometimes even construction) started before buyers and tenants were in the picture. In Oosterwold, the municipality made a vision and welcomes initiatives to develop in Oosterwold. This development is not done by means of public-private partnership between the municipality and one or more large developers. Instead anyone – individuals or groups, professional developers and housing associations - interested in developing in Oosterwold, are invited to participate. Only a limited number of rules are introduced to regulate the future transformation, giving just enough guidance so each individual initiative will step by step contribute to the transformation of the area (MVRDV, 2011). This step-by-step development may be seen as the opposite of an integrated development. This traditional way of development is even deliberately discouraged by the way the plan regulates the land use. The second main difference between the approach chosen in Oosterwold and the comprehensive integrated approach is tightly related to the first: instead of using the level of the plan to organize, finance and regulate the land-use transformation, the individual plot is used as the central focal point. By focusing on this small scale, regulating the small actions rather than the final aggregate result, the development is the opposite of a comprehensive development: it becomes emergent.

4.3.2 The framework-rules

The Municipality enables the development of Oosterwold through few framework-rules and parameters that, for the most part, are generic and non-map dependent (there is no zoning plan within the Oosterwold area, apart from three areas designated as non-developable). Moreover, local government prevents the introduction of specifications and normative measures additional to what is already regulated at national level (contrary to what often happens in the field of land-use planning). The land in Oosterwold is partially owned by the national government, and a public agency manages the process of land selling. This, from a formal point of view could be important, but from a substantial point of view does not directly affect our main research question.

Land-use developments are regulated in the Oosterwold "plan" (*bestemmingsplan*). Rules regulating the development of Oosterwold are generic (there is no predetermined land subdivision) and they mostly aim to avoid conflicts among initiatives instead of prescribing a

certain kind of end state (Gemeente Almere & Gemeente Zeewolde, 2013: 43). These rules regulate the relationship between private actions and the public interest, and assess fair play between existing landowners and development by new initiators. Public investments will follow private investments, instead of the other way around, as is more common in the Netherlands. These rules regulate not the entire Oosterwold area, but only the part on the territory of the municipality of Almere. This is called phase 1. The other part of Oosterwold, on the territory of the municipality of Zeewolde, will be regulated later on. However, the general plan is sufficiently clear for initiators to be able to apply for a building permit (*omgevingsvergunning*) with the shortest procedure.[101] Particularly interesting is article 13 (*Ontwikkelregels*) of the plan: the development rules. Other articles define for instance the concepts used in the plan and regulate the existing land uses.
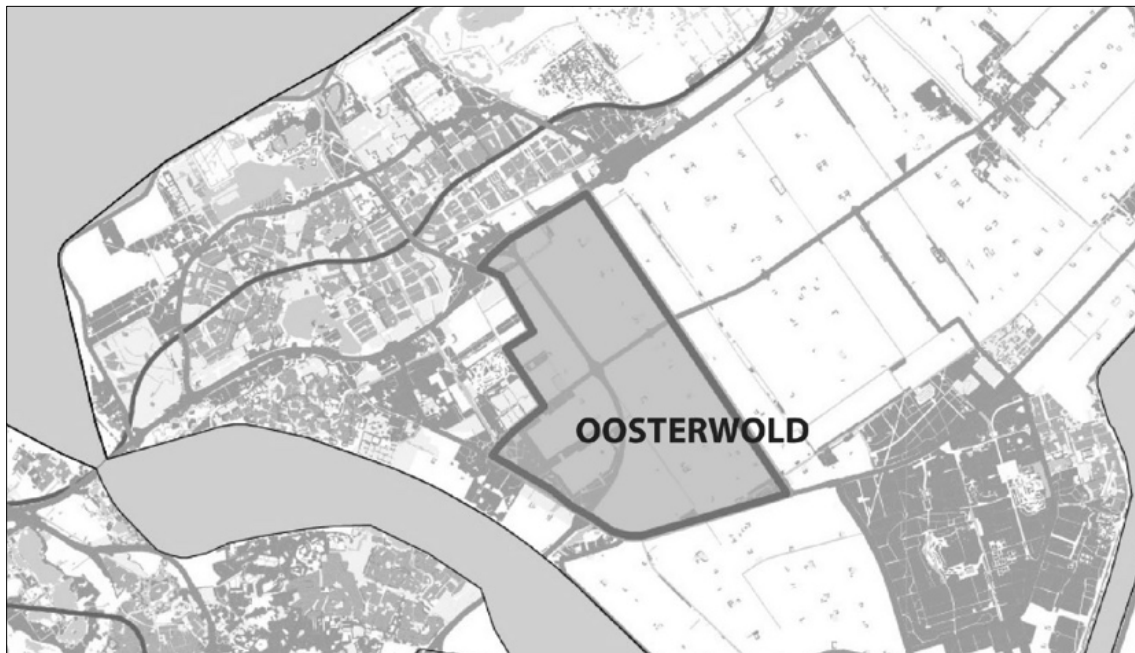

Figure 93: *The Oosterwold area.*

Plots are developed according to the development rules (article 13). Once initiators show that rules are respected, they sign a contract with the municipality. This private law contract is used by the municipality in addition to the public law plan to ensure cost recovery for planning costs and possible future infrastructure investments. After signing the contract initiators can start to build on their plot. In order to coordinate different private initiatives, and monitoring the overall development of Oosterwold, the municipality provides an open

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[101] This is a broad building permit that integrates several previously separate permits such as the building permit, demolition permit and permit for felling trees. The shortest "regular procedure" takes eight weeks. The building permit is regulated in the General Provisions for Environmental Law Act (*Wet Algemene bepalingen omgevingsrecht*, abbreviated as "*Wabo*")

source map representing the location of different initiatives as well as their phase of development. The framework-rules in Oosterwold mainly cover four issues: the choice and the spatial *layout of plots*, *permitted uses*, the *floor area ratio*, and the *self-reliance* of plots (in terms of energy production, sanitation, and financial issues).

Choice and layout of plots

Initiators can choose between three types of plot: "standard plot", "agricultural plot", and "landscape plot". The total amount of land allocated to each type of plot across Oosterwold is regulated: "Standard plot" 73%; "Agricultural plot" 10% and "Landscape plot" 17%. These types of plot have different parameters and must be developed with a maximum and minimum of land uses (two adjacent plots can be combined to meet the maximum and minimum demands). See the following table:

Table 13: *Plots types and land-uses parameters.*

Land-uses parameters	Plot type		
	Standard	*Agriculture*	*Landscape*
Buildable area	≤25%	≤7.0%	≤6.0%
Infrastructure (incl. parking)	≤11.0%	≤2.0%	≤2.3%
Publicly accessible "natural green"	≥0.0%	≥0.0%	≥80%
Publicly accessible "dispersed green"	≥7.0%	≥1.5%	≥1.5%
Water	≥2.0%	≥1.5%	≥2.3%
Agriculture	≥50.0%	≥80.0%	≥0.0
Total subdivision in Oosterwold	73%	10%	17%

Initiators can choose any plot size in any shape. This freedom is restricted only by the financial possibilities of initiators and the availability of land. In particular, the availability of land is restricted by two public conditions.

The first condition is that, at the end of the development, the *overall subdivision* of land uses in Oosterwold should be equal to: 20% housing, retail, services and office buildings; 6.5% pavement; 20.5% of public green; 2% water, and 51% agriculture (the area manager is responsible for controlling that the aggregate sum of all initiatives respect such parameter). This subdivision is opposed to a more common *plan* based subdivision in which the final overall land-use division is spatially predetermined.

The second condition states that all the land in Oosterwold is available for initiators except for three specific zones, which have detailed collective previsions: the area indicated as *Eemvalley,* developable only as landscape plot; an area reserved for a *future railway*; certain areas indicated as *forest* in which real estate development is prohibited (however, the mayor and aldermen can decide to deviate from this rule for publicly accessible facilities if they contribute to the "recreational attractiveness" of Oosterwold and do not "disproportionally damage" the existing values of the landscape).

List of permitted buildings uses

Some specific uses in Oosterwold are clearly forbidden, such as large-scale shops (bigger than 2000 m², intensive livestock farms, casinos, and brothels. Then all other uses are permissible: the rules allow for residential development, services, hotels/B&Bs, infrastructures, offices, commercial (shops, bars, cafes and restaurants), industrial (within limits of environmental classification – they are listed separately in an appendix and are based on national regulation)[102], and a combination of the summed-up land uses.

Floor Area Ratio

A Floor Area Ratio (FAR) of 0.5 is applied to the buildable area of each plot which must be always in the middle of the plot. An exemption from this rule is possible, and the FAR can be stretched to 1. In that case the extra built-up area should be compensated on an adjacent plot so that the combined plots have a maximum FAR of 0.5. There are no restrictions as regards the number of floors or the maximum eight of buildings, as well as there are no restrictions as regards building designs, construction materials and technological solutions.

Self-reliant plots

All initiators in Oosterwold have to take care of their own energy production, sanitation, negative externalities and the production of collective facilities. These rules mainly aim to avoid external effects (instead of regulating a certain predetermined end) and creating the needed collective spaces (for example streets and green areas). As regards ecological values, public safety, noise, or water, no "uneven situation should emerge" in Oosterwold. In this regard, in the appendix of the plan various "decision trees" are added to help initiators to determine whether or not their application will meet these requirements, and whether further proofing is necessary (by means of investigations) or other steps are required. The point is that these rules oblige initiators to internalize all negative external effects. To provide some examples, these rules require that: (i) anyone who wants to start a business in Oosterwold must keep a certain distance from adjacent plots in order to internalize the

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[102]As regards industrial activities the mayor has the power to grant exemptions if the pressure of these activities on the environment is equal or less than the already allowed activities.

external effect of nuisances (the distance depends on the kind of activity, specified in an appendix, and activities that involve a great deal of noise must be situated on a larger plot);[103] (ii) facilities for generating sustainable energy (such as a wind turbine) may not hamper the possibilities of other plots to generate sustainable energy on their own; (iii) each initiator should connect its plot to the existing road network and provide sufficient parking spaces according to national norms for parking spaces; (iv) all edges of a plot are publicly accessible and at least 2 meters wide".

