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THE EMERGENCE OF MORE-THAN-HUMAN COMMONS IN CONTESTED URBAN GREEN SPACES

an inquiry into the politics of two rewilded spaces in Milan

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Abstract

In recent years, increasing attention has been given to nonhuman presence in cities. This trend can be read as part of the increasing understanding of cities as spaces of inhabitation for humans and nonhumans as opposed to the former human-centric conception. Namely, the idea of cities as natureless spaces is being increasingly overcome and replaced by an ontology that accounts for their multispecies complexity.

Within this perspective, this thesis aims to investigate the political implications of this understanding, as well as how it relates to the theme of the Anthropocene and the development of a different approach to facing the environmental question that cities raise in their past and face in the present and future.

More specifically, it explores how the human and the nonhuman are co-constitutive in actions and mobilisations traditionally confined under the realm of the social and that takes place in the context of the city. Therefore, the main interrogatives that it aims to answer concern the way that the idea of urban nature is being constructed and its political implications.

To answer these interrogatives, it focuses on two urban green areas in Milan that underwent a process of spontaneous rewilding. The first one, Piazza d'Armi, is a former military exercise area that has almost remained untouched by urban development since the 15th century. In contrast, the second one – la Goccia – is a former industrial area where an urban forest spontaneously developed after the abandonment due to the ceasing of industrial activity. During the last decade, these spaces have become contested terrains between groups of citizens, botanical experts and associations that recognise the spontaneous nature that has emerged and developers who regard them as "empty spaces" awaiting development. These contestations and debates, therefore, also make these spaces emerge as spaces of 'more-than-human politics' and innovative 'more-than-human commons'.

By adopting a theoretical framework inspired by Actor-Network theory and adopting qualitative research methods (ethnography, interviews and content analysis), this work aims to illustrate how these politics unravel among the actors involved and how they represent an instance of more-than-human commoning. After the analysis of green spaces in the Milanese context, concerning the history and the struggles associated with them, this work aims at illustrating the contested character that these struggles assume and how these can be informative of a different idea of what constitutes urban nature, in light of the development of a different relationality between human and nonhuman.

Keywords

rewilded spaces, more-than-human, actor-network theory, urban nature, civic movements

Index

1 Introduction 8

1.1 Rethinking the human place in nature 8

1.2 Research questions 12

2 Conceptual and Theoretical Framework 14

2.1 The multi-faced concept of commons and its declinations 14

2.1.1 The origins of the concept and its first theorisations 14

2.1.2 Governing the commons 16

2.1.3 Commons as a political concept 19

2.1.4 The enclosure of the commons: primitive accumulation and the birth of capitalism 21

2.1.5 Commons in the urban context 27

2.1.6 The enclosures of the "welfare commons": Neoliberalism roll-back 28

2.1.7 From commons to *commoning* in the urban context 30

2.1.8 More-than-human commoning 35

2.2 Actor-network theory and Science and Technology Studies 41

2.2.1 Actor-network theory: the relationality of humans and nonhumans 41

2.2.2 We have never been modern 44

2.2.3 Some enduring tensions between Ant and Marxism 46

2.3 Urban Ecology 48

2.3.1 Conceiving the city as an ecosystem 49

2.3.2 The "four natures" approach and the emergence of *novel ecosystems* 54

2.3.3 The concept of *third landscape* between botany and architecture 56

2.4 The Political Character of Ecology 58

2.4.1 The social construction of Nature 61

2.4.2 More-than-human ontologies and multispecies perspectives 67

2.4.3 The concept of natureculture 72

2.5 Bringing together all the matters 75

3 Review of Existing Literature on Urban Nature 77

3.1 Researching urban nature from a global perspective 77

3.2 Emerging themes and topics in previous research on urban nature 78

3.2.1 Urban ecology – the multispecies city 78

3.2.2 Urban ecologies of the Anthropocene 79

3.2.3 The politics of Urban Nature 82

3.2.4 Green gentrification: the controversial use of urban nature for speculation purposes....86
3.2.5 Temporalities and historicity of urban natures....91
3.2.6 Enacting more-than-human commoning....93
3.3 In-depth: Berlin Urban Ecologies....95
3.3.1 The emergence of Berlin as a field of urban ecology....97
3.3.2 Histories of ecologies, war, indeterminacy and contestation in the brachen...97
3.3.3 Natürpark Schöneberg Südgelände....104
3.3.4 Park am Gleisdreieck....107
3.3.5 Tempelhofer Feld....113
3.3.6 A summary of the value of Berlin urban ecologies and biotope protection regimes 117
3.4 Where to go from here?....119
4 Methodology and approaches....121
4.1 Comparative studies - a relational approach....122
4.2 The selection of case studies....123
4.3 An immersive approach to the research....124
4.3.1 Entering the field....124
4.3.2 Some notes on the context....127
4.4 Qualitative data analysis....128
4.4.1 Content analysis and coding....128
4.4.2 Doing research through images....130
5 Green spaces in the context of Milan, a post-industrial city in constant transformation 132
5.1 Iconic “historical” parks....135
5.2 The modernist and soil-sealing urban development....137
5.3 The “modernist and green” development....139
5.4 Association-led Park Developments....142
5.5 Private green....144
5.6 Environmental struggles in the history of Milan....148
6 Piazza d’Armi and la Goccia: two ‘novel ecosystems’ that unsettle the conception of green in Milan....151
6.1 Piazza d’Armi, history and civic actions....151
6.2 la Goccia, history and civic actions....155
6.3 The socio-ecological assemblage of urban rewilded spaces....159
6.4 The institutional perspective on Piazza d’Armi and la Goccia....161

6.5 Differences and similarities in civic movements 165
6.6 Emerging sentiments on rewilded spaces among civic groups 174
6.7 The historical dimension and the more-than-human history of the spaces 182
6.8 The role of aesthetics in the construction of the spaces' imaginaries 185
6.9 Ecosystems as services, between anthropocentrism and activism 190
6.10 Pollution as a contested concept 193
6.11 Urban nature as a matter of more-than-human politics 196
6.12 More-than-human commoning as a learning process 201
7 Discussion and Conclusions 207
7.1 More-than-human politics and their role in re-conceptualizing urban nature 207
7.2 Thinking about commons from a more-than-human perspective 211
7.3 The influence of the context in mediating struggles 212
7.4 The ambivalent Anthropocene of toxicity and pollution 213
7.5 Where to locate the agency? 214
7.6 The benefits of approaching urban ecologies through a comparative relational approach 215
7.7 Addressing the limits of the nonhuman turn 218
7.8 Notes on limitations, contributions and possible research developments 219
8 Bibliography 223
9 Annexes 243
9.1 Content analysis codebook 243
9.1.1 Codes - Analytical coding 243
9.1.2 Codes - Descriptive coding 245

List of tables

Table 1 The concept of commons in classical economic theory 15
Table 2 An overview of the documents for the analysis 129
Table 3 An overview of the actants that are involved in Piazza d'Armi and la Goccia.....160
Table 4 Comitato la Goccia actions and strategies.....167
Table 5 Terrapreta APS actions and strategies.....168

List of figures

Figure 1 Capitalism and commons goal-orientation and values, according to De Angelis (2017).....24
Figure 2 The difference between commons as goods and commons as the relation of commoning 35
Figure 3 Anthropocentric and more-than-human conceptions of commons 40
Figure 4 The work of purification and translation (Latour 2011) 46
Figure 5 Paul Duvigneaud's Bruxelles ecosystem (source: Gandy et al. 2020) 50
Figure 6 Herbert Sukopp's zones of human influence in Berlin (Source: Gandy et al. 2020) .52
Figure 7 Alternation between long and brief term evolution processes (source: Clément 2014) 57
Figure 8 The spontaneous EX-Snia lake (source: Wikimedia commons).....80
Figure 9 The book cover of Joel Sternfeld – Walking the High Line 90
Figure 10 Informative signs and design adaptations in Südgelände park (Source: author's pictures) 105
Figure 11 Environment and more-than-human design in Gleisdreieck Park (Source: author's pictures) 109
Figure 12 Nonhuman life and regulations in Gleisdreieck Park (Source: author's pictures) 110
Figure 13 German Museum of Technology ERINNERUNG (memory) sign (Source: author's picture).....111
Figure 14 Different environments in Tempelhofer Feld (Source: author's pictures).....115
Figure 15 Informative sign about the presence of the skylark in Tempelhofer Feld (Source: author's picture) 116
Figure 16 A schematic representation of the more-than-human network of Berlin urban ecologies 119
Figure 17 Regulations and informative signs on urban nature in Milan (Source: author's pictures) 132
Figure 18 Location of Piazza d'Armi and la Goccia in the map of Milan (Source: Google Earth) 151

Figure 19 Piazza d'Armi location in the neighbourhood (Source: Google Earth) 152

Figure 20 INVIMIT announcement for the auction of the area of Piazza d'Armi. (Source: INVIMIT website) 153

Figure 21 Bosco la Goccia location in the neighbourhood (Source: Google Earth).....156

Figure 22 The evolution of the spontaneous forest of la Goccia, from 1975 until 2018. (Source: Terrapreta APS) 157

Figure 23 Pictures of rewilded nature and industrial remnants (Source: Dossier la Goccia) 186

Figure 24 Pictures from Piazza d'Armi (source: Le Giardiniere) 187

Figure 25 A possible suggestion for the future project of la Goccia (Source: Comitato la Goccia) 188

Figure 26 A possible project of Piazza d'Armi (Source: le Giardiniere) 189

Figure 27 Itinerario Bovisa to illustrate the "regeneration of the neighbourhood (Source: Milano Urban Center) 199

Figure 28 Images that depict and communicate the presence of triturus carnifex in Piazza d'Armi. On the right, the use of the symbol of the animal as an icon for the civic struggle (Source: le Giardiniere) 202

Figure 29 Mapping la Goccia forest (Source: author's picture).....203

1 INTRODUCTION

1.1 Rethinking the human place in nature

A recent emerging topic that has provoked much discussion is the "liveliness" of cities, a kind of liveliness that goes beyond human life. Especially during the COVID-19 pandemic, this lively dimension is something that is irrupted in the urban scene and also from the perspective of those that were not familiar with the debate. Images and videos that depicted the "return of animals" in cities around the world during the first month of generalised lockdowns due to the spread of Covid-19 can be considered a key visual representation of these trends. Besides constituting "unusual" pictures, this phenomenon just made more visible something that was already a characteristic of cities: the fact that cities are (and have always been) full of nonhuman life (Franklin, 2017; Metzger, 2015). Moreover, during the lockdown, the presence of spaces for the nonhuman in the city became even more of an object of attention, the fact that parks and green spaces acquired a fundamental to support the physical and mental health of urban dwellers, constituting open-air spaces for recreation (Rodgers 2020; TU Berlin 2020). This, therefore, gave rise to a new impetus to the imperative of caring for nonhuman life in cities.

However, the pandemic situation and the consequences that provoked only represent the tip of the iceberg of the reasons why nonhuman life in cities is also worthy of attention. The most important one is the fact that, in the era of the Anthropocene, rethinking the idea of the city beyond given paradigms, with a specific focus on urban nature, has become imperative to redefine the relation between the human and the non-human and the production of new ecological knowledge (Gandy 2018). In other words, this change of paradigm has a direct impact on the very idea of what constitutes a city, how to accommodate nonhuman life in this context and how to overcome the human-centric roots in planning.

At the same time, it must be affirmed that the demand to answer to this imperative was already present before the COVID-19 pandemic. For instance, the central theme of the Venice 2021 Architecture Biennale – which was postponed for a year due to the pandemic situation – was also connected to more-than-human life and, more in general, how to 'make space' for the non-human in the urban context. It is quite significant that it was titled "How will we live together?" – meaning not 'together

after the pandemic situation' but referring to the general more-than-human complexity. Nevertheless, its emergence in the context of the Venice Architecture Biennale also only represents the most visible 'public' instance of the debate that was already taking place in the academic context.

Before introducing this debate, it must be noted this trend can also be seen as a response to the fact that this particular ontological aspect of the city has been ignored for most of the time due to the implicitly shared idea that the city constitutes an environment "for the human". For a long time, urban sociology – especially in the earliest works of the discipline – represented a field of studies that could have also been defined as "the study of the humans in the city". In other words, urban sociology has mostly been characterised by a human-centric framing of the object of study, conceiving all the surroundings as merely the "environment" inside which human action takes place (Catton & Dunlap, 1980). It is, therefore, also from this perspective that the city emerges as a space that is mostly artificial, as opposed to the wild environment that stands outside of it.

It was, therefore, with the rise of the socio-environmental question that renewed attention towards the environment also emerged in the sociological disciplines. Especially after the rise of the concept of the Anthropocene – or, more precisely, the Capitalocene (Moore, 2016) – the environmental dimension of social processes is something that vividly emerged, helping to challenge the dualism that is at the roots of the ecological crisis (Gibson et al., 2015), making evident how much the environment and the ecologies are "social" other than "natural". The relationality with resources that have characterised the rise of modernity hence had an impact on the ecology. That is why this research inserts within this field of inquiry, aiming at researching the interconnectedness between the human and the nonhuman, but also how these two are always in the process of co-dependence. The increased visibility of animals during lockdowns is hence only the most visible aspect of the multispecies city: plants and other forms of vegetable entities – as well as other critters like insects and fungi – are also abundant in the city and are responsible for the production of what can be defined socio-ecological assemblages.

Nevertheless, the strategy I aim to adopt does not involve a radical abandonment of the sociological perspective or the categories and concepts that are characteristic of the discipline. It is rather a matter of adapting them to a new sensitivity, which integrates the perspective of the nonhuman. To perform this choice, I decided to follow

the concept of commons. By combining the concept of commons and ecology, I would like to suggest that the second is intrinsic to the first – since the idea of commons in itself is an interaction between actors and their environment. I will illustrate how thinking and speaking of the commons is representative of a certain way of thinking and relating between people and between people and the environment. That is why they constitute a valuable starting point to spur a reflection on the ecological crisis and the general relationality that people have towards the environment, in opposition to the capitalist ordering of extraction, exploitation and enclosures (Sevilla-Buitrago, 2015), both towards people and the environment.

Another implication that the adoption of this new perspective puts forward is the political character that the environment itself assumes: it, therefore, ceases to be the space that contains the politics, becoming the object of politics themselves. To this extent, the action of social movements, activist groups, citizens committees and similar actors is something that is becoming increasingly evident.

Therefore, to observe these dilemmas and issues, I decided to take a radical approach in this work, and, in contrast to the traditional tendency of urban sociology, I decided to start from what has never mainly been the object of study: the nonhuman. In other words, I start my inquiry from the post-industrial ecologies in the city, a feature that specifically emerges out of the 'ruins of capitalism' (Tsing, 2021) – out of the ruins (both literal and symbolic) of the human-centric idea of the city as a space for human activity. In fact, besides emerging in the ruins of the positivist thinking associated with the idea of modern progress, they materially take form among the ruins in their materiality of spaces that have been abandoned by human activity, constituting opportunities for novel assemblages that merge the social, cultural, economic and political spheres.

In short, the main premise of this research and idea that aims at exploring is the fact that these rapidly evolving ecosystems constitute new socio-ecologies. The attention is hence turned to the situations in which these novel socio-ecologies are (re)discovered, breaching towards a novel understanding and construction of what constitutes nature and how it is deeply interconnected with what is usually defined as human. If the concept of the Anthropocene has highlighted that human activity played an impact in the transformations of the environment and ecologies, is it possible that also the opposite holds true? In this work, I would answer affirmatively to this

question. In his turn, the environment also plays an influence in shaping and determining what is usually defined as the realm of the human (Haraway, 2016).

In other words, what I aim to suggest is the development of a sociology that is also spatial. Inspired by Massey (2015) and Löw (2016), I aim to consider space – or, in other words, the environment – as a key determinant for the development of humans. It is, therefore, in this light that this research aims at seeing whether or how these green paces – which often unintentionally emerged out of neglect – can play an influence in developing new critical perspectives that aim at tackling differently the ecological crisis, oriented towards principles inspired by the idea of environmental justice – both for the humans and the nonhumans. This will also be a creative process, given the necessity of finding new terms to speak about those spaces of spontaneous nature that emerge in the urban context (Gandy, 2022, p. 249).

Therefore, at first glance, the so-called "nonhuman turn" seems to address a gap that was present in social sciences – especially urban sociology. However, at the same time, such a reading can also be limited and not address the complexity of the reasons for this absence – as, for instance, the difficulties that are associated with the adoption of a similar standpoint that properly accounts for the perspective of the nonhuman (Bulle, 2022) At the same time, another limit concerns the de-politicization that the nonhuman turn might bring. The fact that the topic is being addressed at Venice Biennale does not only constitute an instance of the fact that the topic has become more and more prominent but also the fact that a plurality of actors can embrace it and portray a vision of the world where the focus on the issue (e.g. the Anthropocene as a general concept) removes the processes that lead to its creation. This aspect is also something at the origins of the tensions that exist between the Marxist perspective and ANT – especially concerning the late works of Latour. Namely, a radical Marxist critique accuses ANT of creating descriptions where politics are removed. As Pellizzoni (2019a) notes, Latour (2018) – despite criticizing modernity and the élites – "succeeds in the miracle of never evoking capitalism or neoliberalism". In other words, he suggests that the "limits to growth" are something that also characterizes a new form of capitalism emerging from the '70s.

To sum up, the nonhuman turn poses theoretical, epistemological and political challenges. It is taking into consideration all these different layers that this thesis aims at addressing this turn, constituting another inquiry into how it can be implemented and what insights it can produce by also paying attention to its limits and drawbacks.

I will hence adopt a multidisciplinary approach towards the urban, which attempts to blur the rigid academic boundaries between disciplines. In fact, talking about nature in the city has mostly been a task for geographers or ecologists. For instance, several studies that have been conducted focus on the urban environment and how spontaneous nature emerged from a spatial and physical perspective (Gandy, 2002, 2017, 2022; Harvey, 1993; Jasper, 2018; Lawton et al., 2019). Similarly, ecology focused on those ruderal ecologies and plant and species succession within these new ecologies. Following this trend, I also aim to suggest that multidisciplinarity could also be a feature of a renewed approach to urban sociology that takes into consideration the emerging complexity that derives from the abandonment of the classical human-centric perspective on cities. To pursue this ambitious strategy, I will mainly base my reflection and frame of analysis on the Actor-Network theory perspective, as one of the perspectives that can also be considered part of the sociological approach and one of the most promising attempts to incorporate the agency of the nonhuman in the sociological theory.

1.2 Research questions

In light of these premises and issues that have been raised in this research, the aim is to guide the inquiry starting from these questions that are raised:

- How does urban nature contribute to shaping the city and its imaginary?
- How does urban nature emerge as a matter of politics in the city?
- What can be learned by looking at urban green spaces through the lenses of the commons?

And, as further elucidatory questions, it will ask:

- How does urban nature(s) are enacted or opposed by actors (municipality, developers, citizens committees, associations and organizations) through practices, policies, and politics?
- Who are the actors that mobilize and produce visions towards the definition of what is denominated as ‘urban nature’?
- How does nature emerge in the contemporary city, and how does it relate to pasts images of the city?

- How does urban nature acquire the character of a commons?

Besides inquiring how these questions relate in light of the overcoming and the presence of the dualistic thinking that separates humans from their environment, my intent, in general, is also one of testing the growing more-than-human theory to read the city by applying it in a novel contest (Milan) that has not been yet studied with these lenses, since – as I will highlight in the analysis – has been mostly characterised by a dominant human-centred approach towards the definition of the city as a *natureless* entity. This, therefore, influenced the general theoretical orientation of the research, given the fact that the theoretical dilemmas that have played a fundamental role in influencing its structure and reasoning.

To pursue these goals, I will first present the theoretical and conceptual framework that I will adopt to guide the inquiry. Then, I will present a brief overview of some literature that is inspired by similar theoretical understandings, noting the aspects that demand further contribution. After this chapter, I introduce the methodology and research strategy that I will adopt. Then, I will move to the presentation of the results of the inquiry. In the first chapter, I will make a brief socio-historical analysis of the theme of green spaces in the Milanese context to provide a grounding for the inquiry. I will then move to the analysis of the struggles that originate around the two rewilded spaces, concluding with some reflections on the contribution that it might make to the general topic in light of the research questions that I posed.

2 CONCEPTUAL AND THEORETICAL FRAMEWORK

2.1 The multi-faced concept of commons and its declinations

The concept of commons is a buzzword among many disciplines and approaches. It is a concept used by academics, policymakers, municipal officials, citizens and activists. This extensive use of the concept by a plurality of actors also mirrors a plurality of meanings and declinations, which might not necessarily converge. That is why affirming that green spaces constitute commons brings different meanings and ideas according to the actors and the adopted theoretical framework of reference. This section aims to illustrate this complexity and how different declinations of the concept emerge, clash or converge. To do that, I will first provide a brief overview of the main approaches to the concept of commons. Then, I will discuss their potential and limitations. Finally, I will illustrate how I conceive green spaces as more-than-human commons, discussing how it relates to the widely adopted definitions of the term and how it can contribute to the novel declination of the concept, which aims at including the agency of the more-than-human. Because of this, I aim to shed some light on how the concept of commons – instead of merely constituting a way to classify resources and goods according to the classic economic theory – can constitute a complex concept that fosters reflections on different world views with radically transformative potential.

2.1.1 The origins of the concept and its first theorisations

To start the discussion, it is necessary to develop a reflection on the meaning of the concept of commons and where it originates. It could be noted that the concept, in its dominant use, originates in classical economic theory. Namely, in this theory, things and entities that people use as resources, and these are named and defined according to modes of behaviour: the behaviour of individual consumption (rivalrous) and the possibility of consumption by different people at the same time (non-rivalrous), the possibility of excluding people from the consumption of a specific resource (excludable) or the impossibility to do it (non-excludable).

	Rivalrous (prevents consumption by several people)	**Non-rivalrous (consumption by several people is possible)**
Excludable (it is possible to exclude people from the use)	**Private Goods** Clothing Bicycles Smartphones	**Club Goods** Cinemas Wi-fi (with password) Toll roads
Non-excludable (it is not possible to exclude people from the use)	**Common Goods** Fish stocks Forests Rivers	**Public Goods** Street light Squares City parks

Table 1 The concept of commons in classical economic theory

As it is possible to observe in Table 1, commons constitute all those goods that are considered virtually open to anyone for appropriation. Anyone could hypothetically gather trees from a forest, fish from a river or exploit the river as a resource. That is why in a framework that considers commons as scarce and harmed by the consumption of different people at the same time constitutes a problem. This problem has been defined by the biologist and ecologist Garret Hardin as the "tragedy of the commons" – probably the most discussed and controversial theorization of the concept, which also leads to different approaches depending on the positionality of the researcher towards it.

Developing this idea, Hardin suggests that there is a problem between the appropriation of resources by humans and the natural common wealth, which is understood as an unequal and precarious relationship. Because of this, Hardin believes that free access to common resources by humans inevitably leads to their depletion and destruction. As an example, he argues that if each person were allowed to retrieve wood from a forest or fish in a lake without any limit, the availability of those goods would be compromised irremediably – since "the world available to the terrestrial population is finished" (Hardin, 1968, p. 1243). Based on the idea of resource scarcity and the threat of their depletion by unlimited appropriation, he calls for actions to avoid this tragedy, like the action of putting those resources under state control or turning them into private ones, hence preventing their simultaneous use by different people. It is hence from this standpoint that the enclosure of the commons – in the form of privatisation or state control – becomes increasingly viewed as an inevitable necessity to prevent the unlimited exploitation by single individuals and

allow the preservation of those resources. In fact, similar arguments have been widely adopted, and they are at the base of many policies or calls to increase privatizations or state-control agreements to manage resources (Carraro & Siniscalco, 1993; Williamson, 2002; Wood, 1991), framed as necessary and inevitable.

However, this approach has many critical issues which will be reviewed in this thesis. Among these, one of the main ones is the fact Hardin's perspective is based on abstract and general assumptions rather than real case studies, especially regarding the real efficiency of private property or state control to prevent the depletion of the commons. As I will argue further in this chapter, this is an assumption that is not often verified, while the opposite – the fact that especially the privatization of the commons is what allows their depletion – is what mostly occurs. Hence, rather than a measure to effectively address the supposed tragedy of the commons, these measures have provoked the opposite effect of perpetrating unequal resource exploitation and depletion. The actual privatization of the commons can be conceived as the real tragedy, laying at the base of many environmental conflicts. I will present this argument further in this section, but first I will discuss the other popular perspective on commons, namely the governance of the commons described and theorised by Elinor Ostrom, who also criticizes the abstract character of Hardin's reflection and tries to ground the analysis of the management of commons in concrete empirical cases.

2.1.2 Governing the commons

After the one of Hardin, the other main perspective on commons is the one put forward by Nobel prize winner Elinor Ostrom. What is interesting about Ostrom's perspective is that fact of being different from Hardin's one by the adoption of a different standpoint. Namely, she argues that – in most cases – the free access to resources that Hardin adopts as the basis of his theory does not exist. Rather, it is more common to always find already present forms of regulated access in the form of resources governance created by the appropriators to avoid overexploitation. This form of regulation implies the existence of a series of norms and principles to regulate the access and the number of available resources to each appropriator. Alongside them, they are also sanctions in case they are violated. Finally, these principles are aimed at guaranteeing a sort of equity in the provision.

In other terms, even if it is not visible from an outer perspective, it does not mean that the government of the commons does not exist, as illustrated by the cases of commons management around the world that she presents.

In contrast with Hardin, the strength of her argument is the idea that to avoid the tragedy of the commons, informal institutions of regulations are also effective, going beyond the idea of privatization or an act of force of the state as the only feasible strategies. The joint administration of common-pool resources (CPR)[1] is a practice that, in several cases, is preferable, and it is expected to occur when communities face the dilemma regarding how to regulate access to common goods. Starting from this assumption, she illustrates the series of principles that render this appropriation and management possible for this administration of commons to be effective:

1. Clearly defined boundaries Individuals or households who have rights to withdraw resource units from the CPR must be clearly defined, as must the boundaries of the CPR itself.

2. Congruence between appropriation and provision rules and local conditions appropriation. Rules restricting time, place, technology, and/or quantity of resource units are related to local conditions and to provision rules requiring labor, material, and/or money.

3. Collective-choice arrangements. Most individuals affected by the operational rules can participate in modifying the operational rules.

4. Monitoring. Monitors, who actively audit CPR conditions and appropriator behavior, are accountable to the appropriators or are the appropriators.

5. Graduated sanctions. Appropriators who violate operational rules are likely to be assessed graduated sanctions (depending on the seriousness and context of the offense) by other appropriators, by officials accountable to these appropriators, or by both.

[1] With common-pool resources, Ostrom (1990:30) identifies the systems or entities that produce the common goods that can be appropriated by appropriators. Examples of these are lakes, rivers and forests.

6. Conflict-resolution mechanisms. Appropriators and their officials have rapid access to low-cost local arenas to resolve conflicts among appropriators or between appropriators and officials.

7. Minimal recognition of rights to organize. The rights of appropriators to devise their own institutions are not challenged by external governmental authorities.

For CPRs that are parts of larger systems:

8. Nested enterprises. Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organized in multiple layers of nested enterprises.

(Ostrom, 1999, p. 90)

These principles are hence not pre-determined, but what emerges after the analysis of the commonalities among cases of long-enduring systems of CPR administration. Compared to Hardin's theorising and discussion on commons, the proposition of Ostrom and the way she carries out her argumentation appear more solid and based on grounded empirical evidence. For this fact, Ostrom's theorization can be easily observed in many real-life situations across a variety of contexts and locations.

In sum, the theorisation of commons presented by Ostrom has gained bigger popularity, especially for its scalability. The examples that have been briefly discussed highlight how it constitutes a framework that adapts well to different contexts and is not limited to a specific historical moment of the management of the commons. Hence, it is not a surprise that it has been adopted both by a variety of scholars as an analytical framework also to inquire about commons in the urban context[2] and by governmental

[2] For instance, Arvanitidis and Papagiannitsis (Arvanitidis & Papagiannitsis, 2020)

officials as a mode of governance for the urban commons – like, for instance, in the Italian case of Patti di collaborazione for the government of the commons[3]

2.1.3 Commons as a political concept

The success of Ostrom's work and it is acclaim by a large number of researchers who study commons led to its consideration as one of the foundational works on the topic, especially for the merit it had in opening again the discussion regarding their nature beyond Hardin's need to put them under private or state control. However, according to some scholars, it presents several critical drawbacks that fail to address the inherently political character of the idea of the commons.

The main thing that has been criticised by these scholars is the starting point of both authors and the premises from which they develop their argument. For instance, in spite of their differences, one idea that unites Hardin's and Ostrom's theorisations is the fact of believing in the risk of the tragedy of the commons caused by appropriation. The fact that Hardin's theorising is based on the idea of capitalist appropriation and commodification of resources is something that is self-evident from a critical analysis (Harvey, 2011, 2013). But, as De Angelis (2017, pp. 67–68) observes, also Ostrom's argumentation is based on a dominantly economic perspective of resource administration. In other words, she also thinks that there is a problem with the idea of appropriation without questioning the principles on which different forms of appropriation are based. Therefore, in this logic, commons management of resources could potentially coexist in the capitalist scenario, constituting an alternative for the cases in which private or state management of a resource would be ineffective. Put differently, her critique of Hardin's thesis is based on empirical arguments rather than political ones (Mattei, 2015, p. 35).

Nevertheless, if both Hardin and Ostrom's perspectives are considered rooted in the general framework of liberal economics, what would be a political declination of the concept? An answer to this implicit question can be provided – according to De Angelis – by referring to Caffentzis (2004, p. 170) distinction between commons as endogenous social systems and commons as affected by external resources. Caffentzis, in fact, argues that Ostrom's conceives commons as endogenous social systems; in this

[3] On this regard, it is worth mentioning the work of Labsus (an association that works on the promotion of commons management regulations) and, in particular, the regulation for the management of the commons developed by Turin and Milan municipalities

way, a failure of the commons would be determined mainly by an internal failure in its management. In contrast to this – he observes – commons are often affected and influenced by external forces. The forces of capital and their way of appropriation of the commons could play a determinant role in their "failure" – like in the cases of an attitude of resources over-exploitation for capitalists' interests. In his words, Ostrom and her followers "see the problem of the commons as an issue of management requiring good institutional designs 'to help human groups avoid tragedies of the commons'"; from a different standpoint, "the anti-capitalist supporters of the commons see the struggle for a commons as an important part of a larger rejection of neoliberal globalising capitalism since it is the commons in the indigenous areas, in the global sense, and in the area of collective intellectual production that is now threatened with enclosures by a capitalism bent on commodifying the planet, its elements, its past and future" (Caffentzis, 2004, p. 169). Therefore, it can be affirmed that Ostrom accepts the existence of the tragedy of the commons, while anti-capitalist supporters argue that the core of this tragedy can be found in neoliberal capital dynamics.

It is important to point out that Caffentzis and De Angelis argumentation is not an attack on the validity of Ostrom's work. It can be rather conceived as a different perspective, which puts the political value of commons before the adoption of a purely economic perspective, becoming not only a principle to improve resources management but something opposed to the capitalist form of production and appropriation, which menaces their existence. In other words, they rather point out the social construction of the act of appropriation, which determines the modalities and the extent. This approach to the commons is hence more suited to inquire about the origin of neoliberal dynamics, how they are related to the appropriation and exploitation of the commons, as well as possible resistances to them that can arise. At this point, before leading to the idea of more-than-human commoning, it is necessary to expand on this perspective and the history of the commons it presents. Hence, I will first illustrate how the struggle between the capital and the commons initially took place during the process of enclosure of communal land. The main theoretical framework I adopt is derived from Polanyi's theory of embedding and dis-embedding of the market in society. I will then show how the welfare state – which emerged to curtail the detrimental consequence of the commodification that these enclosures generated – replaced the function that commons previously had in society and how its

dismantling paved the way to the institution of neoliberal thinking. Then, I will focus on how the roll-out of this neoliberal thinking has been possible through the governance of the urban context aimed at restructuring the provision of public services. After delineating the background of the analysis, I will inquire about the different contemporary definitions of commons and how they relate to neoliberalisation. In other words, I aim to illustrate how – to understand what constitutes commons in the contemporary period and how they can be declined in a more-than-human exception – it is necessary to understand the role that commons played during history – especially in the wake of the industrial revolution.

2.1.4 The enclosure of the commons: primitive accumulation and the birth of capitalism

The critique of the enclosure of the commons can be considered as a political declination of the idea of the commons to critique the rise of the capitalist system or the relation of appropriation and transformation of the world in stocks of resources. Returning to the very idea of the tragedy of the commons, these authors would argue that the main problem of Hardin's reasoning is the fact that it is based on a capitalist conception of society and appropriation. Firstly, he depicts men as individuals who act only according to their own specific interests, perceiving themselves as disconnected from each other and in a state of constant competition; secondly, he naturalises the idea that men as individuals have infinite needs in a finite world, therefore putting no limit to appropriation. In fact, it is coherent with the capitalist ethos of an individual, which has the goal to maximise infinite production and its profits beyond personal needs. But, most importantly, he conceives the cattle he uses for his metaphor as individually owned; if instead it were held in common, Hardin's logic of maximisation of individual utility could not be applied (Harvey, 2011, p. 101)

Grounding the reflection on conflict theory, it is possible to observe that many researchers started to develop the concept of commons by inquiring how it emerges as a signifier of what has been dispossessed through the social transformation that capitalism brought, especially since the wake of modernity and the industrial revolution. In other words, the relationship between pre-modern commons and capitalism can be considered as conflictual, with the latter emerging as the outcome of the appropriation of the first by those that will be defined as capitalists. The pre-modern commons are identified as the communal lands, forests and natural resources which had as whom could be defined as the main appropriators communities of

villagers – that can be called commoners – who relied on them for their subsistence (Standing, 2019, p. 3). In this section I will thus argue that the early enclosure of the commons comported a significant societal transformation that allowed capitalism into becoming the new ordering principle of relationship between people and people and things.

The appropriation of the common by the capital – according to critical thinkers like de Angelis and Linebaugh – can be defined as a slow revolution of the rich against the poor, carried out with the help and support of the state. Even if it is difficult to find a precise origin of the phenomena, it can be dated back to the enclosure of common land and its transformation into a private commodity during 15th century England after the dissolution of the monasteries (Linebaugh, 2008, p. 49). Namely, they constituted the eviction of the people from what constituted their means of subsistence of that time. These evictions have been carried out both in the logic of scarcity that Hardin used to justify the idea of commons enclosure, while –depriving commoners of their means of survival, it is what gave rise to pauperism (*ibidem*).

The logic of early enclosures described by Linebaugh can be considered in line with Marx's theory of primitive accumulation derived from the analysis of the second wave of English enclosures during the 18th century. Namely, primitive accumulation is the stock of resources – intended as both raw materials and labour power – necessary for the capital to begin its productive circle, and the enclosures have been the means to acquire it:

> "capitalistic production presupposes the pre-existence of considerable masses of capital and of labor-power in the hands of producers of commodities. The whole movement, therefore, seems to turn in a vicious circle, out of which we can only get by supposing a primitive accumulation (previous accumulation of Adam Smith) preceding capitalistic accumulation; an accumulation not the result of the capitalistic mode of production, but its starting point." (Marx & Engels, 2001, pp. 1019–1020)

That is because primitive accumulation allowed the enclosure of the commons/common wealth on which commoners relied for their survival, transforming them into proletariats that could sell their labour force. Besides

assuming different forms according to the contexts and the countries inside which it takes place, it is possible to say that the underlying ontology of expropriation happened in England in the classical form (*ibidem*:*1023*).

In short, what Linebaugh's narration of the enclosures of the commons and Marx's theory of primitive accumulation share is the idea that the commons – in the form of common wealth – were something that guaranteed subsistence to people and was responsible for a certain mode of societal organization. The appropriation of those means of subsistence by the capital was the key factor that allowed the emergence of a capitalist society, turning those that were formerly commoners into proletariats, who started to rely for their subsistence on a wage earned from labour under capitalist working relations. But, the other relevant thing was the fact that commons allowed the existence of a communitarian form of regulations and inventions of practices that determined the emergence of specific social structures and relationships. The mere access to resources was not enough to guarantee subsistence; it also required the organisation of the appropriation, derived from bottom-up regulations, which echoes Ostrom's descriptions of modes of the government of the commons. Hence, this system of rules for appropriation was responsible for a specific societal mode of organization, which required individuals to gather and come together, constituting a community. This was the form of survival and subsistence that the appropriation of the commons enabled. And thus, the destruction of the commons was accompanied by the destruction of this "fellowship of mutual aid":

> "Enclosures were not the only force in the creation of the land market but they destroyed the spiritual claim on the soil and prepared for the proletarianization of the common people, subjecting them to multifaceted labor discipline: the elimination of cakes and ale, the elimination of sports, the shunning of dance, the abolition of festivals, and the strict discipline over the male and female bodies" (Linebaugh, 2008, pp. 51–52).

This critique hence saw enclosures as destructive elements, not only for the land but for the customs and societal arrangements that were connected with the commons and the relationship between people and the land. At the same time, this mode of reasoning points out how the idea of commons as a mere set of resources appears

reductive. Therefore, rather than focusing on the materiality of the commons, it suggests to rather see commons more as a verb, as the action of *commoning*. This ontological shift, as I will argue later, is particularly relevant for the fact of making commons emerge as a relationship between people and things. Here, I limit myself to highlighting how this understanding illustrates how enclosures also inscribed a new logic in society and the end goal of labour, as well as a reconfiguration of the relationship between people and things.

To start delineating how this reconfiguration took place, it is fundamental to start with De Angelis (2017) distinction between the logic of the commons and the one of capital, by referring to commons and capital as if they were social systems. Grounding the reflection on Marxist theory, he affirms that the capital circuit involves the existence of a primary form of capital (M), which through the commodity [2] (C) increases its value (M'), putting money both at the start and at the ending point: M-C-M'. By contrast, the start and the ending point of a commons system is the commodity, which – when used for social reproduction – becomes a commons (Cs), giving birth to the opposite cycle of the capitalist system: Cs-M-Cs (Figure 1).

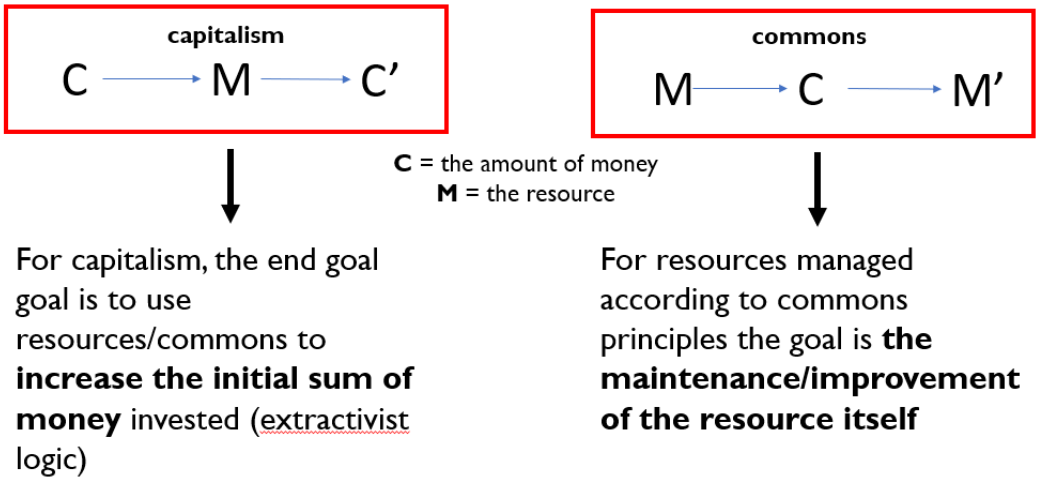


Figure 1 Capitalism and commons goal-orientation and values, according to De Angelis (2017)

Therefore, according to De Angelis, the main difference between the two is the fact that the end goal of a capitalist system is the production of surplus value, while the end

goal of the commons system is the production of value for the reproduction of the means of subsistence. This hence structures different systems of embeddedness and possibilities. However, before de Angelis, examples of what embeddedness and disembeddedness look like can be derived from the economist Karl Polanyi's work.

The underlying thesis that supports Polanyi's work is the idea that market society is not a natural state of things but the outcome of processes that led to its creation and its imposition as an economic regime – market society – as the coordinating principle of society. This happened with the disembedding of people that relied on the commons for their daily living due to the enclosures that supported industrialisation and their re-embedding into the system of commodities and industrial work. This analysis can be considered similar to Marx's analysis of primitive accumulation, but it is different to the extent that Polanyi sees the process as a reconfiguration of the relation between market and society rather than merely the emergence of capitalism. The idea on which it is based is that the primacy attained by market society dis-embedded individuals from the traditional web of ties that composed society, giving them more freedom of action and choice. Then, the other side of this movement required re-embedding individuals in a new web of social relations – the one of market society.

Similarly to Marx and Linebaugh, also Polanyi argues that what he calls traditional society – which was embedded in commons – provided security to individuals since the commons system was the way individuals were able to produce and retrieve the resources for their survival. A large number of peasants, in fact, relied on arable land for food provisioning and fields for cattle grazing, as well as commons being places where they were able to build their own houses. This mechanism, which implied a communal arrangement of work, provided security to individuals, but, at the same time, Polanyi also notes the oppressive character that also this system presented since the role of the community was dominant in organising reproduction of these societal arrangements, putting limits to individual freedom of life choices (Polanyi, 2001, pp. 187–188). Nevertheless, the commons regime constituted a system of social reproduction.

The commodification process started with the enclosures. By spoiling the poor of its means of survival, they have been forced to rely only on the market and commodities. That is why

> "Enclosures have appropriately been called a revolution of the rich against the poor. The lords and nobles were upsetting the social order, breaking down ancient law and custom [emphasis added], sometimes by means of violence, often by pressure and intimidation. They were literally robbing the poor of their share in the common, tearing down the houses which, by the hitherto unbreakable force of custom, the poor had long regarded as theirs and their heirs'. The fabric of society [emphasis added] was being disrupted; desolate villages and the ruins of human dwellings testified to the fierceness with which the revolution raged, endangering the defences of the country, wasting its towns, decimating its population, turning its overburdened soil into dust, harassing its people and turning them from decent husbandmen into a mob of beggars and thieves." (Polanyi, 2001, p. 113)

The emergence of market society, in Polanyi terms, does not signify that, before it, there was no market. On the contrary, the figure of the merchant is known in history. The essential difference lies in the fact that it was not the main aim of production. Namely, referring to Aristotle's distinction between production for use and production for gain, with the first as the main principle which guided householding, Polanyi affirms that before the emergence of market society, "markets and money were mere accessories to an otherwise self-sufficient household" (Polanyi, 2001, p. 138). Thus, the reasons why a market-based society can be detrimental to individuals' reproduction need to be searched in this distinction between different scopes of production. If the existence of commons guaranteed individuals' survival in case of losses occurred in trades, in the post-enclosures society, the failure of trades or the markets harmed individuals' essential capacity of survival – since there is nothing else outside the market. Besides provoking the emergence of a new kind of society, this commodification process was also visible materially; namely, it transformed the city in the core place where production was occurring, therefore becoming the place that hosted all the previous commoners that became proletariat (Castells, 1979, pp. 20–63).