Table 14: *"Degree of spontaneity" within the rules-framework.*

Rules for initiators	*Degree of spontaneity*	*Comments*
Plots availability	High	Almost all the land of Oosterwold is open for private actions. Initiators can choose any plot shape, size and dimension.
Plots layout	Low	Plots layout is determined by specific land-uses parameters which ensure the future agricultural vocation of Oosterwold.
FAR	Low	The density of Oosterwold is low and will be always concentrated in the middle of plots. Once all the FAR is used, there will not be any room for further expansion.
Buildings	High	Initiators are free to design their buildings according to their preferences, knowledge and resources.
Admitted uses	High	All uses are permitted with exception for large-scale shops, intensive livestock farms, casinos, and brothels.
Self-reliance	High	Initiators are obliged to respect some basic performances (for instance: energy production, sanitation or road networking). However, they are free to find or use the technological solutions they consider more suitable.

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[103] However, exemptions can be made if different initiators of plots decide to cooperate and accept the nuisance.

Figure 94: *Land ownership in Oosterwold. In 2014 about the 80% of the land was in public hands (Official map).*
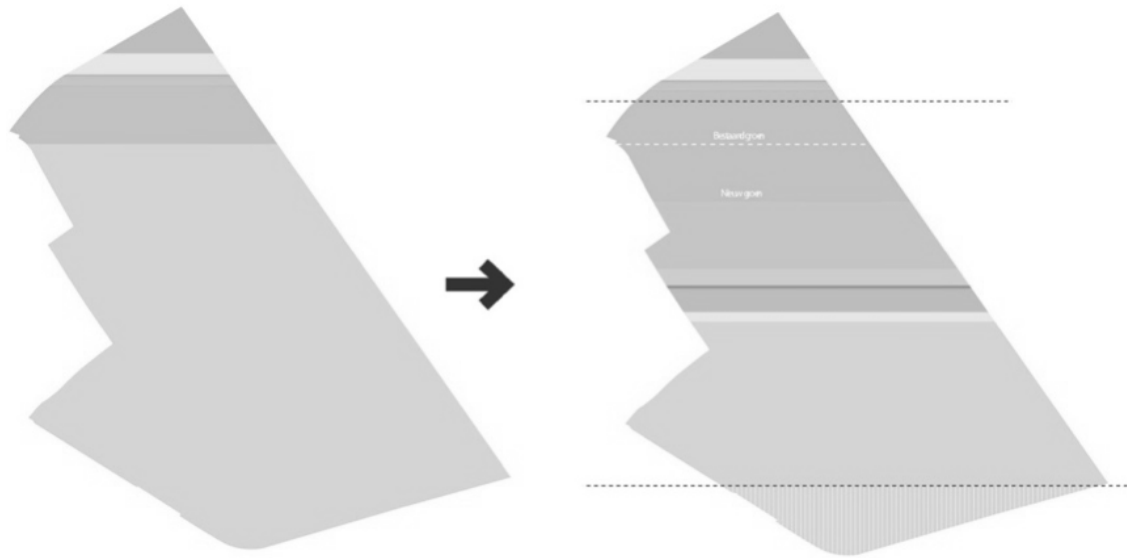
Figure 95: *The factual land-use subdivision in 2009, and the future subdivision according to the rules (20% buildings, 6,5% pavement, 20,5% of public green, 2% water, 51% urban-agriculture).*
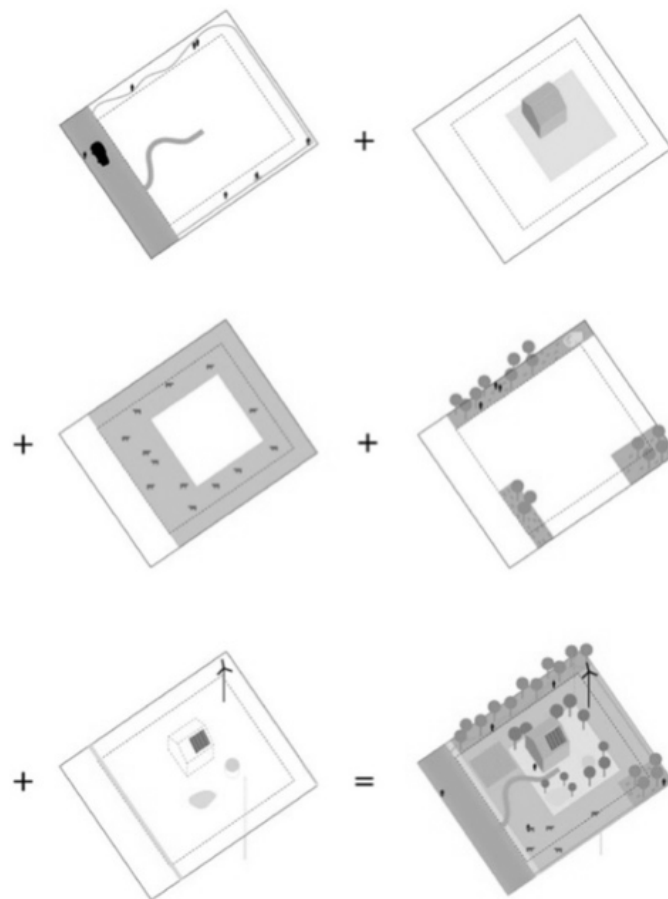
Figure 96: *Rules regarding the construction of a single plot. First, initiators build road, Second, initiators place their building in the middle of the plot. Third, 50% of the land is for agriculture. Forth, initiators build public spaces. Fifth, initiators are responsible for energy production and sanitation.*

T1

T2

T3

T4

Figure 97: *An evocative simulation of the incremental and organic development process and a possible emergent spatial configuration (MVRDV, 2011).*

Figure 98: *An evocative figure representing a possible emergent configuration of public spaces in Oosterwold (simulation; MVRDV, 2011). This is an evocative image which shows how the public space may emerge overtime according to the rules of the game and initiators actions,*
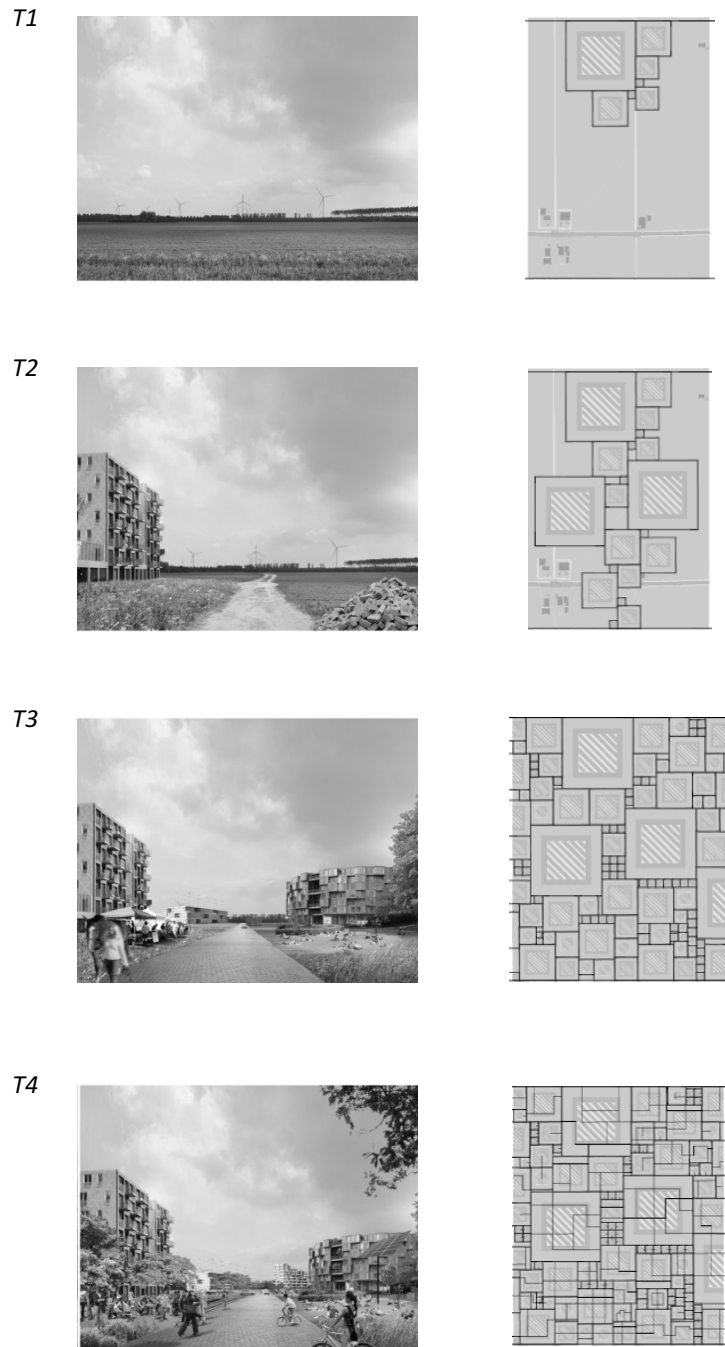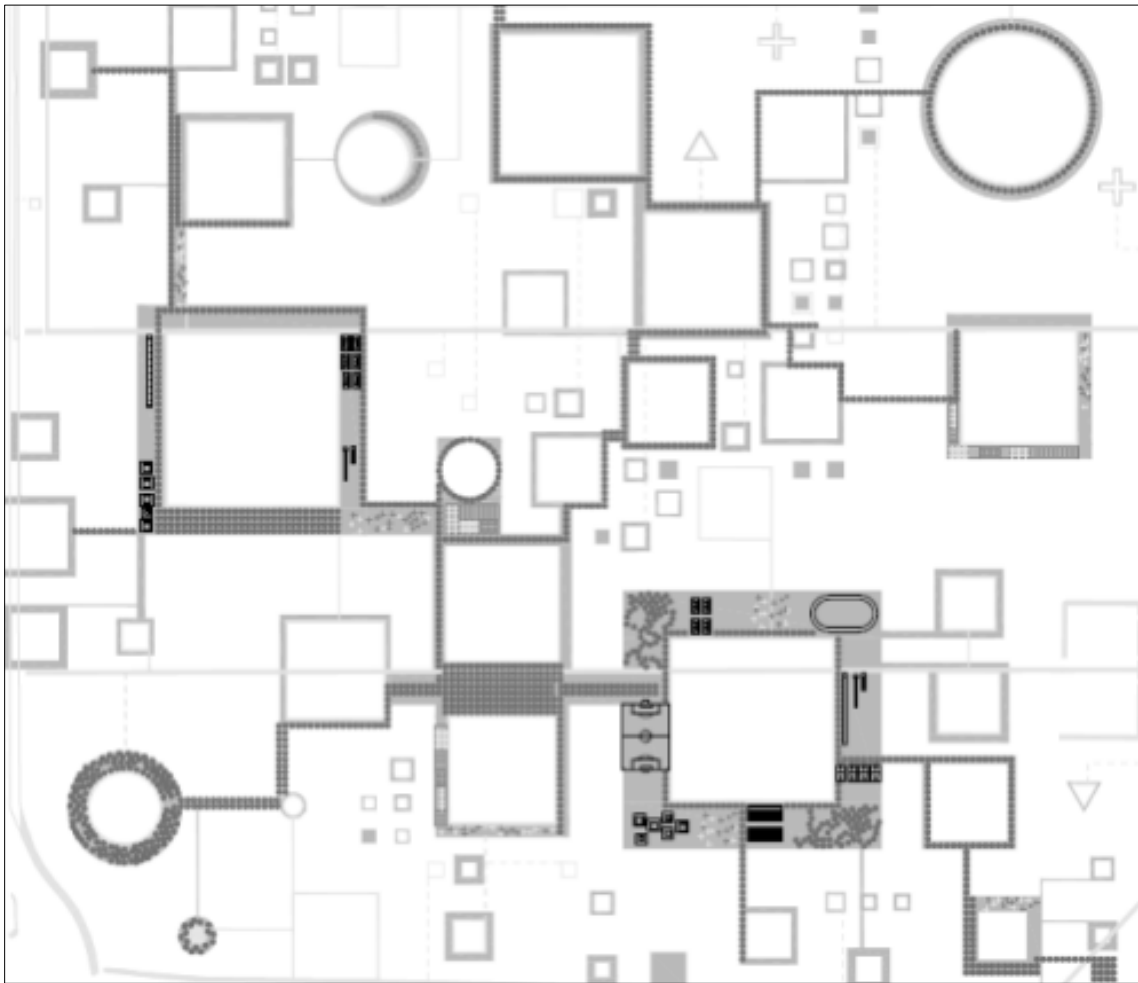
4.3.3 The development process

The process starting from single actions[104]

Premise: for organizing and manage the spontaneous development of Oosterwold, the public agency provides a map in which are represented the locations of different initiatives as well as their phase of development. Each phase is marked with a different color. The map is shared and visible online (www.maakoosterwold.nl). Initiative are marked with four different colors. Each color represents a specific phase of the development process: phase 1 "declaration of interest", phase 2 "latter of intent", phase 3 "agreement", phase 4 "building permit".

Table 15: *Plots development process in Oosterwold.*

	Phase I: *Declaration of interest* An initiator in Oosterwold starts the process placing a green dot on our map: the initiator indicates a preferred location for his plans, without knowing exactly the shape or acreage of the plot. This phase gives the initiator the room to think his plans without a formal agreement on the plot.
	Phase II: *Letter of intent* When the plans are getting more concrete, the initiator signs a letter of intent with the public agency. At this stage contours and acreage of the plot are clear, so the plots are marked on the map with the red lines. The public agency calculates the costs of the plot. The total costs for the plot to be paid by the initiator consist of two elements: the land price and a contribution in the costs the government has to make in order to develop Oosterwold (kostenverhaal). This contribution is meant for the organizational costs, but also for future costs: for example, widening public roads in case of evident problem of traffic congestion.
	Phase III: *Agreement* Two months after signing the letter of intent the public agency and the initiator sign an anterior agreement. With the anterior agreement the initiator is obliged to develop the plot according to the rules of Oosterwold. The anterior agreement also obliges the initiators to pay the contribution in the costs as aforementioned. After signing this agreement, 10% of this contribution has to be paid. On the map plots are marked with yellow.

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[104] This section is the result of a meeting with J.E. Leeffers (Project Secretary of Oosterwold) and Ivonne de Nood (Area Manager of Oosterwold) in May 2016.

Phase IV: *Building permit*

After signing the anterior agreement, the initiator develops his final plan and applies for a building permit. After applying for a building permit, another 10% of the aforementioned contribution is charged. When the permit is granted, the purchase agreement between agency and initiators is signed and the plot is sold. At that moment the remainder of the contribution and the land price is charged. This is the moment in which start the phase of construction. On the map plots are marked with violet.

State of affairs (September 2016)

In September 2016, 7 initiators started to build a total of 42 houses. Another 30-40 initiators were expected to start before the end of the year and other 140 initiators have started the process for new developments. The transformation of Oosterwold is now slowly emerging following small initiatives (so far, plots average ranges from 1,000 to 3,500 m²). Three types of initiator are recognizable: the *self-builder*, a single initiator who directly build and develop the plot; the *cooperative*, self-organized initiators that jointly act to diminish certain collective costs (for instance the costs regarding energy production or sanitation, as well as the design costs, or procedural costs); the *real estate*, initiators who buy, organize, build and then sell plots to future inhabitants.