To sum up, Polanyi's work is relevant to the topic of commons for the fact that it highlights how commons were responsible for the emergence of a peculiar societal organisation which provided individuals with means of security for social

reproduction – besides constituting a means of survival for individuals. The imposition of market society dis-embedded individuals from that societal arrangement, re-embedding them in the market economy, which subordinated everything (labour, land and money) to its guiding principles (Polanyi, 2001, p. 165). This subordination, therefore, exposes these resources to the commodification process and the detrimental logic of the market; that is why the allowance of the market to gain such a level of control institutes a satanic mill that would bring the total destruction of society (ibidem: 167). Hence, governments developed institutions to regulate it. These institutions, as I will illustrate in the next section, acquired the function that commons had, providing a non-market alternative (regarding the nature of the provisions) for social reproduction and stability.

2.1.5 Commons in the urban context

As previously stated, Polanyi affirmed that the self-regulating market is detrimental to society and its order. The description of precarious conditions inside which workers are an instance of the devastating effects it had on individuals. But besides this, it also rendered precarious the stability of society as a whole: this mode of production and embedding of society into the market gave rise to the Great Depression of 1929 (Rothermund, 2002). It is starting from this background that form of institutional regulations of the market arose, especially in the European context. Using Polanyi's (Polanyi, 2001, pp. 253–254) terminology, it is possible to affirm that it has been the 'double movement' in action: if, on the one hand, the market was attempting the implementation of commodification pushes, on the other hand, the welfare state was a form of protection, to redistribute the wealth created by the new industrial techniques.

Besides the fact that they did not criticise the dominant role that the market acquired – these forms of regulations fulfilled a similar function to the one that commons fulfilled in pre-modernity, regarding their character as means of subsistence. In fact, a large share of production and consumption was directed towards the production/acquisition of durable goods, like cars and home appliances (Rossi, 2017, p. 213). Therefore, by forcing an interpretation which stresses mainly the importance of commons for subsistence, it is possible to affirm that the welfare state constituted the commons after the commodification. Despite the fact that the urban can be considered the product of commodification and the imposition of market logic

over society, from another perspective, it can also be viewed as the place for a partial redistribution of the wealth created by industrialisation, aimed at improving individual living conditions. A remarkable instance of how the model of welfare state provision provided non-commodified goods to the citizens is the concept of public housing. For Hodkinson (2012), post-war welfare state mass public housing program represented a form of housing provision that existed beyond the market since its allocation was based mainly on a general allocation model ('first come, first served') instead of one on special needs. Similarly, Uitermark (2017) illustrated how in Amsterdam, following the uprising and protests that happened during the '60, a public housing program has been able of putting renters in control of the provision.

Returning to Polanyi's framework, it is possible to affirm that the politics embraced by the welfare state aimed at guaranteeing individuals protection from the 'satanic mill' of market forces and commodification in the city (Hodkinson, 2012, p. 512). The disappearance of the commons caused by enclosures has been compensated by the formation of new commons, emerging from the new web of the society of the urban context. However, the welfare state model has been the object of critique by anarchist thinkers. Colin Ward, for instance, criticised its paternalistic character due to the elevation of the state to the function of provider with the consequence that it comported, in his view, institutional oppression over the ability of the individual to self-organise; that is why he suggested its replacement with a more community-based "welfare society" (C. Ward, 1988, pp. 107–121). But besides the anarchists, it received the critiques of the classic liberalists, which viewed it as a limit to market freedom, proposing an even more radical embedding of state and society into the principles of the market. In the next section, I will inquire about the philosophy of this economic perspective and the way that – starting from the '80s – it influenced the transformation of the form of government itself towards these principles.

2.1.6 The enclosures of the "welfare commons": Neoliberalism roll-back

The analysis of the welfare state role presented in the previous section is partial, and it does not take into account its critical elements. Namely, it would be misleading to define the institution of the welfare state as non-commodified, egalitarian and outside the market since it relied on the market relations. Moreover, it was also based on the wealth produced by an economic boom which caused an "ecological debt" (Mattei, 2015, p. 56). But besides these critical aspects, its historical role has also been

one of attenuating to some extent the effects of commodification, providing some sort of protection from market forces. However, after the energy crisis of 1970, its institution was undermined by the emergence of a new philosophical orientation, one that adverse any regulation of the state in the economy; instead – as Foucault highlights – this philosophy contained the idea that the state must be based on market principles, conferring to the market the main regulatory power (Lemke, 2001). This is, in short, the underlying principle behind what has been defined as Neoliberalism.

This neoliberal project – after dismantling of the Keynesian state due to its decline – aimed at transforming into 'common sense' the values upon which it is based in the effort to "entrepreneurialize the governance of economy and society as a whole" (Rossi, 2017, p. 207). Analysing it through Polanyi's theoretical lenses, it can be affirmed that the neoliberal project constituted an effort to dis-embed society from the set of provisions created by the welfare state and re-embed it into a pure market logic as its ordering principle. To understand how it entails both a destructive and constructive character, Rossi refers to Peck and Tickell (2002) concepts of neoliberalism roll-back and roll-out. The former defines the waves of privatisation of state-owned enterprises and the flexibilization of labour, and the latter the creative process through which it is made 'common sense'.

The neoliberal rollback is mainly identified with the economic policy of Ronald Reagan in the United States and Margaret Thatcher in the United Kingdom, which started in 1980 (Rossi, 2017, p. 207). On the one hand, their main goals were the application of tax breaks and incentives to favour businesses and, on the other hand, the application of measures to render work more flexible and to favour the polarization of jobs in low-skilled and knowledge-intensive. Subsequently, the project of welfare state dismantling comported the erosion of the public control on those services and provisions created by welfare capitalism, like healthcare, transportation or education, in favour of their commodification (Comaroff & Comaroff, 2000). As argued before, those provisions allowed individuals survival outside commodified relationships, and their commodification, therefore, provoked transformation in the societal organisation. To exemplify how this occurred, I return to the theme of public housing.

After illustrating how the institution of public housing took place in the UK, Hodkinson also analyses its dismantling. The enclosure of the public good – he argues – can be identified in the privatisation, dispossession and capitalist subjectification that access to housing faced, rather than conceiving it as a basic right. This is integral

to the ideological diffusion of the entrepreneurial and self-reliant attitude – which is concretely realised with the right to buy, pushing people to aim for homeownership and mortgages (Hodkinson, 2012, pp. 513–514). A similar change also happened with the Amsterdam housing system, with the transformation of the government-controlled housing associations into private housing corporations, which were able to escape control from the state and the tenants regarding the administration of the housing stock and thus capable of commodifying housing for their own needs (Uitermark, 2017, p. 207).

What lies at the core of this transformation is the shift from a state arrangement that was putting citizens more or less in control of the urban space and resources (especially in the case of Amsterdam) towards another one that expropriates both the control and the resources from them, in favour of the private. This roll-back phase has been fundamental for the roll-out – namely, the transformation of the city into a place of consumption rather than production.

To sum up, the idea of reading the transformation of the welfare state as the enclosure of new commons that have been created after industrialisation can be regarded as an example of how commons constitute a concept that is malleable and adaptable since it is not limited to a specific socio-historical moment. However, at the same time, this reading also ends up reproducing the same conception of commons as resources. Welfare state and welfare provisions are being regarded as resources available to the citizens, which have been subsequently eroded by neoliberal policies. In this form, despite the several differences regarding the approaches, the solution to this dilemma would simply be one of re-instating those welfare provisions. Despite constituting a promising reading of the transformation that underwent the welfare state and its provisions, it seems that the concept of commons cannot simply be applied to new resources without implications, and this strategy would not explain the complexity of the phenomena of neoliberal transformation. That is why, in the next section, I will propose theorising the idea of commons as an action or a relation to explaining how commons take place in the urban context.

2.1.7 From commons to *commoning* in the urban context

As I have discussed at the beginning of this chapter, during recent years, commons have increasingly become a debated topic. Several scholars have re-theorised the concept, moving away from Hardin (1968) formulation that justified

commons appropriation by private property and the state. The most influential work that reopened the debate has been the one of Ostrom (1999), who argued that Hardin mistook commons with open access resources and that commons can be appropriated and effectively managed by groups of people to prevent their depletion.

Ostrom's theorisation also had the merit of opening the way to define commons as resources that directly belong to individuals and society, which help maintain and – in the case of cultural and knowledge commons – produce them. In this formulation, commons are parks, oceans, the air, the land, languages and cultures (Bollier, 2017; Linebaugh, 2008; Standing, 2019). And it is also starting from this formulation that commons can be considered a right of all individuals (Mattei, 2012, 2015).

Another aspect that unifies the discourse of these authors beyond the several nuances is the fact that they all define commons as something menaced by the capital and its logic of appropriation and privatisation. In this perspective, commons represent a sort of welfare, namely non-commodified resources at the service of the citizens; they constitute citizens' wealth, and they suggest that, besides mismanagement, they must be protected from capital plunder and capture.

Despite the merits that all these authors had in theorising commons and applying them as a property of entities, I think that the empirical manifestations of commons should not be included as part of the theoretical definition. In line with Dardot and Laval (2019, p. 59), I think that the definition of the commons should rather stress their character of being an action, a process, or a series of customs and rules. Firstly, rather than contrasting the definition of the commons as a critique of capital appropriation, this approach centres the focus on both the defensive and the constructive side of commons. Secondly, this approach avoids a-priori determination of the commons, helping avoid a pre-determination of what constitutes commons. To illustrate how this definition can be constructed, I think that it is necessary to start from Peter Linebaugh historical account of the common.

Linebaugh, on the one hand, views the enclosures that occurred in pre-modern England in the wake of the industrial revolution as the destruction of the principles stated in the Magna Carta – the document that guaranteed commoners' right to access commons like fields for cattle grazing and forests. But, on the other hand, he views enclosures more than plunder of resources:

"Enclosures were not the only force in the creation of the land market, but they destroyed the spiritual claim on the soil and prepared for the proletarianisation of the

common people, subjecting them to multifaceted labor discipline: the elimination of cakes and ale, the elimination of sports, the shunning of dance, the abolition of festivals, and the strict discipline over the male and female bodies" (Linebaugh, 2008, pp. 51–52)

In other words, what is at stake in Linebaugh's analysis is not the shift in property relations that enclosures comported but rather the impact they had on individuals' social life. The great erosion of freedoms was not determined mainly by the fact that enclosures comported privatisation of common land – since also before, land did not formally belong to commoners. The dramatic outcome has been determined by the fact that they eroded the customs and traditions that were based on the commons ("the shunning of dance, the abolition of festivals"). In this formulation, commons do not appear merely as a resource to guarantee commoners' survival, but rather as an action – to common – capable of creative power and enablers for specific imaginaries and customs to emerge, as well as a specific form of socialisation. That is why after the commons have been eroded, commoners have been forced to socialise to the rationale and logic of the capital as a principle for ordering work, life and production: the "strict discipline over the male and female bodies".

Despite constituting an analysis of commons that is grounded in England during the unfolding of the industrial revolution, the analytical strategy he adopts can also be applied to the reading of the contemporary urban commons because of its focus on the relational aspect. Similarly to Linebaugh, other authors like Hardt and Negri, Dardot and Laval and Harvey started to conceive commons mainly as an action.

Hardt and Negri stress the focus on the activity by referring to it singularly as the common, namely the social production of "knowledges, languages, codes, information, affects, and so forth", focusing on "the practices of interaction, care and cohabitation in a common world" (Hardt & Negri, 2009, p. viii). Similarly, also Harvey puts commoning at the centre of his definition. He claims that the common "is not to be construed, therefore, as a particular kind of thing, asset or even social process, but as an unstable and malleable social relation between a particular self-defined social group and those aspects of its actually existing or yet-to-be-created social and/or physical environment deemed crucial to its life and livelihood. (Harvey, 2013, p. 73). Finally, this de-materialisation of the common reaches its maximum with Dardot and Laval, who claims that"[t]he common is not a good. The common (singular) is a political principle through which we are able to build the commons, maintain the

commons and sustain the commons". In other words, the common (principle) is central for the emergence of the commons (things).

The definition of the common developed by these authors seems all to converge on the conception of the common as a political principle. However, the reasoning of the authors presents some slight differences when they inquire about how it relates to capital, depending on the analytical framework they adopt. For instance, Dardot and Laval, despite recognising the merit of Harvey's work in highlighting contemporary "accumulation by dispossession" enacted by capitalism, argue that the core rationality of neoliberalism is the exploitation of workers. Namely, besides appropriating the resources, they argue that neoliberalism is creating and demanding the emergence of a new subjectivity socialised to its principles, and this is a totalising case in the case of someone that did not participate in those commons before. That is why they consider the commons as a way to federate the modes of resistance to re-appropriate plundered resources but also the very subjectivity against society subsumption under capital (Dardot & Laval, 2019, p. 88).

Dardot and Laval, in short, conceive the common as a form of administration of the commons, with the creative capacity of constructing new imaginaries regarding how life should be organised, as an alternative to capitalist subjectification. Nevertheless, one drawback of this perspective is its excessive focus on the human experience as the only source. An attempt to promote a new theorisation of the commons and their relation with the capital that overcomes this limitation is proposed by Pellizzoni (2020).

Drawing from Boltanski and Chiapello (2005) argument developed in the book The New Spirit of Capitalism – namely the idea that capitalism renews itself by englobing the forms of radical critique to itself – Pellizzoni argues that commons are susceptible to the same mechanism (Pellizzoni, 2020, pp. 45–46). After rejecting the post-workerist thesis on commons[4] , by arguing that their vision does not take into account the context inside which those forms of collaboration are produced, he argues that contemporary commons should be defined as inoperative praxis. In other words, inoperative praxis redefines commons as passive practices to resist capitalism

[4] Post-workerist thinking relies on the idea that that new forms of work organisation that follow the logics of commons (e.g. the informal "smart" factory) constitute forms of formal rather than real subsumption. In this, according to them lies their emancipatory force to overcome capital domination (Pellizzoni, 2020, p. 46)

rationality: “the commons could be reconceived as neither resource management regimes, nor the result of political acts of an institution or state-backed rules of access, but socio-material assemblages corresponding to an inoperative praxis”. It is thus “by choosing not to” – do something doable, achieve something achievable, extract value available, handle something in a possessive way” that commons emerge as a socio-material assemblage (ibidem:50).

Pellizzoni’s theorisation of the commons is an insightful proposition to open a debate regarding how commons can be conceived and enacted as a critique of capitalism beyond a human-centric standpoint. In fact, their confinement to the dimension of the society has the effect of denying agency to nature, assessing the primacy of human agency over nature's course (Pellizzoni, 2020, p. 42). Nevertheless, I think that commons as inoperative praxis should not be thought of in opposition to the operative ones, but rather as complementary. For instance, when commoning initiatives emerge as operative practices to contrast the effects of a crisis, the operational strategy is preferable to an inoperative one, regardless of the fact that they might constitute a commons fix. And starting from the idea of the “commons fix” (De Angelis, 2013) – conceived as an instrument adopted by capital to use both nature and the social commons to fix the contradictions of the capitalist mode of development – I aim to propose a different strategy of theoretical inquiry.

Rather than considering the “commons fix” as problematic and emblematic of the appropriation of the idea of commons by the capital, I aim to research the limits of this appropriation. In other words, I aim to inquire whether capital appropriation of the commons is total or if it still maintains some elements of contradiction. Therefore, I open up again the question of whether commons can constitute an instrument to hinder capital rationality – even within capital. And if that is not the case, research should be carried out on the mechanisms of control that prevent this from happening. In short, I aim to inquire about possible tensions within appropriation or how the production of common not in contrast with capital occurs. Besides providing examples of commons and capital co-optation, De Angelis claims that “[c]ommons are not just a ‘third way’ beyond state and market failures; they are a vehicle for claiming ownership in the conditions needed for life and its reproduction” (De Angelis, 2013, p. 606). This is because he conceives commons and capital as two autopoietic systems that operate according to different internal logics – the reason why in his view, it is not

possible to speak of commons as fully englobed into capitalism but in a constant precarious relation:

"We must take heart in the fact that, in spite of capital's strategies to use a commons fix to the problems it creates, while never really solving them, commons may well be part of a different historical development. The spectre of commonism is already starting to haunt the globe." (De Angelis, 2013, p. 612)

In short, I decided to focus on this aspect of the commons since I think that it is relatively unexplored. The debate on the commons had the merit of making them visible and highlighting their importance. Also, in recent times, after the COVID-19 pandemic, the importance of maintaining and fostering these sorts of provisions has re-emerged (Rodgers, 2020). However, the other debate that, in my opinion, should be widened is the analysis of whether they can constitute an instrument for a transition to a post-capitalist imaginary or they might end up having the main function the one of "common fix". To inquire about this aspect, I think that it could be insightful to look at the impact and influence they have on governance.

2.1.8 More-than-human commoning

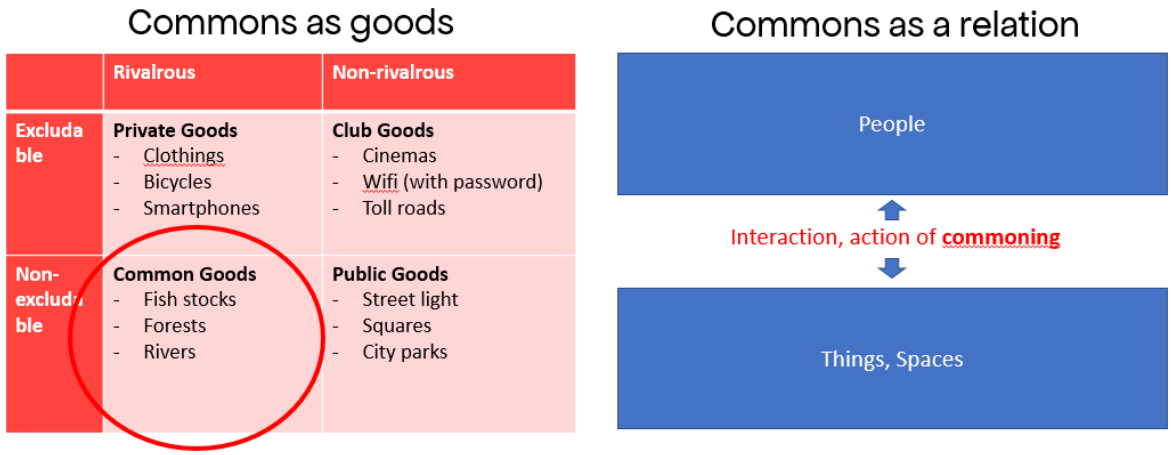


Figure 2 The difference between commons as goods and commons as the relation of commoning

The perspectives on commons that I have discussed clearly illustrate the multiplicity of the declinations that the concept of commons can assume. Rather than representing a simple way of classifying resources as the classic economic theory suggests, it constitutes an object of debate that critically inquires about societal modes

of organisation and ways of managing and caring for resources held or produced in common. This declination had hence the result of extending it to the cultural artefacts named *creative commons*. However, an underlying assumption that unites these perspectives, besides their differences, is the idea that commons are thus either things or a property of some things. Ostrom, for instance, defines them as common-pool resources, or Hardt and Negri as both a feature and the product of certain social relations – regardless of their material or immaterial character. Put differently, this perspective share (implicitly or explicitly) the underlying conception of human agency primacy over the non-human (Pellizzoni, 2020). It is hence no surprise that, starting from similar considerations, many scholars are prone to argue that commons is an anthropocentric concept that concerns a certain way of administering resources, regardless of the fact that they are material or non-material. That is why many authors – building on a definition that is also centred on the action of *commoning* – questioned whether anthropocentrism is inevitable or – building on existing theory – it is possible to extend the concept also to nonhuman entities and their agency. It is, therefore, from this attempt that it is possible to define the idea of more-than-human commoning and thinking commons as a relationship between humans and non-humans (Figure 2).

One of the key texts that support this argument is one of Metzger (2015), who adopts a critical stance towards traditional theorisations of commons because of this human-centric assumption. The starting point of his inquiry is a re-reading of the highly criticized Hardin (1968). In fact, he argues that – despite the eco-fascist implications of Hardin perspective – he warned against the critical impact of human activity on the world, stressing the need to think about new ideas and values on how to live in a more sustainable way to protect the commons. It is from this perspective that – according to Metzger – those who accused Hardin of being a defendant of private property missed the main point that he wanted do raise – namely warning against the danger of the human-centric approach towards the resources[5].

What is at the centre of the problem is hence the very idea of commons as resources. Mezger argues that the origins of this dominant and human-centred vision of the commons can be found in the idea that humans and non-humans are separate

[5] However, it needs to be stated that Hardin's work remains regardless controversial, especially for the fact of thinking about human activity in a de-politicised manner and by not taking into account or considering those societies whose human activity is in a better relationship with the non-human. Nevertheless, as already stated, also Metzger in the article raises a similar critical point ad he does not accept Hardin theorisation.

entities. Therefore, this relationality is responsible for shaping the world and the ways that it is interpreted and – according to him – one of the key manifestations can be found in the idea of the city, which has always been first conceived as a *menschenpark* — as an environment "for the humans" from which animals or other non-human entities had to be expelled or had no right to be recognised within it. That is why he claims that the concept of more-than-human commoning means challenging this assumption and including the non-humans as stakeholders, both as a general idea and as entities that are present in the city, which – building on Latour (2011) idea of *collectif* – he theorizes the city as a urban collectif of humans and non-humans. That is why he suggests that commoning is part of the "politics of conviviality" (Hinchliffe & Whatmore, 2006), suggesting that, in this form, the concept can be used to face the environmental crisis that modernity has produced, deconstructing the idea that humanity stands "outside and above" nature, calling for a more responsible way of sensing and inhabiting the worlds. More specifically, it means calling for different ways of relating to the nonhumans, accounting for their presence and defining them. For instance, unusual remnant spaces like the sides of the railway, derelict land or woodlands, which in the anthropocentric perspective are depicted as empty spaces, can emerge as urban commons, as recombinant ecologies that reconnect humans and nonhumans.

Metzger's understanding of the commons, therefore, appears as a further step in the debate regarding *what is commons*. What he proposes is a critical reflection of the human-centric roots that certain theorising implies and a way of adapting it to the emerging sensibility of the social causes of the ecological crisis. Compared with other radical theorisings, it involves a change in paradigm to rethink the human standpoint in the world beyond the framework of modernity, besides constituting a promising attempt to read the commons through Bruno Latour's work. Nevertheless, I will discuss more this paradigm shift in the next section.

Besides Metzger, another researcher who attempts to analyze commons beyond its traditional roots is conducted by Bresnihan (2015), who analyses how more-than-human commoning also takes place within a human activity like fishing. To understand that, he critically engages with the understanding of commons developed by Hardt and Negri (2009). He claims that – despite the fact of recognizing the ecological relevance of the commons – what appears problematic in this theorizing is the division between material and immaterial commons. He argues that – despite

being helpful from an analytical point of view – this declination produces one form of commons that is "asocial" (namely, the material commons) and another that is "anatural" (the immaterial commons derived from an abstract concept of human production). What he found problematic is the fact of "obscuring the continuity and inseparability of the material and the immaterial, the natural and the social" (Bresnihan, 2015, p. 94).

Starting from these instances, it can be argued that the idea of more-than-human commoning implies a shift on the ontology, from a human-centric perspective focused on human agency towards one that accounts for the existence of the non-human in closed contact and coexistence with the human. This conflict and ontological redefinition can be mostly seen in the city, for the fact that it constitutes a "space for the human", as highlighted by Metzger. This human-made character, in fact, materializes in different forms which are not only material. For instance, laws and regulations over space are human constructs and also part of the human-centric vision. The concept of commons acquires a radical concept for blurring and questioning those laws and regulations, especially the division between private and public (Dardot & Laval, 2019; Hardt & Negri, 2009; Mattei, 2012).

The concept of more-than-human commoning further proceeds in this direction by questioning how adopting a more-than-human ontology disrupts the traditional social construction of the city and regulations over the spaces. In particular, Cooke et al. (2020) show how thinking of more-than-human commoning as the interaction between humans and non-humans challenges the 'parcelization of ecologies' that property laws produce – or, put differently, the subsumption of ecologies by property. Accounting for the multiplicity of life and agencies, the idea of more-than-human commoning unsettles this social construction, becoming an "inter-active process outside of property". In their words, "[w]hat is needed is a shift in emphasis from urban greening as tied to cartographic representation to one of processes and relationships grounded in the lives of more-than-humans. In this sense, plants would […] have a temporality and mobility beyond property, and whose survival relies on a web of geographically dispersed socio-ecological relationships" (Cooke et al., 2020, pp. 180–181). In short, more-than-human commoning in highly parcelized territories such as the city allows for rethinking the essence of those property relations and the logic that follows them, taking into account ecologies and non-human entities that are not subjected to them. It is hence also possible to argue that in this conjunction, more-

than-human commoning reconnects with the revolutionary conception of the commons that challenge the individualistic idea of private property and subject it to the needs of humans and more-than-human entities.

Finally, another research that can be placed within this perspective and constitutes the elaboration of commoning through a multispecies perspective is the one of Centemeri (2018), who analyses permaculture as an instance of this concept. Namely, she highlights how the practice of permaculture does not merely require the ability to manage a plot of land intended as a resource. Rather, it aims at creating a *community of response* inside which a variety of nonhuman entities play an important role together with human beings, hence forming *naturecultures* of "mutualist and nonantagonistic interspecies entanglements" (*ibidem,* p.8). In other words, also Centemeri stresses the importance of defining commons as an action that involves the cooperation between humans and nonhumans. Moreover, she adds that this interspecies entanglement can also be viewed as a form of *pericapitalist* and *subversive* economy that exists both "within and outside" capitalism logic of value (*ibidem,* p.13).

To sum up, it could hence be affirmed that – as already stated by Metzger (2015) – the concept of more-than-human commoning resonates with the general umbrella of "politics of conviviality". The politics of conviviality, as defined by Hinchliffe and Whatmore (2006), are the "messy business of *living together*", which demands a "shift in the politics of knowledge in which expert designs on urban space (including those of conservation science) are more liable to be contested and resisted by city inhabitants (of all kinds) whose ecological vernaculars have been learnt and honed through their everyday practices of making themselves at home in the city" (*ibidem*:134). It is the development of a different relationality between humans and the world they inhabit, one that takes into consideration the existence of more-than-human entities. At the same time, the relationality does not go only from the human to the nonhuman, but, in their turn, the nonhuman also reclaims themselves as commoners and are also learning how to live with the human and have an impact on them.

In short, I think that the concept of more-than-human commoning suggests the need to foster this reading of human-nonhuman interaction and relation, expanding the perspective on different contexts. Nevertheless, it is important to note that this understanding is not possible without changing the paradigm, the concepts and the lenses we use to think about nature and the city. Or, more precisely, adopting a

different ontological understanding from the one adopted in the literature I discussed is fundamental to developing the understanding of more-than-human commoning. However, adopting the understanding of more-than-human commoning also has the effect of producing further insights into how nature and the city are usually constructed and how a different and interdisciplinary understanding can be applied.

To conclude, what is also central is the fact that this understanding also stimulates a different relationality between the human and the nonhuman and a different way of reading that relationality. In fact, another fallacy of all the approaches that conceives commons as a resource to be taken care of, as if the direction was univocal. Commons are depicted as scarce or fragile, and hence human action is needed to protect or manage them. Human agency has primacy, and it is not only what leads to their depletion but also what will preserve them. By contrast – maintaining the idea that human agents act upon the nonhuman world, the perspective of more-

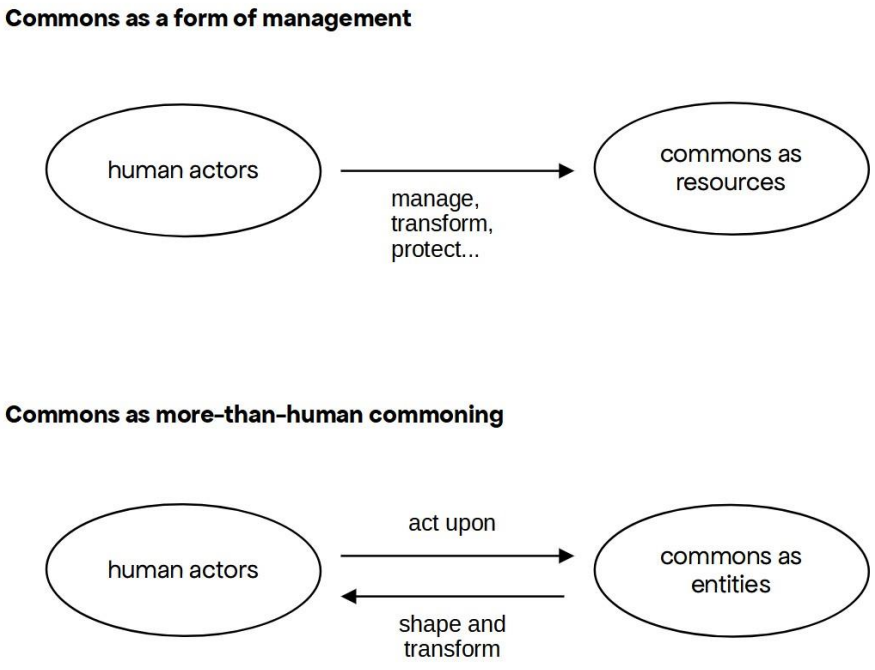


Figure 3 Anthropocentric and more-than-human conceptions of commons

than-human commoning also helps expand the two ways the relational character of commoning also to the nonhuman. In this sense, commons as entities, in their turn, shapes humans and their actions in the form of mutual influence (Figure 3). In the

next sections, I will further expand on this idea and the theoretical and ontological implications that it implies.

2.2 Actor-network theory and Science and Technology Studies

As discussed above, the concept of more-than-human commoning has the advantage of putting to the forefront also the dimension of the nonhuman, which, in the traditional urban sociology perspective, has mostly been considered as a general background, or the "environment" where human affairs happen, hence more declined as a container rather than something that plays a role in shaping the social. However, in recent times, this previously neglected dimension has acquired significantly more relevance. In this and the following sections, I will thus inquire and present some of the theoretical approaches and disciplines on which the idea of more-than-human commoning is based. First of all, I will discuss Actor-Network theory (ANT) and Science and Technology Studies (STS) – two of the main perspectives that constitute the basis on which the ontological shift of more-than-human commoning stands.

2.2.1 Actor-network theory: the relationality of humans and nonhumans

Actor-network theory is a theoretical perspective that describes the world as composed of networks, and the components of these networks are called actants. It is, in other words, a form of relational sociology – namely, the idea that society is composed of relationships. Nevertheless, it departs from classical human-centred declinations of relational sociology, the fact of considering these actants not merely as humans but also as nonhumans. Put differently, for actor-network theory there are networks composed of human and nonhuman actants, and, for this multi-layered character, networks can be defined as *assemblages* of actants.

Nevertheless, identifying networks as assemblages and the actants as the units of the network would also be reductive from ANT perspective. This is because actants are, in their turn, assemblages composed of other actants: what ANT aims at doing is breaking with the idea that there exist levels that can be defined as micro, meso and macro, in favour of the idea that what matters are interconnections and co-constitutions between different entities, regardless of whether they are human or nonhuman.

Nevertheless, despite its name, it would be misleading to consider ANT a theory in the specific meaning of the term. In fact, ANT is not a theory in the classical sense

since it does not constitute a way of thinking about the world and how it works; it rather aims at pointing out the ontology of the network, remaining adaptable to different goals and purposes (Mol, 2010). A theory in the proper sense – for instance, Marxist theory – is built on specific assumptions about how power is distributed, how interactions occur (e.g. class conflict), and schemas to analyse the past and imagine future occurrences – thus with a certain level of normativity. All of this is absent in ANT, since it can be a malleable perspective on things that can be incorporated or adapted with other theories. As an instance of this, it could be pointed out that – despite defining the term "actor" – ANT does not use the term to define someone who does, but someone who does and at the same time is being made, *acted upon*, hence rather providing a descriptive tool on the world. Returning to the concept of commons and looking at them through ANT, it would mean thinking of them as both something some actors act upon and what transforms the actors that act upon them; hence, it rather points out the necessity of focusing on the relations. Using the terminology applied in Ostrom's framework, actors and commons are both actants in their turn, and they cannot be excluded from each other. In other words, ANT provides a concrete explanation of the reason why there are no commons without commoners and there are no commoners without commons. Therefore, what needs to be regarded are chains of effect, "networks", rather than the pursuit of an explanation of the causes. In short, Mol (2010, p. 262) points out that if there is an attempt to conceive ANT as a theory, this theory must be conceived as something "to attune to the world, to see and hear and feel and taste it", as if it were a "set of sensitivities". But, what is then this set of sensitivities that ANT enables? To answer this question, discussing the work of some of its main proponents could represent a good strategy.

One of the most important books to be named that helped define what is ANT is Reassembling the Social, by Bruno Latour – one of the "founders" of this theory[6]. The main argument he puts forward in his research is the idea that the social is not something that is constructed only by humans but collectively between humans and nonhumans (Latour, 2005). As a result of this, interconnections start to emerge, as well as different forms of relationality; for instance, he observes that science and the laboratory are not merely the domain of human activity that is being depicted but a certain socio-natural construction. In this view, something like the discovery of

[6] In the meaning that I discussed above

pasteurization has been the outcome of a collaboration between Lous Pasteur and the microorganisms (Latour, 1995). I will return later on to this human-nonhuman relationality, explaining how it represents the point of departure for Latour's critique of the idea of modernity. What I mean to stress in this case is the fact that this line of thinking dislocates the action from a single source to all the actants involved; put differently, there is no cause and effect but relationality (Latour, 2005). At the same time, this implication involves the fact that actions of individual actants are responsible for actions taken by the other actants – even when they are not aware or know where the action came from (Pyyhtinen, 2015, p. 24). As an instance of this, I can perform the action of taking the metro to go back home, and this action is far from being rendered possible only by myself. I can do it because someone else decided to build a system of metro, and I happen to live alongside the metro line. At the same time, the decision of those actors at that time was made possible because it depended on the one of the engineers that developed the metro as a technology. And the fact that I do not know precisely how a metro train works and how different technologies are at play does not prevent me from using it. The only thing that I need to know to perform this action is the fact that it runs and it follows a schedule that, more or less, reflects mine. At the same time, I am also influenced by the schedule (or better, by all the set of actions that led to the definition of the "schedule") in deciding whether or not to take the action of riding the metro. Nevertheless, this action of me taking the metro at that time is also co-influenced by all the actions that led to the definition of fixed opening and closing times at the university – and the fact that I cannot remain past those times. However, this is also not a universal law, because if I were in another context, in a university that allowed me to stay inside as much as I wanted, I might not have taken the decision to take the metro at that specific time (and surely not the same metro). Finally, I can also affirm that I am not aware of all the other factors that lead me to take this decision, but this does not prevent all these factors from determining my decision.

What can be learned from Latour (2005) is hence the fact that, rather than reasoning in terms of micro/macro and trying to fit entities in those scales, it is more insightful to think in a 'rhizomatic way' (Deleuze & Guattari, 1988) and look for chains of interdependences. This approach, however, does not posit that there are no hierarchies and that all the elements are equally responsible for the co-constitution. Rather, it suggests avoiding pre-determining these hierarchies.

The reason why I spoke about this is the fact that, in my research, I will try to incorporate this sensitivity in the methodology I will adopt. Rather than defining only one cause for a phenomenon I am observing, I aim to inquire the more-than-human network that takes place and allows it. But, more than an epistemological strategy, by mentioning this, I aimed to expand the adoption of this ontology in urban studies, aiming at showing how it can provide more details regarding the complexity of contemporary assemblages. This – as I will argue – can be performed through the overcoming of the traditional 'modern' framework that is responsible for the production of certain knowledge. That is why, to explain what it means to overcome the 'modern way of thinking', I will first reflect on how it has been constructed.

2.2.2 We have never been modern

As mentioned in the former section, what characterizes Bruno Latour research activity and theoretical approach is the fact of not being limited to the study of the social; conversely, he is attentive to inquiring about how social actors interact with the material world and how the two are related rather than constituting two completely different "worlds". It is from this standpoint that, as argued above, he can be considered one of the pioneers of Actor-Network Theory. In this section, I will further expand on his peculiar theoretical approach to ANT and the implication it has towards the reading of the social, its transformations and the deconstruction of the idea of modernity and linear progress, or the idea that modernity constitutes a distinct time regarding what preceded it.

The idea of modernity is one of the most popular theorizing to explain social change and transformations. In fact, it is common to think that modernity brought a novel understanding of society has been shaped and created, as well as a specific way of inhabiting the world. This idea – translated in the adjective 'modern', is often seen in a linear time scale, as an improvement from the past and as a way to grasp a better understanding of things, and it represents a form of understanding that is also shared also by different political spectrum (Frisby, 1996). At the same time, the idea of modernity, especially the idea that it constitutes an improvement, is also something that is being contested by the anti-modernists. Nevertheless, regardless of the fact that someone is in favour, what these approaches share is the idea that modernity constitutes a distinct time period that breaks with what existed before. And the ones that believe that there is a post-modernity, besides sharing this understanding, also

contribute to its perpetuation (Latour, 2011, pp. 8–10). This understanding of modernity and the ways associated with it is the starting point of Latour's provocative question: what if we had never been modern in the first place?

The question posed by Latour (2011), in other words, asks for an ontological re-definition of the grounds of the idea of modernity, and he does this by putting forward the idea that, after all, modernity is only a social construct. In other words, rather than an ontology of the real, for Latour, it represents an "idealistic project" that never took place. To do so, he does what Foucault (2002) would call a *genealogy* of modernity, identifying its birth in the dispute between Hobbes and Boyle. Hobbes, in fact, pretends to put under the Leviathan everything, also the production of truth through the arithmetic calculus that is therefore universal, while Boyle affirms that reality and nature can be known through *matters of fact* that are produced in the laboratory. That is why the two truths appear as mutually exclusive: the first one affirms that there are no spaces of truth outside the central power, while the second one affirms that truths can emerge in the private environment of the laboratory. However, Latour states that if these positions are taken at the same time, they constitute the basis of the modern way of thinking: the dissociation between the representation of things through the laboratory and citizens' representation through the social contract are two different things (Latour, 2011, p. 27).

In sum, by considering Hobbes and Boyle perspectives at the same time, Latour identifies the genesis of the idea that the social (Hobbes) and the natural (Boyle) must be studied separately, and they must not interfere with each other. In particular, science affirms itself as the study of the natural world that is being "unfolded to men" through the scientific method. The natural world is hence something that could be studied independently from the social. This is hence what Latour defines as the "Modern Constitution": the outcome of the separation between the "work of translation" (the creation of hybrids of nature and culture) and the "work of purification" (the separation between nonhuman nature and human culture). Figure 4 provides a good representation of this idea.

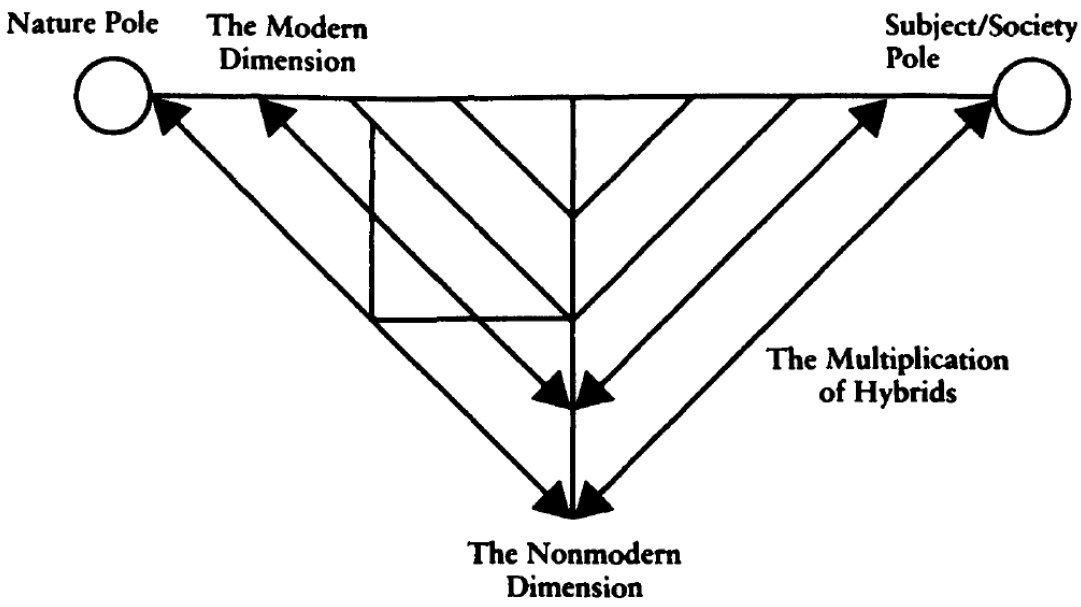


Figure 4 The work of purification and translation (Latour 2011)

Nevertheless, rather than an ontology, Latour argues that modernity is a social construction. By denying the existence of hybrids as the outcome of the work of purification, moderns end up multiplying the amount of these hybrids exponentially, mixing the social and the natural even more, and the separation remains only fictional. That is why it is possible to claim that "we have never been modern [...] we have never left our old anthropological matrix behind" (Latour, 2011, p. 56). Humans never really ceased to produce hybrids, and therefore – as anthropology does with the non-western contexts, we must not inquire about human and non-humans entities as if they were not mixed. This does not translate into the avoidance of the creation of hybrids but rather constitutes an exercise of reflexivity on their creation.

2.2.3 Some enduring tensions between Ant and Marxism

The reasoning of Latour hence appears insightful for bringing another perspective to what has been defined as modernity, as well as for proposing other ways of conceiving agency and transformations. However, at the same time, it also received fierce criticism from different sociologists and traditions of thought.

Among the critics, it is worthy of mentioning the famous one by Bourdieu (1975). According to him, ANT is a sort of "literary game" that "transforms reality into a text". This critique, rather than an observation of the limits that ANT presents, can be viewed as an attempt to dismiss it, especially for the fact that he does not conceive the

possibility of treating humans and nonhumans alike as a "system of actants". In other words, he dismisses the validity of this perspective as a method to interpret the world, accusing it of relativism. However, if Bourdieu critiques the premises of this way of reasoning, a different critique on the political implications is also put forward by Marxist perspectives. Pellizzoni (2019b), for instance, observes that Latour's perspective can also risk de-politicising what is at stake. For instance, he observes that Latour does not conceive "geo" in geopolitical terms – namely, as a setting that witnesses the struggle for the conquering of resources – but as "an agent that participates in public life". Then, he also observes that the French philosopher's critique of modernity and the élites never takes into consideration neoliberalism as a process. But, most importantly, he claims that Latour does not seem to consider the fact that the "growth of limits"– rather than constituting something that undermines capitalism – has been incorporated within capitalist production since the '70s, hence ending up developing reasoning that can be embedded within the capitalist framework.

Therefore, these critiques seem to suggest an incompatibility and a tension between a more affirmed school of thought and the new more-than-human perspectives that attempt to decentre the ontology beyond human-centrism. This tension hence demands more work that aims at solving it or finding a synthesis. Among these attempts, one that is worth mentioning is the work of Miriam Tola.

The starting point of Tola is the reflection on the fact that, at his turn, also Marxism presents some critical human-centric elements – like, for instance, the fact that it is implicitly based on the distinction between the human and the nonhuman, with only the first that seems to act on the second that "just exists" (Tola, 2017, p. 243). It is from this critical point that she suggests a reconnection between the history of labour and natural history, and she attempts it by engaging with the work of autonomous Marxists. Despite some human-centric limitations that they also perpetrate, she notes the potential of this radical thinking in bridging them. As she concludes, "it is not a reinvigorated humanism that can create modes of living otherwise but rather situated collectives that politicize the attachments to that which makes them possible" – situated collectives that are composed of both humans and nonhumans. (*ibidem,* p. 252). This conclusion is similar to the one she reaches in another book chapter, where she specifically discusses the tensions that exist between Marx's and Haraway's works. What she observes is the fact that Haraway shares the

main challenges and transformative elements that are put forward by Marxism, but – instead of affirming truths – Haraway prefers the emergence of situated perspectives that involve the formation of alliances between heterogeneous groups (Tola, 2022, p. 54). What then appears central in Haraway's work – she argues – is the idea that these alliances are to be created within the alternative life forms that can be found within Anthropocene/Capitalocene ruins, which unite "bacteria, minerals, vegetables and human and nonhuman animals" (*ibidem,* p. 55).

To sum up, this tension highlights the fact that ANT cannot be taken uncritically. Nevertheless, at the same time, it can also be affirmed that its critics inevitably naturalize and affirm a certain "system of truth", the scientific one – that is also, in its turn, a kind of social production of a certain society – as if it was naturalized. That is why I think that it is important to be aware of this tension and reason within it, attempting to resolve it rather than either accepting one or the other positions. In the next sections, I will return to different instances of this point, highlighting possible ways that these tensions can be resolved through the understanding of capitalism as a process that implies a certain material transformation of the nonhuman.

2.3 Urban Ecology

The adoption of ANT perspective and Latour's critique of modernity has profound implications that lead to the re-definitions of the "object" that are often defined as belonging to the human realm. For instance, applying these ideas to the concept of the city, it is suggested that it can be considered as a socio-natural space co-produced by humans and nonhumans. Nevertheless, leaving aside the human-centred vision of the city also demands the adoption of new tools of inquiry that are suited to analyse this multiplicity; that is why I am arguing for the adoption of a multi-disciplinary approach to expand this set of tools. Among the different disciplines, an important contribution towards this direction can be brought by urban ecology. As the human-centric vision of the city starts from the human and their activity over it, the perspective of urban ecology starts from the nonhuman and the way that the city constitutes a specific kind of ecosystem. Adopting ANT as a specific sensibility and multidisciplinary framework, taking into consideration also the dimension of urban ecology, appears as a good strategy to pursue this ontological de-centring. In this section, I will hence make some brief notes regarding the work of urban ecologists and

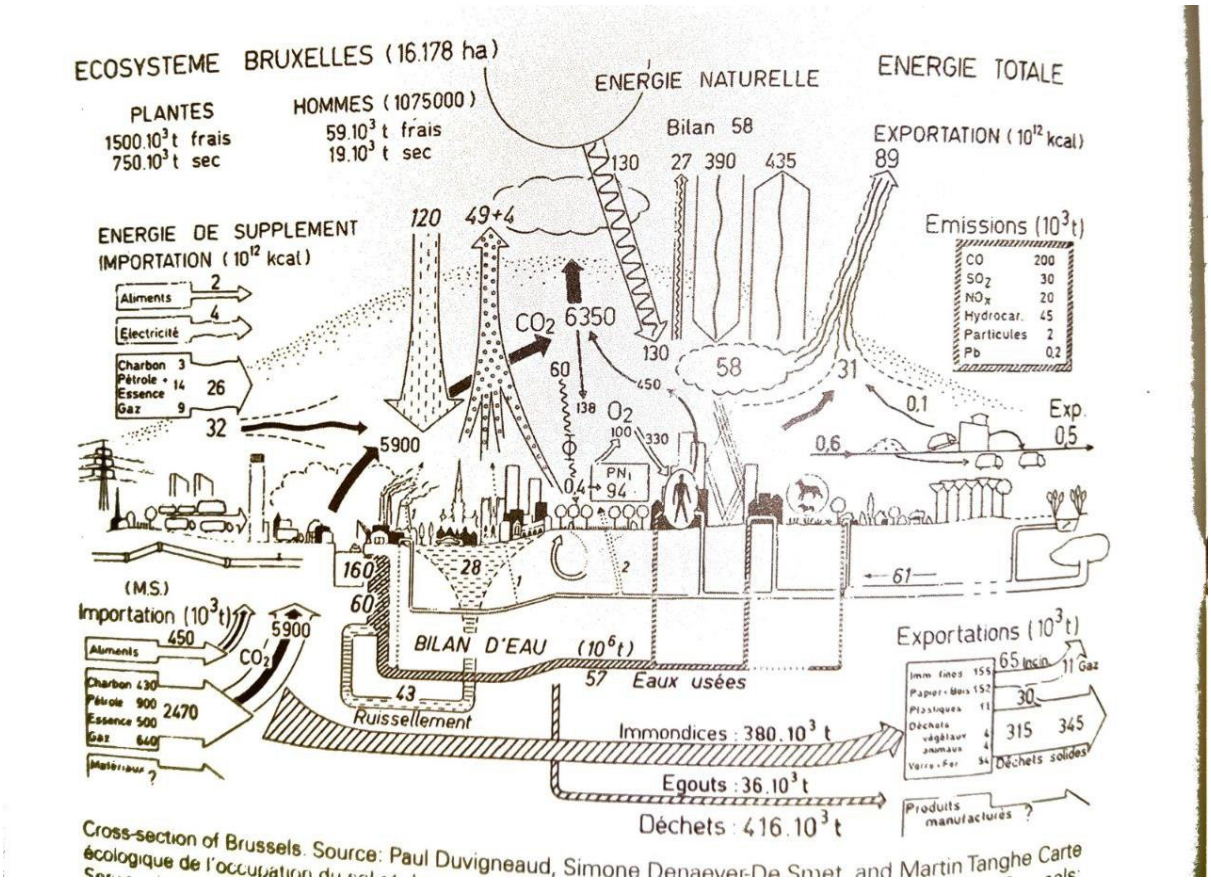
the understanding that they brought to the city. I will inquire about the birth of the discipline and the tensions that it raises.

Despite this multidisciplinary broadening of my research framework, I will not inquire into it in detail since it is the domain of botanical and ecological studies. What I am at doing, by providing some descriptions, is an instance of how it is possible to conceive the city also as a natural space, to understand how this ecological knowledge and dimension get intertwined in approaches to urban green spaces.

2.3.1 Conceiving the city as an ecosystem

In the change of paradigm in biology from focusing merely on "nature that is far away" to also "nature in the city", the work of two botanists, Paul Duvigneaud and Herbert Sukopp can be considered a milestone for the part it played a significant part in the development of this new field of botany studies. Despite the difference in the approach, what unites their work is the conception of the city as an ecosystem inside which human presence contributed to its shape and features.

Applying the "systems-ecology" paradigm, Duvigneaud conceived the city as an ecosystem that interconnects different organisms together with their non-biotic environment. More specifically, he applies this conception of the city to Bruxelles, the main location of his studies.



Cross-section of Brussels. Source: Paul Duvigneaud, Simone Denaeyer-De Smet, and Martin Tanghe Carte écologique de l'occupation

Figure 5 Paul Duvigneaud's Bruxelles ecosystem (source: Gandy et al. 2020)

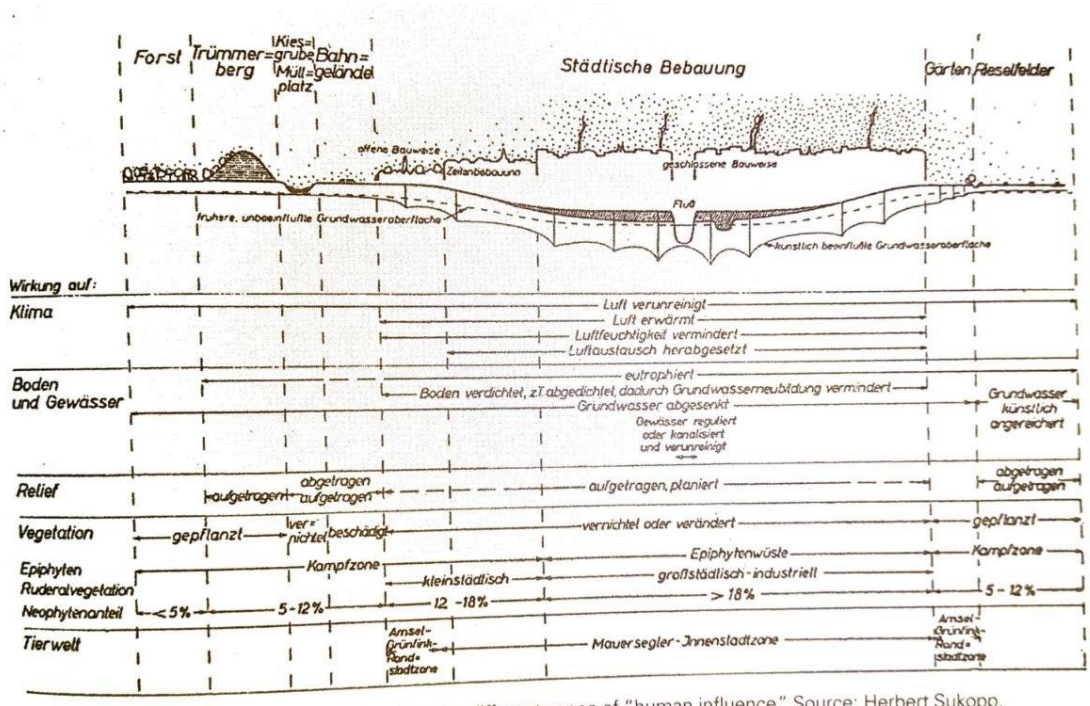
What needs to be stated is that, despite his focus on the city as an ecosystem, his attention is mostly focused towards the semi-natural landscapes. This approach also played a role in influencing his conception of the urban itself, which he divides into five "zones of greenness", conceiving it as a system that sees the intertwining of different socio-natural processes and a specific form of metabolism (Figure 5). It is hence a quantitative and data-oriented approach towards the ecological study of the city, which goes in tandem with urban planning and the modernist conception of urban development (Lachmund, 2020).

By contrast, the Berlin ecologist Herbert Sukopp, despite sharing the same understanding of the city as a socio-ecological space, develops a different conception of the urban and, in a famous article titled Der Einfluss des Menschen auf die Vegetation[7], he inquires how human activity has played a role in influencing the

[7] The influence of people on the vegetation

vegetation presence, colonization and growth in cities (Sukopp, 1969). The revolutionary character in his approach and his work in general lies in the fact of not limiting himself to the account of cities' biodiversity, but also the very influence of human activity on the emergence of biodiversity patterns (Kowarik, 2020, p. 449). However, it needs to be noted that his approach has also been influenced by the specific socio-historical and material context of Berlin (like, for instance, the presence of vegetation in rubbles of World War Two destruction), being one of the key reasons that made Berlin an important centre for the emergence of the discipline of urban ecology and for the favours he encountered in the local governance system (Gandy, 2022, p. 244).

In short, what needs to be noted is the fact that the focus of Sukopp was more oriented towards specific sites in the city rather than the city as a whole, as Duvigneaud did: what he was more interested in were the new vegetation patterns that emerged from this specific socio-ecological formation (Figure 6). That is the reason why he became more interested in wastelands and “ruderal areas” and conceived the city in different areas according to human influence and the types of biotopes (Lachmund, 2020)



Cross-section of Berlin showing the different zones of "human influence." Source: Herbert Sukopp, "Die Großstadt als Gegenstand ökologischer Forschung" (1973).

Figure 6 Herbert Sukopp's zones of human influence in Berlin (Source: Gandy et al. 2020)

To sum up, it can be stated that the work of these two ecologists presents differences regarding the conception of nature and the city. The perspective of Duvigneaud is broader and more focused on the metabolism of the city, and to some extent, it is more prone to forms of management and planning of the urban green. Conversely, the one of Sukopp is more oriented towards the recognition of biodiversity in the city and puts forward a different perspective on wastelands and ruderal spaces, which – as it will emerge throughout this research – are often depicted as "voids" when analysed from a human-centred perspective. As Lachmund (2020) observes, these differences are not subtle and unimportant, but they can rather be connected to different political ways of conceiving the city and orienting policies towards the non-human. For instance, the one put forward by Duvigneaud can be better suited to the technocratic perspective of modernist urban planning, as he also states in his intents. Conversely, the perspective of Sukopp is more akin to a political orientation that sees the human and the nonhuman as co-consitutive of the city in a way that is not necessarily and normatively human-centric. For instance, in light of the preservation of the spontaneous biodiversity that emerged, he advocated for the protection of

wastelands in the same way that the pristine countryside is regarded as something to be protected (Kowarik, 2020).

The works of Duvigneaud and Sukopp hence constitute a remarkable starting point for this new discipline. Nevertheless, I will not dive more into depth in this field, and what I aim to point out is the fact that the city can also be a field for ecological and botanical exploration. The final thing that needs to be noted is the fact that the difference in their vision of urban biotopes, besides being a matter of different interpretations in the discipline of ecology, can be an expression of two different political positions. For instance, Duvigneaud and Sukopp had two different ideas on the specific ecologies of the city. For the first, it is more about the biological productivity of the ecosystem, while for the latter it was more about the biodiversity of the environment and the variety of biotopes (Gandy et al., 2020, p. 27). These differences hence inspired specific methods and objects of inquire, and they are political in the way that they conceive the relationality between the human and the nonhuman. Later, on this chapter, I will further explore the political meaning of urban natures.

As a final note, it can be affirmed that since its birth, urban ecology constitutes a field that is increasingly gaining popularity, especially in light of the concept of the Anthropocene. Moreover, as discussed in the introduction regarding the way that animals were "returning to the city" that was emptied from human presence due to lockdown restrictions as a consequence of the COVID-19 pandemic, this conception of the multispecies city is increasingly becoming more prominent also in the general discourse. However, rather than something that generated new phenomena and behaviours of the nonhuman, the lockdown situation mostly made visible something that was already happening. These "accidental ecosystems" that are emerging since when cities have become more inhabitable also for the nonhuman are the object of what geographer and historian Peter Alagona (2022) has discussed in his book.

The 'Accidental Ecosystem' constitutes an inquiry focused on the U.S. context regarding how cities progressively transformed – willingly or not – to accommodate also nonhumans. This fact does not come as a surprise because – adopting an ecological perspective on the landscape where cities can be found – they constitute spaces that present desirable geographical and environmental conditions to accommodate life. According to Alagona, it is hence not a chance if also humans chose those spaces to live, and prior to human urbanisation, they constituted spaces of

vibrant wildlife. Moreover, what constitutes a drive for attraction is also the way that has been shaped by human activity and urbanisation, making them attractive for some species, for instance, for the fact of constituting spaces that produce food waste that can be seen as a resource for some animals.

To conclude, what I aimed to show in this section is the fact that urban ecology has provided descriptions that are not merely ecological but include humans as active actants in the creation of those ecologies. This implies that the ecological dimension is included in the planning paradigm, as in Duvigneaud's work, or that it is included as an explainer of certain ecological assemblages, as in Sukopp's work, or that, as suggested by Alagona, ecological features of specific environments are described as something that pushed humans towards the construction of cities in specific geographic locations and pushes out other nonhuman entities from them, and how the features that they acquired after their transformation by humans played an influence into attracting other nonhuman entities.

2.3.2 The "four natures" approach and the emergence of *novel ecosystems*

An important contribution in the field of urban ecology that observes the interplay between the human and the nonhuman has also been provided by the work of Ingo Kowarik. Having studied with Sukopp, it can be affirmed that he continued his work, following the approach that aimed at seeing the city as a patchwork of ecosystems. What is probably his most famous theorizing is the identification of four different types of nature according to the features that these patches present:

1. **Nature of the first kind**. The kind of nature that is derived from the conservation and restoration of wild natural areas.
2. **Nature of the second kind.** Rural land with a dominant agricultural vocation.
3. **Nature of the third kind.** This type reunites all the nature shaped by human activity, like recreational parks or gardens.
4. **Nature of the fourth kind.** With this denomination, they can be called all natures that constitute novel ecosystems, arising in spaces of former human activity that have been abandoned and witnessed a process of spontaneous rewilding.

   (Kowarik, 2012, p. 33)

Besides providing a more detailed analysis of nature in the city beyond the idea that it consists only of parks or decorative features, the classification presented by Kowarik has the merit of bridging the rural/city divide. Rather than idealtypes of nature that describe specific environments, this classification has the merit of identifying spaces according to their features. Put differently, it could be possible to find nature of the first kind also in some parts of some cities, while nature of the fourth kind can also be found in environments that are traditionally defined as the countryside.

Another classification of the different kinds of natures that mirrors and expands the one of Kowarik is the one presented by Baker (2019). Referring to Marris (2009) theorising – she adds new types of natural environments according to the features they present: for instance, she points out how, in certain spaces, it is reconfigured, restored, trashed or encased. However, besides expanding the classification beyond the idea of four kinds of natures, another contribution she makes concerns the critique of nature restoration as the goal of preservation policies. In fact, highlighting how being non-static is part of nature's character and ontologically it exists no 'original nature', she illustrates how nature as a pristine and fixed in time ecosystem is what in sociology would be called a social construction since what characterizes the ontology of nature(s) is always being in transformation. Hence, attempts to restore nature to a stable condition make nature itself even less "natural" (p.54). It is, therefore, by recognizing non-staticity and the agency of different entities (humans and non-humans) as defining natural ecosystems that it could be affirmed there is no authentic nature in the dominant meaning. Arguing for 'authenticity' as a reason for nature preservation has the effect of producing a "fake" nature since an authentic one is always in a state of change. Hence, on this basis, rather than policies of conservation guided by this constructed idea of authenticity, the goal is to "work in tandem" with nature, recognizing the mutual interrelation (p. 60).

To sum up, these approaches constitute a set of tools to enact the perspective of urban ecology towards the reading of cities. Kowarik's and, in particular, Bakers' approaches take more into consideration the activity of the human as something that contributes to shaping the environment and the emergence of new forms of nature o ecological assemblages. Returning to the critique of the modern distinction put forward by Latour (2011), it can be affirmed that the works of urban ecologists that go

in this direction have the aim of critiquing the distinction on the "material science" side. In other words, they refuse to conceive a "science" that exists beyond and despite the human. Ecology, in this case, does not constitute an autonomous domain that can be studied as if it were self-sufficient or disconnected from the side of the human. Rather, they illustrate how the two are interconnected and how these *perturbated environments* are also worthy of attention. It is hence, to this extent, that urban ecology can relate to the work of sociologists.

2.3.3 The concept of *third landscape* between botany and architecture

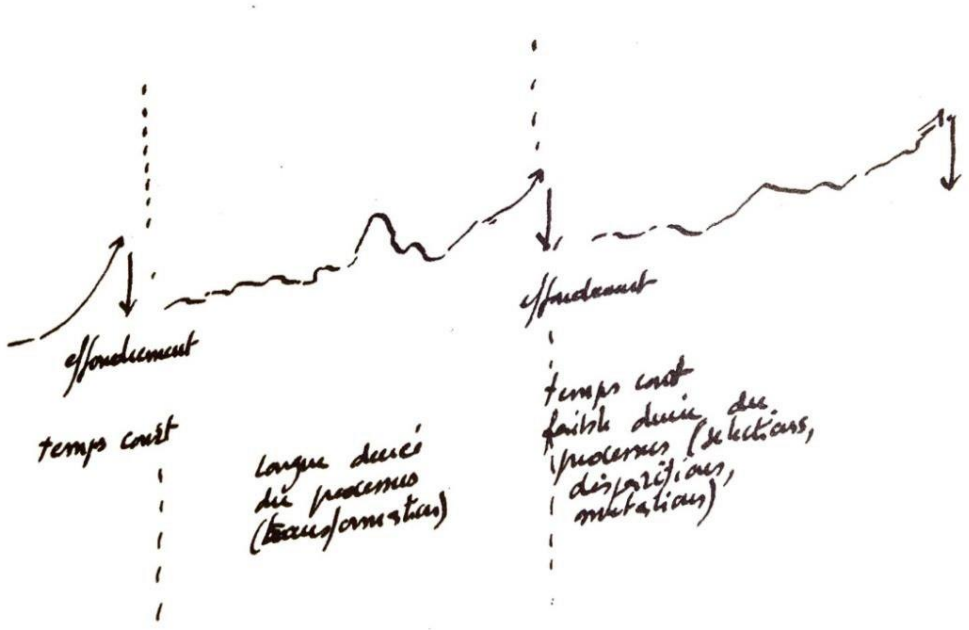
> "If we stop looking at the landscape as the object of human activity, we discover a certain quantity of indecisive spaces, without any function and difficult to name. […] [I]t covers modest surfaces, dispersed, like the forgotten corners of a field, vast and uniform, like peatlands and certain areas that have been recently abandoned after having been dismissed" (Clément, 2014, p. 10)

These words have been written by the French botanist and entomologist to define all those spaces with the presence of spontaneous ecologies that usually do not get attention or are considered as not valuable. To these spaces, he dedicates this manifesto, with the intent of finding a new definition, which is organized in 12 dimensions – among which the origins of the term, the extension it has, the challenges it presents alongside its limits, and the general view that society and culture have with it.

It can be affirmed that the work of Clément also is important for the framework of urban ecology, for the invitation to turn attention to the spaces that are often forgotten or pass unnoticed. Similarly, like what has been done in the works that I presented in the former section, it is interesting that Clément states that the *third landscape* is not something that exists on itself, but it is the outcome of the activity of the human – of the rational organization of the territory. In fact, it is something produced by this rational organization in the way that it escapes from it. This planning must not be configured as something only urban but also something that happens in the case of agricultural land. Put differently, the idea of the third landscape is also something that breaks with the distinction between the urban and the rural, in some

ways promoting a continuum, since "the frontiers of the Third landscape are the frontiers of the Planetary garden, the limits of the biosphere" (Clément, 2014, p. 16).

At the same time, the third landscape is in a constant state of mutation, depending on the exchanges it has with the surroundings and the pressure that these surroundings exercise on it. On top of that, also time and temporality that are connected with biological modalities of the environment play a significant role in



Alternanza tra processi evolutivi di lunga durata (trasformazione) e di breve durata (crisi, selezione, scomparsa, mutazione).

Figure 7 Alternation between long and brief term evolution processes (source: Clément 2014)

shaping and giving form to it. That is why this can also happen through moments of crisis and discontinuity, with gradual and slow modifications (Figure 7); that is why the Third landscape can appear as the territory of the biological invention (*ibidem*: 47-51). This biological invention also emerges in the way that Clément avoids using normatively the distinction between native and non-native plants, as well as any preconception about the necessary restoration of specific ecologies based on historical grounds (Gandy, 2009). For these reasons, it can also be stated that the concept is in line with the idea of novel ecosystems that has been mentioned before.

In short, the theorizing brought by Clément is important because it inquires about what happens in the spaces that are left to be developed, and the human interference is minimal. However, it is important to specify that he does not refer to

the origin of the space of third landscape, since it can also be human (e.g. the abandonment and the negligence over a certain space). Rather, it refers to the action and ecological successions that happen over it. But, besides this reason, Clément's work is also significant for bringing the ecological dimension to the concept of landscape.

The definition of the third landscape hence constitutes a different perspective on urban spaces, and it can be reconnected with the idea of more-than-human commoning that bridges the anthropocentric paradigm. For this reason, it can be affirmed that the manifesto put forward by Clément makes emerge the political character of thinking and defining what constitutes a green space that is worth protecting. This fact that seems self-evident is actually not the norm, for the fact that the conception of the green is usually discussed in a de-politicized manner. That is why developing attentiveness to the more-than-human can also have a politicizing character. In the next section, I will thus expand further on this claim and the reasons why it does matter.

2.4 The Political Character of Ecology

The former section that highlighted the ecological dimension of the city helped bring forward an understanding that challenges the idea that cities are merely social constructs but also – in their own ways – ecologies. The deconstruction of the city as the mere realm of the human hence opened the path to its reconstruction within other terms and perspectives also informed by the adoption of ANT. Among these, one that helps shift the ontology and extend the political to the nonhuman is urban political ecology. This extension is therefore being performed through the adoption of the political ecology framework.

As informed by the name, urban political ecology hence aims at conceiving the city as a socio-material-political entity. To summarise the implications of this reasoning, it is useful to quote Harvey's provocation to illustrate the standpoint of this discipline:

> "[i]t is pure idealism, for example, to suggest that we can somehow abandon in a relatively costless way the immense existing ecosystemic structures of, say, contemporary capitalistic urbanization in order to get back close to nature. […] [T]here is in the final analysis nothing unnatural about New York City and sustaining such an ecosystem even in transition entails an

inevitable compromise with the forms of social organisation and social relations which produced it" (Harvey, 1993, p. 28).

What the quote from Harvey points out is the inevitable intermingling between a system of social organization – capitalism – and its material embeddedness – usually defined as the "environment". Forms of social organization are also connected with some ecologies that have been produced; in other words, there is a continuum between society and what is usually defined as "Nature". As it is self-evident, this perspective is strongly connected with the one of Latour (2005, 2010, 2011) that I formerly discussed. But, as the foundational volume edited by Heynen, Kaika and Swyngedouw illustrates, the aim of Urban Political Ecology – rather than the socio-environmental ontology of the city already defined by ANT – can be found in the analysis of how this process is political that makes and remakes certain socio-ecological conditions (Swyngedouw et al., 2011, p. 2). In this way, the intermingling between the technical and the material is pointed out, and rather than considering the environment as a background where politics happen, it is being considered as the main object of the politics. For instance, in this term, the construction of a dam to provide electricity to a city is not merely being regarded as an intervention aimed at bringing a public service, but rather as a way of appropriating, shaping and transforming a certain environment to achieve a specific goal and vision.

In other words, political ecology studies how landscapes of resource extraction, exclusion and dispossession are produced, what drives their creation and the effect that this has on populations. A term and concept that is widely used in this discipline contributing to delineating these landscapes is the one of *metabolism*. For instance, according to Swyngedouw (2006, p. 106), cities and urbanization can be viewed as "a process of de-territorialization and re-territorialization through metabolic circulatory flows" and therefore, under capitalism, "the commodity relation and the flow of money veils and hides the multiple socio-ecological processes of domination/subordination and exploitation/repression that feed the urbanization process and turn the city into a metabolic socio-environmental process". However, even before, also Marx used the term in a way that is aking to the use that it has acquired in political ecology: referring to the relationship between human beings and nature, he claims that capitalism produced a *metabolic rift* due to the imbalance caused by capitalist agriculture and its effect on soil fertility due to the use of chemicals (J. B. Foster, 1999). In other words, the use of the term by Marx is well connected with the political ecology way of thinking

regarding the interconnection between human activity (in this case, capitalism) and environmental issues.

Metabolism, in other words, is used to indicate a certain kind of relationality and form of resource appropriation that ends up producing a transformation. This fact also has an impact on the kind of natures that are enacted and produced. In the section about urban ecology, I presented Ingo Kowarik's distinction between different kinds of nature; in this one, instead, I will also present a classification of nature which rather observes the direct political character of transformations and the way they relate to the capitalist mode of organization. This classification is the one proposed by the environmental historian William Cronon, who distinguishes between "first" and "second" nature. For Cronon, first nature, as a general definition, indicates nature that precedes human influence. It could be defined as nature in its "pristine" state, while second nature is, for him, all the nature that has an "artificial" character. Nevertheless, he avoids the critique that an assemblage perspective would move by defining this very distinction as artificial: he recognizes that the nature that we inhabit is always a mix between the two. At the same time, it could be argued that its description is not innovative since this ontology is something that has already emerged and is being discussed. What is instead innovative in Cronon's analysis is the way he continuously refers to how capitalism – or human activity in general – is always central in the making and remaking of second nature, to the point that it cannot be known anymore what is natural and what is not. For instance, canals and lakes would be considered in the general discourse as "natural" in the sense of nature of the first kind and considered as key elements of specific "natural landscapes". However, an historical analysis makes emerge how many of them are actually artificial and made to serve capitalist needs – like the one of transporting goods (in the case of canals) and the one of accumulating water as a resource (in the case of lakes) or, in general, lakes and rivers have been altered by human activity, producing new geographies (Cronon, 1991, pp. 56–57). But, more than this, it is remarkable the way he describes how Chicago became the capital for pig livestock. What happened in this context was the transformation of first nature into second nature, through the *metabolism* of industrial capitalism. Pigs become embedded in the context of urbanization, and this embeddedness alters their first nature. They are inserted within the capitalist chain of production and commodification, which produces this landscape of *second nature* that is often

regarded as artificial, with the outcome of transforming animals into meat to be sold into the capitalist market, becoming essential for its functioning.

The analysis performed by Cronon is significant for the fact of highlighting how processes that are considered “artificial” – like the capitalist mode of organization – are never truly only a matter of the human but involve a political definition and transformation of nature for different purposes. The production of landscapes of second nature is hence deeply political and always inspired by principles grounded in specific ideological thinking. This reasoning can be expanded from the description of the creation of landscapes of livestock and consider the very process of urbanization as a political and ecological process. To start illustrating how this takes place, I will start by returning to the concept of wilderness, reasoning on what it means when urbanization emerges in contrast to it.

2.4.1 The social construction of Nature

The idea that there is a wild environment might appear self-evident. In the general discourse, a wild environment is characterized by the absence of humans – an absence that must be maintained to consider it as such – and a rich, "harmonious" nature that flourishes. It is an a-temporal environment of pure peace and therefore constitutes a "more pure" place than the ones that are inhabited. "In wildness is the preservation of the world", writes Thoreau (1989). However, this is only seemingly self-evident, while, in fact, it might also hide a social construction which is also connected with the affirmation of the industrial mode of production. It is, in fact, no chance that the idea of wildness is seen as something that emerged in particular since the late 19th century, coinciding with the period of modernisation.

One of the novelties that the ideal of modernisation determined is a particular mode of Nature's appropriation, metabolism and destruction. As formerly noted, this mode of appropriation classifies some environments as resource-rich, hence producing landscapes of appropriation – where resources are extracted – and production – where the transformation of those resources takes place. While the first can be found in sites that are “resource-rich”, the latter has been concentrated in the industrial city, which attracted large numbers of workers employed, leading to the emergence of a highly populated environment heavily modified by an anthropic

activity where living conditions were unhealthy[8]. The idea of wildness hence emerged in contrast to these landscapes of appropriation and production, as an alternative to the chaotic and unhealthy city, as an anti-modern reaction by the bourgeoisie – the same one responsible in the first places of the destruction of certain environments. Hence, wildness emerges as the place where "to seek shelter" and find a "more authentic way of living" (Cronon, 2002). In other words, it is only after having destroyed it that the bourgeoisie speaks of nature (Papson, 1991, p. 10) and socially constructs it both as an ideal and as a space associated with certain leisures.

The first evident contradiction that appears emerges when considering the conditions inside which the idea of wilderness is being produced: it is only people that grew up thanks to the benefits of a "modern lifestyle" that can enjoy Nature in this way that 'others' it from human activity, as the recreational activity of the "excursion in the wilderness" (Cronon, 2002, p. 124). Hence, starting from this paradox, it can be affirmed the commodification of nature began with industrialization (Marshman, 2019, p. 91). The result of this process is hence a form of 'othering' Nature from *what is not,* breaking the spatial continuum and placing humans outside of it. It is both the "real place where to live", but, at the same time, it is not a place where to live because the act of inhabiting it would not be feasible. The experience of Thoreau is also exemplary of this fact since he entertained a relationship with a village to make his life in the wilderness possible and – despite it might have worked for his individual lifestyle – he does not reflect on how it can be extended to a broader social structure maintaining the same principles. That is why, to some extent, Thoreau's experience can also be considered the archetype of the 'experience of wilderness' that is being sold as a commodity.

Therefore, starting from these observations, Thoreau's famous sentence can be rewritten as "in Wildness Is the *commodification* of the World". Despite constituting a place where to escape, the emergence of the concept of wildness is another instance of Nature's commodification and appropriation by capitalism. It became something that can be consumed and experienced as a form of *leisure* during free time or as an imaginary to return as a critique of the modern way of living. However, rather than

[8] As a proper instance of this condition, it is useful to refer to Engels (1969) description of the condition of the working class in England. Although Cronon presents an analysis that is more related to the United States context, the description by Engels can be considered as an idealtype of workers' condition

constituting a critique that indicates an alternative mode of living compared to the one of industrialization, it indicates no other concrete ways of living but rather a form of 'being in Nature' without transforming it. It is not, in other words, the promotion of a lifestyle that is akin to one of commoners before the enclosures, but rather a non-realistic way of living that implicitly states that there is no alternative to the modern lifestyle.

In sum, what political ecology makes emerge is that, on the one hand, it is possible to find the idea that nature lays "elsewhere" and certainly not in cities, which are the centre of industrial production. On the other hand, this way of conceiving cities as the opposite of nature led to the creation of cities without nature in mind, fostered by the idea of industrial progress. That is why, at the end of the 19th century, the importance of turning cities into "more natural" spaces started to be discussed since they were depicted as unhealthy spaces where people lived in terrible conditions. It is starting from these assumptions that different politics for Nature started to be sketched, which resulted in the redaction of the Athens Charter.

The Athens Charter, in fact, constitutes one of the key principles of modernist thinking. It describes the problems that cities have and puts forward the new "modern" solutions to these issues to transform them according to new architectural principles aimed at tackling the unhealthy condition of cities. These principles revolve around the four functions that a city must fulfil: inhabiting, working, recreation (in leisure time), and circulation (Le Corbusier & Sert, 1973, p. 93). However, despite including the design of green spaces in the urban form, this vision still excludes the rationality and the knowledge ecological dynamic are absent and the core design principles support a human-centric and technocratic perspective towards the world.

At this point, once it has been defined that Nature is a socially constructed concept – in a similar way compared to how the laboratory and the idea of science are socially constructed – it also opens possibilities of re-assembling it (Latour, 2005) into novel forms. However, this act of reassembling, more than a rethinking, it is something that allows a deconstruction of the very idea of what constitutes nature and what should be exempt from it. However, it is not a process that can be explained in one sentence or be carried out without taking the proper steps since it requires challenging ideas that are more or less taken for granted or naturalised. Hence, what is needed is a step-by-step explanation of how certain ideas or categories of thinking have been

naturalised and how they can be imagined otherwise. To perform this activity, I think that the process of thinking of ethnomethodology would be useful.

For a start, it could be useful to ask: why *a city is called a city*? And *what is the main imaginary that is being associated with the city?* This is indeed a broad question that is difficult to address and tackle, but it could be easily defined as a space where humans have the tendency to gather and reunite. Saying that human beings always had the tendency to gather in formations that recall the one of the city is not an over-generalising statement. In fact, examples of cities can be found all over the world. Hence, besides historical and contextual differences, it could be said that the city is a concept and a material conurbation derived from the satisfaction of human needs in different historical times. A city, in other words, is a space where people and activities gather and concentrate. Although the city always retained a social function, this function did not always remain the same and changed over time, depending on the mutation of socio-economic conditions (Mela, 1996). As it already emerged, a key event that had an influence on shaping the nature of cities was the industrial revolution, when cities acquired a pivotal role in the concentration of resources and people and thus became key places for the development of capitalism (Castells, 1979). This industrial city in which natural amenities had no function hence influenced the social construction of Nature as something that does not belong to it, which I formerly discussed. That is why, especially during industrialization, nature has been designated with the capital N and referred to something that exists outside and in opposition to the city. However, it needs to be stated that the idea of Nature with the capital N is a socially constructed concept that has its origins much before the affirmation of modern thinking, but it is especially starting from modernity that it became a signifier of something that is not the built environment.

At the same time, despite the city being considered a non-natural environment, it does not mean that it has no natural features or that such features are not planned. Especially after the modernist influence on urban planning that I discussed above, spaces of nature started to be planned according to specific social-oriented functions or aesthetic principles. In other words, it can be stated that when city nature is defined, it often happens that it designates only a specific kind of ecological assemblage with

specific features or as something designated in urban planning schemes[9]. Therefore, it is from these distinctions that the uncontrolled growth of nature would be politically assessed within the city context as desirable and not desirable as "beautiful" or "neglected" as urban nature or derelict land (Lossau & Winter, 2011).

Despite the fact that this social construction might appear as self-evident, in general use, it is hardly the case. What often happens is that the socially constructed idea of nature is naturalised and also affects scientific disciplines. This can be seen in the way that urban ecology – as I illustrated in the section about that in this chapter – is a series of ecological studies that came after the institution of the discipline of ecology: initially, ecologists were interested only in places that were "far away from the city" because the city was not regarded as an interesting place to study. Nevertheless, Lossau and Winter also note that, as a social construction, it is also never permanent but varies according to the specific period *zeitgeist* (Lossau & Winter, 2011, p. 335). Different tastes, different ideals and forms of sensitivity towards the nonhuman, and different ways of seeing natural phenomena can influence different social construction of urban nature. Namely, it can be supposed that in the early phase of modernity, when anthropocentrism was at its extreme, Nature was defined mostly according to the recreative function that it might have for the human or as a form of *simulacra*[10] of the other socially constructed notion of "countryside". On the contrary, it can be supposed that, at the present moment, the emergence of the environmental question and the critical reflection on anthropocentric perspectives over the ways of engaging with the world might have also influenced a different perspective and social construction of Nature. This variation in the declination of urban nature is something that I will constantly pay attention to throughout this work, together with the changes that influence it.

Nevertheless, before moving on, I still want to focus the reasoning on this social construction, regarding the ways it comes into play and how it presents occasions for alternative operations of reassembling. If by far I have inquired how something that is nature is defined as non-nature, now I will turn my attention to the way in which what

[9] As an instance of this, Pileri (2022) provides a good example, when he observes that a certain green space in Milan that falls within the categorization of railway area but materially appears as a green space is categorized as urbanized land, while another space that is part of a park but constitutes a portion of sealed soil is classified as green space.

[10] A term derived from Baudrillard (2015)

is considered natural is actually constructed. One of the main authors that reflected on the social construction of nature is the historian William Cronon (2002). In his critical reading of the concept of wilderness, he notes how wilderness is, firstly, a human creation and, secondly, a creation that emerged only during a specific time-period. Among the many features that allowed its flourishing, two important ones are the idea of the sublime or – in the U.S. context – the idea of the frontier. What mainly emerge from these visions is the idea that wilderness is something valuable because of the absence of human. It is on these grounds that, for some authors, wilderness emerged as an anti-modern critique, fostering the idea of a more authentic life. Put differently, wilderness emerges in contrast with the *corrupted* industrial city. What is controversial – Cronon highlights – is the actual fact that people that defend and reclaim the idea of wilderness as a more authentic place are actually people that live in the *industrial city* and benefit from the lifestyle derived by modernity while thinking of going in the wilderness as a form of leisure. In other words, their home is in the city, and they would never think about really making a home in that wild space. What is even more controversial is the fact that their idea emerges in opposition with one of the people that actually live in those spaces (like Native Americans), with the latter being considered by the former as a cause of nuisance for the «real nature». From this reasoning, it clearly emerges how wilderness on itself is an artificial concept that can also bear problematic colonial connotations. Besides this, another staggering problem that Cronon highlights are the implications of this reasoning: if an authentic nature is nature without humans, it means that mass suicide would be the only solution for nature preservation. Rather than accepting both the premises and the consequences of this reasoning, he proposes a different focus on how we think about nature and wilderness:

> "Idealizing a distant wilderness too often means not idealizing the environment in which we actually live, the landscape that for better or worse we call home. Most of our most serious environmental problems start right here, at home, and if we are to solve those problems, we need an environmental ethic that will tell us as much about using nature as about not using it. The wilderness dualism tends to cast any use as ab-use, and thereby denies us a middle ground in which responsible use and non-use might attain some kind of balanced, sustainable relationship. My own belief is that only by exploring this middle ground will we learn ways of imagining a better

> world for all of us: humans and nonhumans, rich people and poor, women and men, First Worlders and Third Worlders, white folks and people of color, consumers and producers—a world better for humanity in all of its diversity and for all the rest of nature too. The middle ground is where we actually live. It is where we—all of us, in our different places and ways—make our homes". (Cronon, 2002, p. 139)

Then, it is by looking for this middle ground, thinking about the environment in which we live, that it is possible to develop a new form of consciousness towards nature. It is not by placing our real home in a fantasy that we do not actually inhabit but by thinking about the place where we live and the way we treat nature here. Hence – he continues – there is no real difference between a tree that might spontaneously grow in a forest in the *wilderness* and a tree that has spontaneously emerged in our backyard: both can be subjected to dynamics of attention and care. It is hence by fostering these arts of attentiveness (T. van Dooren et al., 2016) that it is possible to develop a new relationship with the nature that surrounds us. In other words, it is about – as he states – adopting the sense of wonder of nature dynamics that we tend to observe only in the wilderness also in the nature that is not far away. This would then also imply destroying a part of nature to make our home, but this destruction follows a critical reflection and would not be indiscriminate.

Despite its marginalization (Gandy, 2021), I think that the value of urban political ecology is actually one of – directly or indirectly – questioning this city/nature divide. What unites the conception of the city as a human matter and nature as something that is far away is some sort of naturalisation and de-politicization of a specific process. Put differently, the dominant conception of the city emerges as a political decision to sacrifice nature in a defined space or subsuming it within a human-centric paradigm and ontology. Similarly, imagining nature as something far away to be protected emerges as a political decision of not conducting any sort of human activity in a defined space, privileging "some part of nature at the expense of others" (Cronon, 2002) – with the reasons being based on any kind of motivation besides the ecological one.

2.4.2 More-than-human ontologies and multispecies perspectives

One of the most innovative trends in urban research that reassembles the concept of urban nature is the ontological shift of the analytical perspective from a theoretical

and methodological approach to the city, mainly human-centred, to an approach which accounts for the different ontologies that populate it and are responsible for its creation. This shift clearly reconnects with the perspective of STS and Actor-Network Theory over the city but expands the debate also on the ontological and ethical claims that can be made, putting in the forefront also the perspective of the non-humans.