The development plans of all initiators can be observed on a website created by one of the initiators (http://oosterwold.donerler.net/).
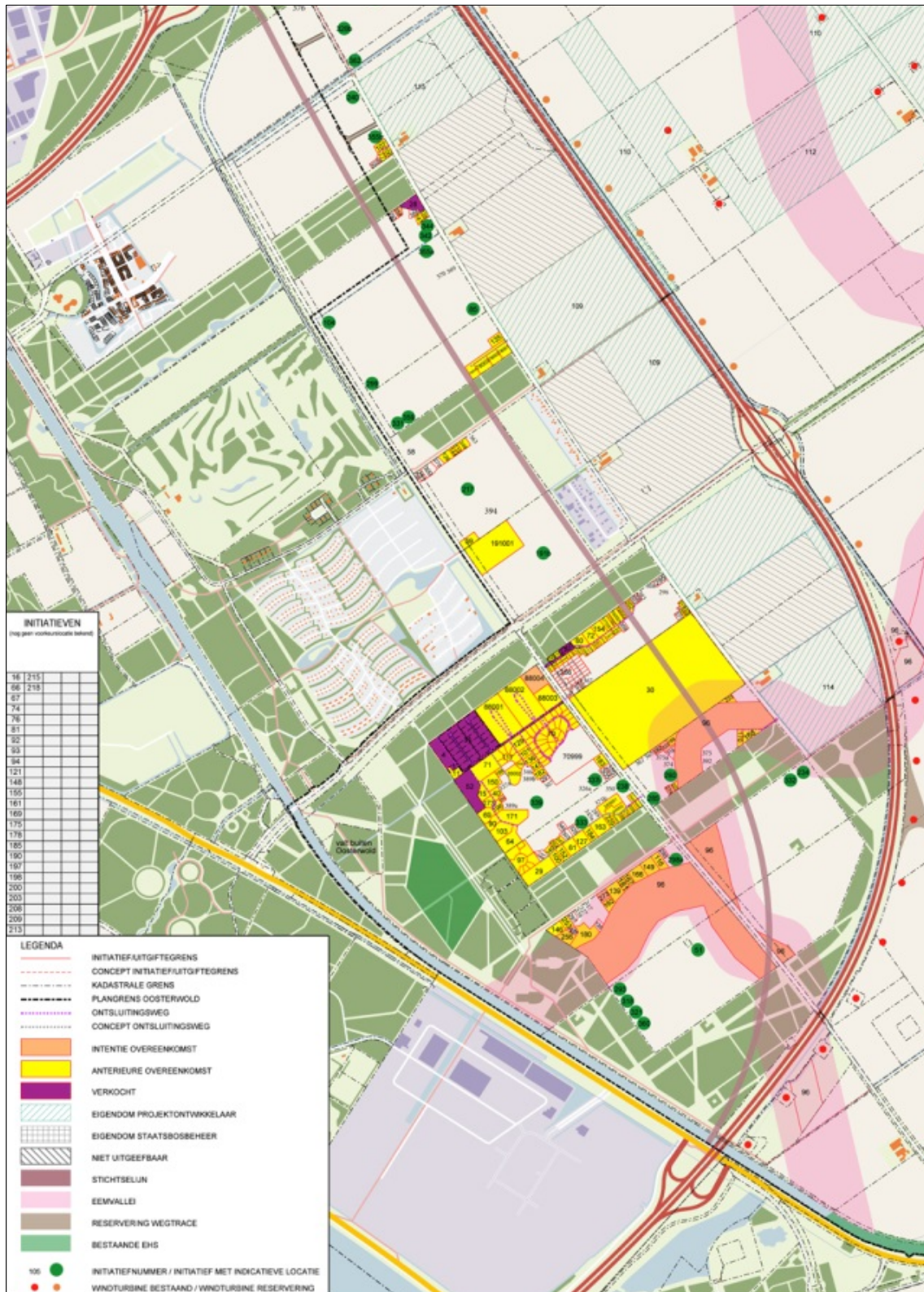
Figure 99: *Oosterwold development map. The development process and state of affairs in September 2016. Most of the actions are clustered (figure 100), while only few of them are dispersed within the development area of Oosterwold. The existing street crossing Oosterwold represents a crucial element influencing the localization choices of initiators.*
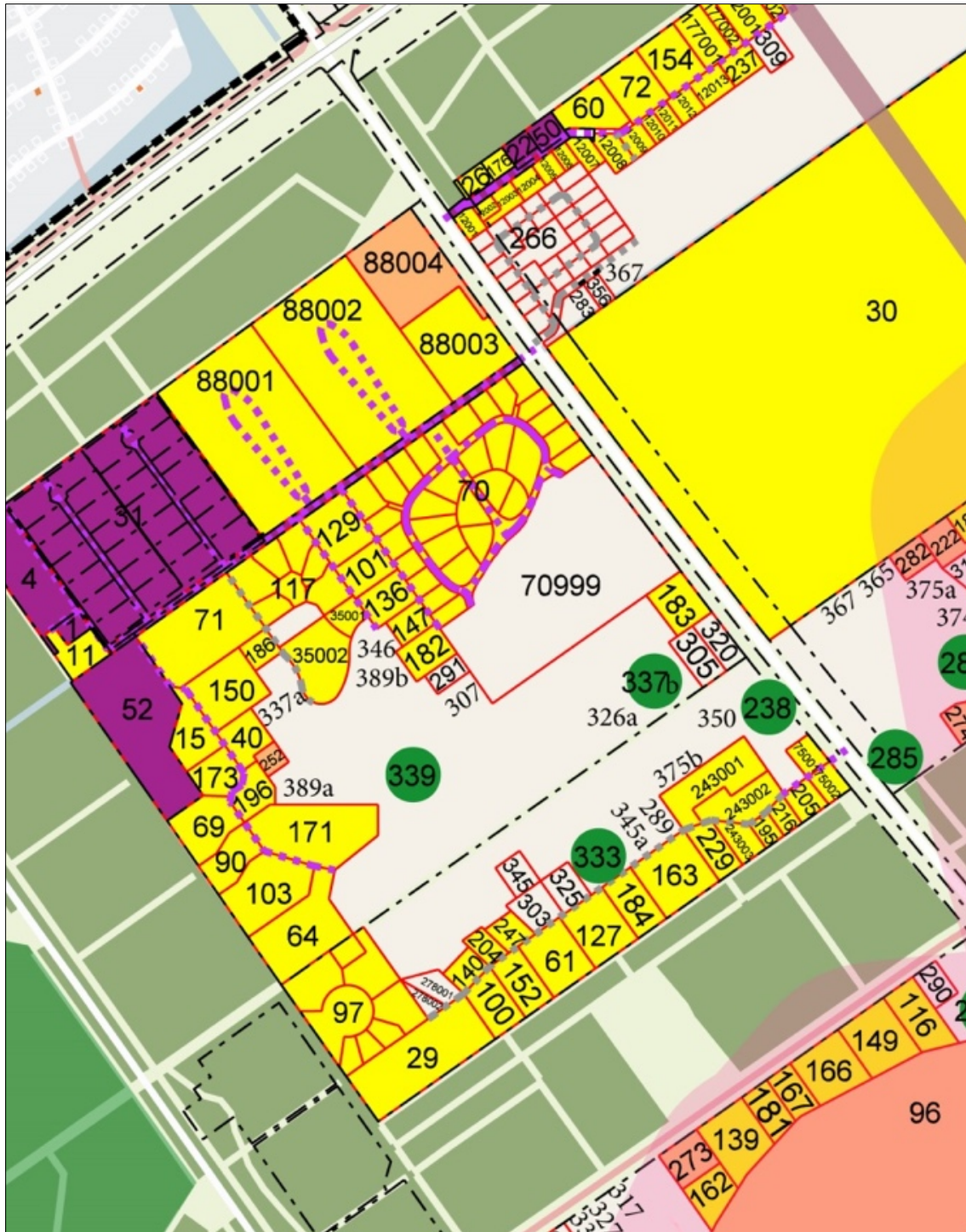
Figure 100: *First emergent cluster emerging not from the rules of the game but from people free actions. Extract of development plan (September 2016).*

Examples of the (already) built environment

Figure 101: *The preexisting street crossing the Oosterwold area. Photograph by the author.*

Figure 102: *The first road built by private in Oosterwold. The road connects the preexisting street to plot number 31. This road is managed through an association of initiators. The association organizes actions and interactions, facilitates road maintenance and shares all the costs among initiators. Photograph by the author.*

Figure 103: *Plots number 22 and 55. Photograph by the author.*

Figure 104: *Plots number 22 and 55. Photograph by the author.*

Figure 105: *Plot number 52. Photograph by the author.*

Figure 108: *Plot number 52. Photograph by the author.*

Figure 109: *One building in Plot number 31. Photograph by author. Photograph by the author.*

Figure 110: *Plot number 31. This plot contains multiple buildings and different properties. It is the result of one single design advanced by only one architect. Photograph by the author.*
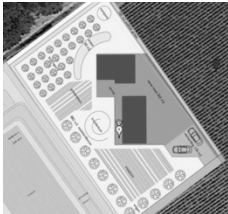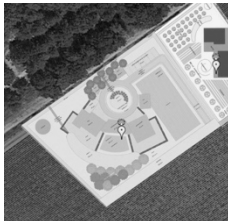
Figure 111: *Plot number 11. This plot has been built by a small cooperative and contains seven apartments. Photograph by the author.*
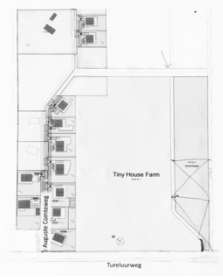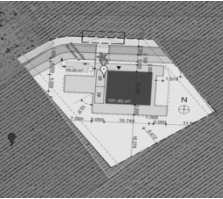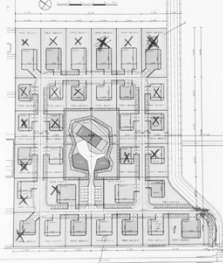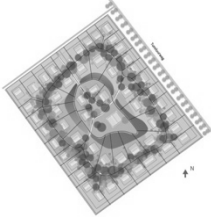
Figure 112: *Plot number 11. Although the buildings are still under construction, future inhabitants already live there in large camping tents. Photograph by the author.*

Existing building permits

Table 16: *List of building permits in Oosterwold (September 2016).*

Plot n.	Description	Design	m²
128	*Four Little dreams* "Large vegetable garden, orchard with fruits and walnuts, chickens farm and apiculture".	*(no image)*	1.600
141	*Fam. Waninge* "There will be a lawn for rabbits. There will be also chickens. The walls will be made with straw and a wooden skeleton".	*(no image)*	2.058
I78	*Landgoed De Grauwe Abeel* "Three familes with small scale activities. Bio-based materials will be used".		4.623
248	*Elements of nature* (no description)	*(no image)*	3.000
144	*Connected living* "The principles of permaculture are the base of our project".		1.420
126	*Back to the roots* "Our dream is to live free and self-sufficient. We will have a vegetable garden open to visitors and a B & B".		3.536
120.13	*Time out* "Vegetable garden, fruit trees and welmuts and breeding hens".	*(no image)*	2.000
154	*Noorderij* "We will have fruit trees, chickens, vegetables, berries and a pond".	*(no image)*	4.975

120	*Tiny House Farm 1* *(real estate project)*		
120.08	*Camperloft* *(no description)*	*(no image)*	1.435
120.07	*Villa Wijde Blik* "Corn, vegetable gardens and orchards".		1.080
30	*Tiny House Farm 2* *(real estate project)*		/
176	*Polderwoon* "Orchard, chicken farm, egg, onion, carrot, leek".	*(no image)*	1.300
233	*Sunset Boulevard* *(no description)*		2.500
70	*Buitenplaats* *(real estate project)*		/
70.022	*Buitenplaats Oosterwold* "Orchard, chickens and beekeeping".	*(no image)*	1.8757
70.027	*Buitenplaats Oosterwold* "Edible garden and chickens farm. Music laboratory and hand-spun wool. We are	*(no image)*	1.697

	open to initiatives to tackle together in the future".		
70.010	*De Buitenplaats, kavel 10* "We are going to build an energy-neutral bungalow with orchard, vegetable garden and chickens".		1.994
70.012	/ "Fully automated, energy-neutral bungalow. Fruit and vegetable garden".		1.411
70.015	*Martin en Else* "Our house has Fruit plants and walnuts".	*(no image)*	1.203
101	*Liesbeth* "Orchard, picking flower fields, agricultural strips and meadow with pitiful animals".	*(no image)*	3.500
117.001	*Giraffendorp Cathelijne & Theo* "Permaculture garden, fruit orchard, herb garden, chickens and goats. Table d'hote with products from our own garden".	*(no image)*	2.109
117.009	*Familie Dieke* "Plot for agriculture in the form of orchard"	*(no image)*	3.000
186	*Egel & Muis* "Small-scale horticulture (among others sprouts and kale) and orchard".		1.765
196	/ "The plan is to build a bungalow with wooden logs, 200mq plus garden shed and greenhouse".	*(no image)*	3.000
190	*Fam. Ehrhardt* "Energy-neutral bungalow, orchard with various fruits and a permaculture vegetable garden. The surplus will be traded".	*(no image)*	/

243	*Vrijplaats Freedôme Oosterwold*		14.183
	(no description)		
152	*De Secretarisvogel* "Mixed farming. I'm looking for people who want to do the work in exchange for a large part of the harvest".		4.000
166	*2 onder 1 kap Oosterwold* "Vegetable (permaculture), sheep, bees, etc.".	*(no image)*	6.000

4.3.4 Discussion

Framework-rules and action space

With Oosterwold the municipality of Almere is clearly promoting and favoring the realization of particular urban-agricultural lifestyles. However, it is a good example of large-scale development governed only by few public framework-rules (without previous public investments) relying on the evolution of emergent configurations.