Nevertheless, this exists in friction with dominant sociological theory, and its integration is never always successful. Hence, in this research, following the adoption of a multidisciplinary perspective, I also engage with research and perspectives – mostly from the field of geography – that attempt to describe the city from the point of view of non-humans and see non-humans as central in the formation of *phenomena*. However, I also recognise that my attempt remains limited, mainly sticking (consciously or unconsciously) to a more traditional sociological perspective on the urban. At the same time, I am also critical towards it, and it is within this critique that I aim to introduce some of the concepts derived from this multispecies perspective on the reading of the *assemblages*.

For a start, it could be stated that a good explication of the multispecies political dimension of ecology is highlighted by Clément in the Manifesto for the Third landscape. Defining this new type of landscape, he sees how anthropic elements are something that allows its creation for the dynamics of neglect, but also how anthropic activity constitutes a menace to it, in the way that "the contemporary practices of exploitation of the planet mainly obey to the logics of a market economy that revolves around the liberal model, with immediate-profit goals" (Clément, 2014, p. 31). This – he argues – is also influenced by the general change in the lifestyles of the human population, and this change has a critical role regarding the future that the third landscape will take. It is in this approach that his perspective can be defined as multispecies, for the fact that he sees the third landscape as something with a strict and mutual relationship with society: from the way it appears and it is defined (as a natural space? A space for free time? As a space of non-productivity? As a sacred space?), influences a specific relationality and the way that society "cares for it", whether it goes unnoticed or acquires peculiar meanings. Nevertheless, he also stresses that there is no direct correlation between ways of caring and the existence of the third landscape. Quite the contrary: often, the fact of *not caring about it* is what allows its existence. And, when institutional actors actually care about the space, they do it in light of the profit potential that the space can generate. (Clément, 2014, pp.

53–56). In other words, what emerges is the fact that the relationality and the approach that humans have towards it have a direct ecological implication.

Besides this, the third landscape has, for Clément, another kind of political connotation that derives from the term itself, which comes from the revolutionary connotations of "third estate" that was used in the French revolution. It is to this extent that it acquires the peculiar significance of the "landscape of resistance" (Gandy, 2009), mixing the social and the natural in its claims.

Returning to the specificity of ANT, it could be stated that a multispecies perspective is implicit in the sensitivity to read phenomena that characterise it; it is, in fact, from this standpoint that the city emerges politically as a *vegetative* entity. Namely, it constitutes something that exceeds the dimension of the built environment, with different natures constantly irrupting and claiming its agency. There are several instances of how this occurs, for instance, through the "vandalism of plants" that irrupt the urban space, breaking the asphalt and challenging the created infrastructural order, or in the clash of temporalities regarding the rhythm of growth of plants, which happens in front of the eyes of the humans but cannot be grasped (Brighenti, 2018).

By defining the city as a vegetative entity hence makes his character emerge as a human-nonhuman hybrid (Marshman, 2019). This narration, therefore, demands new ontologies and modes of narration that make space for this complexity. Among these, one that is insightful is the concept of meshwork, as proposed by anthropologist Tim Ingold (2007). As he states, the concept of meshwork derives from Lefebvre (1991) description of how patterns of humans and animals weave together, and Ingold applies this idea to describe the trails that humans and nonhumans do when they travel space. What is insightful from Ingold reflection is the fact that these lines are not simply points of interconnections as the ones that would happen in a network of interconnected beings, but they signify the world "coming into being", weaving together like a knit. Besides providing a strong visual depiction of how paths intersect in a less regular way compared with the way they do in a network, the idea of meshwork is also insightful when also conceptualised in an abstract declination. Applied to the idea of the vegetative city, especially to the ones of temporalities and life rhythms, the meshwork can illustrate how these different temporalities and life rhythms overlap in unpredictable ways. The conditions under which the meshwork of humans and nonhumans comes into being are hence non-intentional and temporary, and the intensity of the encounter can vary. For instance, it can happen that an area that is

abandoned from human activity sees the flourishing of a spontaneous ecosystem or that a human-made infrastructure unintentionally becomes colonised by animals (Alagona, 2022). In short, the meshwork can be considered as the ontology of the 'vegetative city', and the response or the outcomes of this 'knitting together' of different beings acquires a political meaning – whether it can be disruptive or inclusive. Nevertheless, it can also be seen as the basis of the concept of naturecultural encounters – namely, the idea that there is no such thing as "purely human" culture but rather a form of culture in which the human and the nonhuman are intertwined in different ways. Therefore, the image of entities – human and nonhumans – knitted together in the way that they compose and make each other constitutes one of the clearest examples of what is a multispecies ontology. In a similar way, also Haraway (2016) provides an image of the intermingling between humans and nonhumans by the idea that companion species are playing a string game among themselves, since they "make kin in lines of inventive connection as a practice of learning to live and die well with each other in a thick present"; it is in this way that different species co-become. As an instance, she points out at the relation between humans and pigeons in the way that the existence and the place in the world that the second acquired nowadays is deeply influenced by the role that those played in history since when humans used them to send messages: for Haraway, this is a string game played between pigeons, humans that exploited their ability of orientation which further played a role on pigeons mode of adaptation of living in the world.

Despite the insightful example provided by Haraway and the fact of constituting an innovative framework that fosters a radical re-formulation of society and its interdependence with the nonhuman world, one of its main limits is the fact of remaining mostly based on an abstract level of reasoning. The works of Cronon (1991) Alagona (2022) constitute some examples from environmental history and ecology; however, on the side of social sciences and related disciplines, the approaches to the world are still mainly anthropocentric. An innovative and discussed approach to incorporate this multispecies perspective comes instead from anthropology. On the one hand, this might not necessarily be a surprise since – as also Latour (2011) pointed out – anthropology constitutes the science that is most suited to produce this alternative understanding since it is the analytical strategy that it adopts. But the problem is the fact that it has mainly been adopted to study contexts in the Global South, while, in the Global North, the distinction between nature and culture has

mostly remained the ordering principle that determines the ontology of the object of study. It is to this extent that the work *The mushroom at the end of the world* by the anthropologist Anna Tsing constitutes a ground-breaking study in regard to the discipline.

Taking the multispecies perspective seriously means asking questions regarding the interconnections between social and natural entities or being open to the «unexpectedness» of the assemblages that can appear during the research. This can be considered the starting point of Tsing (Tsing, 2021) work, where she describes the interconnections between the global economy, the value regime, precarious work conditions, migrations, cultural differences, ecologies and nonhuman entities. This is being performed by following a mushroom called *Matsutake*, from the spaces where it can be found, the work that is being carried out to collect it and the way that it is being sold. What can be derived from her description is the fact that all these stages and moments take place in the form of interrelations, connected with human (capitalist) ad nonhuman dynamics.

The mushroom called *Matsutake*, in fact, constitutes an interesting ecological artefact. It is a mushroom that originates only in territories and forests that have been perturbated by capitalist dynamics and human-caused disasters; for instance, it emerged in Oregon in a forest that arose from a form of management that aimed both at preserving it and making it profitable for woodcutters (Tsing, 2021). This implied a series of measures that had unexpected ecological outcomes. For instance, the suppression of (spontaneous) fires prevented yellow pines from growing, fostering the development of other types of pines or trees instead. Among these, there has been a proliferation of *Pinus Contorta* – a kind of tree that favours the growth of this kind of mushroom.

Besides constituting an ecological artefact that arises only in specific environments that witnessed certain transformations, Matsutake is also an expensive and highly demanded mushroom in Japan. This feature thus created a specific market of demand and offer, and when it became known that it also proliferates in other forests around the world like the one in Oregon presented by Tsing, this fact gave rise to a global chain of commerce with a number of intermediaries and actors that assembled to render possible the whole supply chain, from the moments that the mushrooms are picked up to the ones that are sold in Japan. The creation of this chain of value thus created *non-scalable* economies connected with the specific differences

and features of the territories where they are located, governed by "mechanisms of translation" between different economies.

To sum up, what Tsing aims to highlight is the fact this assemblage is a complex system where human and nonhuman entities come together into place, and both humans and nonhumans produce this non-scalable economy. On the one hand, this is being performed within the human histories of cultures that allowed a certain migratory process towards specific locations, which resulted in the employment of certain populations in the job of Matsutake picking and selling. On the other hand, the work and interconnections created by funguses with other nonhuman entities allowed the proliferation of the Matsutake themselves. To this extent, it is possible to affirm that Tsing work constitutes an example of what it means to apply the "assemblage thinking" also to the empirical domain.

The works and the theory discussed in this section constitute examples of modes of reassembling the social (Latour, 2005) with a multispecies perspective. At the same time, they constitute works and perspectives that are distant from the research I am discussing in this work, both for the discipline, the focus and the research methodology. However, what I aim at is attempting to partially adopt this call in the main message it aims at conveying. In fact, one common thing that unites all the theorizations is the recurring idea that has already been discussed regarding how "the social is never only social, and the natural is never only natural": they 'dare' the researcher to take into consideration this complexity. Hence, by keeping in mind the work and the perspectives that have just been discussed, I 'dare' to adopt a complex reading to inquire how urban nature emerges as a commons. As a final missing tile to perform this operation, I will introduce in the next section another concept that helps foster this understanding: the idea of natureculture.

2.4.3 The concept of natureculture

As an anthropological encyclopaedia definition, natureculture is described as "a synthesis of nature and culture that recognizes their inseparability in ecological relationships that are both biophysically and socially formed" (Malone & Ovenden, 2016). As a very simple definition, it states that what is usually defined as culture also entails a material relation with other-than-human beings. Nevertheless, despite the simplicity in which it might appear, the common understanding is one that does not

take into consideration the ecological dimension, conceiving culture as only a matter of the human.

The neglect of natureculture can be understood in light of Latour's (2011) analysis of the pillars of modern thinking. In fact, as a consequence of the work of *translation* and *purification*, there is a strict separation between what is 'natural' and what is 'social', and that is why a concept like the one of natureculture might appear like an oxymoron. In short, this relates to the critique of the way of thinking put forward by modernity that was discussed in the section above. But, despite modernity does not allow this way of thinking, it does not mean that natureculture does not exist. As Latour argues – to get an example of it – it is sufficient to look at the narrations produced by the anthropologists when they describe Native American populations: there is no narration that distinguishes between myths, religions, political structures, agricultural and other techniques; everything is intertwined in a single narration, and this is exactly what natureculture is (Latour, 2011, p. 7).

At the same, what needs to be noted is that the neglect does not imply that there is no natureculture in the modern world; we simply have not yet developed the understanding exactly because the division between the works of translation and purification has been imperative for Western society. Therefore, it is actually what should be done to address critically modern thinking and the assumptions that it entailed. It is in this light that the collective work *An inquiry into modes of existence* promoted by Latour must be read, as the *pars construens* of the work that he initiated in *We have never been modern*. Besides being based on the idea that characterised the following book – namely, the fact that it is impossible to explain one assemblage only through the analytical instruments of a certain discipline – the book further builds on this idea, arguing that there are different modes of existence among actants. In this sentence, it is important to stress the plural declination of mode since the core idea is the fact that there is no single one that can explain a more-than-human interconnection, but several are awaiting to be noted down. Therefore, from the theoretical standpoint and the analytical strategy that is pursued, *An inquiry into the modes of existence* is an example of the production of natureculture, for the fact of taking into consideration at the same time several dimensions, like technology, law, politics, organization, literature, philosophy and religion.

To sum up, the concept of natureculture is important as an attempt to take seriously the interconnectedness that ANT postulates; it constitutes its direct

application at the level of ontology. Nevertheless, the emergence of naturecultures is not something exclusively highlighted by this mode of sociological thinking. As illustrated above, also urban ecology speaks of natureculture when it accounts for the impact that human activity provoked on ecosystems and the behaviour of the nonhuman. Despite not directly using the term, urban ecology also does the analysis of naturecultures, constituting another example of how interdisciplinarity plays a significant role as part of this new understanding of the "more-than-social".

Despite this proliferation of naturecultures, they still remain something underexplored, since traditional readings of the urban phenomena are being conducted by implicitly accepting the "modern constitution" – the separation between the human and the nonhuman. Therefore, speaking of naturecultures can also be considered a political act. It critiques human-centrism and the linear idea of progress, proposing a multispecies ontology that takes into consideration the fact that human production always happens in tandem with the nonhuman or implies influencing and modifying it. Therefore, for instance, the choice of allowing light and noise pollution in cities or creating infrastructures that would be hostile to nonhumans has the political implication of reproducing a human-centric vision that does not take into consideration the more-than-human.

This conclusion might appear as gloomy and might postulate the inevitability of human-centrism, but it could also stimulate the production of a different understanding towards the world that humans inhabit. This understanding hence implies the recognition of the existence of other-than-human beings with needs and modes of existence that are different from the ones of the human. Between the decision to ignore this fact and imagine that exists a Nature that is exterior to human creation (modernity) or refuses any kind of action by considering the mere act of interfering as something that must be avoided (anti-moderns), there is the one of taking it into consideration in the choices that are being performed, reflecting on the naturecultural assemblages that it creates. In other words, it means producing culture through the lenses of more-than-human commoning, hence recognising the fact that the world is intimately shared between different kinds of human and nonhuman beings that are inevitably interconnected and in relation with each other.

2.5 Bringing together all the matters

In this chapter, what I aimed at doing was delineate a theoretical framework to adopt to answer the questions I posed. I started from the idea of commons, highlighting how it constitutes a powerful political concept to shed light on contemporary struggles, as well as how it can be explanatory of certain societal transformation dynamics and socio-environmental inequalities. At the same time, I illustrated how a relational declination of the concept – focused on the action of *commonning* rather than treating commons as resources – constitutes a more promising key of a lecture that accounts for the complexity of phenomena. This is because *commoning as an action* inquires about the relationality that exists between humans and the world they inhabit: different relations produce different modes of inhabiting. It is hence from this definition of the commons that focuses on the action that I attempted at merging commons with the literature on more-than-human perspectives, starting from the idea of more-than-human commoning – namely, the idea that commons relationality is not univocal but rather implies a sort of mutual relationality of learning and influence.

Given these premises, I further expanded on the implications that the idea of more-than-human commoning is both based upon and contributes to shaping. I hence argued that it reconnects with the framework of an Actor-Network perspective, for the fact of focusing on assemblages of humans and nonhumans. Besides this, I discussed how assemblage thinking also reconnects with an interdisciplinary approach towards a multi-layered understanding and how urban sociology reconnects with urban ecology. In the final analysis, I discussed some of the political implications of these lenses and how they bring forward a new more-than-human understanding of the intermingling between human culture and natural elements – as well as the enduring tension that exists between this perspective and Marxism – suggesting the adoption of an analytical framework that accounts for this feature also as a way to discuss how to better integrate this perspective with existing one.

In sum, it is with the adoption of this multi-layered theoretical framework, grounded in the idea of the commons as an object of study, that I conceive Actor-Network theory as an analytical lens to inquire of more-than-human politics of how different natures emerge in the contemporary city, how they relate to the idea of commons and what are the political implications. By analysing how ecosystem dynamics and specific assemblages of human and more-than-human entities are

shaped and contribute to shaping citizens' struggles around the topic of ecology, my aim is to continue the inquiry of the emerging naturecultures.

Before moving to the fieldwork of my research, in the next chapter, I aim at further discussing about this approach and the insights that it can make emerge through a review of the literature that – adopting a similar framework – inquires socio-natural relations in the urban context.

3 REVIEW OF EXISTING LITERATURE ON URBAN NATURE

3.1 Researching urban nature from a global perspective

Despite constituting a radical break in many disciplines that has only recently emerged, this approach that looks at nature and the city with the intent of overcoming the distinction between human and nonhuman has already produced many interesting publications, studies and interventions that contributed to the development of a new way of "reading" the city, overcoming the implicit limits that a non-multidisciplinary approach would have, hence placing the contributions of a specific discipline in dialogue with the others. This chapter will thus be a review of these works, maintaining an emphasis on the sociological tradition regarding the questions to pose but reaching also other disciplines to find answers. Rather than doing it merely with a critical intent, the purpose of this review is one of reflecting and engaging with these perspectives, setting them in dialogue with my research questions and the context I am focusing on. I will thus aim to inquire 'what I can learn from them' and how my research will help shed light on some issues and interrogatives raised by these studies. Despite considering a plurality of studies from different contexts and cases worldwide, I tend to dedicate a particular focus on the case of Berlin because of the fact that the Berlin school of urban ecology constitutes a cutting-edge perspective on the city as an ecological field. As I will show in the chapter where I discuss the fieldwork I conducted, this school constitutes an insightful lens to look at urban ecologies in other contexts, making emerge the different social constructions of Nature that take place and how they are enacted or reproduced.

In this section, I will hence review different cases of spontaneous, conflicting or unusual urban ecologies from cases all over the world – with a particular focus on Europe and the Global North in general. The criteria that I used to select the literature concern the way that they directly highlight and expand on some of the ideas that I encountered in the theoretical framework and as a general overview of what are the dimensions that emerge when observing urban nature from a critical perspective, as a reflection on what to observe in the analysis of the material I collected, aiming at making a contribution or shed light on critical issues.

3.2 Emerging themes and topics in previous research on urban nature

3.2.1 Urban ecology – the multispecies city

An important feature of looking at the city through the ecological perspective is the fact that the focus is also posed on ecologies and ecosystems that emerge are "novel", hence the outcome of socio-environmental processes (Baker, 2019). In other words, looking at the city through this perspective highlights the complexity behind urban nature, the intermingling of native and non-native species and how human processes influenced the composition of the biotope.

In a chapter where he discusses the ecological imaginary of cities, Gandy (2005) highlights how cities often are more biodiverse than the countryside. This feature is amply discussed in different studies about ecological assemblages in cities, showing how certain plants are unexpectedly present in urban contexts and how they constitute peculiar ecological formations. Barchetta (2021, p. 92), for instance, illustrates how on the riverside of the Stura river in Turin coexist spontaneous (local) vegetation, ornamental species that have been brought by people and allochthones species. If, in some cases, the arrival of allochthones species is "unplanned", she also highlights the non-intentionality in this specific case, where *Robinia Pseudoacacia*[11] have been introduced as an attempt of re-forestation of the area following the destruction brought by the Second World War. Nevertheless, she also points out how, in a post-industrial city like Turin, ecologies can also be far from what is often being described as *idyllic,* since there are cases where spontaneous vegetation grows in a polluted environment. However, she also notes how pollution constitutes a relative concept depending on the perspective from which it is theorised and – from a more-than-human perspective – it simply constitutes one element in the cycle of *decay - rebirth - sociobiological mutation,* and a specific kind of ecological assemblage. Following this line of reasoning, she shows how *Bryonia alba, Lonicera japonica, Lupinus arborens and Duchesnea indica* are not affected by the elements that are polluting for human life and hence take over the space, involuntarily fulfilling what, from a human perspective, would be defined as a practice of phytoremediation.

The unique ecological assemblage is also a feature typical of the railyards area. Different studies, in fact, highlight how these areas emerge as sites of particular

[11] Which, for its invasive character, is also called *Black Locust*

botanical interest because this kind of infrastructure and the flows of goods and people that they enable to have the unintentional outcomes also constituting corridors of flows for seeds and insects, allowing them to colonize new spaces; this reason – combined with minor interventions of mowing – is what allows these spaces to have a higher level of biodiversity compared to one of the traditional city parks (J. Foster, 2010; Toffolo et al., 2021). Key examples of these dynamics are some areas in Berlin where trains from Russian regions arrived in East Germany during the time that it was a divided city and, for this reason, novel plants assemblages emerged from the seeds and the insects that had unintentionally been transported in train wagons (Kowarik, 2012; Kowarik & Körner, 2005; Sukopp, 1969). Nevertheless, I will inquire more specifically about these parks in the focus section that I dedicate to the context of Berlin.

3.2.2 Urban ecologies of the Anthropocene

Another instance in which features in urban nature are highlighted is in the way that they relate to the Anthropocene. As Trepl (1996) pointed out, to some extent, there has been a neglect of the political dimension of urban ecology – but, more than this, there has also been the neglect of the fact that these ecologies emerge in strict connection with human action and modes of intervening on the world.

A key case that clearly illustrates human and nonhuman intermingling in the Anthropocene is represented by Ex SNIA lake in Rome (Figure 8). What is worth of notice about this lake is the fact that its emergence has been the result of an assemblage of human and nonhuman agency; however, what seems interesting is the fact that more than human agency played a significant role in shaping the features that the space presents nowadays. As its name suggests, it constitutes a lake that emerged in an environment that already underwent anthropocentric transformations: it was a former industrial land where a factory that produced artificial silk was situated. After its closure, the owners that aimed at redeveloping it wanted to build a mall, but when the developments started, they reached the groundwater; this irrupted, flooding the construction site (Lago eXSnia, 2022).

As an enactment of natureculture, it is also worth mentioning that this fact has inspired musical production, in the form of a song by the local musicians “Assalti Frontali” and “Il Muro del Canto” with a strong political connotation of the lake that

fights against the anthropic activity. This is how they describe in the chorus the new space that emerged:

> "Within the concrete monsters
> This water now reflects the sky
> It's nature that struggles
> And this neighbourhood is less dak
> Within the concrete monsters
> The lake is a dream that comes true
> It's nature that resists
> Tonight Rome is less dark"[12]

It is worthy of notice that these few lines well describe natureculture and the landscapes of the Anthropocene, as well as how these constitute spaces of contestation because of the different interests that are involved and the unexpectedness of the encounter. This unexpectedness is highlighted by Tola (2019, p. 200) when she discusses the contrasting dynamics of appropriation. Namely, she argues that the reason why the space was interested in anthropic activity was the high availability of water as a resource for industrial production since the viscose process is necessary to



Figure 8 The spontaneous EX-Snia lake (source: Wikimedia commons)

[12] Assalti Frontali, *Il lago che combatte*

produce silk. On the other hand, the same water source is what re-appropriated the space when the construction of the mall started, hence producing this more-than-human landscape.

Among the many aspects that are inquired in the book, Barchetta (2021) also points out how the ecologies that emerge in Turin are strictly connected with both the conditions that enabled industrialization and the conditions that emerged after its dismission. But, in general, she points out that they always have been shaped by human uses according to time. During the 18th century, they were shaped by the use of *Loisirs* by the nobility, who were responsible for modifying the ecology of the banks, favouring the growth of monoculture tree species and shaping them for hunting and agricultural purposes. Nevertheless, the most impactful transformation occurred during the era in which Turin was growing as a Fordist city: in this period, rivers became fundamental to foster that growth, both as infrastructure and as a space from where to extract resources. That is why this ideology of the "city as a factory" had a profound impact on river ecologies, altering the ecosystem and replacing it with a new one that emerged from the interaction with the industrial activity of the *Anthropos,* which inevitably led to a polluted environment. That is why she depicts rivers as "scars" on the territory. Nevertheless, these scars reflect more complex socio-ecological relations rather than mere pollution, constituting an example of *natureculture*. This is because – given the fact that they were often not well-paid – factory workers tended to cultivate gardens on river banks to compensate for the lack of money from their employment. It can be affirmed that this is also a modification of the ecosystem since migrants from the South of Italy brought plants to cultivate that were not present in the area. Moreover, the increasing use of rivers as the Turinese *Riviere*[13]promotes the construction of kiosks and other amenities for recreation. Nevertheless, after the '50s, this use of the rivers disappeared since they were dedicated to industrial activities that were dumping their liquid waste directly in the river, and it was from this moment that they became increasingly polluted in a visible way, with water that changed its colour. Therefore, rivers became amenities that produced bad smells derived from this Anthropic modification and impacting activity, and this factor is what enabled the unfolding of a "reparative Anthropocene" during the post-industrial transition. With this term, it can be described as the aim of

[13] This Italian term designates a space that is dedicated to loisir on the side of the river

repairing these scars that have been caused by the industrial past and the "fordist infection" of the city. Rather than reading them as a success of ecological restoration practices, Barchetta inquires them about the complexity that lies between the projects and what is actually enacted, between the ideals of restorations and the actually failed practices to enact them, due to the financial limitations. That is why, also in the post-industrial period, they emerge as the uncertainty brought by Anthropocene, in the form of a physical and social fragmentation of the river, visible as the interventions as "*rattoppi*" [patches].

Industrial ruins can hence be considered another key space where spontaneous ecologies emerge in environments that have been deturpated by industrial activity and then abandoned. Paradigmatic of these dynamics is the case of Detroit.

Detroit is a city that is known for having been one of the core sites for automobile production. But, after the closure of many plants, the city got bankrupt, witnessing a process of progressive abandonment of large areas, with weeds growing in abandoned lots and among derelict buildings. This particular feature gave rise to specific aesthetics and imaginaries that are enacted and produced through images of photographers. This is mainly because the new emerging landscape breaks with the traditional imaginary of the city and transform it into a mix of countryside and the city, with pheasants that roam through the abandoned lots (Draus et al., 2019). This sort of hybrid landscape is hence the product of the Anthropocene and the different temporalities of abandonment that are enacted.

In short, the examples presented in this section highlight the impact of anthropic activity in the modification of landscapes. At the same time, anthropic activity is also visible in restoration practices and in attempts at redefining spontaneous ecologies. This is, therefore, to highlight that these urban ecologies of the Anthropocene are always inherently socio-natures (Bryant et al., 2015). These socio-natures, as will be highlighted in the next section, are always inherently political.

3.2.3 The politics of Urban Nature

Among the literature that inquires about the cases I highlighted, the political role of rewilded spaces or urban natures, in general, is another theme that vividly emerges. Rather than constituting only a matter of biological or natural sciences, this character stresses the intermingled character between the social and the nonhuman highlighted by Latour (2011), about which I amply discussed in the theoretical framework. If urban

ecologies are as social as they are natural, this means that they have a political meaning.

One of the most prominent works that goes towards this direction is the one by Stoetzer (2018). Adopting a similar framework to the one I presented, she argues that urban nature in Berlin can be read through the lenses of migrations, social conflicts and general socio-historical transformation that the city witnessed. She illustrates how what she calls the ruderal approach helps, pointing out "the unintended effects of capitalism, racism, and nation-making as they become embodied in a city's fabric, beyond the boundaries of the human skin" (p. 309). In other words, the ruderal ecologies of "non-native species" appears in spaces where power cannot exercise its control. As the key example of this manifestation, she talks about the history of the *gecekondu*[14], a space that has been appropriated and developed by a Turkish immigrant during the period of the divided city of Berlin. The parcel of territory where he started to develop his project has a contested nature because, despite belonging to the eastern part of Berlin, it was located in the western part of the wall. After negotiations and confrontations with the eastern authorities, he was eventually allowed to stay and keep using the plot as a space to grow food and vegetables. After the fall of the wall, other favourable outcomes eventually allowed the space to remain, becoming one of Berlin's icons where tourists and Berliners passed by and stopped on the bench that Osman Kalin placed. Another feature that adds to the unique significance of this space is the fact that it is also a plot where an *Ailanthus Altissima* grew. Rather than cutting or 'fighting against it', Osman constantly models the structure of the *gecekondu* to allow its growth. It is hence in this complex socio-ecological nature that the space becomes "a space of hospitality for people, plants, and objects left behind" (p. 309).

Adding to the unruly character of spontaneous ecologies in Berlin, she observes how this political character is also acquired by telling 'histories of disturbance', since "[e]xceeding systems of human governance, Berlin's rubble fields were not passive environments but developed their own lives. Rather than constituting the cultivated nature of postwar urban planning or the native natures the fascist regime had dreamt of, they challenged the idea of a homogeneous nation and directed attention to previously unnoticed and cosmopolitan ways of remaking the urban fabric" (p. 304).

[14] Which, in Turkish language, it is used to defined a squatters' place that has been built over night

In this way, these urban ecologies contrast the nationalistic and identitarian framing of ecologies and natural landscapes. This conflict, she argues, is sparked and emerges when different conceptions of nature clash and are used for identitarian discourses. As an instance of how this occurs, she presents the conflicts that arise from the use of parks. It is to this extent that parks – rather than representing neutral spaces – can emerge as spaces where conflicts arise when different ideas on how to use them collide. Namely, from a nationalist perspective, the habit of migrants barbecuing in parks in Berlin is regarded in a negative way, questioning their way of "inhabiting nature" against the one of "westerners", adding to the prejudice of migrants as "lazy, unemployed people that waste their time grilling in the park". This process of stigmatization and normativity regarding the "proper ways to use the green" is not something limited to this context, but it can appear in others with similar dynamics and rhetoric. As Barchetta (2021, pp. 114–115) observes, also in the case of Stura park in Turin, migrants are stigmatized in the barbecuing practice – a stigmatization that justified the use of police to avoid these *improper uses*. It is to this extent that Stoetzer sees *brachen* as an occasion for escaping social divisions and conflicts over the "use of nature". In short, "ruderal ecologies are not necessarily characterized by an absence of cultivation: human–plant relations are shaped by systems of control, and yet their interactions also create unruly openings for new forms of cohabitation that do not adhere to the places assigned to them in official definitions of public space, private property, and multiculturalist schemes. It is in this sense that they carry seeds of change" (p.312).

In short, it can be stated that urban natures and ways of inhabiting it are the source of different conflicts and also directly contribute to the transformation of the spaces. Barchetta (2021, p. 95) observes that in the case of the territories alongside the Po river in Turin – with the formalization of certain gardening activities in spite of others – have been the outcome of a social conflict between different uses, producing a controlled space which expelled all those initiatives that did not fit within this recognition.

In another instance in the Indian context described by Baka (2013), certain ecological assemblages that fall under the concept of wasteland are charged with significance and used politically for land-grabbing purposes. This occurs because the use of word *wasted* is used to depict a certain space that, at the moment of the definition, represents a space that has no value, thus acquiring a political meaning

when claims to instead "use" that space is made. Hence, in this case, the definition of wastelands is both used to devalue the richness of the territories on which this definition is applied and as a strategy to appropriate land that is owned by farmers.

In a similar way, the value of rewilded areas becomes a factor of clash and contestation, also in the case of Prati di Caprara – an area in Bologna that witnessed a process of spontaneous rewilding after its abandonment. Despite the acquired 'green' character, the area is generally referred to as a wasteland in the official urban planning scheme; it is for this reason that Zinzani and Curzi (2020) and Trentanovi et al. (2021) see the civic struggle that is associated with their preservation as a socio-political struggle, for the fact that it aims at contesting these plans. In their view, these struggles have both the aim of reclaiming the value of this green area as an instance of socio-natures and as a symbolic redefinition of city space beyond the neoliberal paradigm that considers it as a space suitable for development. It is in this light that the recognition of the space as a spontaneous urban forest can be considered as a successful outcome of this struggle on the definition of urban nature (Rigenerazione no Speculazione, 2022).

Nevertheless, what is important to stress is that the struggle that took place in Prati di Caprara also involved the critical appropriation and redefinition of rewilded nature aesthetics. Thus, it can be stated that also aesthetics are socio-natural and constitute the object of the struggle between municipal actors that have different aesthetic ideals connected with urban green and citizen groups that imagine these areas differently. This conflict on aesthetics is also illustrated by Thomsen (2021) when enquiring about the struggle that takes place in the management of a permacultural garden. This conflict hence takes place on two levels: the first one is within the group of gardeners, since they also have different aesthetic ideals, while the second one is between gardeners and the municipality, which does not share the aesthetics and the principles of permaculture. At the same time, as it happened in the case of Prati di Caprara, these positions are not fixed, and the conflicts that emerge often lead to a re-negotiation of urban nature aesthetic values and principles.

Finally, to conclude, it is also worthy of mention the research of Bulle (2022) on the French experiences of ZAD[15], but, in this case, some critical elements associated with the "more-than-human turn" are discussed. The ZAD, in fact, constitutes one of

[15] Translated from French, areas to be defended.

the key examples of the politicizing role of environmental struggles. However, compared with Zinzani and Curzi (2020), she argues that the nonhuman turn is still weak concerning the political aspects. This is first because 'nonhuman spokepersons' cannot acquire a human point of view or their political sensitivity, hence operating in two different domains that cannot communicate with each other. Secondly, it is also because of the political differences that exist within the activist groups and the lack of homogeneity within them, which might result in the existence of different perspectives within the same group, some of which are closer to human-centric perspectives while others to more-than-human ones. In short, despite recognizing the innovation and the transformation potential that the more-than-human turn brings, Bulle also warns of the main potential limitations.

This brief review of different case studies in different geographical locations shows that natures are inherently become political, constituting something that demands further inquiry, especially regarding the different ways in which urban nature can become a matter of politics and their relation with the specific contexts inside which they take place.

3.2.4 Green gentrification: the controversial use of urban nature for speculation purposes

In the former section, it has been observed that nature acquires a political character to the extent that it claims an alternative imaginary for the urban, as opposed to the one that only constitutes a terrain for development and speculation. However, at the same time, the idea of urban nature can also acquire a more controversial role, connected with dynamics of speculation and gentrification, acquiring a de-politicising role.

One of the main researches that analyse these contradictory dynamics is the work of Angelo (2021) on how "green became good" and how the idea of urban nature as "beneficial for everyone" became an influential policy that frames the provision of green spaces as the solution of cities problems, in spite of the promotion of traditional social policies. The argument of Angelo is that this occurs through a de-politicization of urban governance and the reframing and the construction of a certain imaginary about which the provision of green cannot be seen as beneficial for everyone. It is not something that can be questioned. As a key example, she discusses the transformation of the Ruhr, which enabled reinventing of post-industrial rewilded spaces as recreational spaces, alongside a new way of experiencing those landscapes. But, more

exemplary than this, she quotes the example of a park development in Dortmund – the Phoenix Lake – where space emerged as a public good and as a consumers' good, without the latter playing a role in the existence of the first. Despite the fact that – as she notes – this case does not involve the presence of industrial ruins or industrial heritage as something to incorporate in the present and the new image of the space, it highlights the intention of using the idea of green as a pacifier for conflicts among the different actors, or as something that inevitably is for the benefit of everyone. Nevertheless, when looking at the material conditions, it clearly appears how inequalities or 'the usual state of things' is what is being reproduced. This is because, in the development project, there is no presence of social housing, public park space is scarce (since the majority of green space is, in some form, privatized) and other choices that are market-oriented economic mandates that appear as fundamental for the successful development to take place – given the lack of external public funding.

In other words, Angelo critical inquiry tells how

> "greening becomes a very powerful way of organizing social life because nature's normative associations make projects that involve it appear to stand outside the terrain of civic negotiation. Urbanized nature conditions greening protagonists to view themselves as benevolent actors providing public goods, rather than as managers constructing ideal cities and citizens, and audiences to receive the projects as desirable public goods to be evaluated, perhaps, in terms of their accessibility, amenities, or distribution but not whether or not they are "good" at all" (Angelo, 2021)

Angelo statement can be considered as a provocation, in light of the idea that the preservation of urban nature – and also of wild urban nature – is usually viewed in opposition to gentrification or – in the case of wild urban nature – beautification intents. In fact, nature clearly emerges against the appropriation of the city by neoliberal dynamics in the case of Prati di Caprara (Trentanovi et al., 2021; Zinzani & Curzi, 2020) presented in the former section. Similarly, also the emergence of the Snia Lake in Rome is considered a form of counter-politics, to the extent that also a group of musicians-activists wrote a song about it. Nevertheless, there are also many other instances where this does not happen

If the presence of brownfields could be seen as a counter-aesthetic to redevelopment projects, a study by Essoka (2010) illustrates how, in the current socio-economic paradigm, they actually constitute something that enables gentrification and speculation dynamics, for the fact that they attract investments for the interventions that can be performed on them, concerning remediations and beautification opportunities. In fact, to some extent, brownfields and spaces of spontaneous urban nature are considered as something that 'blight' a specific community, exasperating the inequalities that these witnesses. But on the other hand, when development is proposed as something that will bring an improvement also to the community, this does not happen, producing displacement, especially in the racialized and marginalized communities in the U.S. context.

Nevertheless, brownfields do not constitute an element that increases the risk of gentrification only because of their redevelopment potential but also for their aesthetic and the more-than-human assemblage that they present. The study of Thomsen and Blok (2021) also notes that – while the presence of unruly and new forms of nature might appear as a novelty – cultural aesthetics have shifted, and this kind of assemblages might actually be desirable in the context of gentrifying neighbourhoods rather than constituting an impediment or a form counter-aesthetic. In other words, this study argues that the 'blight' character that unruly nature produces is not something that prevents urban development but, on the contrary, acts as something that fosters it.

Similarly, another example of how "unruly" nature does not contrast with the general dominant ideals of what constitutes nature in the city but actually contributes to reframing it and subsuming in the general development trends is represented by New York High Line abandoned railway. If, from the perspective of some developers, unruly spaces are considered as scars that negatively affect the image of the process or urban development, which – as argued by Essoka (2010) – will have the goal of "removing" them, the case of New York High Line shows how an "urban scar" can become a "park in the sky" (Millington, 2015)

Located in Manhattan West Side, the High Line was a railway that was used to transport commodities to factories. After its decommissioning, it represented an 'old relic' that was seen as an impediment to the development of the neighbourhood. However, it has not been demolished for many years and – because of the process of abandonment by human activity – it witnessed a process of spontaneous rewilding. In

this case, the materiality of spontaneous rewilding played a dominant role in its transformation and reimagining. To illustrate how this appropriation took place, it is useful to start with Amanda Burden (the Planning Commissioner of New York between the years 2002-2013) presentation of the project during a festival on city imaging organised by the organisation Torino Stratosferica that has been held in Turin from 14-16 October 2022. The first aspect that she stresses is how she sees the High Line as a successful public space that attracts many urban dwellers because it provides an immersive experience of nature, and it constitutes something that "public space users"[16] demand, especially since the event of the Covid-19 pandemic. In her view, that is why the protection of this infrastructure constituted a key event during the time she was in the administration. Nevertheless, it must be noted that there are complex reasons that promote the management and the creation of public space in the city rather than 'the sake of creating it'. Using Burden's words, a certain project for development must be "courageous, ambitious and economically strategic". Put differently, it must be well inserted in the governance mechanisms that are in place in the city, and this means responding to a vision where certain actors are the stakeholders. And in this case, also private investors' tastes played an important part in determining the outcome of the project. In fact, as she explained, there were some developers that were conducting lobbying actions against its demolition: since they considered it a blight, they saw it as a feature that would negatively impact their development plans. That is why a series of actions have been conducted, and the shape that the High Line took after the redevelopment can be considered as the success of the activities aimed at changing developers' and the general public imaginary: a photographer has been hired, and he took pictures form the top of the High Line, to present it from a different perspective (Figure 9). It is thus through these pictures and the subsequent civic actions that this infrastructure ceased to be seen as a source of blight, but rather it got transformed into a profitable development tool.

In other words, the acknowledgement of "what was there", bringing visibility to something that was invisible, is what inspired civic actions that demanded its preservation, hence giving birth to the civic association "Friends of the High Line" (Millington, 2015, p. 2330). The work and the demands put forwards by this group of

[16] It is the term she used to refer to city dwellers

citizens were hence fundamental to inspire the redevelopment of the space and its transformation into a public park.

The case just mentioned hence become a prime example of the transformation in

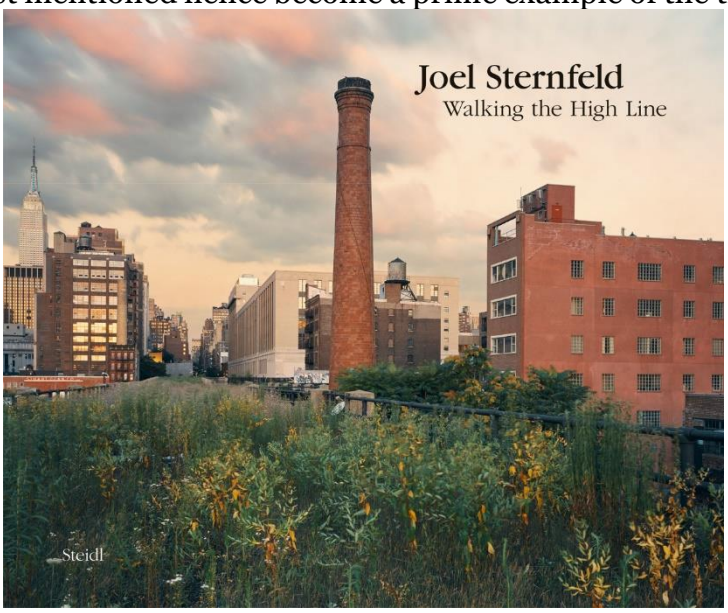


Figure 9 The book cover of Joel Sternfeld – Walking the High Line

the cultural taste and aesthetics of urban nature. Put differently, abandoned spaces that have been produced by the process of de-industrialization, which would usually be considered scars and something that negatively impacts the attractivity of a place, are now integrated into the "growth machine" (Logan & Molotch, 2007). Research on the production of this specific urban nature imaginary hence helps to inquire about an emerging trend that would demand a thorough inquiry into how it unravels in other contexts and modalities. As Boltanski and Chiapello (2005) argued regarding the appropriation of the creative work within capitalism, the same logic and narration can be applied to the dynamics of green and urban nature. If a former style of capitalism and urban development was being performed in disregarding the green and nature in the city, often leading to violent clashes that destructed ecosystems, the "new spirit of capitalism" is *green*.

As a final note, it must be highlighted that the process of appropriation goes alongside a transformation of the character of the space, which is the outcome of a social appropriation and production of another imaginary that usually does not correspond to the one that the space has before its appropriation by capital. Before the redesign, the High Line was a space of invisibility, where a plurality of uses – like queer sex, artistic production, encampment or drug use – was taking place (Patrick, 2014). Moreover, it was also possible to find a high level of biodiversity in plant species. That

is why the redevelopment has also caused the displacement of a broader set of socio-natural relationships, and its replacement with a different normativity (Millington, 2015, p. 2333).

In conclusion, besides the different dynamics that must be analysed, it can be stated that seeing the approach to green through the *new spirit of capitalism* of Boltanski and Chiapello produces interesting insights and perspectives on how also a formerly radical discourse as the one of *greening the city* can be co-opted and lose its original formulation. What is worth noticing is that this operation directly incorporates some elements of the critique within the dominant paradigm – like the idea that green spaces constitute commons, in opposition to profit-oriented spaces. As Millington (2015, p. 2335) notes after the analysis of the case of the High Line, "engagements with urban abandonment and socio-natural entanglement are too easily enrolled into development apparatuses that facilitate the expansion of neoliberal urban governance", hence putting forward a critical stance regarding the political role of urban rewilded natures. Nevertheless, rather than implicitly accepting it as a conclusion, this statement could be taken as a warning or as a question regarding something to inquire about.

3.2.5 Temporalities and historicity of urban natures

One of the main aspects that emerge in urban natures is their intertwining with the historical dimension. Besides representing a material account of aesthetic principles of specific times (like in the case of urban parks), what also emerges is the historicity in the intertwining of more-than-human assemblages. This kind of historicity I am referring to is not the one of the Anthropocene, but rather the one that can be the domain of what is usually defined as "human history" and how the natural and the spatial make those traces emerge.

An instance of how biological and human-historical temporalities are interwoven is clearly explained by Gandy (2013) when he presents marginal spaces in London. Namely, he highlights how some ecosystems are the outcome of the conjunction between human history and ecological features: for instance, the presence of the *Sisymbrium irio* (known as London Rocket) is a reminder of the great fire that occurred in 1666, since it constitutes a kind of plant that easily spread through the burnt spaces, or the *Epilobium angustifolium*, which appears scarce under natural

condition, but as an outcome of the dramatic World War II, it became appearing in spaces that witnessed bombings.

The case of Snia lake inquired by Tola (2019) also constitutes an instance of more-than-human historicity. Besides appearing as a lake that emerged as an unexpected outcome of human and nonhuman agency, the lake reminds us of the industrial history of the area, how the exploitation of the workers for silk production, how the toxicity of the material and the components employed affected both the human and the nonhuman and the resistance that took place on a similar basis; for these reasons, it constitutes a source of remembrance of industrial and natural history. Therefore, Tola – mobilising Rosanne Kennedy's (2017) concept of eco memory – claims that the history of labour, chemical substances and ecologies are all intertwined in the production of the history of both the lake and the factory.

Barchetta (2021), in her research, encounters the dimension of temporality in the form that the rivers of Torino appear strictly connected with the history that left a trace on them. For instance, she describes how a river – Stura di Lanzo – has a historical memory of the location where partisans were killed during the Second world war. At the same time, the historical memory can also be seen in the actual geography, with the ruins of former factories, the building of popular housing and the informal gardens to grow vegetables that can be found alongside its course stand as a memory of the industrial mode of development that characterised Turin. Nevertheless, these memories do not emerge in an isolated way but in the form of clashing temporalities in the spaces, as it is possible to witness in a space where designed parks, spontaneous nature, community gardens and waste-blighted spaces coexist in close contact (p.91).

These examples hence show the potential of telling stories and inquiring about the histories of a place through botanical traces. The fact that new ecological assemblages have also been produced by human action and interference highlights how these can be read as texts, as an alternative way of telling the past and the evolution of a specific space, as well as what led to this evolution. However, if they become texts and “historical documents”, they do not merely tell a story that has already been told through other sources, but – as von der Lippe (2020) illustrates – they could also be used as indirect evidence to reconstruct histories of the developments of some spaces, where botanical traces are present.

Finally, spontaneous ecologies also bring the memory of the city's past developments. For instance, in the case of Detroit, there is an abandoned railway – the

Dequindre Cut – that reminds of the city's past industrialization and the process of de-industrialization; in the present moment, instead, it constitutes a space frequented by different humans – like graffiti artists, homeless or gang members – or nonhumans – like pheasants or little red foxes. Another peculiar assemblage emerges on an art installation that highlights the abandonment of the Packard plant – a plant that, during the industrial times, was famous for automobile production employing large numbers of workers – when the memory of the past and the rewilding that occurred became an object of attraction for video and photo shootings or tourist tours (Draus et al., 2019). Similarly, in focus on the case of Berlin, I will further expand on this dimension.

3.2.6 Enacting more-than-human commoning

Despite constituting a concept that is still under-theorised, it is already possible to observe the unfolding of more-than-human commoning in much of the research on urban nature that has been conducted. For instance, Barchetta (2021) notes how "the construction of affective relations with plants also allows to attenuate or suspend the anthropocentric judgements, broadening the perspective on anthropic interventions on urban environments. In this way, we might not reduce the phenomenon of abandonment to a process that necessarily must be re-ordered according to specific criteria defined by the human".

An instance of how more-than-human commoning seems to follow Cooke et al. (2020) perspective on urban green policies and modes of governance, which has been discussed in the theory section, is provided by Ernwein (2021). Her study focuses on urban green policies in Geneva and the way that the "fight against the weeds" is abandoned in favour of incorporation of non-human processes in the framework. She notes that this change in attitude required more specialized knowledge by the gardeners to adjust to the ecological-oriented logic – for instance, regarding new skills to take care of new types of plants (e.g. perennials instead of annuals) – which had an impact on workers' subjectivities. Shifting towards a target-based approach towards greening rather than standardized practices of maintenance – she notes – altered dynamics of power, segmenting the gardeners according to the skills and degree they possessed. However, at the same time, accounting for plants' work (like the one of perennials) allowed a decrease in humans' work, resulting in a reduction of the workforce (p. 13). Furthermore, this change also rendered plants and humans work

invisible to park users who are not used to see the work that plants do, as well as the one of workers within this paradigm, with the result of perceiving these spaces as "abandoned". Hence, despite the fact that this instance is not about thinking about more-than-human commoning beyond property relations, it is an instance of what it comports by applying the ontological shift to management practices that were formerly human-oriented.

The work of plants is not the only kind of work that is rendered invisible in the traditional understanding of the making of urban environments, but also one of the animals and other critters. Marshman (2019), for instance, points out how pollinators also serve an important function of ecosystem maintenance which is often overlooked. According to her, this is due to the dualistic approach that considers humans as *outside of* nature rather than being *part of it*. This dualistic understanding is applied to many different domains, like the economy and the idea of development, with the consequence of failing to grasp the interconnectedness between different entities and phenomena. It is hence against this standpoint that she conceives the idea of more-than-human commoning (or, as she calls it, *more-than-human communing)* as both a way to reconnect humans and nature by considering them as *part of* rather than *outside of* it and as a way to actually produce understanding on how this interconnection is enacted. It is thus within this understanding that she places the pollinators and the work they do. For instance, she observes that pollinators are fundamental for the pollination of plants that would eventually produce agricultural products – an *informal* work from which also the *formal* market benefits[17]. But, more in general, they contribute to the creation of healthier environments (especially in urban settings) both for humans and non-humans. That is why she calls this approach '*whole-of-community'* as a way for humans and nonhumans to be in common, based on Gibson et al. (2015) understanding of community as a process, of mutually sharing benefits among humans and non-humans.

For instance, the interaction between tourists and monkeys in a temple in Bali, illustrated by Fuentes (2010), provides an instance of how the relationship between monkeys and humans is one of mutual learning and adaptation. For instance, he

[17] The more-than-human informality-formality assemblage is an interesting viewpoint that can be found also in the argument of Tsing (2021). In her case, she argued that capital gets intertwined both with the dynamics that lead to the creation the spaces where matsutake grow and the informal economies and modes of labor that these environments allow.

observes that, during a ritual in the temple that involves food, macaques do not try to grab it at will but instead wait for it to be offered to them, learning about the timings and steps of the religious ritual. Or, in another instance, bus drivers and macaques both wait for the tourists to arrive – even if for different reasons. Hence, to some extent, Balinese people got used to the presence of the macaques as part of their daily routine. Or another case inquired by Poe et al. (2014) researches urban foraging. They show how the practice of urban foraging constitutes a way to reconnect humans with the environment, enabling human-nonhuman relationships. This happens because foraging becomes an act of interacting with the place and acquiring a better knowledge of its ecology, or how it is also seen by nature managers as a practice also useful to manage the presence of alien species by allowing foragers to gather them. "Foraging landscapes—developed through spending time and building memories with specific species in particular locations—constituted part of the diverse space–time assemblages experienced in the city" (p.11). Here, again, there is the idea of more-than-human commoning as a way of understanding the mutual interrelations between human and nonhuman actors.

What seems to unite all these theorizations of more-than-human commoning is the idea that the concept sheds new light on human-nonhuman relationships, fostering a new ethic – both regarding the acknowledgement of nonhuman agency and ways of fostering new modes of coexisting *in common* that are mutually beneficial. Rather than constituting yet-to-be-created practices or modes of coexisting, more-than-human commoning can also be used as a lens to observe different practices and modes of interaction that are already taking place.

3.3 In-depth: Berlin Urban Ecologies

In the former sections of the review of studies of urban ecologies in the context of mainly the Global North, natures in the city appear as a complex phenomenon that sparks reflections on the nature of cities, proposing an alternative to the ones that see the city only as a matter of "human culture", highlighting how – by contrast – it represents a *naturecultural* entity. Starting from this proposition, I aim to strengthen this interpretation by considering more in-depth the case of Berlin. This analysis is justified by the city's deep history and relationship that has with the field of urban ecology. Building on the corpus of literature and research that has already been conducted, I am at arguing that Berlin constitutes one of the most prominent cases

where this vision of urban nature as *natureculture* emerges in concrete terms. Nevertheless, besides conducting a general review of the existing literature, I aim to deepen the inquiry on the case of Berlin by integrating reflections that I developed from the field visits that I conducted on those sites during a four-month period of research abroad.

These reflections I developed are hence inspired by the vast literature on urban ecology that has been produced in this city. As argued by Gandy (2022, p. 244), Berlin constitutes a privileged space to study urban ecology and how nature can evolve in cities, both for historical reasons and scientific ones. That is why it is possible to explain why certain politics of urban green take place. Conducting a period of research in that particular context helped me both better grasp the theme of urban ecology and understand the specific context-sensitivity of urban nature. Nevertheless, one thing that is important to notice is the fact that they must not be regarded as part of my empirical fieldwork; as I will better explain in the methodology chapter, the fieldwork experience that I conducted to answer my research questions has been carried on in Milan. The logic on which I conducted the observations in Berlin is merely exploratory, and its purpose has been the one of 'asking better questions' on the empirical material that I collected and, by contrast, making visible aspects that I might have overlooked. In other terms, I did not intend to conduct a comparative study between Milan and Berlin; however, this choice has not been performed due to a lack of interest towards this purpose but rather due to a time constraint regarding the time I had to conduct this research. Nevertheless, as I will argue, the opportunity I had to spend time at the geography department has been valuable in connection with the on-site explorations informed by existing literature have been fundamental in strengthening and constructing my approach towards urban ecology, as well as the perspective that I adopted to inquire about urban nature in Milan.

Before presenting this inquiry, one thing that I aim at specifying is the fact that mainly conducted it by consulting library sources and literature on these spaces and ecologies. However, at the same time, I decided to complement this inquiry with some field observations that were aimed at better describing what stated in the literature. These were mainly walks in the spaces performed during different periods of time and different moment in 2022, from March to July, during my visiting period at Humboldt University. During these walks, I took pictures and notes to illustrate the spatial features and the different modes of use and appropriation of the space by humans and

nonhumans. Despite it might appear as similar to the work that I conducted in Milan, it actually had a different intent and purpose, and I did not apply to it the same methodological and analytical approach that I adopted for the Milanese cases. Since – as I will illustrate – I did not perform a traditional comparative study, I did not give the same weight to both contexts, and the research questions and the conclusion derived from them apply to the case of Milan. In short, the case of Berlin had the goal of constituting a support for the general reflection of the theme of urban ecology.

3.3.1 The emergence of Berlin as a field of urban ecology

As already anticipated in section 2.3 regarding the birth of urban ecology, it can be affirmed that Berlin played an important role in this event. This emergence is the outcome of a socio-historical-ecological assemblage that acquired specific connotations due to the features of the concept.

One of the complete accounts of urban nature and the policies and politics associated with it can be found in the work of the sociologist Jens Lachmund. In Greening Berlin: the co-production of science, politics, and urban nature (2013), he inquires about the evolution of approaches towards urban green and nature in the city. Besides discussing the work of Sukopp, he reconstructs in detail the history that led to the affirmation of Berlin as a key case to inquire about urban ecology and how this historical dependency played a role in contemporary policies and regulations. This series of actions and policies can be identified as the "biotope protection regime".

In other words, the biotope protection regime is an account of the fact that the shape that the city has acquired has been the product of years of struggles and knowledge-building on the theme of urban nature, as well as the role of different human and nonhuman actors in the shaping of this peculiar sensitivity. In this section, I will hence discuss some spaces of *more-than-human commoning* that emerged in the case of Berlin and the relation that they have with the emergence of the biotope protection regime and what they can tell about the topic of urban ecology.

3.3.2 Histories of ecologies, war, indeterminacy and contestation in the brachen

It is a relatively warm sunny mid-May spring day in Berlin. People are enjoying it outside, in the streets or in the traditionally designed parks. Nevertheless, returning back home with the S-Bahn, I saw people doing it in an area that seemed located in the middle of railroad tracks. When I reached my station, I immediately took the bicycle

from the bike rack where I parked and went looking for that area since it did not seem like a traditionally planned park. In fact, the map was not marked with a green polygon – the shape that is usually associated in Google Maps with a "green space". Nevertheless, I ignored this indication – given the fact that the same applies to Piazza d'Armi and la Goccia in Milan. Not constituting an official space, the other thing that is not clear is how to actually enter. So, to do it, I had to go around it and guess possible entrances. At first, I was thinking of entering from the southern part since it seemed that there was a road from the railway area. However, once I reached it, I realised that it was not possible and there was no entrance. I initially thought of proceeding further southwest but then realised that it was even less likely since this would have meant crossing the railway. Hence, I decided to try from the only remaining side, the northern part. Finally, my attempt to enter was successful: I found through two buildings a narrow, unpaved path with the soil that was eroded of vegetation, which signals a frequent passage of people over it, and I decided to follow it. After the narrow initial passage, it opened into the space that is called the *Nasses Dreieck*.

When looking for a *brachen,* this uncertainty regarding how to enter is something that characterises the discovery of space. Trying it out in different ways is something that cannot be avoided unless the path how to enter is already known or better indicated. But this uncertainty is part of the way that the space is non-determined and subject to change. It might also happen that a path to enter becomes no more accessible in a given moment (e.g. construction works are starting) or permanently, whether a new normativity for the space is enacted (as it occurs when development projects are finally carried out on spaces of wild vegetation).

Nevertheless, it also needs to be stated that *brachen* are not unique, and they might vary according to the place. This one, as I happen to discover, it is one with a certain popularity, and there is also a website where there is a further explanation of how. On this website, it is immediately explained that:

> "The Nasse Dreieck (Wet Triangle) is a large, wildly growing green area in the "Dreiländereck" (Three Countries' Corner) between the Berlin districts of Wedding, Prenzlauer Berg and Pankow. The former border area was left to its own devices after the fall of the Wall, allowing a unique, steppe-like and open natural landscape to develop. Today, the Nasse Dreieck is an important recreational area for local residents and part of Berlin's green lung" (Grünzüge für Berlin, 2022)

In these few lines, there is already a lot written about what the place is like, how it appears geographically and its general ecological features. It also states what I was able to observe by giving it a quick glance by seeing it from the S-Bahn, namely the fact of constituting a recreational area for people. But, what is also worthy of notice, is the fact that it is mentioned how its existence is tied to the one of the Wall.

Moreover, I was also surprised to discover that the impossibility of entering from the southern part site has only been a recent issue since it was initially open, but then it was decided to close, being the place also characterised for constituting a dump. For this reason, the railway – the owner of the area where the southern entrance is located – decided to close it to solve this issue. Nevertheless, this was a decision that was not well received by the people that frequented the space and asked for another solution to this problem, expressing anger when their requests and concerns were not being taken into account.

The *indeterminacy of functions* is also something that leads to the uses of spaces that are harmful to both the community and the environment – like in this case of waste dumping. At the same time, the struggle to ask for the entrance to be opened again can also be seen as a form of providing some form of determinacy, somehow recognising the *brachen* within a broader system of green spaces in the city – but without altering its characteristics.

Until now, the description of the spaces that I provided is from the "bird's eye", and only a more thorough observation conducted in a certain time frame was necessary to provide better insights into how the space was used. However, one limit was the fact that my observations have been mainly conducted in spring-summer time, and with sunny weather, mostly during the afternoon – which was supposedly the busiest time.

The first time I entered that afternoon, I could immediately notice that the space was frequented by a variety of people. There were people coming to find a place where to lay down and rest, children playing and dog owners taking their dogs for a run. What surprised me was actually the fact that dogs were able to roam free without a pre-defined area with its set of rules. In fact, cities are also known for norming animal life, as well as pets (Metzger, 2015), and hence dogs ownership and the activities connected with them are also subjected to a series of norms, among the one that forbids them from roaming free. Also, in Berlin, the normative states that most of the dogs must be on a lead when visiting a park – unless the area is off-lead for the dogs. And this place

constitutes one of those areas where dogs can "roam free" and interact with other dogs and humans (Berlin.de, 2022). In fact, it was common to see the scene of two dogs approaching each other, leading to unexpected ways of interacting. For instance, a small dog scared away a larger one when the latter tried to approach it, or a sudden potential conflict between two dogs was stopped through the intervention of the owners.

Nevertheless, the use of the space was not limited to dog owners. There were also other people lying in the fields, some others exercising and some others reading a book – the activity that I also engaged with, besides observing the interactions between people and the space – and other people that simply contemplated the sunset. Walking around it, I also observed activities that I only could have guessed were happening – like bonfires – because I spotted some traces of them.

Another important note that must be made concerns the sensorial dimension. Besides what is generally considered a pleasant visual situation (watching the sunset), it was also interesting to observe the intermingling between birds singing, the voices of the people and the recurring sound of the passing S-Bahn. To some extent, I realised that all these actors were assembling the space as it appeared in the present moment.

I returned again on the next day, aiming to conduct a more thorough analysis of the space after having processed these first impressions. Besides the typology of people that I described the former day, some more people were present. There was a person that was taking advantage of the wide space to fly an aeroplane that was supposedly hand-crafted; there was a group of teenagers that arrived with a large Bluetooth speaker playing songs and dancing to them, and then there was a group of adults with children that set close to some trees, to which they attached a flag, and had many blankets and towels to lay in a group; there were also more kids that were taken by parents to play, and they could do it running freely, and finally there were, like yesterday, dog owners taking their dog for a run and people jogging on the outer perimeter of the space. Besides this, what was always constant was the presence of the sounds of birds and trains passing.

The second observation let me observe more in detail the "open character" that this space embodies. This *functional indetermination* of the space is something that influences the activities that are carried out in the space; in fact, they all constitute activities that could be carried out in a "traditional" park. However, in a traditional park, it is more likely to find a more detailed determination of functions: there is the

area where the kids can play, the area where it is allowed to lay on the grass, the area for barbecues, the area for artists to play music, the grass would be regularly cut and only certain species of grass and trees allowed. In this case, instead, there was more indetermination regarding all these aspects, leaving the freedom to the people that were frequenting the park to decide what to do and where to do it. This occurrence resonates with Richard Sennett (2006) perspective on the features of the "open city", contrasted with the "brittle city". He writes that "[t]he result of over-determination is what could be called the Brittle City. […] Today's ways of building cities – segregating functions, homogenising population, pre-empting through zoning and regulation of the meaning of place – fail to provide communities with the time and space needed for growth". In contrast to this, he proposes the idea of the *Open City,* a city characterized by three features: 1. passage territories; 2. incomplete form; 3. development narratives. In particular, this space can be seen as an *incomplete form,* "a kind of creative credo. In the plastic arts, it is conveyed in sculpture purposely left unfinished; in poetry, it is conveyed in, to use Wallace Steven's phrase, the 'engineering of the fragment'. The architect Peter Eisenman has sought to evoke something of the same credo in the term 'light architecture', meaning an architecture planned so that it can be added to, or more importantly, revised internally in the course of time, as the needs of habitation change". Similarly, it can be seen that the open form lies exactly in this indetermination of uses and freedom to creatively engage with the space. In other words, it constitutes an example of how the city can be "opened up" to new forms and leave its residents free to interact with the space and – especially in this case – relate with the non-human.

After these two visits, I returned many times to this space. Returning, I was able to create a sense of familiarity with the space and embed it as part of my routines – as well as ways of inhabiting Pankow, the neighbourhood where I was also living. Nevertheless, even if I created this sort of familiarity, I was always able to maintain an open awareness of the space regarding the research question I posed on the relationality between those spaces and the context inside which they were embedded. During repeated visits, I managed to develop an even more in-depth understanding of it. For instance, I discovered that some of the things that I supposed were not always holding. For instance, on one occasion, I engaged in a conversation with a resident that was walking there her. Sharing some words with her, I discovered that the space was not conflict-free. She told me that conflicts between dog owners and joggers – or

simply persons that were frequenting the space without having a dog – were common. The main source of conflict was given by the fact that some people who belonged to the latter category were complaining about the fact that dogs were left off-lead, and for this reason, they were perceived as a possible menace. Nevertheless, the presence of conflicts can also be considered an inevitable feature that goes alongside openness without necessarily constituting a negative one. Sennett, in another book, observes how the excessive policing that takes place as a consequence of the attempt to norm the urban space is harmful to dwellers' creativity and the building of trust (Sennett, 1970). By contrast, living in a *disordered* environment was more useful towards building a mature personality and learning how to live and interact with others. Even if the type of conflicts that can arise in this place do not have the same intensity as the ones described by Sennet, it can nonetheless be affirmed that they are still insightful regarding learning how to interact with other people and non-humans in a non-defined way.

Regarding the relationship between nature and the human, it can be affirmed that this space can acquire meaning from its ontology. Firstly, the fact that the way it appears is not questioned or debated. There are no claims that ask for a redevelopment of the space. In fact, looking at it through the policing logic of urban parks, it lacks illumination, paved walkways, regulated vegetation, and all the other amenities that a park should present. Nevertheless, this lack of facilities is not a problem for the people that frequent it; it is simply considered a green space where it is possible to go. On the contrary, as it was possible to read in the segment I quoted above, the steppe-like landscape is actually considered a feature that renders the space unique. Similarly, in a blog that describes the neighbourhood of Wedding, it is viewed as a rarity, a kind of spaces that is quickly disappearing because of the development pressures on the city (Faust, 2022). It is in this extent that the Nasses Dreieck breaks with the dichotomy between the urban as a space for the humans, that needs to be rigidly controlled and shaped according to certain urbanist standards. Conversely, it is firstly seen as a space that "nature reclaimed" and that should remain like this.

In fact, "charged with historical significance, and part of a tourist hotspot and a prized piece of real estate in central Berlin, the voids became seen as memorials in themselves, and not only in relation to the Second World War and the bombings through which they emerged or the ensuing Cold War which ensured their preservation" (Beveridge et al., 2022). Such open spaces are hence familiar in the

Berlinese landscape. “Voids are not simply islands in a sea of urbanisation. They are shaped by contested property rights and related institutional frameworks sanctioned by the state and performed by the market. They exist in the context of their immediate surroundings, citywide urbanisation processes, local and national government regulations and the force of market logic of commoditisation. They are also burdened with history, if not meaning, their presence, or at least persistence, a political outcome (resulting from prior decisions). The classification of space as void is inevitably bound up with economic, social and political agendas or becomes exploited in different ways by actors.” History, hence, plays a huge role in the definition of such voids. In particular, the Berlin Wall – despite constituting an element that emerged out of a certain socio-political situation – can also be seen as a non-human actant that facilitated the creation of these voids. It is not a coincidence that it is always mentioned in the narratives of the Nasses Dreieck; conversely, creating a space where no one could go, it is what allowed nature to reclaim the space. It is hence out of these historical and spatial configurations that voids became increasingly considered as part of the Berlinese context (*ibidem*). It is hence no surprise that the Nasses Dreieck is part of the landscape conservation area of Mauerstreifen/Bürgerpark/Schönholzer Heide.

In other words, it is worthy of notice how this assemblage between humans and nonhumans – namely the wall, the divided city, the *void*, plants and other non-humans that reclaimed the space – that acquires its historical significance and acceptance of the space “as it is”. Making contexts and cities dialogue, it is possible to affirm – how I will show in the analysis of urban nature in the Milanese context – that these hybrids spaces of spontaneous nature – by quoting Latour (2011) – are never fully human nor never fully natural. This is important to stress to contrast it with the rewilded character they acquired denotes a complete naturalness. By contrast, it can be affirmed that they are inseparable from the intermingling. For instance, had the context been different, the ecological assemblage of Nasses Dreieck would never have existed. At the same time, despite constituting a space that is being designated as a landscape conservation area, this designation could not have been possible without the agency of the nonhuman that reclaimed the space and made it acquire its actual ecological assemblage, which was also the outcome of the isolation the area witnessed during the divided city.

The place that *brachen* have in the history of Berlin is hence insightful to understand how the spaces transformed and evolved and to understand how they emerge in the present moment. To deepen this inquiry, it is useful to turn to some of the spaces that are paradigmatic for the development of this conception, both within city planning and city dwellers, to better understand these dynamics, how they unfolded during the past and how they influence future scenarios.

3.3.3 Natürpark Schöneberg Südgelände

If there is the need to find a paradigmatic example to describe the uniqueness of the relationship between nature and the city in the Berlin context and the application of the "biotope protection" policy, this can be represented by the Natürpark Schöneberg Südgelände. This park, in fact, constitutes one of the most well-known examples worldwide of an experimental park. Besides the many layers through which this park can be observed, it can be depicted as a socio-natural space that emerged both because of humans and nonhuman agency, as the outcome of temporalities of abandonment, spontaneous rewilding, struggles for protection and the flourishing of novel approaches to the design of parks (Gandy, 2017; Kowarik & Körner, 2005; Lachmund, 2013)

Initially, the space was a railyard area located in West Berlin that, after the construction of the Berlin wall, increasingly became under-utilised and abandoned. This occurrence is due to socio-political reasons: despite being located in the West, the rights and jurisdiction of the rail territory were given to an organization that was under the DDR, which reduced train services to the West at a minimum level, hence leaving spaces like the Südgelände abandoned from human activity and allowing the process of spontaneous rewilding to take place. This process also took place in other 'enclave' spaces in the West that were under similar regulations (Kowarik & Körner, 2005), allowing the emergence of spontaneous ecologies.

Therefore, before the fall of the wall, the geography of Berlin – as mentioned before – became characterised by the presence of many rewilded spaces in different locations. However, after it became a unified city again in 1989, many of these spaces underwent developments, but the Südgelände was spared from it since a different vision for the space started to emerge. In fact, besides the development of the discipline of urban ecology sparked by the work of Sukopp, local activist-planners coalitions started to emerge – especially around the Südgelände – focusing on building

an alternative image for those spaces, an alternative to the one that was framing them as empty spaces awaiting for development (Lachmund, 2013). This vision was hence focused on the role that those green spaces had for reconnecting Berlin in the form of "green belts", but it especially drew from the ecological uniqueness that they developed.

As briefly mentioned before, the ecological uniqueness of those spaces was emerging thanks to the manifestation of the non-human agency after the abandonment by the human. Nevertheless, the previous activity of the human has been fundamental for the very creation and emergence of certain ecological assemblages in the spaces. Even though the use of the area by DDR officials was not intense, it witnessed the passing of many freight trains from different regions of what was at the time Soviet Republics. Alongside the trains, seeds and insects from those regions got carried into the area. That is why, after the ceasing of human activity, those new species were also able to thrive in the area, assembling with plants and other nonhuman entities that were characteristic of the region. It is hence as the outcome of the combination of human and nonhuman agency, that this space became a hotspot of biodiversity.

The intermingling between the temporality of abandonment by human and the temporality of the growth of trees and other plants, the space quickly acquire the character of a forest – a naturecultural forest. To sum up, it can acquire this designation the fact that the ecological composition it acquired was also influenced by

human culture – namely, the use of the railways for commerce. It is also natural because the abandonment gave space to the agency of the non-human regarding the reclamation of the space, giving rise to a novel "green space", returning to the state

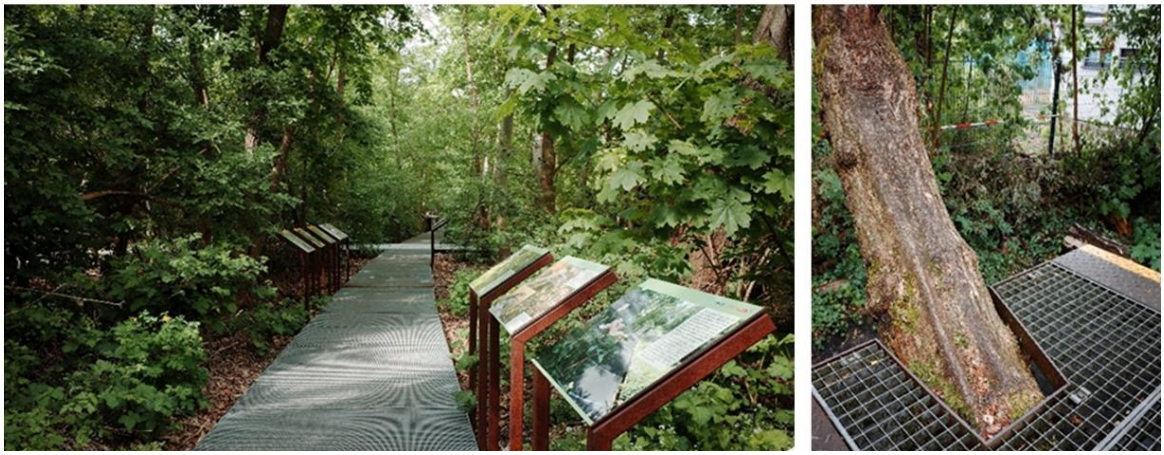


Figure 10 Informative signs and design adaptations in Südgelände park (Source: author's pictures)

that preceded human activity. At the same time, the return is far from what it was before. This is not only due to the human-nonhuman assembled ecological composition of native and non-native species but also for the fact of having thrived among the ruins of human culture, giving a new significance to that culture. In other words, railway infrastructure ceased to be an infrastructure for 'human' culture but allowed certain species to go and thrive. At the same time, what can be considered a new example of natureculture is the meaning it has acquired in the city space, as well as the modes that humans have of interacting that it presents. In other words, it can be stated that it became a naturecultural entity in the way that it has been transformed. With this new layout, it became an unusual park, where primacy is given to the ecological features that the park has, and the infrastructure is built accordingly to protect it. This clearly emerged also in the notes that I took during the different moments that I dedicated to its exploration.

As the visitor approaches the park, the first that they notice is the fact that there are pre-determined paths to follow to get into it. Alongside these, several informative signs regarding the history of the space are present, which inform both about the history connected with the railyard past of the area, as well as the features of plants and animals that can be found in the space (Figure 10). Therefore, these stimulate a different relationality with the space – a relationality that is more attentive to observation and discovery rather than use. Despite the presence of benches and similar infrastructures, the design of the space does not invite people to sit but rather to walk. This feature is something that can always be perceived in the park, despite the season during which the visit occurs and makes the experience mostly individualised, similar to the sensations that a "walk in the forest" would evoke.

Therefore it is possible to affirm that this space stimulates a peculiar kind of relationality between the human and the nonhuman that contrast with the one that 'traditional' city parks enable. This can be visible both in the design and in the way that people use the space. Regarding the first aspect, it can be affirmed that the design accommodates nonhuman life. As it can be seen in Figure 10, it is the infrastructure that adapts to the nonhuman life, and not the opposite; for this reason, it can be affirmed that it materially represents an inversion of traditional principles of design. Regarding the second aspect, instead, what needs to be noted is the fact that it is characterised by an absence of "crowdness". In fact, during all the times of my visits, despite the weather or the seasons, there were never more than 30 visitors on average,

and it was usually not to encounter other people while walking on the paths. This feature, as I will show, contrasts with the two other cases that I take into consideration – Gleisdreieck or Tempelhof – since they constitute more 'popular' attractions. I will talk about this in the next sections.

In short, it can be affirmed that Südgelände park probably constitutes one of the starkest instances of implication of designing and opening a space to the public, but doing it starting from the perspective, agency and right to the space that are mainly for the nonhuman. As it will be seen further in research, this constituted a model that has been taken as a reference by a plurality of actors. In the next section, instead, I will discuss about another park that presents similar features but differs for others.

3.3.4 Park am Gleisdreieck

Park am Gleisdreieck constitutes one of the most popular parks of recent opening in Berlin. At the same time, it is also one of the most debated regarding the topics of urban nature, commons, citizens' mobilisations and landscape architecture, for the fact of constituting a park that has been developed with a logic that is similar to the one of Südgelände, but, in comparison, it constitutes a park with a wider plurality of functions and publics.

As the area where Natürpark Südgelände is located was a former space of rail operations, also the one of Gleisdreieck features within this category. After its dismission, it also witnessed a process of spontaneous rewilding, becoming a *brachen*. It is this feature, combined with the activity of citizen groups, that allowed imagining the space as a public park. In fact, after the abandonment, several development plans for the area were proposed. Despite their differences, they all had in common the aim of completely transforming it and hence demolishing the spontaneous vegetation that emerged. Therefore, it was especially during the 1970s – when the development of a highway was proposed in the area of Gleisdreieck – that a group of citizens united under the struggle against the 'Westtangente' [the name of the highway] voiced for its preservation as an urban park; in opposition to this, they proposed the development of a Grüntangente (Green Tangent) as an alternative vision both for Berlin and the area (Gandy, 2020, p. 109). What is interesting to stress is the fact that what citizens' initiatives were aiming at promoting was the idea that the Gleisdreieck, with the ruderal vegetation and with the emergent plant assemblages, already was a park;

hence, the main aim that was guiding their battle was the attempt of opening it as a park in the way that it appeared, with minor interventions.

However, as it is possible to see nowadays, this is not the main idea that prevailed. Nevertheless, despite not having been successful in implementing the vision as it was sketched, it must be stated that the citizens who mobilized to defend and reclaim the Gleisdreieck as a rewilded green space allowed an alternative vision to take place, in alternative to complete destruction of the vegetation or to its complete transformation into a 'traditional' park. But, besides this, it is worthy of notice the fact that they became part of a coalition of actors named "Aktionsgemeinschaft (AG) Gleisdreieck Park" – composed by the Berlin government, the owner of the land and the activists that represented a broader public – that had the common intent of transforming the area into a park (Müller, 2015).

After many years and competition that have been issued, the final redesign was assigned to an architectural firm called Atelier Loidl. Despite all the intents of preserving the history of the space, the final result is similar to the one of a 'traditional' park with 'traditional' amenities than the one of a park that incorporates the past, the rewilding process and (N. van Dooren, 2019, p. 34). This fact is also exemplified by looking at the way that it is being presented on the website of the architectural firm, since what seems to prevail is the design of the new infrastructure, as well as the depiction of common ways to frequent the park, like people having a picnic or walking their dog, and the nature that is being depicted is one of the green lawns or, in some cases, the reconstructed aesthetic of railyard vegetation. Finally, it is also possible to find pictures of the cafes that have been built in the park, as well as infrastructure for sports and gym activity. In short, without knowing the history of the park, it would be hard to imagine that it was a former railyard territory. During the visits to the space that I conducted in first person, this feature also clearly emerged. However, at the same time, it was possible to observe the complexity of the park and the different environments, as well as the different uses and spaces of presence/absence. It needs to be noted that I visited the space with different meteorological conditions since they are also influential on the different modes of space frequentation (Potchter et al., 2006). However, what needs to be noted is that I visited it during the beginning of the summer season, with a temperature of around 25°C, sunny weather and during the weekend.

The main feature that can be noted is the fact that the park is a composition of different environments with different characteristics. In fact, in some parts, there are cafes or sports facilities, some others are shaped like a 'traditional' park with short grass and little biodiversity, while some other areas are left with a wild and spontaneous character, often leaving vegetation that grew intertwined with former constructions (Figure 11). However, it can be observed that it seems to be a relationship between the location and the designed features: in the northern entrance



Figure 11 Environment and more-than-human design in Gleisdreieck Park (Source: author's pictures)

near Potsdamer Platz, the dominant features are lawns and sports facilities, while in the southern part, near Yorkstraße, it is maintained the character of spontaneously rewilded space. As already noted by Gandy (2020), this feature influences people's way of interacting with the space since people tend to concentrate in the areas where there are facilities or lawns, while rewilded areas almost remain empty. Nevertheless, the design of the space invites people to visit the wild areas and discover their peculiarities, and there are present many informative signs regarding the main features and the vegetation of the space (although most of them are vandalised).

Borders – or the infrastructural absence of them – is another feature of the park that is worth noticing. In fact, there is a lack of fences to prevent people from going into the rewilded areas, and – despite traces of human passage can be seen in some parts of them – it can be stated that these are mostly recognised and respected by park visitors. However, in other instances, borders have a starker connotation in the form of fences, especially in areas where there are animals (Figure 12)



Figure 12 Nonhuman life and regulations in Gleisdreieck Park (Source: author's pictures)

To some extent, it reminds us of the design and the normativity towards the human-nonhuman interaction that characterises Südgelände. However, on the other hand, it also presents stark differences in designs and interactions. For instance, the paths in Südgelände are often above the ground not to disturb the nonhuman activity on it; in Gleidreieck they often are made of concrete, paved directly over portions of the rewilded vegetation.

Finally, another noticeable characteristic that it shares with Südgelände is the preservation of the history that the space had during industrialization and its function as a railyard area. This is firstly noticeable by the fact that train tracks have been maintained in several parts of the park, but, besides them, also railway infrastructure such as light signals or railroad switches have been preserved. It can be stated that, in



Figure 13 German Museum of Technology ERINNERUNG (memory) sign (Source: author's picture)

general, particular attention has been paid to the historical dimension, and this is stated openly with a big metal sign with the German word that signifies "memory" in a space that belongs to the German Technical Museum (Figure 13). But what is the memory that is being referred to? From my observations, I cannot give a detailed answer; however, I can speculate that it is strongly related to the idea of technology and the industrial past of the city, especially regarding railways.

In short, what emerges from Gleisdreieck is a stark contrast between design and non-design. During the walk, it was noticeable the transition between transformed and rewilded environments that both stark and unnoticeable: if, on the one hand, the different environments can be found in proximity to each other, on the other hand, the passage among them is noticeable. For instance, in the designed ones, the main sound that can be heard are the voices of people chatting or playing music, while, in the non-designed ones, the main feature are birds singing and the absence of human voices. It is for this that Gandy (2020) considers it similar to Clément's design of the Henri Matisse park in Lille, inspired by the principles of the third landscape. As Gandy notes, the geographer Jürgen Hasse (2015) finds the diversity and co-presence of different

environments as an interesting feature of the park, as elements of dynamism that produce different atmospheres, and this is because of the interaction between human and nonhuman elements.

Moreover, on the governance and planning side, for some, the case of Gleisdreieck became considered as a way of enabling participation through the protection and creation of a commons (Müller, 2015) or, in general, from the urban planning perspective, it is praised for constituting at the same time a park, a neighbourhood facility and a tourist attraction (N. van Dooren, 2019).

One of the interesting features of the area is that of constituting one of the spaces studied by Berlin urban ecologists Sukopp and Kowarik, and – as they noted in one study – it constitutes an interesting space also from a botanical perspective for the high level of biodiversity and combination of native and non-native plants (Gandy, 2020, p. 109).

To sum up, the case of Gleisdreieck can be considered explanatory and paradigmatic regarding the different dynamics and attitudes that are at play within rewilded green spaces. It constitutes another instance of how the agency of the nonhuman has been fundamental in constructing both struggles and different imaginaries towards a space. Compared to Südgelände, it represents a space that is more permeable in the context inside which it is embedded – for the fact of allowing a plurality of uses and being always open. This space also constitutes an example of a park that emerged after citizens' mobilisations based on ecological struggles. However, it can be stated that – despite the design having been the outcome of a participatory approach – the opening to the public radically transformed the space. That is why, rather than a *brachen* similar to Nasses Dreieck, the space acquired more the character of the 'normalised' park, with a marked attuning to human-centred principles and aesthetics. It is to this extent that it is not a surprise if it has been compared to the redevelopment of the New York High Line[18]. Similarly, it can also be compared with the linear park in New York for the increase in rent prices effect it had on the surrounding neighbourhoods. That is why it could represent a key case on the ambivalence of the policies and politics of 'nature of the fourth kind' since, on the one hand, it constitutes a political statement of the multispecies ontology of the city of the

[18] For instance, see the introduction by Robert Hamond (the creator of the High Line) to the book "Designing Parks: Berlin's Park am Gleisdreieck or the Art of Creating Lively Places" (Grosch & Petrow, 2021)

way that nature irrupts within it and how it can express a new ideal for public space for human and nonhuman; on the other hand, instead, it helps to spur a reflection on how the multispecies perspective can both be incorporated into design principles that are merely the domain of the human and on how even such spaces can end up being incorporated in the governance framework and the dynamics of transformation (and speculation) of the city. In other words, it questions how mechanisms of subsumption come into play in the case of spontaneous wild nature. Leaving the question open, I move to another case popular space with different but similar features that help pose similar questions.

3.3.5 Tempelhofer Feld

Looking a Berlin from a map, one area that is immediately noticeable is a space in the south of the city that is shaped like a large airport. However, despite the fact that the area formerly was an airport, nowadays, it constitutes one of the largest parks in Berlin. But, it can be considered the largest park of nature of the fourth kind in the city, despite the fact that it has a completely different history compared to the one of Südgelände or Gleisdreieck. Compared to these parks, Tempelhof also has a bigger popularity and is considered "the single site that embodies Berlin" (Arneson, 2022). In fact, it constitutes a space with an open character characterised by human and nonhuman (nature)cultural diversity. The history and all the events that allowed the space Tempelhof to become the park that it is nowadays an interesting insight into urban transformation through a more-than-human perspective.

The history of the space, in fact, dates back to 1927, when the first terminal was constructed; then, it became a military airport during the Nazi era. After the defeat of the regime, it also became an important space during the presence of the Berlin wall for the air bridge between to receive goods in the enclave city. Finally, after the reunification, it became a commercial airport until its closure, which took place in 2007. After its closure, there were already plans to turn it into a public park. However, the feature and the kind of park were not defined. It was, in fact, in a provisional way that the municipality started to open it to the public during weekends. Thanks to this initiative and the fact that people started visiting it, its appealing character as a public space got sedimented. That is why – when the city in 2013 announced a plan for its redevelopment – it was met with opposition from a residents' initiative that aimed at defending it for the character that it acquired. It did not matter if the redevelopment

plan implied that only the perimeter of the space would have been developed: they aimed at preserving the whole territory – hence from this intent, they chose as a name for the initiative 100% Tempelhofer Feld (100% Tempelhofer Feld, 2022)

However, according to Carver and Gardner (2022), the creation of Tempelhofer Feld as a public park cannot be considered as the outcome of a civic struggle, but the result of an assemblage of people, species and space mediated by cultural traditions, affinities and encounters. This is because the protection of the space and its imagination as a park has been possible also for the recognition of the Skylark's importance – as well as the existence of laws that that regulated the protection of that specie. At the same time, it has also been possible because of the people that imagined a creative use of the space. But, what needs to be stressed is the fact that – as the authors note – the struggle must not only be defined as a matter of civic activism and re-imagining of the space, nor as a matter of species protection, because the interplay among them has been key to this outcome. In other words, Tempelhofer Feld is the outcome of the action of both humans and nonhumans, in its abstract and material feature.