The framework-rules for Oosterwold are mostly *generic* and do not refer to any specific spatial situations. Instead of having different regimes for different zones within the Oosterwold development area, the framework-rules are applied equally to the total area. The rules discipline the overall development of Oosterwold by regulating the construction of plots (for instance, by setting certain parameters that the plots must respect within their boundaries and the relation between neighbors). All this is reached by setting rules that mainly aim to avoid certain *negative externalities* (Moroni, 2012), and set few positive conditions to facilitate the creation of collective benefits (for instance: "the edge of every plot must be publicly accessible and at least two meters wide", etc.). So far there are not evident innovations in buildings design or construction; however, the preference for using *permeable* (or *open*; see chapter 3.1) rules effectively leaves more room for initiators to find new solutions, and experiment with innovative actions. This leaves space for the greater use of dispersed knowledge. Although all the plots will be mostly devoted to agricultural

activities, the way in which the framework-rules regulate the list of *permitted uses* within buildings allows for a large degree of *flexibility* to initiators, who can voluntary choose the use (or combination of uses) of their plots as long as they respect the requirements of the overall land-use subdivision. Therefore, over time, the spatial distribution of activities will be driven by social and market demand.

The transformation is *incremental*. The framework-rules last for twenty years, within which an independent (but at the same time correlated) succession of private initiatives will shape the emergent character of the area. All initiatives will be correlated to each other; in fact, to include new plots within the previously built environment, all initiators must meet certain conditions. These conditions will ensure the evolution of an overall *organic development* between different and independent initiatives (for instance, the creation of the road network, open green areas, pedestrian and cycle paths, etc.). In other words: step by step, each initiative will be inserted into a framework, respecting and reinforcing the evolutive process of transformation.

Invariants

The framework-rules introduce some conditions which tightly bind the future of Oosterwold, constraining the *range of possible actions* (and therefore, the range of possible emergent configurations). We call these conditions *invariants*. Such invariants are unmovable and stable conditions that must be shared by all initiators: their presence raises the level of predictability of future transformations toward certain known and desired collective situations. Obviously, as seen in chapter 3.3, the more use is made of "invariants" the less room there will be for unpredictable initiatives. In this regards, Oosterwold has only few invariants, three are of particular interest: (i) the assignment of particular prescriptions to three different areas; (ii) the total amount of buildable FAR (floor area ratio); (iii) and the overall land subdivision. Therefore, although the development of Oosterwold comprises a great degree of internal flexibility (and it closely relies on self-organization), to some extent, part of the final configuration of Oosterwold is already known since the beginning.

The first is a case of *spatial invariant*. Three areas have been withheld from free private initiatives receiving specific vocations: first, the *Eemvalley* that has landscape destination; second, an area preserved for *future railway* construction; third, an area indicated as *forest* prohibiting real estate development. Spatial invariants introduce stable conditions that do not complicate the transformation of Oosterwold; they are very simple and easily understandable.

The second is a case of *dimensional invariant* as regards the maximum density of Oosterwold. A Floor Area Ratio (FAR) of 0.5 is applied to the buildable area of each plot. This means that when and whether all the FAR is built, there will be no space for future expansions. In other words: the plan sets a clear limit on the future growth of Oosterwold, which compels the area to remain a suburb. However, after twenty years the rules may be re-discussed, with the possibility of increasing the FAR.

The third is a case of *performative invariant* as regards the overall land-use subdivision. This condition is more complicated than the others. The final configuration of Oosterwold (that will be reached through unknown future voluntary private actions) has to conform to a general and generic land-use subdivision (that is: 20% housing, retail, services and office buildings; 6.5% pavement; 20.5% of public green; 2% water and 51% urban-agriculture) which disciplines the final combination of aggregate actions. Moreover, the implementation of this process is complicated. On the one hand, the area manager has a fundamental role in organizing the initiatives; on the other hand, as the area is developed, the flexible space for new initiatives will decrease, and the implementation will become in its turn more complicated. In brief: with the passage of time, in order to obtain the general overall land-use subdivision, the range of possible initiatives will diminish, and the rules will be more prescriptive. In the meanwhile, this generic land subdivision could also encourage private actions since in this way initiators are aware of the kind of environment in which they will be living, and voluntarily will decide to live within that particular landscape.

The first emergent cluster

After almost three years, the spatial configuration of Oosterwold is now growing and emerging (mainly) along the main road built by the first initiators. Most of the initiators are step by step clustering together. This has two main effects: the decrease of certain costs (e.g. road construction and maintenance, energy production, etc.), and some practical benefits deriving from the proximity with other neighbors (e.g. similar interests for certain productive activities). What for many can be counterintuitive here seems to be clearly evident: although the initiators are free to build wherever they like within the 43 km^2 of Oosterwold, they are spontaneously choosing to cluster within a precise area giving rise to an order that, for many reasons, couldn't be predicted in advance. All the actions are reinforcing and stabilizing an emergent spatial pattern in which the main role is played by certain collective spaces that, otherwise, are hardly sustainable by single individuals or small initiators. Moreover, the process is also showing that land morphology is being kept unchanged, or in certain cases even reinforced, by initiators who place their small actions within an existing "natural" grid.

In short: so far, the development of Oosterwold has been structured by a process in which the actions of former initiators (and not a predetermined plan or zoning map) are influencing some peculiarities of upcoming or future initiatives. It may be that, with the passage of time, this system will also ensure the emergence of some very contextual rules (e.g. private rules between initiators, or informal rules) that nobody today can imagine or predict.

Table 3: *The incremental development of the first cluster in Oosterwold.*

Time	Spatial emergent configuration
July 2015	
April 2016	
September 2016	

Final remarks

The framework-rules for Oosterwold have been designed to allow a high degree of flexibility; however, inevitably, such framework-rules are top-down and imposed, while the aggregation of all initiatives (i.e. the final spatial configurations) is obviously emergent and bottom-up. Completely emergent configurations are by definition unpredictable and "beyond anyone control" (Polanyi, 1951/1998): evidently, this is not the case of Oosterwold. In fact, the emergent development of Oosterwold is influenced by certain *public conditions* which determine and control some salient aspects, for instance the agricultural vocation of the whole area. However, according also to some initiators' opinions, these conditions enable the action of private actors and the self-organization among different individuals having similar lifestyles.

Oosterwold is definitely an interesting experiment. However, some critical points could emerge during the development, for instance: the discretionality of the area director, and of the mayor and aldermen; the concrete contractual form and content of the signed agreements between the public party and the private ones; possible frictions between initiators for collective spaces construction and maintenance (for example, streets and green areas); or possible future disagreement between initiators and the public body as regards the interpretation and the definition of "agricultural land-use" (some initiators have already expressed doubts about the vagueness of such term; in their opinion, this can bring the public agency to behave in discretional manner, and favor some initiators over others).

Only at the end of the development process will it be possible to assess in detail what has worked and what has not in this particular experiment (and what is tied to specific local conditions and what is instead exportable). Further research and evaluation will therefore be necessary as the experiment proceeds and on its conclusion to express a more thorough critical judgment. The case of Oosterwold is not considered here as a "best practice", but as an interesting experiment, probably the most extreme in Europe, that surely requires assessment and monitoring. In brief, the experimental experience of Oosterwold is an example of how social-spatial emergent configurations can evolve even without any predefined order or masterplans, accepting the idea of spontaneity and simple rules.

PART FOUR:

Conclusion

Can two apparently contrasting ideas like planning and spontaneity - which most of the time are seen in contraposition - coexist in practice? What kind of planning conditions are more suitable to exploit the benefits of spontaneous actions? What kind of conditions are more effective in dealing with the emergence of undesirable negative externalities? How planners should cope with collective public issues?

After decades of comprehensive and technocratic planning certain evident limits are easily recognizable. Some regard, for instance, the impossibility to forecast future emergent opportunities and problems by means of detailed and highly prescriptive land-use plans, others regard the lack of flexibility or also the cost of complex rules. However, as the thesis argues, if we start looking at the city considering the *action* as a crucial element, some alternative and innovative perspectives on rule making and land-use planning can be advanced and promoted.

The main point is that the city should not be treated as a simple plannable object but as a complex one. This attitude has relevant consequences both in prefiguring future socio-spatial end-states and in rule-making. On the one hand, what we generally call "plan" should be standing for long-term developments leaving the room for internal flexibility. On the other, planning should embrace the idea of spontaneity providing simple planning rules. In other words, planners should provide a general framework within which spontaneous actions can occur producing emergent socio-spatial configurations. Obviously, this doesn't mean that all kind of configurations can be accepted or may occur; neither that we are neglecting the importance of urban planning. In fact, as the thesis maintains, the presence of certain rules is necessary to control the level of overall degree of spontaneity, and avoid the emergence of negative externalities or protect certain – let's say – "collective priorities".

In brief, planning interventions remain crucial but in different ways: first, to provide good rules for the private city; second, to plan/design the development of the public city.