These assumptions and aspects are visible when visiting the space on a sunny afternoon at the beginning of the summer. The vastity of the space can immediately be noticed when entering the space. To some extent, it is a vastity similar to the one that can be experienced when visiting the *brachen* of Nasses Dreieck, but – for its spatial features – the sense of openness is also more marked, as well as the inventiveness in the uses by the visitors. A bodily engagement with the space is also a good strategy to assess this feature: if someone attempts to cross the whole space, from Paradenstraße gate to the gate on the side of Neukölln through one of the 2 km long runways, that person would realize that the timespan of around half an hour of walking would be necessary. As can be imagined, also this vast space presents a plurality of landscapes depending on the area. There are areas where trees are present that could be the outcome of either spontaneous or intentional reforestation. In other parts of the space, instead, the concrete and the asphalt of the infrastructural airport prevail, although it is possible to observe that rewilding processes are taking place. Others instead have more the landscape of meadows, and it is where the Skylark breeds. Finally, there are also spaces that host kiosks, bars or community gardens (Figure 14).



Figure 14 Different environments in Tempelhofer Feld (Source: author's pictures)

Regarding the way that the space is frequented by people, the closeness to the surrounding neighbourhoods plays a huge role in determining it. For instance, the area that during my visits I found more crowded was the one located near the entrance on the side of the neighbourhood, Schillerkiez. The main activity of people frequenting the space is sitting in groups in the spaces where the grasses are short. Since barbecuing is allowed in some parts of the space, during a sunny day, it is also common to see many people engaging in this activity in the areas where it is allowed. This is also the area where it is possible to find community gardens. On the other hand, the area that borders the neighbourhood of Neu-Tempelhof appears less crowded.

Then, another part of the space that is usually crowded is the former runway. One of the activities practised here that comes to notice is the practice of wind skating – an activity that is allowed by the lengthy runway. Then, other people practice roller skating, cycling, running or simply walking.



Figure 15 Informative sign about the presence of the skylark in Tempelhofer Feld (Source: author's picture)

Close to it, but in stark contrast with the runway, there is the area where the skylarks breeds. This area, in fact, constitutes a space that has favourable conditions for the skylark to breed. It is worth noticing that the separation between this and the rest of the space is being performed only through the placement of white and red tape and a sign that indicates the presence of the bird and signal people not to go there (Figure 15). Based on the observations that I conducted, I noticed that it is mostly respected by the people who frequent the space.

Therefore, also Tempelhofer Feld is a space of contrasts; there is, in fact, a contrast between the crowed, human-noisily spaces, with the presence of smells from the cooking of food and the spaces where the nonhuman presence is starker – like the ones where the skylark breeds, where it is possible to see the birds flying and hear them singing.

Historical memory is also present here in different ways. Firstly, it is clear for the fact that the space was formerly an airport, and this feature is still visible in the way the environment appears, especially in the presence of the airport infrastructure. Nevertheless, it is also stressed the presence of other historical facilities that remind us of the history of space; for instance, a U.S. Force shooting range has been kept and constitutes a reminder of the times of the cold war.

Regarding the presence of wild nature, also here it is possible to find areas that are subjected to different mowing regimes, areas where rewilding is being allowed over the concrete without the removal of the paved surface and areas where reforestation is allowed to take place. At the same time, other areas are subjected to 'traditional'

maintenance – especially the ones where it is possible to find the majority of the people.

To sum up, for the features that have been described, also Tempelhofer Feld can be considered an example of a Berlinese *brachen*. Returning to the beginning of the section, it can hence be stressed again that Tempelhofer Feld is a space that contains the whole of Berlin. There is a diversity of groups and people that frequent it as well as a diversity of uses, and it represents a key example of the application of laws of environmental protection on the urban space that stress the multi-species composition of the urban environment, it constitutes a space of 'nature of the fourth kind' (Kowarik, 2012) since it incorporates unintentional ecologies that emerged out of human transformations, but also it incorporates the contradiction of the city and some of the most contesting debates – for the fact of constituting a space that indirectly fostered the gentrification of Neukölln and Schillerkiez (the surrounding neighbourhoods). That is why, in other words, Tempelhofer Feld well represents the complexity of the more-than-human assemblage in both its potentials and contradictions.

3.3.6 A summary of the value of Berlin urban ecologies and biotope protection regimes

The cases I inquired about in the sections above hence provide an insightful perspective on socio-ecological relations in Berlin. Despite the differences that exist among the spaces, they are all characterized by the presence of humans and nonhumans in proximity. Despite the idea that there is an interrelation, in this case, the relation can also be one of co-presence but not necessarily interaction. Despite the fact that lots of more-than-human theories illustrate the connections and the points of contact between humans and nonhumans, these cases also show how the two avoid each other, inhabiting different environments and following different temporalities. For instance, in Gleisdreieck, the spaces of the animals are separated with a fence from the ones of the human. Similarly, the fact that Tempelhofer Feld constitutes a hospitable habitat for the skylark is due to the fact that the bird has its space where humans are excluded. Similarly, also plants and vegetation are separated by human activity. In the case of Südgelände, paths where visitors can go norm the areas that must be avoided; in Gleisdreieck, there is a less marked separation, but the intent is similar, and also in Tempelhof not all the areas are accessible. However, at the same time, the experience and the relationality with the nonhuman differs and are affected by the different typologies of the spaces. In Südgelände, for instance, the experience

of the space is rather solitary, and the attention is focused on the ecologies that are situated there; in Gleisdreieck, instead, the human-oriented feature is more evident as the feature that characterises the park, while in Tempelhofer Feld the human and the nonhuman have their spaces allocated.

Despite this, there are different insights that can be derived from analysing the assemblages from a more-than-human perspective. The main thing that can be learned is the contextual dependency of humans and nonhuman actants and the way that they are assembled. As stated by Carver and Gardner (2022) in the case of Tempelhof, history is often a history where the agency of the nonhuman actant played a determining role. Nevertheless, it must be recognised that civic movements and people that mobilised for a certain sensitivity over urban ecology played a dominant role in influencing the politics and the outcomes. Works like the ones of Sukopp and Kowarik and the relationality that these people had with institutional actors played a key role in determining the emergence of specific regimes, as well as the sensitivity towards the urban nature of the people from Berlin.

However, one thing that needs to be stressed is the fact that I inquired how these spaces emerged, mainly focusing attention on the way they appear in the present state of things. This had the implication of downplaying the role that citizens played in their formation. Even though it has partially been inquired into the history that led to their preservation, the inquiry did not go into the details. This is limited for reasons related to the research strategy that I will better discuss in the methodology chapter, but also for the fact that I did not conduct detailed fieldwork. In other words, my observations can be seen as complementary to the review of the literature on them that I performed rather than the object of research questions. This is also the reason why the observations I conducted are not part of the fieldwork chapter.

For the reasons explained above, it is possible to affirm that – besides the analysis of the specific context – what the Berlinese case provides is also an instance of the ecological dimension of the city. In other words, it is not that urban ecology is something typical only of Berlin, but it emerged here for certain ecological assemblages. This, therefore, constitutes a guide to look at ecological assemblages also in other contexts, providing a scheme to the actors to which to look and the structuring of the ecological sensitivity. In Figure 16 I try to reconstruct it as a scheme. However, it must not be considered as an exhaustive description but rather as an attempt to read it through the assemblage lenses.

Therefore, one of the goals of this research is to attempt to create a similar scheme with the cases taken into consideration in the Milanese context. To do it, I attempt to observe whether it is possible to find the same elements (for instance, the presence of rules and regulations or how the different actants act).

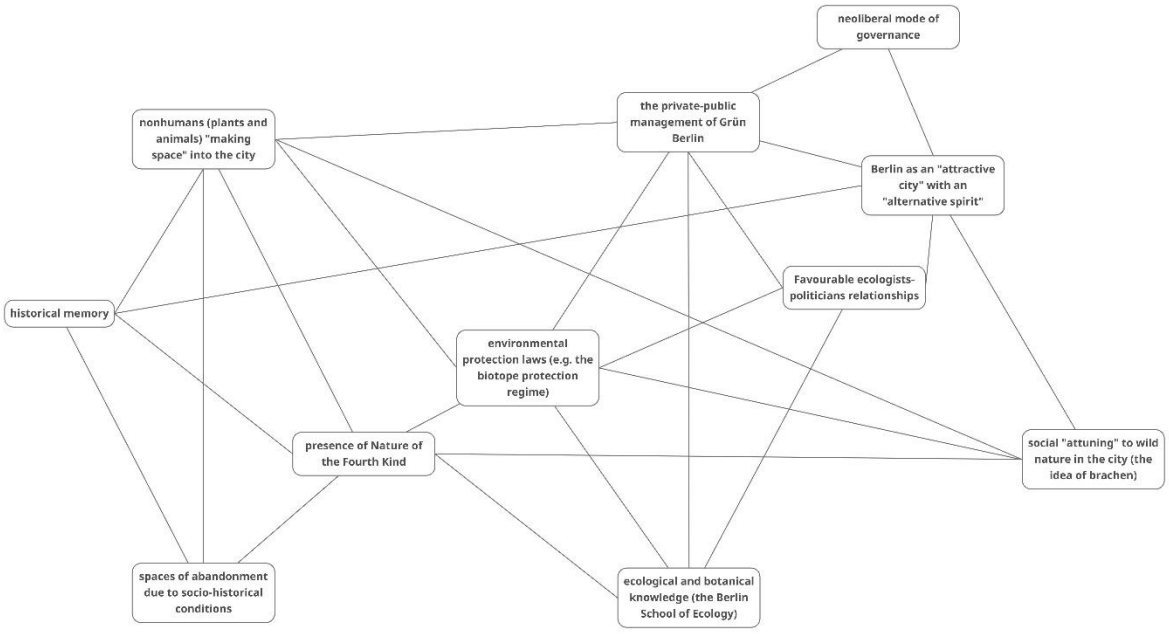


Figure 16 A schematic representation of the more-than-human network of Berlin urban ecologies

3.4 Where to go from here?

The review of research on urban natures reveals the complexity of the field of analysis of urban ecology and the meanings that it contains. Besides the differences in the cases, one thing that starkly emerges is the interconnection of urban nature and the context inside which they emerge. However, this is no surprise since – by viewing urban natures as natureculture – the emergence of different assemblages constitutes a direct implication of the ontology of the term. Different geographical locations, as well as different human cultures and histories, give rise to different assemblages. In this light, it emerges the fact that a context-based analysis can contribute to the debate on how urban ecologies emerge, intertwined with human activity, environmental struggles and urban development. This dominant role that the context plays is hence one of the main reasons why I decided to pursue such analysis in the city of Milan. Besides some exceptions, there is a lack of studies that inquire about green spaces from a more-than-human perspective. This is also because, as I will illustrate in the analysis of the socio-historical conditions, the role of urban nature in the planning of the city

has mostly been neglected. Therefore, it can be interesting to see how urban ecologies emerge and are mobilized by different actors within this framework.

Besides this, the research also aims at contributing to the debate on how space of wild nature emerges in the Italian context. As highlighted in the literature review, there are already numerous cases of similar contested green spaces alongside the peninsula. Also here, according to the regional specificity and local culture, various insights have been produced, as in the case of Ex-Snia lake in Rome, where it is possible to trace the history of the city speculation dynamics towards its expansion and, at the same time, histories of poor working conditions and pollution emerged from the memory evoked by that space (Tola, 2019). Or, in the case of Prati di Caprara, how spontaneous ecologies acquire the potential for a radical critique of neoliberal development (Trentanovi et al., 2021; Zinzani & Curzi, 2020). In a similar way, I also aim to reflect on how the spaces that took into consideration tell a story of the city of Milan and how this history can be reconnected with one of other cities. Namely, my aim is to contribute to further inquiring about these spaces as the relationship they have with the city and how they contribute to shaping specific socio-ecological imaginaries.

Furthermore, building on Zinzani and Curzi (2020) and Trentanovi et al. (2021), I also aim to inquire about how rewilded spaces emerge as commons. However, I aim to deepen the question, inquiring on how they can be considered as more-than-human commons and what they can add to the concept. But the main space I aim to inquire about is an urban forest that emerged from the capitalist ruins of a degraded and polluted ecosystem by the former industrial activity that took place. In the final end, I also aim at problematizing the idea of more-than-human commoning in its possible instances and how different politics and policies are associated with it.

In conclusion, this review also reminds us to pay attention to the ambivalent character that these spaces might have.

4 METHODOLOGY AND APPROACHES

Inquiring a research question that aims at describing in depth the relationality between humans and urban green spaces, this research adopts a qualitative and interpretative strategy. What it aims at inquiring about are the meaning that is assigned or emerge from the perspective of the actors that are involved, the relationality that exists between them and the spaces and the mutual interdependence of the human and the nonhuman. For these reasons, it aims at weaving together archival research, interviews with activists, fieldwork experience in the struggle for the protection of one of those green spaces, as well as the attempt to pay attention to nonhuman entities and agencies and how this assemblage is responsible for the emergence of natureculture.

Besides the engagement with the literature that deals with similar questions from similar theoretical standpoints that I presented in the review, I have been largely influenced by some of the workshops and conferences that I attended – besides the period abroad at the geography department at the Humboldt University of Berlin. What characterizes this approach is a rupture with the 'traditional' academic style, valuing the contribution of different approaches with innovative methodologies – like the analysis of images or the narration of facts with a sensitivity akin to the one of the literature genre. I hence experimented with this approach, attempting to put it in dialogue with the more traditional understanding of urban sociology regarding the socio-environmental conflicts in the urban space. This has also been inspired by the literature that has been reviewed. However, at the same time, I was not able to completely embrace these new methodological strategies in the way that anthropologists like Tsing (2021) did.

In short, this section aims at bringing a reflection on these methodological choices and the impact that they had on the way I structured my research, the data that I produced and the strategy used to perform their analysis. I will raise some points that I will further expand on in the discussion chapter regarding how challenging its traditional standpoints can be a challenge for a sociology that aims at adopting the perspective of Actor-Network theory and, in general, developing a multidisciplinary approach – something that the study of the urban and its complexity often demands. The adoption of this methodological approach thus constituted a valuable strategy to

properly grasp the intermingling of the different disciplines. In the next sections, I will first explain the strategies I pursued to select the case studies and frame them within a broader debate on urban ecologies. Then, I will develop a brief reflection on how these methods influenced my approach to the research, as well as the strategies that I adopted to approach the fieldwork.

4.1 Comparative studies - a relational approach

The first choice that I performed was the adoption of a comparative-oriented case approach as a methodology. This is because this research strategy allows us to address complexity by increasing the number of variables rather than diminishing it; in other words, rather than identifying some general control variables as in the variable-oriented approach, I adopted this approach with the goal of understanding what remains the same regardless of the context, to provide an in-depth explanation of the reasons for the eventual differences (Della Porta, 2008). In other words, I aimed to frame my research in a comparative way and also to explain the complexity of more-than-human commoning and its manifestations. However, rather than using the comparison for the results, I used it as a strategy to raise questions and perspectives on the inquiry I aimed to pursue. For this goal, I adopted a relational comparative approach.

Compared with the common 'side-by-side' approach to comparative studies, a relational comparative approach is a methodology that questions interconnections among contexts and the implication of specific contexts in the history of others. Applied to cities, it means thinking about them and the way they are connected regarding their past, present or future with broader webs of cities and contexts. Therefore, this goes beyond the search for similarities and differences among them – since it does not constitute the main goal – and it rather uses cities "to pose questions of one another" (K. Ward, 2010). The main benefit of this approach is the fact that it allows one to take into consideration an element and "follow it" in different contexts.

An instance of an approach that can be categorized within this methodology is the one of Draus et al. (2019), who highlighted the commonalities between Berlin and Detroit. What the researchers used as a common trait for the comparison is the fact that both cities experienced their historical traumas in the past – the division of the city through a wall from East and West in the case of Berlin and the trauma of bankruptcy and post-industrialization in the case of Detroit – and the connection that

these historical traumas had with spontaneous natures. In other words, what they did was analyse how Berlin's historical past helped pose questions on Detroit's present. Inspired by this example, I imagined that a relational comparative analysis of Berlin and Milan would have led both to inquire how the idea of urban ecology took shape in these two cities and the actants that contributed to each vision. Then, at the same time, it asks questions about whether Berlin uniqueness as a setting for urban ecology, as well as some of the key cases, played an influence in influencing the attitude towards green spaces in Milan. This supposition has been made based on the general idea that cities and their development influence each other in a global dimension – both regarding trends of urban development and protests (Marcuse, 2005; Mela, 1996; Sassen, 2001). This fact holds true, especially in the case of the two cities taken into consideration since they are examples of global cities interconnected with other places in the form of flows and relationality. In other words, "the 'interdependence [of all places] and uniqueness [of individual places] can be understood as two sides of the same coin, in which two fundamental geographical concepts – uneven development and the identity of place – can be held in tension with each other and can each contribute to the explanation of the other'" (Massey 2012 as quoted in Ward 2010). With this sentence in mind, I, therefore, hypothesized that Berlin's history of urban ecology might ask some questions regarding contemporary struggles and ideas that are taking shape in Milan.

4.2 The selection of case studies

As already anticipated in the literature review chapter, the selection of case studies has been performed with the intent of finding insightful cases to pose the research questions and their insightfulness to delve into the topic in depth. In other words, the criteria that followed my research were the adherence to the topic of urban green commons – as an instance of a local manifestation – and the fact that they produce a polarizing debate on urban nature and what constitutes it. Informed by the literature, I preferred spaces characterised by processes of rewilding the fact that these feature leads to the emergence of a contested character, raising question also on what is defined as nature in the city. Finally, the other criteria that I followed are the presence of a certain degree of salience, that there was already a debate over them and some kind of public interest. It is important to mention this because I would not like to suggest that these constitute the only rewilded spaces in Milan and for the fact that

– despite their material features – I mostly aimed at inquiring about their social construction.

Nevertheless, besides having these two cases as the main focus, I did also include other instances and debates regarding urban green that were ongoing in the context, especially regarding the history of past struggles. Notwithstanding, the difference is the fact that the selection of other references and cases has been performed to the extent that they relate to the two main cases – for instance, because they gave better insights on some emerging aspects or because they have been used to make certain claims.

4.3 An immersive approach to the research

4.3.1 Entering the field

Following the ethnographic research methodology approach, I decided to immerse myself in the context of the two spaces that I took as an object for my inquiry in a one-year timespan, from February 2021 until February 2022. This immersion happened on many levels. The first one was the collection of the documents and videos connected with them; then, what played an important role were also visits to the spaces and the engagement, interviews and informal talks with actors and stakeholders that revolve around them.

What needs to be noted is the fact that most of my activity has been focused on La Goccia. For instance, I took part directly in actions for the protection of the space, also motivated by personal interest and orientation towards the struggle that was being conducted – besides the fact that it constituted a "fitting" case for the theoretical approach I developed. Therefore, taking part directly to the civic struggle also helped gaining a better understanding of the context and its complexity.

The first contact I had with the people that are struggling for the defence of the space was with Comitato la Goccia. I simply wrote a general email to their public email address, where I inquired about the possibility of knowing more about la Goccia and the struggle that they were fighting for. As a response, they told me to have a look at their website since everything they did was public and – if I wanted further clarification – I could have contacted one of the members, and she would have answered my further questions. This reaction hence had an impact on me: I felt not comfortable doing research "on the committee". Hence, I decided to start focusing on the material that was public; this is, in fact, one of the reasons why I chose content

analysis as a methodology. Then, I also contacted the person from whom I received the contact, and she provided me with further clarifying information about the history and the politics of the space, and this has been insightful for better understanding the material on which I performed the content analysis.

Nevertheless, at the same time, I started to closely follow their activities and the events that they were organising, and this has been a turning point in my research also in the methodology I decided to adopt. This is because this factor also made me increasingly interested in the committee's activity but from a personal perspective. What played a fundamental role in the formation of this curiosity have been the visits I made to the space, together with some activists of the committee. Since my first visit to the space, I was surprised by its characteristics, and it was a way of thinking about nature that I was not familiar with. It was hence by entering and coming to close contact with it that the space had an impact on my way of thinking. I was not simply inquiring about the space to answer a specific research question, but I was also motivated by a strong personal interest. This also implied the fact that the research did not constitute the only aim for me to enter the field, and – in fact – I continued taking part in the activities of the committee also after the end of the fieldwork period.

Therefore, starting from these observations, I decided to consider the ethnographic fieldwork as a sort of autoethnography since I also collected many notes and reflections regarding the impact that this participation had on me, and I developed a critical reflection on them. In other words, I realised that I could not consider as neutral the impact the research had on myself, but rather something that happened as part of the field and the experience of coming into contact with that specific form of urban nature. It is from this standpoint that I mixed my own experience with one of the activists, with the personal biographies of the individuals that decided to take part in it and the messages that were publicly conveyed.

Nevertheless, this choice was not performed for arbitrary reasons but inspired by other studies that have been conducted, also starting from the personal experience of the researcher and the insights that a similar approach gave rise to. The key example of this approach to the research and the insights it can produce is represented by the Hobo by Anderson (2014) – one of the most influential books for the discipline of urban sociology. In fact, the book constitutes one of the most important studies on the life of the hobos and the stories associated with it, and its valuable insights are derived from the fact that it is also narrated through the personal experience of the author,

who lived as a *hobo* for a period of his life. In the research, I do not aim to present a work that can be compared to the complexity of this classic of urban sociology, but I simply aim to take it as an example of the validity of the personal viewpoint for the research. Besides this, another good example of how the researcher's experience can provide research insights is represented by Jones's (2005) autoethnography on cycling infrastructure in Birmingham using his body as a tool for research. What he did was keep a diary of his daily commute to the workplace and note down the sensations and feelings that he came to experience. The result of his study was hence a detailed analysis of the difficulties that cyclists face when they have to navigate the road and how these difficulties come both from other road users – namely, car drivers – and the infrastructure itself. In fact, by discussing and illustrating his way of "performing the city", he has been able to illustrate how the non-suitability of specific infrastructure for cycling mobilities forces cyclists to use it creatively. What is worth noticing, in this case, is the fact that what he observed is the behaviour that other cyclists could have adopted but possibly did not question it. He was able to do it because he was already familiar with the literature on 'bodily sociology' or the one on the geography of spaces – as well as the literature on city planning. What he did was use his knowledge to better inquire about theoretical concepts and ideas. Hence, these examples show that being already familiar with a topic helps in providing a specific account of it. Jones' study does not exclude the fact that it could have constituted the beginning of a longer one extended to other cyclists and their way of "performing the city". Nevertheless, what I aimed to stress by referring to this example is another instance of how a researcher's personal experience can be used as data on which to conduct research. At the same time, what is important is that the research must contain a sufficient degree of reflexivity and ability to "see it from the outside" from a critical perspective; in this way, also researcher's experience constitutes a valuable source of data which can produce insightful research results. It is hence, based on these examples, that I approached and included autoethnography in my methodology. In other words, I can say that entering the field had a direct personal impact, which contributed to shaping my thoughts, my beliefs and my attitude towards research, and I imagined that those could have constituted insightful material for the data analysis

At the same time, this impact also had the implication of "broadening the field". Besides la Goccia and Piazza d'Armi, I became more attentive also in the observation of urban natures in other parts of the city, questioning the rationale that led to the

development of those specific natures and how they relate to the theoretical perspective I was developing was. Moreover, this fact also caused me to decide to broaden the focus of my research: I realised that it was not useful to inquire about those spaces in isolation but in connection with the broader history of the relationship between citizens of Milan and its natures from a historical perspective. Nevertheless, besides this rather theoretical aspect, reflecting on my personal experience also helped me inquire about the relationship I developed with other activists and how activists – at their turn – had an influence over my perspective.

As a further goal, the choice of performing autoethnography can also be viewed as part of the broader intent of deconstructing traditional conceptions of what is scientific and what is not scientific that is being brought forward by STS and ANT studies – especially the ones framed from a Latourian perspective. By reflecting on my personal experience, my goal is also the one of analysis of how I also develop in the first place interpretations and what, from my background, brings to the development of those interpretations. In any case, this is performed without questioning the idea that research must be rigorous (Ellis et al., 2011).

4.3.2 Some notes on the context

Inspired by the literature on urban nature and more-than-human commoning, I observed that a thorough study with this perspective was lacking in the context I enquired about. Namely – as it will be illustrated in the next chapter – in Milan, there seems to be a lack the reflection on urban nature that is being put forward by the mobilising of novel more-than-human literature and perspective. Urban nature and its conception seem too much tied to aesthetic principles of design, technocratic functions or simply discursive creations that would be identified as *greenwashing* by a radical critique (Athanasiou, 1996; de Freitas Netto et al., 2020). Therefore, I observed that reading the struggle for the protection of these spaces as more-than-human commons could have been an insightful political goal, both for changing the dominant paradigm of human-nonhuman relations and a way to introduce this perspective in a context where it is mainly absent.

To some extent, then, I am reflecting on the positionality I am adopting and the way that it influences the research. Despite the fact that research neutrality is a constructed idea since no research can be completely neutral (Becker, 1967), I can affirm that in my approach, I have openly been non-neutral. This factor had an

undoubtful influence on the perspective through which I observed the cases I studied, and it is something that I also include in my analysis. Nonetheless, this act of taking a specific side did not exclude the adoption of other perspectives and critical approaches to the object of my research and my positionality. I hence did not implicitly "defend the cause I was struggling for", opening to conflicting perspectives. Hence, despite the fact that there might be some limits to this opening of perspectives, I attempted to avoid giving a one-sided view of my research object.

As a further justification of the adoption of this methodology, I would like to stress the fact that I decided to adopt it also inspired by the ideals of action research, aiming at directly making an empirical contribution beyond the realm of academia, as a way to directly implement normative ideas that can be generated in academia and might remain confined to academic niches. At this point, I cannot assess whether I succeeded or not in my attempt, but I can affirm that it was directed towards this strategy.

4.4 Qualitative data analysis

4.4.1 Content analysis and coding

The main analytical strategy adopted has been the content analysis of the selected documents. As a basic definition, it can be stated that content analysis is "a research method that uses a set of procedures to make valid inferences from the text" (Weber, 1990, p. 9). These can relate to a different plurality of entities, like the sender(s) of the message, the message itself, or the audience of the message. It is, in other words, a way of understanding a phenomenon or a perspective through the way that it is being discussed or presented depending on the aspects that are being covered.

The documents on which I performed the analysis are varied, among which they are documents produced by activists, interviews with selected stakeholders and fieldwork notes. More in detail, I grouped them in Table 2

Document	
Ethnographic Diary of la Goccia	1 year timespan
Interviews with municipality officials	2 interviews
Semi-structured interviews with activists	8 interviews
Policy and municipal documents	7 documents

Activists writings	30 documents
Blog entries	27 entries

Table 2 An overview of the documents for the analysis

As a tool to conduct the analysis, I used Nvivo, a qualitative data analysis software. Among the different ways and tools that the software it provides, I mainly used it as a support to highlight contents transforming into codes. Following Saldaña (2013), Schreier (2013) and Weber (1990) strategies, I performed different rounds of coding before developing the coding scheme that I used to analyse the data. Regarding the analytical strategy, I performed a mix between a grounded theory approach and the application of a predefined set of codes. In concrete terms, this strategy means that I did not use the software to produce the results of the analysis, but I rather used it as a support for it.

The starting point to develop the coding scheme has been the literature and the theory that I discussed, from which analytical codes have been produced. From this input, I mainly derived a set of codes that I defined as "analytical" (like care, commoning or natureculture) because they are inspired by the theoretical perspective that I adopted and were aimed at collecting empirical evidence of those concepts. The second category of codes, instead, is one that I defined as "descriptive". Compared with the analytical, codes developed from this perspective are closer to the grounded theory approach since they aim at providing a picture of the content of the documents. An instance of these are instead codes that indicate when there is a reference to the laws and regulations, how the idea of remediation is mentioned, and, in general, dimensions that are close to the category of urban development or urban ecology. To some extent, they are also inspired by the theoretical approach in the range of the possible dimensions that I could inquire about, with the intent of filtering what appeared to be relevant. For more details, the list of codes that have been used is included in the attachments section of this work.

These two categories of codes – analytical and descriptive – have been applied to all the documents collected. In fact, in the first attempt, I was planning on developing different sets of codes depending on the documents and the ones that produced them. But, in the course of the analysis, I discovered that this was not a convincing strategy since it presented the risk of fragmenting the data and missing the greater picture. By contrast, by applying the same coding scheme to all the documents, it has been possible to observe the differences among them, which were the most prevalent codes

among the documents and the different modes codes manifested according to the documents. In fact, it is possible to affirm that this last feature represents one of the points of strength of the software: since I was able to observe all the segments that referred to a single code by clicking on it, it was possible to see in comparison how different actors (e.g. a municipal official or a member of the committee) or different documents (e.g. a policy document and a text by activists) provided a different perspective on a single code. This strategy has hence been insightful in spotting similarities and differences.

As a final note, alongside the coding process of documents, another activity that I performed was the writing of memos, both to reflect on the analytical strategy I was conducting and on the emerging observations. These memos have hence been insightful in developing analytical strategies and identify trends, which later have been transformed into research outcomes.

4.4.2 Doing research through images

Using images in research is increasingly becoming a popular methodology also in the field of social sciences, among what has been defined as the "visual turn" (Bell & Davison, 2013; Rose, 2016; Thornes, 2004). There are different reasons to explain this turn, like, for instance, the increasingly dominant role that visual artefacts play in contemporary society, the fact that also visual media are as rich in messages as texts could be, or the increasing popularity of visual artefacts as tools to convey messages. Or at the same time, images can also be used as a research strategy to circumvent a methodological obstacle; regarding this case, a remarkable instance is represented by Molotch and Ponzini (2019) research on gulf cities and their transformations. This is because the two researchers were aiming to study the transformations of cities of the Arab Gulf, but this was difficult to be pursued through interviews and similar methodologies, for the fact that developers were not willing to be interviewed due to the working repercussions these might have provoked – given the fact that the states in question are authoritarian – and the fact that there was no other kind of data. Therefore, they decided to adopt visual methods as a way to gather the information that they needed.

In the case of the research that I conducted, the adoption of visual methodologies has also been justified by the very object of research, but for the topic and case-specific reasons. In fact, the idea of "green" in the city has a strong visual connotation, and it

is also enacted through the unfolding of certain aesthetics. Moreover, this unfolding of aesthetics is also central in conflicts and politics over the 'more-than-human matter', which determine whether this is defined as blight or as aesthetically pleasing and acceptable, also producing a clash with the understanding that is being put forward by urban ecology. However, at the same time, also ecologies of rewilding carry an aesthetical dimension that plays a role in the *social construction* of both these spaces and the idea of urban nature.

Therefore, since the production of images is abundant also in the documents that I selected for the analysis, and images are often the tools that people use to think and send messages (Rose, 2016), I considered the inclusion of this methodology as an important strategy to carry out this research, in conjunction with the other methodologies that I described in this chapter.

5 GREEN SPACES IN THE CONTEXT OF MILAN, A POST-INDUSTRIAL CITY IN CONSTANT TRANSFORMATION

While I was walking in the neighbourhood of Affori-Comasina, a poster caught my attention (Figure 17, left). It was an announcement issued by Milan municipality, and it had the aim of informing the public regarding the diffusion of a specific plant (*Ambrosia Artemisiifolia*). The announcement did not have a didactic aim regarding urban ecology but rather a regulatory and policing one. Given the fact that this specific *alien specie* is supposedly responsible for allergic reactions in a plurality of individuals, removal or control was the policy applied to it, prescribing the methods to curtail the diffusion of the weed. Nevertheless, the policy is not limited to that specific weed, and citizens are invited to get rid of any kind of weed that would grow in their courtyards.

Walking a little bit further, I ended up in the park of ex-Paolo Pini. The park consists of a project in the former psychiatric hospital Paolo Pini. It is characterized by its "untamed" character, which differs from the principles that inspired the other more famous parks in the city. This different approach also translates into a different



Figure 17 Regulations and informative signs on urban nature in Milan (Source: author's pictures)

sensitivity towards the nonhuman elements that are present. For instance, as it is possible to read on one informative billboard that is located within the area, it is advertised as a stepping stone – namely, a space that privileges certain biodiversity and constitutes a shelter for many different animals (Figure 17, right). Here the aim is rather informative; in fact, it is possible to find another informative billboard that tells about the different bird species that are present in the area. Besides this, the park also hosts an experience called "Il Giardino degli Aromi", which is an association that aims at socially re-inserting disadvantaged individuals through the practice of a kind of agriculture that better helps reconnect with a "direct relationship with nature in the urban context" (Il Giardino degli Aromi, 2012).

I decided to pick these two cases to introduce this section to illustrate how they are paradigmatic of two different approaches towards the non-human. The first one has a rather policing character, defining norms and regulations to tackle the presence of a certain non-human exemplar. The second one, instead, is more accentuated on the character of discovery and recognition of certain ecosystem dynamics. Nevertheless, rather than speaking about them in a normative form, I would like to note that these attitudes and regulations represent political orientations and decisions regarding nonhuman presence in space. In the case of the weed, its presence is not tolerated from the standpoint that it would be harmful to human entities, constituting a specie that would cause certain allergic reactions; moreover, it also contains the idea that weeds must be removed from certain spaces. It becomes political in the way that others would argue from a different standpoint that that specific weed can have positive effects on the environment inside which it can be found – for instance, thanks to its phytoremediation features (Huang et al., 1997).

On the other hand, the Paolo Pini constitutes a space where nature biodiversity is enhanced. However, also this space and the regulations associated with become political for the fact of recognizing biodiversity as a value and the whole space as a *matters of care* (Puig de La Bellacasa, 2017). From the standpoint of other actors – like, for instance, those that have an interest in urban development – these features would appear meaningless, and the space is regarded to the extent that it is possible to build new constructions and the values they can generate. That is why the space itself, which arise out of the intent of valuing and preserving biodiversity, can be regarded as a space with a certain political connotation towards urban nature, as a bottom-up production of awareness and knowledge.

The dynamics and attitude I just presented, rather than constituting unique cases, are instances of the complex relation between humans and non-humans in the city. In this chapter, I aimed to translate into practice and concrete cases the theories and approaches discussed in the literature review, highlighting how they emerge and the matter of politics that they acquire in the Milanese case. Taking these two cases as instances of orientations towards urban nature, I aim to suggest that different attitutes by different actors coexist within a certain context. That is why this chapter has the aim at giving a brief overview of the different attitudes towards urban green in the city of Milan, to put into perspective the contested character that the rewilded green spaces that are the object of this work. Besides this, it also has the aim of further illustrating how urban nature is intimately tied to the context inside which it is embedded – and it is responsible of its co-production.

Milan can be defined as a post-industrial city that witnessed substantial urban development starting from industrialisation. This development comported a certain conception of the spaces, and it witnessed what can geographically be called a process of urbanization (Boatti, 2007). Looking at the process of urbanisation from a political ecology perspective, it can also be regarded as a way of shaping, interacting and transforming the environment. It is from this standpoint that in this section, I will discuss different trends and attitudes towards urban development that took place in Milan. I regard them as different ways of dominating, shaping and transforming nature. What I aim to do is to consider them not as historical phases – although certain historical phases see certain attitudes as dominant – but rather as attitudes that can also exist during the same historical time, emerging as a conflict between different actors and different attitudes and ideas regarding how to relate to nature in the city context.

This analysis, for obvious reasons, could also be called an analysis of urban parks and gardens and the different conceptions and ideas that inspired them since, for a long time, the only way to conceive and justify the presence and the existence of more-than-human entities in the city – besides the use as a decorative function – is one of parks. This is no surprise since the idea of urban parks is intimately tied with the one of modernity and urban planning of the city (Gandy, 2005), and this vision is the one within the development and expansion of Milan happened. Nevertheless, I will try to avoid falling into the modernist trap and reproduce the distinction between nature and culture, considering parks as the only manifestation of nature. Looking at the socio-

ecological processes (Swyngedouw et al., 2011), I will consider the general process of urban development and expansion of Milan as a way of relating, appropriating, intervening and transforming the environment and producing a new form of nature (Cronon, 1997). Put differently, in this process, I will pay particular attention to the creation and development of parks as a peculiar social construction and production of Nature[19]to inquire about different modes of relating and conceiving relationality with the non-human. However, at the same time, I excluded from the categorization the model of community gardens; this choice is motivated by the fact that community gardens add a further layer of complexity regarding the use, transformation and appropriation of nature(s). Therefore, not to increase complexity, I remained to the analysis between the relation among people and urban nature that do not involve the appropriation for agricultural related purposes.

5.1 Iconic "historical" parks

One of the key representations of urban nature in Milan is put forward by the presence of what is defined as historical and iconic parks. The two most popular green spaces that fall within this category are *Giardini di Porta Venezia* and *Parco Sempione*.

Dating back to the XVIII century, Porta Venezia gardens can be considered the first public park in the city. Their construction was inspired by the idea that a city must have public gardens, and hence the idea was to provide Milan with this feature since it was still lacking in the city at that time. Their construction was influenced by a series of aesthetic principles, following the design of the "French garden"; in any case, they were also conceived as a space to host celebrations and events (Toeschi et al., 2007, p. 85). After its construction, the garden witnessed many transformations and developments, as well as interventions of expansions. For instance, several little hills were added, and the expansion followed a new aesthetic fashion: the garden in "English" style. In any case, since its construction, they have been a popular space for the Milan population to go during Sundays and other festivities (*ibidem*), still mainly remaining space for recreation and sports activities.

Another classical park that has become one of the most appreciated by the Milanese people is Parco Sempione. The history of the development of the park can

[19] Here I use Nature with the capital N, because I am referring to the socially constructed modern idea of a Nature that is autonomous and external to human activity

also be regarded as a victory of urban green space preservation against the destructive conception of urban development that regards the city as a terrain for real estate speculation – as I will discuss in the next section – towards a vision of the city that values the importance and the presence of the nonhuman. In fact, the area that nowadays is Parco Sempione was a former military exercise field. After its abandonment – despite there was already the intention by some citizens and planners to transform it into a park – it witnessed the risk of being divided into plots and sold for redevelopment, with the aim of carrying out a speculative development to construct a high-bourgeoise neighbourhood, with the involvement of some people in the municipal government who also had interests for this sort of development; besides this, also the demolition of a large part of the castle was forecasted as part of the development (Toeschi et al., 2007, p. 99). This series of scandals and private affairs hence provoked the dissolution of the municipal coalition and the abandonment of the destructive development project, in favour of plans to transform the space into a public park. Hence, at the beginning of the 20th century, the works to build the park started, also with the decision to build a lake in the middle of it.

As reconstructed by Toeschi et al. (2007, p. 103), the park also witnessed an abandonment by human activity of maintenance-oriented design principles, also causing a drop in popularity. Nevertheless, at the same time, the park also witnessed the construction of a public library in the middle of it and the installation of some works of art as improvements and interventions that had the intent of erasing the feeling of abandonment. Nevertheless, it was only in 1996 that a marked restoration of the park was carried out by mayor Formentini and finished by the following mayor Albertini. These interventions had hence the goal of adding more trees and other kinds of vegetation, as well as new technologies of irrigation, illumination and video surveillance of the park, also with the intent of easing the sensation of unsafe space that the area started to acquire.

In the present moment, it is possible to affirm that the park is highly frequented and constitutes a landmark in the city of Milan. It is a space that is highly frequented both by residents and tourists, or a space that people use to do sport, as well as a space where different events are organised by different realities and associations or different communities meet. In short, it also constitutes a green space that mainly has a social function.

To sum up, historical and iconic parks constitute an important instance of nature in the city that is still highly valued also nowadays. They still constitute spaces that Milanese people frequent for a different variety of uses and towards which developed a particular kind of affection. Nevertheless, it needs to be noted that – in their history and development – they also represent a particular way of relating with the nonhuman – a way that is profoundly anthropocentric. In other words, they can also be defined as socio-natural assemblages, in which the social is predominant and constitutes the form of ordering and disciplining the nonhuman in its features. What predominates is the social dimension, whether they constitute spaces where to organise events or spaces that need to be ordered according to specific aesthetic features. The non-human is considered as a landscape for these activities, or also in a way that mirrors the socially constructed and romanticised nature that emerges as a form of escapism towards an idealised world. Hence, it constitutes a form of *second nature* (Cronon, 1997) that is socially produced. As I will further discuss, this fact raises questions regarding the "actual nature" of these spaces or how they can be considered part of a supposed green provision of the city. Nevertheless, these are all issues and aspects that I will further develop in the analysis; in this section, my intent was more the one of mentioning these kinds of spaces for the fact that they are fundamentally constitutive of the imaginary and form of relating with the nonhuman that are enacted in the city in the present moment, and – at the same time – how they still constitute spaces that are mobilised to reinvent and rethink this relationality in novel ways.

5.2 The modernist and soil-sealing urban development

Modernist urban development represents the main attitude that contributed to the development of Milan as the city as it appears in the present moment. In fact, Milan – until the end of the 19th century was what could nowadays be considered a "green city" with a contained development and a population of roughly 270.000 inhabitants (Toeschi et al., 2007, p. 12) and the shape that it acquired today is the outcome of urban development plans that expanded and urbanise the surrounding territory, which was formerly constituted by rural land use. In other words, industrialization accompanied a process of urban expansions and soil sealing.

One of the first plans that are representative of the modernist attitude is the plan Beruto. This plan had the goal of boosting the residential and industrial expansion that was the consequence of industrialization, following a radial model of expansion from

the city centre. Concerning urban nature, this plan had the ambitious goal of providing each neighbourhood with a green space in an equidistant form. However, some modifications and interventions to it have been made, and these modifications had the outcome of reducing public provisions – hence also the surface dedicated to parks – in favour of a pattern of growth that facilitated the edification of plots to meet the requests put forward by the population increase and industrialization demands (Boatti, 2007, p. 34; Oliva, 2002). In other words, it is possible to see that this mode of development had a marked attitude oriented towards the division of the land into plots and subsuming it to its revenue value: it was the expression of what can be defined as the form of capitalism that connected speculative housing development with the industrial boom – the form of capitalism responsible for shaping an urban form conceived as the realm of the human and its activity, obscuring or neglecting the ecological dimension. This is hence the mode of development that allowed the fast growth of entire neighbourhoods in what was former farming or "untouched" land, and – as it will be highlighted in the analysis – one of the main points that helped build the imaginary of ecological struggles.

The plans that followed plan Beruto had all similar goals, strengthening the vision of the city as a space for population growth and concentration and industrial production. For instance, in 1912, the Pavia-Masera plan followed the radial mode of expansions that characterised the Beruto plan (Boatti, 2007, p. 38). This plan did not last long, and it has quickly been replaced by the one sketched by Albertini in 1926. This new plan did not present any particular novelties, if not the strengthening of the attitude of accommodating real estate development and industrialisation. Proper green spaces are absent in this plan, and the only intervention of "greening" has been represented by the construction of alleyways "to walk" – namely, long alleyways characterised by the linear presence of trees (Boatti, 2007, pp. 42–43). These "micro greening interventions" are hence paradigmatic of an attitude towards urban nature that sees it valuable only "as a decoration". It is hence a vision that does not consider valuable dedicating areas of the city to the green since the primacy is the revenue value that they can generate through real estate speculation.