By taking the issue of spontaneity seriously, the thesis is not declassing the role of public interventions in addressing cities' development but suggesting certain indispensable revisions. Such revisions regard, for instance, the reposition of our attention on what constitute the essential part of the city functioning: the action.

Starting from the theory of human action, the thesis looks at the city as the space and the product of actions. This interpretation gives rise to a dynamic relationship between institutions and actions. Although the issues of spontaneity in cities are today widely discussed, a deep understanding of how planning law can effectively include them (or not) is still underexplored. In the field of urban planning this lack shows a general underestimation of the role played by institutions in addressing city development and, above all, a deep underestimation of how planning rules influence actions and consequently the evolution of emergent configurations. Moreover, this lack shows also the progressive distancing of urban planning practice from the idea of the rule of law.

Three were the main aims of the thesis. First, understanding the nature and the genesis of different types of actions conditions, and the dynamic relationships between existing conditions, the development of new actions, and the continuous restructuring processes of

the institutional framework. With this first objective, the thesis underscores the peculiarity of planning rules in comparison with other different kinds of conditions. The second objective was to indicate some general planning principles including the idea of spontaneity. The third objective was about analyzing a practical example; in particular, comprehending the turn from comprehensive planning to organic development occurred in the last years in Almere, and then examine the extreme case of Oosterwold (with a particular interest for the rules of the game).

Aim 1: action conditions

Chapter two (i.e. "Rules") is composed by four sections: "action conditions", "how rules constrain spontaneity", "differences in rules" and "the reasons of rules". The main thesis of the chapter is that planning should above all provide certain conditions in order to enable the emergence of adaptable self-organizing systems. In other words, planners' intervention is not required to find the best collective solution, or to coordinate the complexity of the whole system; rather, planning interventions are needed to assist the self-coordination of the system and generate an institutional framework within which people may act and interact producing acceptable emergent configurations. However, as planning conditions are imposed on existing orders they may give rise to unintentional variations of the overall configurations. This happens because, in complex systems, it is arduous - if not impossible - to forecast how people will react to new conditions. Uncertainty is unavoidable (Moroni, 2012; de Roo et al., 2012).

Planning conditions are never placed in a vacuum, but they are imposed over preexisting conditions, most of them unintentional, which already enable agents' self-coordination and the use of dispersed knowledge. Differently from unintentional conditions, those provided by planners are by definition intentional. Following our interpretation, planning conditions can be distinguished between *material* conditions and *social* conditions. In the first case, we may think of certain *spatial goods* (e.g. streets, buildings, parks, facilities, etc.); while, in the second case, we may think of the *institutional framework* (i.e. planning and building codes, organizations, etc.). Therefore, in order to favor the development of spontaneous actions and the evolution of acceptable emergent configurations, planners can provide two different types of conditions: on the one hand, (i) good planning on public spaces to grant certain generative spatial goods (Gadanho et al. 2014; Porqueddu, 2015); (ii) good rules for private spaces that allow high degree of flexibility, experimentation and self-organization (Buitelaar et al., 2014; Slaev, 2014).

Planning interventions are relevant to address the emergence of good developments or favor the evolution of certain preferred situations in complex systems. However, it is exactly because the city is a problem of organized complexity (Jacobs, 1961) that only certain types of planning conditions which, at the same time, respect and enable self-organizing processes are better suited to deal with it (Moroni, 2015). In fact, certain planning conditions (and in

particular planning rules) can also stifle the use of dispersed knowledge, limit the development of innovative actions and negate the possibility to have flexible and adaptable spaces.

Aim 2: planning principles

The idea of chapter three (i.e. "Implications") was to provide certain basic principles to plan the evolution of acceptable emerging socio-spatial configurations. The chapter has three sections: "simple rules", "range of possible actions", "planning for spontaneity".

Actions are constrained by planning rules and occur within certain spaces having specific owners. The thesis studies two important factors that influence the range of possible actions in space: (i) the rules that favor the development of spontaneous actions (the thesis defines this kind of rules as "simple rules"); (ii) the relationship between actions and ownership systems.[105] From this perspective, the distinction between public owned spaces and private spaces becomes fundamental. This distinction is remarked with the concept of invariant. The main question is: which public principles should guide planning interventions?

In order to deal with such an issue, the thesis introduces the concept of *invariant* which is obviously and simply a label (I use the word invariant, but probably many other words may fix this idea too). What matters is not how we call this label, but what it represents. The concept of invariant emphasizes the dynamic relation between stable *public conditions* common to all agents and the flexible space for spontaneous actions of individuals using their knowledge, creativity and resources.

Public invariants are deliberately introduced by public bodies. Their role is to enable the evolution of self-organizing systems by solving certain collective interactions problems. As seen, invariants can be both social (for instance in the case of planning rules) or material (e.g. public goods such as streets, services, facilities, green areas, etc.), and regarding both the public city and the private city. Invariants should set precise boundaries between private *action space* and the respect of *civic/public goods*. In general, public invariants should be intended as a common infrastructure (both physical and social) introduced and governed by the public to reach the greatest overall space of spontaneous actions.

Planners have two main tasks: ruling the private city and planning/designing the public city. In the case of the private city planners cannot plan directly the actions of individuals but simply regulate their actions. This distinction is fundamental, and only if we start thinking in this way we can provide good rules which, as the thesis argues, should be as general as possible (i.e. not place specific or indicate precise solution or performance), accessible and binary-response.

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[105] The issue of property is not relevant only to distinguish what can be directly planned or not but, above all, to understand the complexity of cities.

The rules for the private city must be highly open and general even when it comes to regulate the density or the scale of actions.

Let's consider for example chapter 1.2 "Types of actions in planning". That chapter distinguishes between two main types of actions: *using* and *building*. In the case of permitted uses, planners should simply introduce certain negative rules regarding the externalities that individuals should not produce, and then let individuals self-determine the kind of activities they would like to pursue within their properties. In this way, the final distribution of uses will be market driven and emerging from the bottom. While, in the case of actions that transform the built environment the concept of alienation presented by Portugali and Alfasi (2007), for instance, can be a good guiding principle to limit the impact of new actions in order to relate them to the surrounding areas. Although the thesis doesn't test this idea in practice, this approach introduces interesting suggestions to deal with path dependency transformations. However, in general, when it comes to regulate the development of the private city, as maintained by Stefano Moroni and Besim Hakim, the use of general codes instead of locational specific rules is a valid alternative.

In this regard, the case of Oosterwold is a good example in ruling the permitted uses inside the buildings (they say you can place the activity you like apart from a short list of forbidden uses and certain negative externalities that must be internalized within the plots); whereas, it is not a very good example in ruling the use of the permitted uses of privately open spaces (50% of the land must be for agricultural uses – the term agricultural is too general, and many different interpretations can occur), neither in ruling the density of the built environment (the maximum FAR for all land is low and not open to further expansions).

Aim 3: Almere Oosterwold

Chapter four studies the case of Oosterwold. Although it is surely an interesting case, we cannot see it as a best practice but merely as a practical experimentation which re-discuss consolidated planning practices and offer valid suggestions and proposals for further researches. In this sense, it is not so important to underline that at the end of the development process Oosterwold will probably be another suburban area of Almere. What matters is to look at the innovative and experimental approach that the municipality is exploring and testing, and understand if it can be tested again, maybe with more experience, in denser and more complex urban environments. In general, one of the limits of this example is that the land is almost totally public and still not urbanized. Hence, it seems apparently easier to rely on emergent developments (I say "apparently" because we don't know other similar extreme cases, and therefore we can simply suppose that).

The experiment of Oosterwold offers three points which deserve to be emphasized and highlighted.

First of all, it is of interest to observe the rules that are effectively favoring the development of spontaneous actions and the emergence socio-spatial configurations. Such

rules are few, mostly simple, generic and prevalently negative. Moreover, public intervention is less an act of planning and more one of organizing and facilitating private actions.

Secondly, many small-scale initiatives are already taking place in Oosterwold and a first emergent cluster is visible. Whatever will be the final emergent outcome of the whole area, it must be kept in mind that initiators in Oosterwold are voluntary and incrementally shaping the environment with the chance to develop also very creative solutions. Initiators are collaborating to overcome certain "collective issues" such as, for instance, roads networks or systems of energy production (this is deeply unusual in our contemporary societies because these activities are most of the time provided by public actions). This process gives high responsibility to initiators who, supported by the local municipality, are coping with many practical issues.

Thirdly, as the case shows, planners are still important in addressing urban development but in a different way. Their work is more focused on the provision of action conditions rather than constructing closed and ordering final end-states. Thus, planners work with very flexible scenarios and high level of uncertainty, trying to enable and facilitate initiators actions and interactions.

In brief, the case of Oosterwold challenges planners to re-discuss certain consolidated approaches, suggesting radical and alternative solutions that pose more responsibility on people, and different (not less) responsibility on public administrations. In this regard, it is surely of interest to keep monitoring the evolution of Oosterwold.

New concepts and the need for further investigations

The way in which the thesis is developed puts more emphasis on Part Two "Problems and proposal" rather than Part Three "The Dutch experience". Although in the last three years many cases and examples have been observed and studied, the first part of thesis develops a theoretical framework which is mostly based on imaginary and logical reflections. Moreover, it introduces some new concepts. Among them, I think two would deserve further investigations.

The first concept regards the non-obvious relation between *simplicity of rules* and *spontaneity*. In this sense, the thesis identifies certain rules-features that enable the emergence of spontaneous actions (i.e. generality, accessibility and binary-response). Despite offering extensive reflections on this issue, the thesis doesn't provide an effective method to evaluate the degree of simplicity or complexity of rules systems. Therefore, in future, it will be of interest to develop a workable and practical method to evaluate the degree of simplicity or complexity of planning rules systems. In this regard, I believe that lot of work is still to be done in order to transform the idea of simplicity of rules into a practicable alternative to today's planning rules.