One event that indeed provoked great trauma for the city was the 2nd world war. Milano was widely bombed, and many people lost their lives. The bombings hence provoked large-scale destruction of parts of the city. What came after was a large program of reconstructions that also brought a wave of speculative developments. In

fact, the plans for the reconstruction had the character of being particularly permissive and framed as a priority, leading to an indiscriminate reconstruction and the demolishing of damaged buildings. What was also part of this trend was the neglect of green spaces, and hence the opportunity of providing the city with them in areas where there was a lack was not included also in the vision of the post-war city (Boatti, 2007; Oliva, 2002). In other words, Milan remained a city that grew accommodating speculative development, besides constituting a space conceived "mainly for the human".

This mode of development can be thus defined as a form of development that proceeds by "conquering and devouring" the surrounding territory. It continued without interruptions from the '30s until the '80s, and most of the green space that has been spared is located in the south, and it nowadays constitutes the southern agricultural park (Boatti, 2007, pp. 114–115). It is, therefore, against this background that the free area that exists within the city and has been spared from development usually witnesses fierce opposition when development plans are sketched, as I will also illustrate in the cases that are the object of this research.

5.3 The "modernist and green" development

At the same time, it would be reductive and misleading to associate modernism with a form of urban development that neglects the dimension of nature or does not value it. In fact, many modernist projects – like the ones of le Corbusier – also embody a specific social construction of nature, and this trend is also visible in some projects that took place in Milan. The location where this kind of development took place is the western part of the city, which saw the unfolding of many modernist projects, and it can be seen as having a larger number of green provisions compared to other parts of the city. This is because it has also been the terrain where many innovative modernist developments took place and created entire new neighbourhoods.

One of the key examples is the neighbourhood of QT8. The meaning of the name is "Quartiere Triennale 8", and it signifies that it is a neighbourhood that was built during the 8th edition of the Triennale[20] as an experimental neighbourhood, inspired by a neighbourhood Weissenhof neighbourhood in Stuttgart; compared to other modernist developments, what characterizes it is a fact of having ample green spaces

[20] Triennale is a cultural institution that organizes evens and exhibitions around arts and architecture

between buildings, integrating public and private green (Oliva, 2002, pp. 385–386). Nevertheless, the most iconic feature associated with this development is represented by the construction of Monte Stella – the park that has been built as an integral part of the project. Planned and designed by the architect Piero Bottoni in memory of his wife named Stella, it is a little hill of around 50 m – as the denomination "monte" suggests – representing an anomalous feature in the landscape of Padania plain. In fact, it was constructed starting from the ruins material due to Second World War bombings. The initial project planned the construction of a 90 m hill with a restaurant at the top of it, which could have been reached both by walkways alongside the hill and a planned funicular; also, this case had a sort of celebratory or identitarian intent – namely to provide its visitors with an aerial view of Milan, its hinterland and the surroundings (Toeschi et al., 2007, p. 192). Eventually, the restaurant and the funicular have never been built, and the height of the hill was reduced to 50 m. Nevertheless, what is exemplary of this intervention is the fact of constituting an interesting project that conceived a park in a different way, intertwining history, identity and modernist ideas of planning. However, despite it has been realized between 1945 and 1960, it was only starting from 1971 that it became a public park. Despite this, it has been a space that in the past has been used in different ways and hosted many different kinds of events, like sports events, popular fairs, political parties celebrations, outdoor plays and concerts (ibidem). Moreover, the anthropic activity and modelling of cultural goals reached their peak during the winters of 1982,1983 and 1984, when it was transformed into a slope where people went skiing, with also the installation of infrastructures to reach up the hill with the ski.

It is hence with no surprise that the park also has still retained nowadays particular meaning for Milanese people, towards which they have a particular affection and enjoyment. During sunny spring and early summer days, it is common for the park to appear crowded and used by people that are having a picnic, to reach the top and sit on the grass as an observation point for the surrounding landscape and as a place where runners train, going up and down the hill. Nevertheless, nowadays, there is a different way of conceiving the space, and its use for events and similar anthropic activities is not tolerated anymore, both by the municipal regulations towards it and the citizens' committees that struggle for its protection. In fact, looking at the Facebook page of "Osservatorio per il Paesaggio Monte Stella Milano", it is possible to observe how there are complaints regarding mountain bikers that use the space as a space for

leisure, who are accused of harming the slopes of the hill, rendering it more fragile. Similarly, there has also been a backlash when the news of an unauthorised rave party occurred in the space, for similar reasons regarding the harm that it had produced to the ecosystem of the space. In other words, it is possible to observe that different attitudes, practices of care and human-nonhuman relations took place in space during its historical period.

Nevertheless, similar interventions were not only characteristic of the new wave of modernist development after the world war. Another example of a place that is also appreciated by Milanese people that had its origins in 1936 is Parco Lambro. Idealised by the architect Enrico Casiraghi, the park had the goal of replicating the typical Lombard landscape and ecosystem, and also – given the fact that it was built under fascism – the "didactic goal" of putting city dwellers closer to the agrarian life in the fields – since the existence of some fields was also planned in the project (Toeschi et al., 2007, p. 117). Nevertheless, during its historical course, it mutated its aspect and witnessed a variety of social uses. For instance, during the war, it was also seen as a source of wood to burn during a cold winter with scarce resources (ibidem). Another important moment in the history of the park was the "Festival del proletariato giovanile" (Festival of the young proletariat) in 1976, which represented, in the Italian context, a form of local adaptation of the famous 1969 Woodstock Festival in the United States (Grifi, 1976). Similarly, also in the contemporary period, the park is used as a space where people set up self-organised parties and events, leading to conflicts with the authorities for the lack of authorization for these events and the "nocturnal disturbances" that they produce, according to the inhabitants of the surrounding houses (la Repubblica Milano, 2022).

In short, what I aimed to highlight in this section is the fact that green spaces have been developed and also associated with modernist development, and those spaces also have an affective dimension, playing an influence in the imaginary of green spaces and nature in Milan by Milanese people. Furthermore, another aspect of these spaces that I would like to stress is the way that their use changed and transformed during different historical periods. Besides constituting an example of the conception of Nature in modernist thinking and attitude towards urban development, they also represent spaces that have been appropriated and transformed in many different ways according to different periods of time. This fluidity of uses and conceptions is something that constitutes more than a simple historical account of the diversity of

uses but also the unravelling of different ways of socially constructing natures and modes of engaging with them. As it also emerged in the literature on urban nature that I reviewed, these modes of engagement are also something that is at the origin of many conflicts over the space because of the diversity of the uses that take place. In other words, these parks constitute an example of the different social constructions of nature that add meaning to these parks, shaping their identity in a state of constant transformation.

5.4 Association-led Park Developments

Another way of relating to green and urban nature worth of mention is the one carried out by associations of citizens and privates as a response against the excessive soil sealing and "conquering" of agricultural land by urbanisation dynamics.

The most famous park that developed within this trend is Parco Nord, in the north of the city. The start of the development of this park can be traced in an agreement stipulated by six municipalities at the end of the '60s, with the intent of creating a park, and its official creation can be traced to 1975, when it became recognised by the Lombardy region. What is significant about the creation of this park is the fact that it constitutes the outcome of a bottom-up agreement between municipalities and other private actors that successfully managed to subtract former rural land to soil sealing and hence transform it into a park. Until the present moment, continuous interventions have been carried out in the park, with further reforestation interventions in areas that were polluted or empty of trees. That is why nowadays, it constitutes a case of a highly frequented park that it still managed with an associative mode (Parco Nord Milano, 2019b). Regarding its ecological features, it therefore presents a variety of environments, among which both spaces for recreation, spaces that are refuges for wildlife and spaces that constitute river banks (Parco Nord Milano, 2019a)

Besides Parco Nord, another important park that has been created "from the bottom" is Boscoincittà. Boscoincittà is also worth being mentioned for constituting the first re-forestation project in the Italian context. Since the majority of Milanese people considered Milan only as "a place where to work", an association of citizens and privates came up with the idea of improving its territory and amenities, hence sketching the idea of Boscoincittà – a project of reforestation located in the far western part of the city (Boscoincittà, 2014). What is worthy of notice, in this case, is the fact

that the forest hence arose mainly thanks to citizens' and professionals' voluntary work, since it also constituted a bottom-up case of forestation: as it is possible to read in this reportage about their history, "the idea was the one of bringing a forest within the urban context and to involve the entire citizenship" (*ibidem*: 5). As a final note, it is important to stress that the park also had a semi-political intent, emerging as a response to the 'miserable capitalism' (which I described in the section about the modernist and soil-sealing development), aiming at reconstructing a patchwork of "agriculture and nature" (*ibidem*: 9).

In short, these parks can be considered examples of friction regarding the view of urban nature embodied by the municipality and the one embodied by the citizens. To some extent, citizens' views on urban nature were more progressive than the ones embodied by the municipality, with a clearer understanding of the importance of nature in the city. The fact that some of the ones that became the most important parks for the city were initially sketched, demanded or developed by non-municipal actors played a key role, which – as I will further argument – is responsible for the bottom-up character of demands and visions of urban nature in the city, which reverberate until the present moment. In the struggles and cases of urban green spaces that are the object of this thesis, it could also be observed this distance between the municipal official and technicians' visions of urban nature and the one proposed by citizens. And, as it happened in the past, it seems that these actions are also playing a fundamental role in sketching new visions of urban natural spaces that have not been embodied before by municipal regulations and modes of planning.

This section therefore aimed at showing how civic actions and associative dynamics played a significant role in the creation of many green spaces in the Milanese context that nowadays are highly popular, reminding of the bottom-up character that the issue of green provision presented. This is to affirm that the current paradigm of green spaces in Milan has also been the outcome of the actions of citizen groups – like in the case of Berlin, which has been analysed in the review section. However – as is visible in the case of Parco Nord – the ecological assemblages towards which these actions were rather oriented towards the idea of the provision of green as a public service rather than a broader matter of ecosystem protection.

5.5 Private green

Another aspect that concerns the presence of nature in Milan is the one of private gardens. In fact, if in the public the presence of urban nature is scarce, the same cannot be affirmed for private gardens in the buildings. These gardens can also be the ones that are common to the dwellers of a certain building and might constitute a form of shared space or have a merely decorative function. Nevertheless, these gardens are mostly small or do not present any kind of peculiar features. The "scarcity of space" to be allocated in non-profit-oriented manners within the local real estate market hence prevented the provision of large surfaces of private green in development projects. Hence, the majority and the more notable instances of "private green" can be found in buildings that belong to the more affluent strata of society that can afford to own properties that have the provision of "non-utilised" green space.

Besides representing an instance of how inequalities are rooted in Milan – namely, the fact that public provision of green is scarce, the fact that also private green for non-affluent dwellers is generally scarce and the fact that only dwellers with a certain economic availability can afford to have in their building large gardens. How they also structured through the uneven and discriminatory provision of the green, the materiality of these gardens is also interesting to be inquired as another instance of the relationship between humans and nonhumans in the context of Milan, and how economic wealth and the class dimension play a role in influencing it. Despite not having material access to those gardens – especially for their private dimension that transforms them into what would be defined by the classic economic theory as "club goods" – it is possible to find a way to do it through images. Hence, attempting to pursue this strategy, I searched whether there were some resources that collected images of private gardens in Milan, and I was able to find a book dedicated to the theme in the public library.

The book, titled "Private Green: hidden gardens of Milan" (Sierra, 1999), constitutes a collection of pictures of private gardens in Milan, and, for this reason, it represents a valuable resource for the research. However, it must be noted that it contains many limitations. For instance, it does not constitute a recent account of public green since it was published in 1999. Moreover, it must also be noted that the pictures that are collected cannot be considered "objectively neutral" but are mediated through the taste of the book curators, the taste and the technique of the photographer and the construction of a broader discourse on the green. However, despite these

limitations, the book represents a promising account to shed light on a category of green that is mostly hidden, spurring a reflection on aesthetics and the rationality of the gardens appear.

The first thing that can be noted is the recurrence of a certain aesthetic. This aesthetic is one of the wide green lawns of grass monoculture. It is not clear to what extent these can be used for recreation purposes and to what extent they perform just a "decorative" function: in some cases, it can be noted the presence of stones that are laid on the ground, as to norm a certain use of the space that prevents walking on the grass. Alongside this, the aesthetic dimension is expressed by the humanly-crafted character of those spaces and a certain material manifestation of the nonhuman that is obtained through a sustained human intervention in design. At the same time, in many of these gardens, it can be hypothesized a recreative function: the presence of benches and tables indicates that they are imagined as spaces "to be used", and hence their function is not only decorative. Nevertheless, when they express a decorative function, this is reconnected with aesthetic ideals typical of different periods of time. Hence, despite some rare occurrences, the vegetation that appears in these gardens is one that underwent a specific kind of human intervention to shape it in a specific manner. Framed against the materiality of the urban space in Milan that has been shaped by urban development, it can be affirmed that most of these gardens appear as "bucolic refuges" that contrast with the majority of environments where concrete, sealed soil and the absence of vegetation prevails.

Overall, it can hence be stated that these gardens belong to a category of people that can be considered one of the most affluent in the city. Despite some exceptions where more "popular" gardens are illustrated, the largest part of them is found in luxury residences[21], also mirroring the uneven "access to green spaces" that exists in the city. However, at the same time, it must be noted that there is another form of private green that is typical and popular in the city and also not exclusive to more affluent dwellers: the ones of "vertical" gardens that are located on private balconies.

In minor numbers, this book also shows pictures of gardens that can be found on balconies and can be defined as "vertical" for the fact of not being at the low bottom of the building but in its elevated parts, such as balconies or windows. This case presents

[21] At least the ones presented in this book. There is a possibility that there are more gardens that are not necessarily that affluent; however, overall, I aimed at illustrating the one of private gardens constitutes a specific imaginary of green spaces that has developed in this context.

a more accessible form of "private green", despite not being homogeneous and presenting many inequalities regarding its feature. At the same time, similarly to the vegetation present in private gardens, this kind of private green is present in the city but is often invisible. In this case, the invisibility is not more the one of being secluded within courtyards through which it is not possible to see, but it is more an invisibility for the fact that it is not considered as part of the patrimony of the city. Although this might initially appear justified by the supposed low impact, this sort of provision has for its limited surface – besides the impossibility of actually "governing" it – an urban ecological perspective might challenge this assumption. In fact, according to Brantz (2020), these vertical ecologies also play a role in the overall ecology of the city: for instance, if a certain kind of plant is cultivated, it can help attract bees, as well as the possibility of "cultivating the botanical city right outside one's own apartment" and create distinct botanical atmospheres

On the other hand, these spaces also have a sociological significance since they also unravel different aesthetics and approaches to the non-human in the city. By adopting a multidisciplinary approach fostered by ANT, it could be interesting to study the relationships between cultures and plant assemblages present in balconies, observing balconing gardening as a more-than-human practice. Nevertheless, what is also worthy of mentioning is the fact that vertical greening also has a particular significance in the Milanese context. If – as I have argued – vertical green is often invisible in the sense that it is not necessarily considered part of the ecology of the city, in some other cases, it is also hyper-visible. This is the case of the iconic building *Bosco Verticale* (Stefano Boeri Architetti, 20222), which acquired a paradigmatic meaning for the significance that the imaginary of vertical biotope plays in the city. Namely, it aims at being paradigmatic of the idea of "sustainable urban development". It is worth noticing that by typing on Google the keywords "Milano green" or "Milano sustainable", Bosco Verticale is often among the first picture that appears. This, therefore, produce a certain construction of the green, sustainability and provision of green spaces, which – as it will be later highlighted – is critically analysed by the committees and citizen groups that aim at protecting and increasing urban nature.

Finally, another emerging category that returns to the "horizontal" dimension of green spaces is one of the private-public parks. These parks, in fact, constitute spaces that are publicly accessible but arise as the outcome of private developments and that started to become popular in the '90s, often arising from a lack of public resources

from the municipality (Boatti, 2007). Compared to public parks, these parks present "more freedom" in the design – as a municipal official that I interviewed told me – and constitute an advantage for the public in the fact that maintenance costs are sustained by the private. The key example of this kind of space is represented by the one that has been constructed in front of Bosco Verticale: la Biblioteca degli Alberi. La Biblioteca degli Alberi, in fact, constitutes a space that arose from the design of a Dutch architectural firm, as part of the Porta Nuova redevelopment (Inside Outside, 2022). Besides the strong focus on the aesthetical dimension that distinguishes it from more 'traditional' parks, this space can also be considered – similarly to Bosco Verticale – a commodification of the idea of green since it became part of a broader financialised redevelopment process (Anselmi & Vicari, 2020). In other words, urban nature has been reworked through the production of a certain aesthetic, also becoming a tool for the "growth machine". Therefore, as I will show later, it became a space that has been contested by civic groups, especially for this speculative-oriented goal and for the artificial crafting of natural elements to meet an aesthetic purpose.

To summarise, private green in Milan assumes many significances and repertoires. In some ways, it emerges as a sign of the inequalities that are present in the city: in an urban space where there is high pressure on land value and development, benefitting from a large provision of private green appears as a sign of affluence that is not available to the majority of its dwellers. This is also represented by the fact that the aesthetic and material features of those gardens are linked with a construction of nature that is more attentive to representing a socially constructed aesthetic rather than constituting a value for its ecological features. The aesthetic feature is also what highlights the value of vertical biotopes. Also, in this case, referring to the examples of the *Bosco Verticale* and *Biblioteca degli Alberi,* which emerge as visual representations of the idea of "sustainable development. In other words, they represent examples of how the idea of *green* has become a pre-requisite for development: put in Boltanski and Chiapello (2005) words, it can be seen as the incorporation of the critique. Nevertheless, rather than successful incorporation, it still remains ambiguous and an object of debate. As I will explain further in the analysis, this debate also has an ecological and aesthetical dimension, stemming from two opposed visions of urban nature – one that is centred around aesthetic qualities or an idea of urban nature that is still human-centric, and one that is more attentive to ecological dynamics and the ecosystem character of green spaces assemblages.

5.6 Environmental struggles in the history of Milan

The sections that have been presented above had the aim of showing the diversity of green spaces that can be found in Milan, as well as the different attitudes that different actors developed towards them. To some extent, it can be observed that there are mainly two different approaches towards the creation of urban green – one that is top-down and the other one that is bottom-up. The fact that the creation of many of the existing parks in Milan followed a bottom-up process can indicate a sign of the fact that, in the local context, the discourse and the imaginary of *green spaces* in the city has a grassroots tradition that often adopts a more ecologically-oriented perspective over green spaces

In fact, the success of the creation of the parks mainly represents rare instances, while the history of the environmental struggles also accounts for a history of many cases in which the struggle to defend green space did not succeed. To close the chapter, as a key example of a failed struggle to envision a green space, it is worth mentioning the famous case of Bosco di Gioia.

As it is possible to read from the material that is found online in the internet archives, there has been a citizen mobilisation when an "informal" green space in the neighbourhood of Gioia was planned for demolition after a plan for redevelopment was sketched for the area.

Bosco di Gioia can be defined as an *informal* green space because it was not officially recognised as a park by the municipality. In fact, it was an abandoned hatchery which was defined by the residents in the area aimed at protecting it as a green space that needed to be opened to the public and transformed into a public park. The basis for their request was the fact that the former owner – a countess – donated the area to a hospital wishing for it to remain useful for social purposes. It was hence because of this character that some residents put forward the demand for the space to be transformed into a public park; however, their requests have never been taken into consideration. This lack of consideration brought more anger and strengthened the demands for the protection of green space. However, the requests have not been listened to, and the destruction of the green space took place (Il Bosco di Gioia, 2005). Nowadays, it constitutes the space where Palazzo Lombardia rises, one of the highest skyscrapers in Italy. To some extent, the transformation adds to the controversy: despite the different historical periods, this example can be read as an expression of a dynamic that Harvey (1979) illustrated regarding the material-political role of

redevelopments. In his article, he describes the construction of Sacre Coeur in Paris as a response to the revolt of the Paris Commune, as a monument that celebrated the re-affirmation of a conservative conception of society in a location that was symbolic of the defeat of the Commune. In a similar way, Palazzo Lombardia can be viewed as the re-affirmation of the *urban-development-as-usual* characteristic of Milan's growth, which contrasts the bottom-up protection of green spaces; moreover, the fact of constituting one of the highest skyscrapers adds to the dramatic effect of this image[22].

This struggle almost seems to have been forgotten nowadays, or it is not often mentioned. Nevertheless, at the time that it was unfolding, it is possible to note that it acquired a widespread consensus. Namely, it might be possible to affirm that this was the most known local struggle in Italy around that time because of the famous Italian pop group from Milan, "Elio e le Storie Tese" that, in a specific extract of the text, it directly denounces the destruction of "Bosco di Gioa":

> "Here it is why someone
> Thinks that it is more practical
> To destroy a forest
> Considered useless.
> [...]
> Sixteen thousand signatures
> No food for Rocco Tanica[23]
> But then that forest got torn down
> While people were away for the holiday break
> [...]
> Now they are going to build a skyscraper
> They destroyed the Gioia forest"
> (*Elio e le Storie tese – Parco Sempione*)

[22] I would like to specify that – with this affirmation – I am not assuming that this was the intent of the developers, as if in some ways it was in the case described by Harvey. Rather, it retains a symbolic character or a provocative way to look at the transformation that took place

[23] A Reference to the hunger strike that a compontent of the band carried out, in response to the decision of destroying the forest

In my analysis, I think that this struggle for Bosco di Gioia is worth of notice on many levels: a) it constitutes an instance of how the demand for *more green spaces* has been a constant in the Milanese case; b) it demonstrates how the protection of the space has been framed with a marked political connotation, and the critique towards a specific mode of development; c) it constituted an instance of how different people from different groups came together; d) it constitutes an instance of how a more-than-human sensibility that abandons the usual categories of green spaces in the city and the kind of nature that is worth protecting. This can be noted opposing the vision of the actors that were aiming for the redevelopment of the space and the citizens that opposed it; in fact, the formers often put as an argumentation the fact that "it is not a real forest, but a hatchery", hence implying that – for this feature – it was not worth protection. On the other hand, citizens were not considering this argumentation but rather focused on the fact of the green space *being there,* developing – consciously or unconsciously – the premises for the *politics of conviviality* (Hinchliffe & Whatmore, 2006) and an understanding that the division between "what is natural and what is not" is not worthy of consideration. Put differently, it did not matter *how* nature was assembled. It did not matter that it was a former hatchery. It still presented many species of trees and other ecological features. And – on top of that – it could still have represented a green space in a neighbourhood where (at least at the time of the protests) there was a huge lack of them.

With the history of this 'lost struggle', I conclude this brief socio-historical overview of Milanese green spaces. In the next one, I will analyse in depth the struggle for the two rewilded spaces – Piazza d'Armi and la Goccia – reflecting on the meaning they acquire in light of these approaches that I presented and how they can lead towards a new imaginary for green spaces in the city.

6 PIAZZA D'ARMI AND LA GOCCIA: TWO 'NOVEL ECOSYSTEMS' THAT UNSETTLE THE CONCEPTION OF GREEN IN MILAN

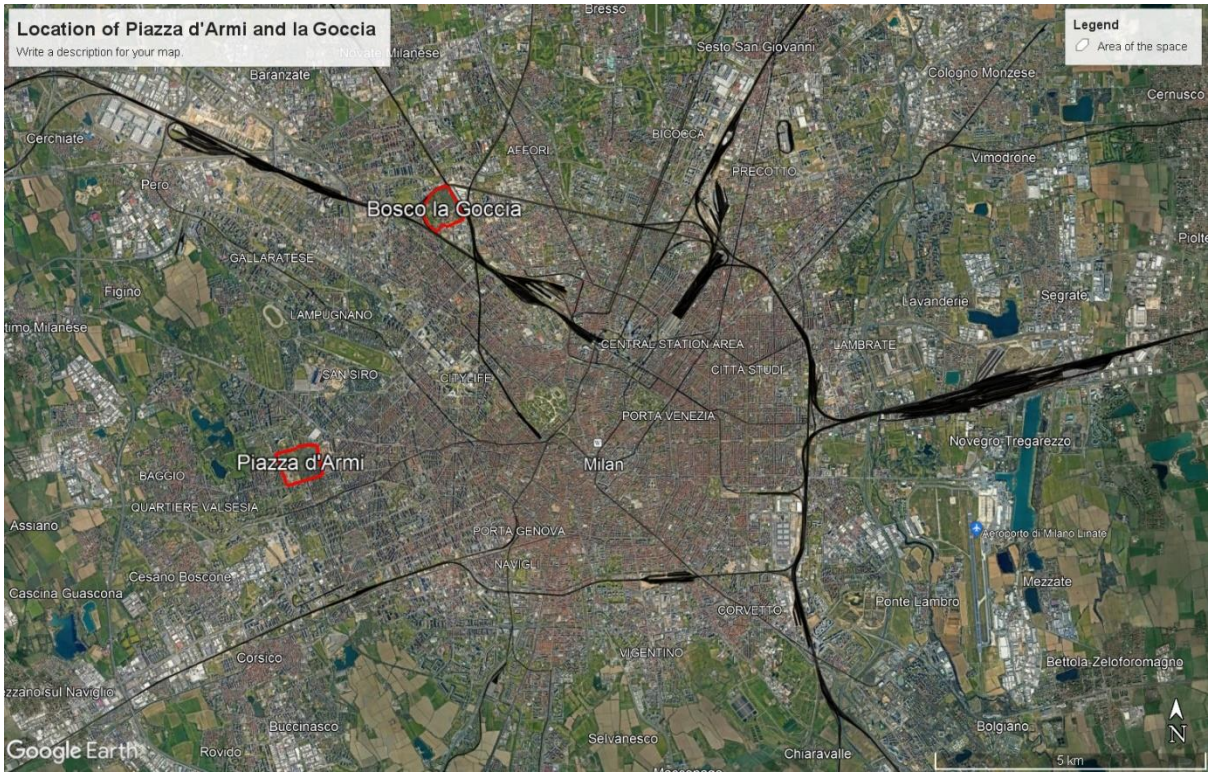


Figure 18 Location of Piazza d'Armi and la Goccia in the map of Milan (Source: Google Earth)

6.1 Piazza d'Armi, history and civic actions

Piazza d'Armi is the name of an area located in the western part of the city of Milan, on the outskirts (Figure 19). The neighbourhood inside which it is located is characterised by its primarily residential function and the fact of being located in a low-income area (Zajczyk, 2005). The feature that characterises it is the fact of representing an area that has emerged thanks to the idea of grassroots activists who reclaimed the historical significance of that parcel of land, which has mostly been left untouched by development. These groups therefore mobilised in committees and associations to carry out civic actions. But, besides this role, they also conducted an important archival role to reconstruct the history of the space in its vicissitudes. In particular, the material that has been produced by Associazione le Giardinere per Piazza d'Armi is particularly worthy of notice. Therefore, to reconstruct the history of

this space, this 'grey' literature has been fundamental to understanding how the struggle took place.



Figure 19 Piazza d'Armi location in the neighbourhood (Source: Google Earth)

The first thing that is known about the area is the fact that, since the 15th century, it has mostly been used for agricultural purposes. In other words, urban development never took place here throughout these times. However, this use stopped during the beginning of the 20th century, when it started being used as an airfield for the airships of engineer Enrico Forlanini. From the '30s until the '80s of the 20th century, it was used as a field for military exercises witnessing partial urbanisation with the construction of the military barracks and deposits. Nevertheless, the largest part of the area remained relatively untouched and has been used only for military exercises. These military exercises had an impact on the ecosystem and left traces that subsequently influenced the novel ecosystem that emerged in the area, but they have not been damaging to the extent that an operation of soil sealing would have been performed (Le Giardiniere, 2022c)

Therefore, reading it through the lenses of urban ecology and novel ecosystems (Baker, 2019), it can be affirmed that it represents an instance of such a space, or, alternatively, by adopting Kowarik's (2012) classification, it can be read as a mix



Figure 20 INVIMIT announcement for the auction of the area of Piazza d'Armi. (Source: INVIMIT website)

between nature of the first, second and fourth kind. In any case, from the perspective of urban planning, it was considered – until recently – as vacant land to be redeveloped; therefore, this urbanistic connotation – alongside the fact that property relations classify it as public land – plays an important role in this case, since they are connected with the reasons why this space emerged as contested. In fact, it acquired this character, especially since March 2018, when Invimit – a society that has the goal of selling public properties as a response to the economic crisis experienced by the Italian state – decided to put this property available for developers to buy it. In other words, it became part of the strategy to fix the economic issues experienced by the Italian state by alienating and selling public goods. As can be observed in Figure 20 that depicts the announcement that publishes the selling of this property, the ways that it is advertised is in line with the human-centric perspective of the city and its space. Starting with the description, the first sentence used to describe it is "estate complex ("complesso immobiliare") [...] comprehensive of former military barracks that tare unused named "Magazzini di Baggio" and a non-cultivated area named

“Piazza d’Armi””. It is also highlighted the distances from the city centre, the metro stop and the airport. This is to observe that the advertisement follows the canon and the style of real estate ones, and hence the area acquires the character of a terrain where redevelopment is possible. There is no mention of the spontaneous nature, and its extension or the history of the space, nor are these elements used to frame it as appetible. The only thing that is mentioned on the page that follows concerns what is possible to build on the area – since these requirements are demanded by the urbanistic plan for the area. In any case, to sum up, what stands out in this fact is the attempt to sell an area that belongs to the public to the private, allowing the latter to redevelop it according to its wishes, within certain limits.

Given the privatising and soil-eroding character of the operation, this state of things has not been happily received by local inhabitants and citizens committee, who started a series of actions to protest against it and reclaim the natural character of the area. Nevertheless, it must be noted that this claim is not something that originated after the attempt to privatize the space, but it was something that was already present in the public debate. Even before it became menaced, groups of citizens started to develop a different sensibility towards Piazza d’Armi, as opposed to the one that mainly depicts it as a real estate asset. This sensibility is hence centred around the “green” character of the space. Among these groups, two whose action became focused on that particular territory are Far West Ribelle and Parco Piazza d’Armi le Giardiniere. Despite the political differences, they both united within the broader group called “Difendiamo Piazza d’Armi”, with the goal of preserving the spontaneous green character and vegetation of the space, against any intent of demolitions and soil sealing for constructions. In this research, however, I tended to focus more on the second group – Parco Piazza d’Armi le Giardiniere – for the broad research work that they performed regarding the space.

Nevertheless, besides the informative activity and the historical reconstruction that has been described, Le Giardiniere also promoted and took part in the struggle to defend the space, organising a series of initiatives. As can be observed from the archived material presented on their website, they organised traditional public protests in front of the municipal building or the space, but what also played a huge role in the formation of the imaginary has been the tours that they organised inside the space, allowing people to discover it beyond the idea that it constitutes a “blighted” space (Le Giardiniere, 2022b).

In any case, it also must be noted that the struggle has not been conducted by a single group but by the union of actors that I mentioned before. What stood out was the different levels on which the protest was carried out. Besides all the actions that I already mentioned, another series of actions that played an important role has been all the actions that had a legal basis. The actions that figure within this category are all the ones with the goal of enforcing certain modes of action by the government or modes of action that involved the imposition of limitations regarding soil sealing or the dimensions of the buildings that could have been allowed in the areas where soil sealing already happened, in conjunction with demands to legally protect the architectural status of the buildings like the military barracks, promoting a regeneration logic instead of one of demolition and reconstruction. Then, another valuable action – or, more in general, the strategy of actions – has been scaling up the levels of the demands. For instance, the demand to put a legal constraint on the space has been presented to the European Union, to a national organization that deals with the preservation of the landscape, or implied through recurring to other actors that aim at preserving and protecting the landscape and valuable architectures in the Italian context (Le Giardiniere, 2022a).

In short, it is thanks to the forming of coalitions of civil actors, which employed different strategies that range from protesting to petitioning and the construction of the imaginary of the space that, on October 2019, a legal constraint to prevent edification and the alteration of the socio-historical landscape has been issued, paving the way to its preservation (Le Giardiniere, 2022d). Although the future of the area is still uncertain (Zinzani & Curzi, 2020), is can be affirmed that this case can represent an instance of successful citizens' struggle since the plan that governs the urbanistic territory indicates it with the function of the green space. Nevertheless, despite this affirmation, the attention of civic groups to the space has not yet faded, since – as it will be later observed – uncertainties regarding its future or the project of transformation still remain and – at the same time – no development has yet started to realise the park.

6.2 la Goccia, history and civic actions

La Goccia is the informal denomination for a territory located in the western part of Milan in the neighbourhood of Bovisa (Figure 21). This neighbourhood has a particular significance in the history of Milan since it was a former place of industrial

production. It is worth mentioning this feature because it highlights the fact that it constitutes a space that particularly witnessed the transition from industrial to post-industrial development. In fact, from an area with lots of industrial remains, after the closure of the factories, there has been the intent of giving the area a new centrality and a new function. (Zajczyk, 2005). Among these transformations, one of the most important has been the installation of a detached section of Politecnico di Milano, which aimed at giving a post-industrial function to the area.

However, at the same time, it also constitutes an area that witnesses different conflicts among its historical residents and the new developers that aim at changing the image of the neighbourhood. As will be further highlighted in the analysis, this represents the line of conflict between developers and some neighbourhood residents for the fact that they demand the provision of more public services. In fact, being an area with a low income that lacks many services (*ibidem*), it paves the way to an alternative imaginary for its present and its future, which criticise speculative-oriented development. As it will be illustrated, among the many issues, one that occupies a relevant role is the topic of urban green. In fact, as it is possible to observe, it constitutes a space where a large part of the soil has been sealed, with a dense pattern or urbanization. From this aerial view, it can also be seen the contrast with a large



Figure 21 Bosco la Goccia location in the neighbourhood (Source: Google Earth)

green space that is enclosed by the railways: that space is what is being informally defined as “la Goccia”, and it constitutes and example of a rewilded forest that – because of the factors that have been describes – acquired a key role for the demand of the increase of the provision of public green.

As in the case of Piazza d’Armi, it is possible to find several documents and research – also performed by the activists that take part in its protection – that tell the history of the space (Comitato la Goccia, 2022). Initially, the space was used for agricultural purposes, like the cultivation of silkworms. With the coming of industrialization, it became a significant space that hosted a factory of gas production that provided gas to the whole city. From a human-centric perspective, this represented the period of its maximum use, as well as a source of employment for many workers. Therefore, as it will be illustrated, it constituted an important space concerning workers’ struggles. That is why it is possible to affirm that – from this perspective – its closure constituted a traumatic event for the workers. Therefore, after the closure of this factory, the space started witnessing a process of progressively abandoned until its complete closure in 1994 (Longo, 1995). The abandonment, however, can also be read as the consequence of the scars that this kind of industry produced; in fact, given its highly polluting character, it started to become a terrain

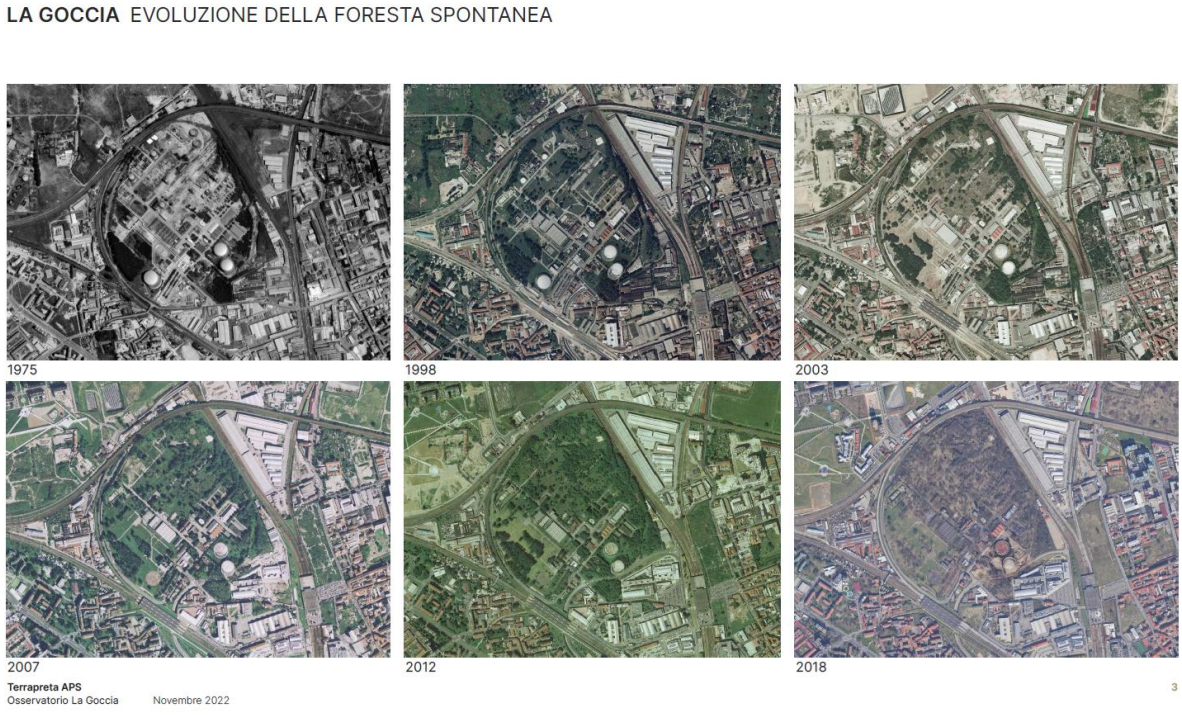


Figure 22 The evolution of the spontaneous forest of la Goccia, from 1975 until 2018. (Source: Terrapreta APS)

avoided by human activity or prospects of development. In other words, from that moment on, because of the peripheral geographic collocation in the city context of those times and for the fact of constituting a polluted soil, it presented favourable conditions for a process of spontaneous rewilding to take place. Therefore, this abandonment allowed the manifestation and the growth of the *vegetative city* (Brighenti, 2018): after almost 30 years of abandonment, a spontaneous forest emerged in the space, despite the pollution that was present in the area. As it is possible to observe in the reconstruction of Terrapreta in Figure 22, this is a process that took place with a certain rapidity.

Therefore, throughout the years, la Goccia emerged as a "space of invisibility" (also for the fact of being enclosed behind a wall) until 2007, when – following the post-industrialization of the neighbourhood – a project by the architectural studio OMA sketched a masterplan for what could be defined as a business park. The masterplan would have hence provoked a radical transformation of the area, overseeing its complete clearance of the spontaneous vegetation that developed; its intent was "to overcome the site's many limitations and capitalize on the opportunities it affords, integrating it into both Milan's urban fabric and economy" (OMA, 2007). In other words, it aimed at turning into a valuable space a territory that was not valuable according to profit-making standards. However, what it implied was other processes of soil sealing and a dense construction of new buildings, while only a little residual space would have turned into a park. As it emerged from the interviews and informal talks with members of la Goccia committee and the content of their published public documents, the proposal of this redevelopment has been one of the key factors that promoted the growth of a citizens committee that demanded that space be preserved into a public park.

The affirmation of the committee hence gave rise to a struggle that – at the moment of the writing – has been taking place for ten years and has the intent of reclaiming the green character that the space spontaneously developed, hence imagining it as a sort of public park, also to provide the highly soil-sealed neighbourhood with green space. As it will be highlighted in the many issues that it raised, this battle can be read as a complex more-than-human assemblage in which also the material and the technical become political.

Nevertheless, despite the sketching of the masterplan, the development by OMA never took place, and the space remained abandoned by human activity. This situation

continued until the other actor present in the area – Politecnico di Milano – demonstrated the intention of using the space of la Goccia to expand his campus. The intent has been shown trough the construction of a project of public-private interest, also allowing the creation of an urban park. However, also in this case, the idea of nature became political, since the new urban park would have been created after remediating the area and hence destroying the spontaneous vegetation. It is, therefore, from this intent that the activity of civic actors took a more ecological stance, aiming not only at preserving the space as green but also its character as a spontaneously rewilded area.

To some extent, it can be affirmed that the dynamics that la Goccia presents are similar to the ones that led to the protection of Piazza d'Armi. However, it must be noted that there is a stark difference: if Piazza d'Armi constitutes a space that is wild and immediately accessible, la Goccia is a space that was formerly polluted, and therefore access cannot be granted in a similar way. That is why this created another layer of complexity, that – on the one side – accentuated a sort of human-centric thinking while – on the other side – allowing for the emergence of the space as a more-than-human commons, where agency and presence of the rewilded nonhuman entities are being taken seriously, putting forward a rather ecological understanding.

If, on the one hand, this feature of the space prevents it from being officially framed as green, on the other hand, it also needs to be noted that also the future of la Goccia seems to follow a similar path to the one of Piazza d'Armi, with the maintenance of a portion of the rewilded spontaneous forest. However, as it will be illustrated, it is also interesting to observe how the sentiment change and whether the negotiation between different standpoints takes place. This is, in fact, suggested by the fact that – at the moment I ended my fieldwork – redevelopment of the place has started, and it also sees the involvement of the famous archistar Renzo Piano in the rendering of the future space (Politecnico di Milano, 2022). Nevertheless, before discussing how these different issues come into place, I will present the socio-ecological assemblage that can be found in these rewilded spaces.

6.3 The socio-ecological assemblage of urban rewilded spaces

As it emerges from the history of the two spaces, when inquired through ANT framework, it can be affirmed that these constitute complex assemblages where different human and nonhuman entities, as well as naturecultural constructions, are

at play. An attempt to delineate them is being made on Table 3. On the left, it collects the actants that are involved in the case of la Goccia, while on the right, the ones that are related to Piazza d'Armi. This constitutes the ground for the reflections that I will make in the further sections.

La Goccia		**Piazza d'Armi**
Comitato la Goccia (civic group)	Legal apparatus	Le Giardiniere Piazza d'Armi (civic association)
Politecnico	Rewilding processes	Invimit
Terrapreta (civic association)	Plants	Far West Ribelle (civic group)
CNR	Animals	Informal gardens
A2A	Historical architectures	Agricultural techniques
Photographers	Committees network of Milan	
Remediation techniques	Historical memory	
CNR	Milan municipality	
A2A	Squatters	
Pollution	Examples of rewilded spaces transformed into parks	

Table 3 An overview of the actants that are involved in Piazza d'Armi and la Goccia

However, it also needs to be stated that putting them into a table is not explanatory of the complexity since it does not show the interrelations that there are among these elements. In fact, the reason why I presented it is to stress the fact that civic social movements arise as a result of the interaction of many different elements, and nonhumans can actively emerge as actants. It is, therefore, through this

perspective that I aim to analyse the fieldwork I conducted and the documents and interviews that I collected for this research.

6.4 The institutional perspective on Piazza d'Armi and la Goccia

As an important prerequisite to understanding the battles that take place around these two spaces, it is fundamental to inquire about how the institutional actors depict them. In general, it can be affirmed that the position of these actors towards these spaces is often ambiguous and unclear; if, on the one hand, they consider the importance of transforming those spaces into urban parks, on the other hand, they do not question the need of transforming them into poles of attraction and development. As it will be illustrated, this ambiguity revolves around the difference in the relationality that they envision towards the nonhuman.