The second concept is that of *range of possible actions* and, in particular, how the distribution and the composition of properties may influence the evolution of emergent configurations. In this sense, the main issue that needs to be addressed is to observe if certain types of ownerships configuration and organization discourage spontaneity or vice versa, and see what can be done to overcome this kind of problems. For example, think about large-scale developments result of comprehensive plans and master plans like the first neighborhoods built in Almere in the '80s (chapter 4.2). If the case of Oosterwold demonstrates that with certain rules it is possible to have spontaneous developments, we still don't know how we can turn entire existing neighborhoods that are the result of rigid, hardly adaptable and inflexible plans into flexible places for spontaneity. Although in chapter 2.2 the thesis discusses some ideas, I believe that this aspect poses very intriguing and important challenges for future researches.

Final remarks

In order to include the idea of spontaneity in planning, the thesis introduces some planning principles according to which emergent socio-spatial configurations may evolve over time. The proposed ideas and principles, however, cannot be directly applied in practice but they need to be declined and adapted to specific circumstances. In fact, we cannot think to have a quick and complete revision of the overall systems, above all in the case of planning rules. This lesson derives exactly from the observations developed all along the thesis (in particular in chapter 2.3 "Differences in rules").

In general, we cannot imagine to substitute the existing institutional world which has its own logic, history, and consolidated practices with a new, "perfect", and non-existing (but preferred) world that is the result of abstractions. This approach is unfeasible and undesirable. Rather, the adjustment of the planning system might take place slowly, step-by-step, any time there would be the chance to adapt the regulative framework. Hence, reasonably, the proposed revision could be reached only sometime in the future.

Lastly, the thesis looks at the complexity of the urban system from different standpoints. Specifically, it looks at the urban environment through the plural perspectives of actions. looking at the urban environment in such a way help us in recognizing the intrinsic complexity of the social system. The complexity of urban livings is unavoidable, and planners must deal with it. This can be done only if planners recognize certain limits within which they can act and operate efficiently. Outside these limits there is a world of structural ignorance. To cope with these evident limits, planners should prevalently focus on the creation of certain conditions that favor and expand spontaneity.

The recognition of these limits, as well as the recognition of dispersed potential and forces within society, is the first step to limit the negative effects of planning interventions, but also a good starting point to exploit the benefits of spontaneous actions within complex systems.

ANNEXES

Interview 1: Esther Geuting

(Innovative Director Municipality of Almere – September 2014)

Figure 113: *Almere City Council (2014). Photograph by the author.*

SC: Hi Esther, how is it going in Oosterwold?

EG: In Oosterwold at the moment 42 contracts have been signed. The first one was signed only on June 23rd. We can say that the "little shop" has opened very recently, while for a long time we have been discussing and talking about the rules of the game. In Oosterwold we use a little part of public law, but we work and have arranged the private law in order to facilitate new initiatives. […] There are a limited number of rules in the public law. Probably Oosterwold is the only case in Europe where there is not a map or a design that deal with the future: the consequences will depend on upcoming contracts and initiatives coming from new initiators.

SC: Which planning levels are involved in Oosterwold and in which sense you have only a limited number of rules?

EG: Beyond the national law there are only five basic rules that must be respected by initiators, and the municipality provides a contract of 46 pages where the private declare to be responsible for all positive and negative externalities. Oosterwold can be defined as an experimental garden that will contribute to discuss the rules of city planning in general. This is a combined project of the national government and the city of Almere which challenges the Dutch tradition.

SC: The Netherlands is famous for its rigid and comprehensive plans… How and why Oosterwold proposes a different approach?

EG: In the Netherlands, we have a long tradition of land use planning where local government prepares and sell the land influencing the right to build. We realized that this way to plan influences a lot private initiatives because municipalities tend to introduce always more rules. The result of this way to plan the city is that in the Netherlands almost all the municipalities are active in buying and selling the land with very restrictive requests. Nowadays this attitude has become risky. The 2008's crisis and the actual demographic transaction toward smaller families, as well as the increase of age. People get older and older. This leads us to think that we don't need as many houses and offices as it was projected ten years ago. The municipalities have a lot of lands to sell, but there are not as many buyers as before. Therefore, after years of active land policies (there aren't other countries in Europe with this strong tradition) municipalities are facing a bankrupt and new paths must be experimented. Today it is interesting to think if it is possible to find a new path, a new experimental path, a new experimental garden. Oosterwold tries to open the debate. Let's try to follow this path and see what happen.

SC: It seems to be a radical experiment…

EG: I'm a planner, and from a theoretical perspective, we need to discuss the rules of the game in the planning field. So far in the Netherlands nobody have discussed the rules of the game before because we have had, and largely we still have, a given and strong path and everyone follow it dogmatically. But now the risk has increased too much and it's time to discuss this tradition critically. Oosterwold can become a leading example.

SC: What's the role of private initiators in Oosterwold?

EG: Initiators are responsible for everything. They can organize the things as they want. Every plot has the same amount of building rights, and the way in which privates organize the right to build is up to them. They must provide all that is needed for their transformation… roads, sanitation, public green, water… respecting the five rules we provide to them. What is important to us is that they will take responsibility for every externality. For instance, the shadow of buildings must remain inside the plot… or if someone wants to build

a chicken farm, he or she must consider a circle of smell-influence in a way that it won't negatively influence the surrounding areas.

SC: Can you explain what you mean with "right to build"?

EG: In the Netherlands we have the right to build comparable to the American right to build. In Europe we don't have this tradition, but in America the fact that you own a land gives you a specific right to build a small percentage of the land according to the land use plan which establishes where the right to build can be used or not. In the Netherlands we say that the owner of the land has the full ownership of the right to build, and therefore that the owner can automatically develop a certain amount of land. This principle can also be used as a financial model to develop the land. The Dutch right to build is very similar to the one you have in Italy: the difference is that we don't have a map and we don't either design how it will be used.

SC: How does the municipality interact with initiators?

EG: When a private has a project, and come to present it, we only check if it fits within the rules of the game. Thus, the initiator must be responsible for his proposal and must provide all the researches that are needed to develop the land…for example soil analysis and archeological conditions. The main principle is that the initiator must pay for all external effects, and this is something new in the field since before the government has always been used to pay all the costs to prepare the land. Now the initiator does it.

SC: Who owns the land in Oosterwold?

EG: In Oosterwold there are different ownerships. The land owned by the national government is about the 50% of the whole area, while the city of Almere is the owner of a smaller part. Nevertheless, the National Government has mandated the city of Almere to manage the process autonomously and to sell to private investors all the areas. However, in Oosterwold, there are also some other owners such as housing cooperation, real estates, and farms. Most of them bought the land in recent years because they expected that the city of Almere would have grown in this direction. After the crisis the scenario is changed. Now the value of the land is mostly defined by the public with a price which is independent from the market. Also, the right to build is lower; it is about the 10% of the land.

SC: Can you go a little more in depth with the issue of land prince? How much initiators pay the land in Oosterwold?

EG: The city of Almere has decided to sell the land for 16 euros for square meter, which is a very low price compared to the market. Before the developers bought the land for 80 euros

for a square meter. Now their land is somehow blocked because they don't want to build; otherwise, they will lose the initial investments. Over the price of the land, initiators must also pay other 15 euros for a square meter for the planning process and consultancy. Thus, the final price of the land is about 30 euros for square meter, that is a very low price…but, beyond this, privates must also provide all that is needed by themselves.

SC: Who is buying the land in Oosterwold right now?

EG: At the moment the smallest initiative is about 300 square meter and the biggest one 500 hectares. Among the 42 contracts stipulated so far, there are many different initiatives. What is important for the municipality is that they fit the rules of the game, and once the contract is done the initiator commits himself to respect what has been established together with the municipality. It is relevant to underscore that so far the 90% of them are proposed by privates and small operators, while only the 10% by real estates.

SC: If privates must provide everything by themselves, who is going to build infrastructures and facilities?

EG: People have to provide the needed facilities. However, if there is something needed for collective use which implies a huge expenditure we cannot think that private can do it by themselves. Thus the municipality keeps the money gained by the sale of the land by creating a kind of bank account in order to be ready for unexpected expenditures. Therefore, if the development of Oosterwold succeeds, and the municipality collects a sufficient amount of money, we could provide new facilities. For this reason, the municipality has set to evaluate the development constantly, and if it concludes that Oosterwold is not going to grow, or that new facilities are not needed, the municipality will give all the money back with interests to people.

SC: Who is the mind behind this challenging experiment?

EG: MVRDV is the "mastermind" of Oosterwold. This is a clear and challenging experimental garden that is unique in the planning field also because the Netherlands has a unique system hardly findable elsewhere. In any cases, I think we can all learn something from this experience. This is a place where the rules and the planning activity are widely and intensively discussed.

Interview 2: Jeroen Zuidgeest

(Project Manager, MVRDV, Rotterdam – September 2014)

Figure 114: *Mvrdv's office (2014). Photograph by author.*

SC: When and why the Dutch moved from comprehensive /integrated planning to the idea of "spontaneity"?

JZ: There is a long tradition in liberated and *light urbanism*. The first publication was presented 15 or 20 years ago… It is a kind of urbanism that appears and disappears: this is our starting point for the discussion. We did a project for the national government called *NL City* where we tried to look at the Netherlands as a city, and we proposed a radical view suggesting what needs to be planned and what not. So, we arranged a list of things that the government must plan and, consequently, all the other things that remain open to uncertain future. This is somehow the open track for *Freeland*. In general, when I think about urban planning, and this is a strong personal belief, everything is planned in a mediocre way. That's why it is much more interesting for us to think about only most important things such as

main corridors, parks, and infrastructures that need to be organized very well, and then all the other things can be left to individuals and collective creativity and intelligence…

SC: Have you ever applied these ideas in other contexts?

JZ: We applied this approach both for Freeland in *Biennale di Venezia* and for Oosterwold. We also tried to develop a research called *AnarCity* where we asked our self what would happen if planning suddenly disappear and people start to organize everything by themselves. Obviously, this is a counterproposal to the dogmatic and structured European way to plan cities in general, especially in the Netherlands where everything is highly controlled…but we are trying to image a new approach and give room to more liberty and creativity. Most of this challenging approach is included in a publication we did some years ago named *KM3*. For the occasion, we designed the country with only five lines, but I don't think you can do the same in Italy since everything seems to be more complicated there.

SC: Which are the rules in Oosterwold?

JZ: Most important is the vocabulary we provided for Oosterwold. We don't call them rules since rules mean planned again, but we introduced principles based on the vision of the project that means what we want to achieve in the area. These principles must be very understandable by everybody, from my grandmother to my nephew. For example, in Oosterwold there are three very important things. One is that you are free to do whatever you want, but you need to organize everything by yourself… liberty comes only with more responsibility; second, that you must maintain the quality of your land (agricultural land or green open land), and concentrate your building area in the center of the plot; the third thing is that you frame your plot with public accessible path in order to connect your plot with the neighborhood. That's all.

SC: Are these the only rules in Oosterwold?

JZ: Surely there are some national rules related to health conditions or whatever that must be respected (for instance gas network, waste network, water network…) but Oosterwold is changing the way we look at that. In fact, people in Oosterwold will be highly independent, and they will produce part of what they need. One of the effects is that they will probably pay less in terms of local taxes.

SC: What's the role of public institutions in Oosterwold?

JZ: All this is a sort of choreograph made by the public where private can find lots of space to act. For this reason, the public assumes a different role; it becomes a kind of, let me say, marriage maker, which tries to stimulate and combine people with similar initiatives and find

new innovative solutions. In Oosterwold we fixed a generic plot with similar percentages of land-uses and we manage the realization with a consultable software.

According to "NL city", in the Netherlands we need few things that must be governed: a good energy park (or wind park) along the cost that obviously we have to defend; a systems of river-parks which take care of water, cleaning and landscape; a central forest; a couple of good ports; and three main corridors. That's what we need.

Going back to Oosterwold, the generic plot generates enough freedom to do whatever you want in the building area…we don't define the functions because it's up to the people. You can do it by yourself or in a collective way. The only important thing is that everyone provides all that is needed to be self-sustainable.

SC: It seems a challenging and intriguing approach…

JZ: Oosterwold is a challenging proposal where there is a general idea based on how things will be in the future but, in the end, no one can know how things will exactly be since the development here is based upon a general strategy and not design. People have the room to express themselves, and they are obviously more creative of designers. That's why we just need to tell them what we don't want… and then someone else will find the solution.

SC: How is the process going right now?

JZ: It is beautiful to see that now the municipality is in a process to collect initiatives which are completely different from each other. All this can happen only if you give room to the market and offer to people the opportunity to propose also crazy things that a municipality can never suggest a priori. Moreover, this approach works in a period of crisis since the proposals are strictly related to feasibility. The municipality cannot predict the market.

SC: Is Oosterwold a special zone in The Netherlands?

JZ: Oosterwold is not a special zone in the Netherlands because there are many places where you can build almost everything you want. This approach can be promoted at any scale, but the only important thing is too fix what you don't want to change…certain "territorial invariants" and the rest in between can be left open to freedom and "do it yourself urbanism".

SC: From this perspective, it seems that the public has a completely different role…

JZ: The municipality is not the promoter of the strategy, we produced the strategy together, but then we leave space to the market and private developers who must provide all that is needed and contribute to spatial quality. In this sense that's why I define the municipality a

marriage maker: because it can stimulate the development and facilitate interaction between operators.

SC: What are the main effects of this approach?

JZ: The price of the houses here are also lower than other parts of Europe, and this is a specific feature of Oosterwold, but it is also true that after you build something here, you may take the responsibility to manage and maintain all the things. Moreover, what is interesting in our vision is that the quality of the space is strictly defined by people needs, their interests, and lifestyles. This is a completely different way to develop city compared to the way we have used to plan in the last decades. Our approach tries to go back to the past and look at how the historical city grew but applying all the techniques and the knowledge that we have today. By the way, Oosterwold is not a tabula rasa, but there are already some existing characteristics related to morphological aspects, landscape, and some operating farms. Thus, the introduction of strong but flexible principles is a kind of generative way for incremental development.

SC: Which are the main goals of your project?

JZ: Part of the strategy is to keep the agricultural landscape by maintaining the quality and improving the accessibility in order to make people interested in spending time there. We want to break the large-scale mono-functional landscape into one more mixed and attractive, composed by multiple initiatives. Therefore, Oosterwold is much more a transformation strategy rather than a masterplan proposal, which aims at organic development.

SC: How you see the future of planners? Is their job changed?

JZ: The role of planner is to create a vision and then a strategy to reach the vision. After that, planners must organize the tools and the software which may be able to guide the process. Liberated urbanism doesn't mean that you (planner) have less work but that you have to organize the work in a different way…by working inside the process without having strong and fixed design.

SC: I know that one of the most radical experiments regards, for instance, the production of facilities and services. Is it true?

JZ: About facilities… it can be affirmed that we have always been used to build schools first and then the community came. In Oosterwold the situation is completely different. The municipality can interact within the process and use one of the plots to build something according to collective needs…for instance a school. Changing the perspective, the same

discourse can also be made for private activity. Let's try to think about commercial activity; for instance, the realization of a new super-market. If you look at "neighborhood planning" there is a stupid rule that says that at every amount of household the municipality needs to organize a super-market. This is what we discuss in depth with *AnarCity.* Shall the government plans this kind of things or we may let them open to the market? In my opinion, entrepreneurs are smart enough to understand when there is the potential for a new super-market or not. Moreover, this rule is stupid for another reason since in the Netherlands there are many small entrepreneurs and they represent the biggest potential, the small grain able to produce activities and services at different scales. Thinking in terms of micro-scale of planning (that means to remain open to individual and small collective initiatives) allow to micro scale of economies, and therefore cultural and social network again, that is creating community and good neighborhoods.

SC: Can the same approach used in Oosterwold be applied in denser urban environment?

JZ: I think it is only a bit more difficult. Currently there two examples: one is realized, and the other one is more visionary. In Leyden for example we only defined building blocks and the streets, and within this framework private could do almost whatever they want. In our perspective, planners must organize the infrastructure, regulate the streets, the parking lots and the accessibility and connections. The second example is the *vertical village* project. The project is inspired by the "rooftop village in Taipei". In this case, we developed an interactive model as a base to liberate urban planning. You choose your house, you define the sunlight, the views, the exposition, you choose your plot according to what has been already realized, and then you start to work with the context. This is a way to have a more mixed typology of building according to users wills and the parameters we set. A program like the vertical village can be the base for parametric urban planning which can lead to a democratization of the field, guiding planning toward a new era where the choices won't depend exclusively upon personal decision and values. So, in my opinion, we can plan as we did for Oosterwold also dense urban context…Another example is *Column City* in Hong Kong was a completely self-organized dense urban block. We need to provide the tools and not the design anymore.

SC: If I get it, all this means that in your view everything in the planning field is changing… right?

JZ: Planners will be more important in the future but in a different way. They need to organize better what is needed to be organized at a certain scale, and then let the field open to micro-scale initiatives, both to the municipality and inhabitants. The local scale must remain as much free as possible to people and their initiatives. Beyond this, I think that it will be challenging and beautiful to provide and have an online platform with all the planning tools where people can interact and discuss how they want that the city looks like. This can be an instrument also for politicians to dialog with inhabitants.

SC: How new technologies are changing the planning practice?

JZ: Technology as Facebook, for example, or other kinds of instruments, can be fundamental for municipalities to become a real marriage maker, and work with the community. Thus, I think municipalities may work in this direction and provide "online table" where people can collaborate and negotiate, not only concerning planning transformations but also as platforms for collaboration between privates.

In any case, now it is time to see the city as a process not as a design, as an adaptable body. This is the major change.

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If we recognize the essential role of action in the city functioning (i.e. its creative role for innovation, the importance of localized knowledge, the need for perpetual adjustment and improvement of the built environment, the expansion and the growth of economies and services, etc.), we cannot plan and create the intentional and specific social-spatial configurations we like or desire (due to the unintentional effects of many actions interacting and the impossibility of collecting the dispersed knowledge); we can only create the conditions in which certain negative externalities are avoided and acceptable emergent socio-spatial configurations may occur and adapted over time. Such conditions regard (i) good planning on public spaces to grant certain infrastructures and (ii) good rules for private spaces that allow high degree of flexibility, experimentation and self-organization (i.e. rules that are simple, open, abstract and general, mainly negative, stable and easily enforceable).
After decades of comprehensive and technocratic planning, we can recognize certain limits and avoid them (i.e. the lack of flexibility, the problems and the costs of complex rules, the impossibility to forecast future emergent opportunities with detailed land-use plans). This doesn't mean that we may neglect the importance of public interventions in addressing cities' development, but that we need to revise some consolidated planning dogmas diffused all along the twentieth century, repositioning our attention on what effectively guarantees cities' survival and wealth: the action. From this perspective, the experimental experience of Oosterwold, as well as other cases of the so called "organic planning" in the Netherlands, are merely examples of how social-spatial emergent configurations can evolve even without the traditional zoning plan, relying on forms of spontaneous developments and self-organizing processes.

STEFANO COZZOLINO
THE CITY AS ACTION
The dialectic between rules and spontaneity