Starting from la Goccia, the main thing that emerges is the conception of the space as an opportunity for development for the future services it is expected to deliver. And this idea of service is connected with the idea of green, which is mainly framed in technical terms. As it is possible to read in the documents that designate the transformation plan for la Goccia,

> "The guiding principle for the planning of the green is the valorisation and the maximization of the existing natural and landscape heritage, granting care, accessibility and connection among the parts. The area will present a significative quote of open public spaces. In particular, the park of the Gasometers and la Goccia park will present green spaces, green spaces with infrastructures, paths and walkways dedicated to the practices for leisure time and sport, characterizing the frequentation of the area as an attractive experience for both the local and the metropolitan scale."

In short, what is stressed in this description of the main principles is the conception of the green spaces as an infrastructure, something that needs to be used and something that constitutes a pole of attraction for the area. This framing is further expanded in the words of the major Beppe Sala that describes the area that is valuable as green but needs to be transformed into a green area "within modern thinking" and – in any case – as an area that needs development. Namely, he referred to the project of redevelopment using these words:

> "We are trying to interpret the environmental question with concreteness and *modernity*. But in a serious way. The area which we are talking about [...] it is something close to Montanelli Gardens [an iconic park located in the neighbourhood of Porta Venezia]. Those who had the luck to enter and see la Goccia notices that today it is green, *but it is a form of green that cannot be consumed. And this is the difference!* It is the difference that is at the origin of our action in abandoned railway areas. Today it is not possible to go because it is a polluted environment, because *it is wild vegetation where it is difficult to imagine going for a run*. In this, there is again the will to believe again in the environmental transition. [...] I am pretty enthusiastic about this project because it reconnects with the policies of my governmental team. [...] I believe that our will to work on single city neighbourhoods and be attentive to the environment, *to look for collaborations between public and private* – and, in primis, with universities – is finding a synthesis in reality. [Emphasis added by the author]

Looking at these few sentences through the theoretical lenses that I adopted, it immediately emerges how they are dense and rich in content. In a few lines, it is expressed modern thinking, the anthropocentric and social construction of nature and how this integrates with the public-private mode of governance. In fact, the mayor is claiming that that particular nature has no value because it is not a form of nature that can be consumed through socially constructed practices like going for a run in the park. Therefore, these mobilise different hierarchies of value: monumental parks are hence considered "true" green spaces that belong to the city, while spaces of wild nature are not considered as such – or, at least, they do not fall within the city framework. Eventually, the final goal of redevelopments is to render attractive the neighbourhoods inside which these spaces are inserted. All of this, is an expression of "doing things with modernity".

Nevertheless, also on other instances, the space emerges as problematic as the general state of things. This can also be seen in the workshop that aimed at redeveloping the space by also involving citizens and associations. The general thing that emerges is the idea that la Goccia is mainly problematic for its character of polluted environment, and at the same time, it constitutes an opportunity to solve Bovisa deep structural problems.

Therefore, in general, the idea that the area is problematic because of its pollution issues is a recurring theme in the discourse of municipal actors. In an interview that I conducted with a municipal official, la Goccia was compared to Piazza d'Armi for the rewilding process that took place[24], but, as an important element of difference, the theme of pollution was mentioned as a key feature for the area. It is hence because of this feature that the role of Politecnico was seen as fundamental to solving the area's structural problems and developing a new pole of attraction. It needs to be stated that this interview was conducted at a later moment, a year after the statement of the mayor that I quoted. Moreover, the municipal official also stressed the importance of the collaboration with Terrapreta – besides the one with the private actor. Nevertheless, what remains is the idea that pollution represents the key problem for the area, and hence the transformation will solve it and shape it differently. In other words, this reflects a human-centric approach that frames what is problematic and the desired transformation mainly according to what is beneficial for the human actors.

Despite all the differences in the narration between municipal actors and the ones of committees that have been reconstructed in the section regarding the history of Piazza d'Armi, it can be stated that, at the present moment, also by the municipality there is an intention of transforming the area into a public park. This can be seen by the fact that this intention is stated in the PGT – the plan that guides urban development and the governance of the territory:

> "the GFU is constituted by a large urban park that also includes the existing forest area and corresponds at least to 75% of the surface. The park must include a minimal provision of services."

This is something that the municipal officials I interviewed clearly remarked when I asked what the purpose and the plan for the area were. One, in particular, also mentioned the importance of doing it by continuing the collaboration with associations and committees that mobilized for its protection – among which, also the name of le Giardinere was mentioned as "the soul of this nice battle".

[24] In particular the difference concerned the theme of remediations, as it can be seen from the words of the municipal official: "Piazza d'Armi has far less remediation problems. We have to do some remediations, but not like in the case of la Goccia that presents heavier forms of pollutants.

However, one issue that is less clear regarding the way it will be executed concerns the construction that is supposed to take place. In the PGT, in fact, it is mentioned that

> "on the areas that are not interested in the large urban park it will be possible to fulfil additional urban functions and services [...] among which social services, sport, housing services"

In fact, this second point represents one of the issues that still remains a site of contestation on the side of the committees and associations since they affirm that it does not represent a transparent planning tool. However, municipal actors do not frame it as a problem and speak of the impact that constructions might have as something of minor importance compared to the development of the park that is supposed to take place. This fact particularly emerged in the interview that I carried out with the municipal officials. For instance:

> "[the area that will be dedicated to construction] is a minimal part. Let's say that 80% of the area will remain as a park. [...] So, let's say that the future vision of Piazza d'Armi will be determined by a project on the side where there are constructions, where it will remain possible to build".

Or, in another instance,

> "we will build on existing ground. Then, maybe we will try to locate something within the park – something that is related to the park, of course. But maybe also something else, like a centre for the elderly, why not. [...] It could be the occasion to create large gathering and socialization centres, which that neighbourhood is desperately in need of".

Therefore, in short, the general perspective of institutional actors on these spaces is the one of constituting infrastructures for the neighbourhood, even if with some differences between the two areas. La Goccia is mainly imagined as a pole of attraction for the fact that it is an area that is dedicated to university functions because of the

presence of Politecnico. In the case of Piazza d'Armi, instead, the imaginary of the area as a park is already defined in more clear terms. However, also additional edifications are forecasted but framed within the idea of constituting services for the neighbourhood.

In short, it can be stated that the general framing of the areas by institutional actors reflects the plan for the government of the territory (PGT) that Milan has adopted to govern its future transformations. What needs to be noted is that – despite the fact that there are some brief mentions of the presence of spontaneous vegetation that followed the process of rewilding, the primacy is given to the role that the space can fulfil as a service for the population. In other words, both areas are not regarded as urban ecologies but as areas of future transformations to be integrated into the urban fabric. This, as I will illustrate, contrasts with the imaginary that is being mobilised by civic groups, which are responsible for the visioning of different futures for both areas.

6.5 Differences and similarities in civic movements

In opposition to the institutional perspective, there is the approach of civic movements and associations. As already anticipated in the reconstruction of the history of the two spaces, it can be witnessed a plurality of modes of participation towards the defence of these spaces as spaces of spontaneous nature. Therefore, these result in different kinds of actions and strategies that are pursued by the different groups that are involved, which also determine different modes of engagement with different publics in different ways. That is why, before inquiring about the content of these struggles and the imaginaries that are being mobilised, I will provide a brief overview of these accounts, presenting a comparison between the modes of participation typical of civic committees and the one typical of modes of association. Besides stressing the differences that exist among them, what is worth noticing are also the similarities that both movements present.

The mode of classification that I use to mark their similarities and differences takes inspiration from Lichterman and Eliasoph (2014) analysis of civic action[25]. Specifically, I aim to inquire how different groups have different or similar

[25] In particular, I refer to the table that can be found on pages 242-243

orientations regarding the actions and their temporality, as well as the way they are oriented towards conflict or a more general intent of consolidating an imaginary.

Therefore, I will firstly present the different analyses starting from the specific space that is taken into consideration, and, at the end of the section, I will draw some observations concerning the similarities and differences. Although the difference in the modes of actions can be observed in the protection of both spaces, in this analysis, I focus the attention on the case of la Goccia as a good explanatory example to observe these differences between the modes of actions that different civic groups pursue, although inspired by the same goals. Despite the fact that similar dynamics can also be found in the case of Piazza d'Armi, I tended to focus only on the case of la Goccia both for the fact that I was more directly involved in the context and because the struggle to defend Piazza d'Armi decreased in intensity and activities after the promulgation of the legal constraint aimed at preserving the space. The first one is Comitato la Goccia, the committee of citizens that was responsible for bringing forward the issue, and the second one is Terrapreta, which can rather be defined as an association of both civic actors and experts that started to devise the preservation of the space in collaboration with institutional actors.

As I explained in the history of the space, la Goccia emerged as a case of spontaneous rewilding that became worthy of notice and attention because of the action of the committee, which started to lobby for its protection, narrating the history of the space and voicing the reasons why, according to them, it is valuable to protect it. This activity hence determined the pursuing of a series of actions within a specific repertoire of public engagement that I collected in Table 4.

Comitato la Goccia

	Conflict	*Imaginary construction*
Actions	Political protests in front of institutional buildings Entering the space in legal or semi-legal ways Ties formation with other civic initiatives of protests Participation to civic protests around other struggles	Entering the space in legal or semi-legal ways Participation to festivals and similar events Interventions (artistic, maintenance) over the space

	Communication with journalists	Organization of events and walks
Actions for the long term	Petitioning Legal actions	Engagement with experts and researchers Creation of social media contents Publication of reports Visual products creation (photos, videos…)

Table 4 Comitato la Goccia actions and strategies

As can be seen, the activity of the committee spans all the different dimensions. Particular significance is raised by the dimension of the protest, for the fact that the constitution of the group had the main goal of voicing against a way of framing the space that the group did not agree with. That is why the main actions towards achieving this goal have been public protests in front of institutional buildings. This can be visible in the updates published in the blogs of the committee, in the narration that emerged from interviews and in the informal conversations with activists. Also, in my personal autoethnography, I directly took part in some of these initiatives – like a public protest in front of the municipal palace, as well as moments during which we entered the space to inquiry about its state. However, the boundary between the actions that are merely oriented to the protest and the ones that are oriented towards the creation of imaginaries is blurred. For instance, the moments during which we entered the space have also been fundamental for the creation of the imaginary of them, for "knowing what is there" and collectively constructing a narration – especially the ones that saw the participation of people that were interested in the space but were not part of the committee.

On the other hand, the committee is also focused on actions aimed at consolidating in the long term the space. These are mostly associated with the legal instruments as a tool to make the demands emerge. In fact, petitioning is an important strategy that has been pursued. But, besides petitioning, members of the committee with a more thorough "political culture" and technical knowledge aimed at intervening in a conflictual but legal way by presenting legal complaints regarding the way that the private-public governance takes place and how urbanistic decisions about the area are taken. But, besides this, other actions of imaginary consolidation in the long term have

been taken, like the involvement of botanical experts or the organization of conferences and debates with public personalities. Then, also the publication of reports, inquires and proposals for the future development of the space constitute a fundamental strategy that has been used to foster a certain imaginary.

However, the committee is not the only actor that mobilised to preserve la Goccia. During the last two years, there has also been another association of architects and other actors that stated to also aim at reaching the goal of the protection of the space, but the methods it employed differ from the ones of the committee.

Associazione Terrapreta

	Conflict	*Imaginary construction*
Actions	Support to grassroot initiatives and environmental groups	Entering the space in legal ways Participation to festivals and similar events Interventions (artistic, maintenance) over the space
Actions for the long term		Engagement with experts and researchers Ties formation with other actors and stakeholders Ties formation with institutional actors (e.g. the deputy for the environment of Milan municipal government) Creation of social media contents Publication of reports Visual products creation (photos, videos…) Citizen science initiatives

Table 5 Terrapreta APS actions and strategies

Deriving their name from the type of dark soil that they describe as "capable of self-healing", Terrapreta is an association that presents itself as an actor that does research on ecosystem services and "Nature-Based-Solutions", as well as acquiring the role of

intermediator between grassroots movements and institutions (Terrapreta, 2022). Therefore, the aim at putting forward a series of strategies that are directed towards the fulfilling of these goals, working on la Goccia as the main case on which they focus their activity.

As can be observed from Table 6, the work of Terrapreta is rather oriented towards the construction of the imaginary of green space; this is being done in different ways. For instance, I took part in several moments where Terrapreta members presented the work they were conducting on la Goccia at public events – as, for instance, a festival that discusses the dimension of sustainability or events like the Milano Green Week – that were aimed at presenting their work and conception of the space to the general public. What is characteristic of these events – in comparison with the ones organised by citizens committees – is the fact that they are often organised in collaboration with institutions and institutional actors; for instance, it is not uncommon for a member of Terrapreta to speak at the same event to which municipal officials are invited – as it happened in 2022 during the annual event organized by institutional actors called "Green week"[26]. Moreover, the fact that there is a good relationship between these actors has also emerged in the interview with an actor of the municipality, who mentioned the agreement with the association to improve the space.

However, this activity is accompanied by a broader activity of imaginary construction with actions that have an impact in the long term. In fact, the group directly engaged with the space on different occasions. For the first time, also Terrapreta entered the space in an informal way; for instance, this happened during a three-day event that the association organized to map the space, adopting techniques and knowledge production through citizen science. For this event to take place, invitations were sent to people belonging to different organizations or environmental groups and – from the morning to the early afternoon – the activity of mapping the space was collectively performed by a person with specific technical expertise and people that were "learning by doing". This event can be considered as part of the imaginary construction because, as a form of directly engage with the space, it allowed

[26] This is an important point to stress, since it constitutes an event that polarized groups and associations. For instance, the network of committee of the city of Milan organized a counter-even, where it accused the event of constituting an example of "fake environmentalism" and "greenwashing" (Partecipami, 2022)

to collectively shape the idea that the space is valuable to be preserved as a case of the spontaneous forest.

After the hiring of security guards to prevent non-authorised entrances, Terrapreta did not stop conducting research activity. This is because the organization signed a collaboration pact between Milan municipality, a research centre on polluted areas and them as an association to officially conduct research on the space and measure its ecosystem services. It is, therefore, from this perspective that the group was allowed to continue the visits, the research activity and the engagement with the space, given the fact that it has the authorization to enter. In this regard, what has been fostered is a collaboration with different actors from different sectors. As they informed in their social media, different moments of entering the space have been organised in collaboration with botanists, entomologists, architects, members of the civil society and other third-sector associations; these visits, therefore, had the intent of fostering the imaginary of the space and support their research activity.

Nevertheless, it must be noted that Terrapreta also aims to support acts of activism towards the protection of these green spaces. This is highlighted by the fact that – as announced on their news channel – they took part in different reunions of activists and grassroots groups that conducted struggles both regarding the environmental question – in the Milanese context or from a broader perspective – and general urban issues. However, what must be noted is the fact that these represent a marginal focus of the activity of the association, whose main aim is oriented towards seeking collaborations among different institutional actors or groups of experts.

In short, what this analysis stress is the fact that the protection of green spaces also engages in different ways with the context inside which it takes place, despite the common goal. These different modes of engagement highlight different sets of actions and different ways of responding to the context of the city. What both groups recognise is the importance of the protection of la Goccia as an urban forest. However, they present differences in the political traditions and methods employed.

In general, it is possible to affirm that the activity of the committee is rather oriented towards the conflict and the denouncing of what they consider as improper ways of managing the space and increasing public consent over their perspective. As I can affirm from my personal experience, the practice of getting involved in a struggle with the perspective of the committee implies a certain approach to city politics and governance and the development of a certain set of knowledge connected with them.

This approach is mostly critical and aims at highlighting what is problematic, trying to intervene in all the different possible ways. But, rather than merely "spread their voice", it also orientates the action towards making interventions that can have a long-term concrete impact. Connected with this finality, legal battles constitute a key element as another way to ait at reaching their goals within the framework of politics and regulations. The members of the committee believe that this is the main long-term strategy to change things. For instance, as it emerges from the different material I collected, committee members see the legal struggle that they put forward as a success concerning the fact that the initial project by OMA never succeeded in taking place. On the other hand, despite also Terrapreta conceiving the space as an important area for the neighbourhood, it tends to have a less confrontational and conflictual attitude towards developers and institutional actors.

From the civic action perspective, it must be noted that these findings seem to partially reflect the ones that have been highlighted by Barone's (1984) analysis of ecologists activists. In fact, she identifies three types of modes of aggregation: a) protectionist associationism, b) ecological-militant politicised activism, and c) autonomous self-organised aggregations that she sees as characteristic of groups that act on a territorial basis. Nevertheless, besides this classification, she notes that it is insightful to analyse the experiences operating in the Milanese context depending on the goal of political ecology or social ecology – which she defines as the aim of transforming the mechanisms that regulate the decisional processes in political-institutional settings and the modification of cultural models between humans-nature relationship. In fact, it can be stated that the action of the citizen activists is more directed towards what she defines as political ecology, while the action of Terrapreta can be considered as an instance of social ecology.

In other words, it can be stated that this reflection illustrates how these two modes of association are in line with the different modes of civic actions typical of the Milanese context that have been highlighted by Barone (1984). To some extent, the action of the committee reminds the political approach of groups that critique institutions and their actions, aiming at imagining alternative municipal politics. This can also be noticed from the fact that the committee is also part of a network of committees in the city of Milan that focuses on similar struggles in different neighbourhoods.

What can be noted is that these different modes of association and participation also have a different relationship with the new governance instruments that are increasingly being adopted by municipalities, embracing or refusing them. In fact, the work of Terrapreta and the relationship it has with other actors can be considered as an instance of the collaboration happening within the instrument of "patti di collaborazione" (Comune di Milano, 2022b) – the new forms of citizens groups-municipality agreements that conceive the shared governance between the municipality and groups of citizens that are being adopted by Milan municipality. Compared to the committee, the members of this association actively seek collaborations with municipal officials and other stakeholders in a way that is more oriented towards cooperation rather than conflict. Even though Terrapreta states that they aim at maintaining their autonomy, this mode of action has an impact on what is politically possible or feasible. In other words, what seems to prevail is a post-political consensus that norms specific forms of actions and would not allow others.

To some extent, the action and strategy of Terrapreta can be read as both an instance and as a response to the crisis of traditional modes of activism (Citroni, 2017). Compared to the committee, there is less the adoption of a confrontational attitude towards politics in favour of an action that strategically seeks collaborations, also through the new forms of participation enabled by the new governance instruments like *Patti di Collaborazione*[27]. This factor – connected with the primacy that is given to the stipulation of strategic collaborations with certain civil actors and experts – seems to suggest that Terrapreta implicitly shares the idea that – in the current governance framework – the obtaining of a certain goal can be possible through the active collaboration with the municipality.

Nevertheless, this observation has merely the aim of highlighting the trend of the association, and it does not implicitly suggest that this constitutes a more successful mode of goal-obtaining. In this light, the study of Bianchi (2018) suggests that the engagement in governance processes – as well as the use of the instruments like *Patti di Collaborazione* – can be seen as a sign of de-politicization of the issues that results in a low capability in producing an impact. This can also be seen in reading the pact since it does not state that the work that Terrapreta is conducting will be binding in

[27] *Patti di Collaborazione* is a name that designates a governance instrument that is being adopted by Milan municipality for the shared management of the commons with the ones that they defines as "active citizens" (Comune di Milano, 2022b)

any way. Namely, it is stressed that the agreement takes place "according to the principles of the GFU and the current remediation process [...] in any case, without prejudices or interferences with the actuation of the project of the municipality and the subject that is part of the GFU" (Comune di Milano, 2022a). Nevertheless, at the present state of things, it is only possible to hypothesize, and the outcome of this mode of interaction will be visible only after the end of the redevelopment project for the area to assess how much they have been able to influence the design. But, for the moment, it is worth noticing that – despite it constitutes an agreement that gives more possibility of action to Terrapreta, simply for the fact that they are granted permission to access the area, the activity and the results will not be binding in relation to the project idea of the stakeholders. At the same time, it could also be hypothesized that it might still not represent a main problem for the association, since – as it is written on their website, they aim in general at promoting "Nature-Based Solutions" in different contexts. That is why, besides the outcome of the struggle, the knowledge that they might acquire conducting research on the space might still be valuable for its own goals, and it can be hypothesized that this could have also been a reason that pushed them to sign the collaboration pact.

However, at the same time, Terrapreta's strategy can also be considered as another method of civil action that does not necessarily share institutions and other actors' perspectives but sees collaboration as an opportunity to strategically achieve those goals. In fact, as they state on their website, they are "a nonprofit organization that studies and promotes Nature-based Solutions in collaboration with local communities and institutions" and that they study "the most effective strategies to enhance mutual interactions between humans and other life forms, within urban and suburban environments" (Terrapreta, 2022). In other words, the final goal is the promotion of nature-based solutions according to the efficiency of implementation. It is in this light that the action of Terrapreta resonates with the one of Ecologia 15 association analyzed by Barone (1984) since also this association – to achieve its goals – risks the integration in the institutional framework because of the strict relations it establishes with institutional actors and the funding sources. Therefore, it can be expected that these will also be issues that Terrapreta has to confront in the present moment or in the future.

At the same time, it must be noted that there are also points of connection among the different modes of association. They do not tend to exclude *a-priori* forms of

participation and modes of action. For instance, also Comitato la Goccia adopted a less conflictual standpoint when it took part in events organised by Politecnico in 2015, which had the aim of "collecting the voices of the neighbourhood". As can be seen from the documents published on their website dedicated to the event, they took part in different moments of the workshop, sketching their imaginary for the area. However, it must also be noted that they developed a critical analysis of this participation, stating that the critical structural points – like the methods and techniques employed for remediations or the urbanistic plan for the area – were not addressed.

As a final note, it must also be noted that the two groups are not always mutually excluded and in contraposition. Despite representing two different modes of action that cannot be conflated, it happened that their activities overlapped. A good instance of this case is represented by the event "WWF Urban Nature 2021", which they organised as a moment for the public to engage with the space and discover it. During this event, the committee and Terrapreta organised different events and performances at different times, and the public that came for the event organised by the respective groups tended to participate also in the one organised by the other.

To sum up, this brief analysis of the similarities and differences between these two actors can therefore be inserted within the diversity of the modes of association that are characteristic of the Milanese context and have also been highlighted by previous research on the topic. At the same time, it highlights how these differences and modes of action are impacted by the changes that occurred within the governance framework and the new instruments that have been implemented.

6.6 Emerging sentiments on rewilded spaces among civic groups

The main thing that emerges from the struggles is the development of a specific relationality towards rewilded spaces. In fact, in the documents of the municipality, these areas of spontaneous green are often defined as 'empty spaces' (vuoti urbani). This definition evokes the sensation that there is nothing valuable inside of them and that they constitute a sort of "blank space" for reimagining different futures. It is in reaction to this affirmation that the main sentiment towards these spaces emerges, contrasting it with an imaginary that takes into consideration the ecological dimension that they present, as well as the radical potential to rethink nature in the urban space.

As stated before, the imaginary that has been created by the committee can be considered fundamental for having opened the debate and the opportunity to reimagine la Goccia as a rewilded space. The main emerging sentiment is the one an opportunity potential to defend a space that presents some character of 'uniqueness', as some of the sentences extracted from the public documents they published highlight:

> "We think that this area represents one of the last opportunities for our city to have a green lung of similar dimensions."
>
> "We think that the project [of an innovative park] represents an important occasion for the green regeneration of Milanese territory."

And finally,

> "If we waste this opportunity, Milan will lose one of its main regeneration opportunities for its urbanistic history."

In short, is emerges as a valuable space. But, this value is strictly reconnected with the rewilded character that the area acquired,

> "what happened in around 30 years that took place inside la Goccia is something that we cannot avoid considering. Nature took back possession of its vital space, despite all the polluting substances that are present and different types of plants grew and continue to grow, becoming a refuge for a fauna that has magically turned into a habitat that is suspended between the ruins of a past that tells about the scars that the environment witnessed"

In other words, the main sentiment that la Goccia acquires is reconnected with its ecological dimension, and the action of the nonhuman is valued and framed against a past that has been characterised by the infliction of different scars because of the pollutants.

Similarly, also Piazza d'Armi is valued by civic groups for its ecological character:

> "The 35 hectares of green of the former Piazza d'Armi can hence be the occasion to put in place, in brief times and with reduced costs, the requests that have been advanced by Milanese citizens and supported by the ecologists promises that Milanese administration often referred to during these last years; themes and targets that, a city like Milan, should pursue by applying, in fact, the regulations of many other European examples with a vision that is sustainable and regenerating."

Similarly, also in the case of Piazza d'Armi, le Giardiniere frame the creation of the park as a unique opportunity, also motivated by the reduced costs that this would imply. Moreover, also in this case, the sense of uniqueness of the area is mobilised by affirming that "it constitutes the only urban green area in the city with populations of 5 different amphibia" and that – always according to le Giardiniere – it represents a "unique case of a juxtaposition of different environments", because of the stark difference with the surrounding urbanised space.

Therefore, if both for the institutional actors and the civic groups, the spaces present opportunities, the meaning of these opportunities differ – with the first sees it in a way that is connected with the attractiveness of the space, while the second puts forward the ecological assemblage and the "vegetative stratum" (Brighenti, 2018) that irrupts in them. This difference, therefore, also translates into a different political orientation and conception of the spaces between the two actors.

For instance, according to le Giardiniere, when Invmit – the private actor – aimed at selling the area of Piazza d'Armi, it manifested a conflict between two kinds of interests, the public one that has the goal of turning it into a park for the citizens and the private one, which has the goal of gaining revenues from the taxation and process of urban development. Based on this premise, they claim that "it is time for a radical revision of the concept of development/urban growth".

Similarly, also activists of la Goccia frame the struggle in these terms:

> "The whole neighbourhood of Bovisa, in fact, is full of spaces that have already been abandoned – in the intention of transforming it into an area of great attractivity."

> "We do think that it is not necessary to build new constructions in an area like Bovisa that is widely sealed and in a city like Milano that rates as the second in Italy for the amount of soil sealed."

In other words, civic actions frame this struggle as an attempt to contrast the dominant idea of urban development that is profit-oriented and produces damages to the territory.

It is worthy noticing that this attitude is not limited to the perspective of the committee and other civic actors but is also something that is emerging in the general discourse on the space. As support to this claim, it is useful to analyse how the space has been described in ZERO (Baranello & Serafini, 2022) – a local online magazine that provides descriptions and narrations and news of the city and its cultural sphere. Also, in this case, the narration that is being created contrasts the one that frames it as an empty space:

> "La Goccia is a container of uncommon domesticity: a scenario that, if you look at it for too long, you learn that it does not contemplate you, that it is not influenced by the old humans' discourses on regeneration. The reflection that it spurs while standing at the centre of the gasometers is that it is not true that everything needs to be changed for it to remain as before, at least not in this case. Rather than dreaming of buildings of globalization, hyper technology, with the promise of a greener city, la Goccia must remain "the other" of Bovisa, its urban forest. Further construction would simply mean [...] eliminating the biodiversity to praise the normativity of urban parks."

In other words, it is a description that tries to valorise the "otherness" (which is also mentioned as a concept) that la Goccia expresses for Bovisa and criticise the paradigms of value-extracting urban development that is being accused of trying to appropriate also this space. It is actually this otherness that is celebrated in the article, emerging against the "normativity of urban parks."

A central point of reference for this description is also the urban ecology dimension of the space, and how it constitutes a place of spontaneous rewilding. However, this spontaneous rewilding is framed intertwined with the historical

dimension and past of the area in the form of naturecultural encounters and assemblage. For instance,

“We finally find a gap between iron weaves and plants: it is like entering a parallel metaphysical reality. We are sucked into a manifesto of the third landscape that has grown over more than 30 years of neglect. In the dense forest of 40 hectares and spontaneous vegetation, the space seems to close in on itself.”

or

"La Goccia also believes in anti-authorship, in the chaotic assemblage of trees and lampposts, shopping trolleys, sheet metal, takeaway cappuccinos and other works found in the rudimentary display of an abandoned car park."

What is interesting is the knowledge and familiarity with more-than-human ontologies and ways of narrating the urban-making hybrids emerge in a similar way that Actor-Network theory would follow to describe the naturelcultural hybrids that the process of translation creates. But, more than this, what also emerges is the concept of *third landscape* (Clément, 2014) and it is also openly used by the authors of the article.

In short, it could be stated that this brief article seems to mirror the critique of the nature/culture divide and the normative conception of the city and its development, proposing a different ontology that stems from a naturecultural approach. At the same time, the description that is being proposed remains mainly on the human side, with the ruins' aesthetics and the historical past of the area that is dominant on the multispecies perspective and construction of the space. Framing it also within the online magazine that is being published, it seems that the main aim is one of rendering a different, evocative dimension of the space rather than a full account of its assemblage character and how the nonhuman has an agency. In fact, the idea that spaces like la Goccia or Piazza d’Armi are empty signals the implicit adoption of a certain perspective that considers lands valuable only when it is constructed and developed. Therefore, civic actions and other persons that are interested in these spaces claim the fact that these are already “full of something” rather than being empty

Nevertheless, it must be noted that, for the activists, the struggle mainly assumes the particular connotation of constituting a struggle against the sealing of the soil. This might appear as a common feature of environmentalist battles, but in the case of Milan, it acquires a more pressing character. In fact, looking at the socio-historical background of the city, it evidently appears that the city has largely been characterised by urbanism favourable to soil sealing that neglected the presence of green spaces. It is, therefore, against this background that spaces of unpaved land that are comprised within the municipal borders become an object of environmental struggles to protect them. In fact, this can be seen as the main argument that motivates the struggle to defend la Goccia and something that is demanded in the public texts written by activists:

> "what we demand is a radical change. And we demand it because Milano (and not only Milano because the issue is regional if not even national) now *breathes* only concrete".

Then, there is the mention of specific cases as the instance of the harmful effect of soil sealing:

> "Emblematic of the way that soil is being wasted, the case of Triennale Bovisa [an attempt to build a modern art gallery in Bovisa] that has been inaugurated within la Goccia with lots of advertisements as the first steps for the area valorization and then [after some years] has been closed without too much notice."
>
> "[the struggle is against] the risk of indiscriminate soil sealing that all the project by far presented."

And, discussing the intent of conducting remediation on the space that would involve digging the soil and destructing the existing vegetation, the members of the committee lament that

> "the money for the remediations must have arrived, as usual, from monetary compensations of whom would have developed the land, also here, as usual, the thousands of concrete mq2 that the plan for the government of the territory would have allowed. This is the famous perverse mechanism that leads to soil sealing. In this case, the sealing of the soil would mean the death

sentence for the park, to bury it under more buildings and more commercial services. We always stated that this neighbourhood does not need this".

To conclude, it is worthy mentioning that another emerging sentiment, besides the critique of the urban development of that space, is the theme of abandonment. In particular, this theme seems to be particularly present here in the fact that Bovisa is a space with a marked post-industrial character. In other words, it is a periphery that thrived during industrialisation but that – during the post-industrial transition – it suffered from the closure of many of the workspaces and the societal transformation that this comported. But, to be precise, there was a sort of development – especially led by the role that Politecnico acquired in the neighbourhood – which aimed at transforming the neighbourhood around the figure of the university. Nevertheless, this redevelopment was not always successful, and it left many derelicts and abandoned spaces, besides having been unable to repair the fracture between the dwellers and the neighbourhood's post-industrial transition.

This contextual characteristic of Bovisa is one of the main objects towards which the committee aimed to spur a reflection. Namely, in a presentation named "The Sky over Bovisa[28]", it is openly critiqued the fact that, in the neighbourhood, there are many abandoned spaces or buildings. The work of the committee hence traces the history of those spaces, the ideas that were initially devised for them – in some cases – how they got abandoned. For instance, they raise attention over the construction and the abandonment of Triennale Bovisa as a paradigmatic case of this tendency: Triennale Bovisa constituted one of the attempts towards changing the features of the neighbourhood in line with principles that inspire forms of post-industrial development – namely, by hosting art and cultural exhibitions – but it lasted only five years, and, after its closure, it got abandoned. Besides this, they also highlight the housing projects that have been led by speculative dynamics and (at least at the time of the publication of the document) are left to remain empty in the absence of buyers or dwellers, the former building of the posts that are being left abandoned and without any apparent redevelopment plan and similar kinds of "failed developments". Besides the mapping of the 'landscapes of abandonment', the concept is also key in other public documents that the committee issued, implying that abandonment has been caused by

[28] In Italian, *Il Cielo sopra Bovisa*

a certain mode of conceiving the city and its growth and produced a landscape that – according to the activists – is disconnected from the needs of the city and its inhabitants. Therefore, it is important to notice that the struggle conducted by the committee also occurs as a response to this mode of development since they do not see it as successful for the city, the neighbourhood and its inhabitants but as something that is detrimental to both for the dwellers and the environment since – besides its failures – it is a process that causes soil sealing.

At the same time, abandonment is regarded as ambivalent and also at the core of the innovative potential – if handled in the correct way. It can also become what inspires a different kind of development – one that valorises and focuses on empty spaces that are already there, with a creative re-imagining. For instance, as a good practice that follows this logic, they illustrate in the document 'The Sky over Bovisa' the example of Livellara Factory redevelopment, with has been transformed into a bar and a concerts venue.

Besides this, abandonment – at the same time – is framed as a positive occurrence in itself when referring to the spontaneous rewilding of la Goccia.

Therefore, the theme of abandonment read through the politics over these rewilded spaces makes it emerge as a political issue on two levels. The first one is represented by capitalism and its destructive features in relation to the environment and the social. The second one, instead, politicises abandonment from a more-than-human perspective since it rather becomes framed as the question of *abandoned for whom?* Besides not directly constituting the idea to which people of the committee refer, it can be considered as the outcome of the discourses that they put forward. In short, it can be affirmed that this document constitutes an effort to collectively map the empty spaces in Bovisa for a critical inquiry.

In conclusion, it can be affirmed that what unites all these sentiments that emerge in the space and, because of its aim at arguing that the preservation of la Goccia and its ecosystem is fundamental and that this does not imply "avoid improving the neighbourhood". By contrast, the sentiment that is expressed tells that the improvement of the neighbourhood can only be made by recognizing the implicit value and opportunities that these existing spaces have. According to this vision, this perspective provides the fulfilment of the opportunity potential of the neighbourhood for its existing dwellers, some categories of newcomers and the urban nature that is present in it.

6.7 The historical dimension and the more-than-human history of the spaces

One dimension that also emerges in both cases is the one of historicity. The aim of the different civic movements, in fact, is also one of preserving the spaces not only for their natural character but also for the historical dimension that they carry.

In the case of Piazza d'Armi, a recurring theme in the public documents presented by le Giardiniere is the fact that the space has been an important site for the launch of the airships of the aviator Enrico Forlanini. That is why, in the project for the park that they presented, they aim to include a historical path:

> "In line with the indications of MIBACT legal constraint, there will be inserted inside the park around ten didactic photographic panels that trace the history of the place, with an itinerary that starts with the initial agricultural use and then continues with the period (1913-1930) of the first airship flights, among which the famous one of Umberto Nobile and the first woman aviator Rosina Ferrario, airships built in the place by the engineer Enrico Forlanini, then with the following military use and finally with the actual transformation into an urban park".

These few sentences hence well illustrate the position of the citizens' committee. The narration and imaginary for the place that they put forward hence does not make a tabula rasa of the past, but rather accounts for it and is fundamental for sketching the imaginary of the future park. This vision is mobilized against the one put forward by investors and the owners of the area: in an interview that I conducted, le Giardiniere viewed the act of destruction of the former military barracks both as an act that is disrespectful towards the history of the space and as a move by the owners to render the area more appetible for the developers that will buy it. Therefore, to some extent, it can be affirmed that the historical dimension emerges as part of the counter-narration to the one of the developers. In fact, when looking at the advertisement for the area presented by INVIMIT for the sellout, the historical dimension of the area is absent, and the space is presented merely in a way that makes it appetible to future investors. For instance, it is stressed the proximity with infrastructural nodes or services like a hospital. In other words, it is presented as a non-historically binding space that can be developed.

Similarly, also in the case of la Goccia, historical and industrial memory is particularly stressed. For instance, in a dossier that presents the space, it is observed how

> "during the 19th century, this area was formerly agricultural. It was a space where fruit trees were cultivated, as well as mulberries for the production of silkworms. It was irrorated by different karstic springs, clear waters from where frogs and fishes were fished, ending on the tables of the popular restaurants. Not so far away, there was cascina Bovisa. 150 years ago, […] without the presence of the railway, la Goccia territory was unified with the surrounding agricultural areas. […] In 1905 Union de Gaz de Paris installed here Bovisa gas factory, a huge industrial complex that was producing gas from coal and, until the half of the century, provided Milan with electricity. In 1969, with the arrival of electricity, before and after methane, gas production ceased to take place, and the area was transformed and managed by Aem[29] until the end of the '90s".

What is worth noticing is the fact that this description mixes together different elements, both regarding the materiality of the space during the different historical times (pre-industrial, industrial and post-industrial) and the relationality with the nonhuman, as well as how this contributed different modes of production and relationality with the space. These dimensions are blended and redefined in the way that the space is imagined today:

> "it constitutes a magical space that embraces together the industrial history and the one of a nature that is able to produce a sentiment of wonder."

In other words, nature and culture are mixed, and together they form the value that this space has acquired during its different transformations, and this will also be part of the future project. Similarly, history is depicted as a series of transformations interconnected with historical temporalities, also in the case of Piazza d'Armi. That is why in the plan proposal, le Giardiniere aims to include some agricultural activities for the space as a way of reconnecting with the past of the area.

[29] The former local energy company

In another declination, the history of the space has also been incorporated in the project denominated "bosco di sculture" ("forest of sculptures") that has been realised by la Goccia committee as an invitation for the people from outside to visit the area[30]. This is visible in the references that are present; for instance, in the description of a work of art that reminds us of the workers' presence in the area:

> Among the works of art that have been installed, there is the "Workers' book" by Paolo Cabrini, who has described the history of the area by crafting on eight panels different figures, among which a wrench, the AEM symbol, some pipes, a factory and a person that lifts the fist to the air. "Among the magic of a city habitat that is reach of more than two thousand trees and that hosts foxes, I aimed at remembering what is the history of the area."

As can be seen, also this description, there is an intermingling between symbols and materialities. The materiality of the work of art, it is sculptured the history of the space through the symbols of industrial productions (the wrench, the symbol of the company) and the political, historical memory (the person raising the fist to the air as a memory of workers' left). This, as well, is embedded into the space as it is imagined nowadays – namely, as an ecological environment where animals and plants dominate. In other words, this can be read as an instance of natureculture production.

On the other hand, the historical dimension seems to be a less relevant one for the institutional actors and developers. What characterizes their vision of the space is an orientation towards the present and the future. But, in contrast with the vision of the future that is being sketched by groups of citizen activists, this future acquires more of a "blank state" for opportunities. This is indicated both by the way that current green spaces are defined as "*vuoti urbani*" (translated, urban empty spaces), suggesting a negative framing of the space and the freedom of reimagining by filling them with something, and the way that they are discussed in the official legal documents that talk about future projects. For instance, it is claimed that architectures that are present will be reused and valorized – provided that they are "precious" (without specifying according to which criteria they are defined as such). It is, therefore, within this

[30] Bosco di Sculture is a project that some members of the committee carried out in May 2019. It consisted in the realization of an artistic path with permanent sculptures realised by artists and "donated to the forest". This had the intent of attracting the curiosity of visitors, to observe both the works of art and the discover the forest (*Bosco La Goccia*, n.d.)

framework that historical memory is mobilized and depicted as a goal for the project. This is particularly stressed in the case of the project for the campus in Bovisa, where the historical buildings are seen as functional for its development.

By stressing the importance of history in shaping the spaces the way they appear and the signs that they present, the way that this history is intertwined with the spontaneous rewilding and how the future of the spaces is one that incorporates both elements of the present state and the past, it can be affirmed that civic groups see the spaces as more-than-human commons. This vision differs from one of the municipal actors, who tend to see the spaces as opportunities for the future development of the city, with the idea of the public-private partnership.

Regarding the dimension of more-than-human commons, I will talk further in detail in the last section of this analysis, while, in this one, the aim was mainly one of observing the interconnectedness among the actual present of the spaces and their historicity. This historical dimension is, therefore, another element that contributes to the reasoning why the spaces should be valued and protected.

6.8 The role of aesthetics in the construction of the spaces' imaginaries

As suggested by Beveridge and Kip (2022, p. 3), urban voids can be interpreted as Walter Benjamin's 'wish images' of the city. These wish images are conveyed through the documents written by the activists and the enactment of public protests. However, at the same time, also what plays a dominant role in enacting them are – in fact – images. Looking at the different published documents, in fact, the visual dimension is always relevant, acquiring a dominant role in the message that aims at being conveyed.

These images are of two kinds: on the one hand, there are photographs of the spaces, which aim at illustrating the richness of what is considered as the void. Among the many documents, one that contains many of them is a dossier published on la Goccia committee website, which collects different images that have been taken by different photographers that entered the space (Figure 23). These pictures are of different categories: it is possible to find historical archival photos of how the area looked during the times of industrialization, photos that are being shot "inside the forest" that aim at showing the vegetation density, photos that highlight the intermingling between human and nonhuman elements, photos of specific plants that

can be found inside the forest and photos of the project "Bosco di Sculture" that the committee carried out with different artists.

Relating to aesthetics, this project called "Bosco di Sculture" is worth mentioning regarding the more-than-human assemblage of the space and the attitudes towards it. As it is possible to see in a video that presents it, on an early morning on May 25th 2019, different persons entered the area of la Goccia carrying different sculptures and works of art. This morning, they installed these artefacts alongside a path that has been opened by the ones that had this idea – and some of them are members of the committee. In short, in this way, the idea of the «Forest of Sculptures» takes its shape. According to the artist (that is also part of the civic actions to defend the space) who pushed for this idea, it represented one of the most successful initiatives that have been carried out to raise awareness about the existence of the spontaneous forest. In the interview I conducted with her, she narrated to me how the planning involved thinking about the path to be created and entering creating it by cutting brambles and other kinds of vegetation since it was not possible to realize the intervention otherwise. Then, narrating the event, she affirmed that they "grafted" the works of art. Similarly, another activist that took part in the organization of the event sees it as a key moment for opening the area to the public and raising awareness about it. In fact, he states that – according to him – the presence of the path of sculptures helped normalise the space



Figure 23 Pictures of rewilded nature and industrial remnants (Source: Dossier la Goccia)

and make it appear “less scary”. In other words, as the person that had the idea affirmed, it was a way of “using art to make the forest evident”.

In this case, it is worthy of observing the intertwining between aesthetics, art, nature and ideas over it. Returning to the concept of natureculture that has been discussed in the literature review, it can be affirmed that this intervention constitutes a clear example of this idea and realization. This emerges in many ways, for instance, in the lexicon that has been used: works of art are referred to as if they had been *grafted* – a word that would usually be used to refer to plants – and for the fact that the material boundaries between the works of art and the vegetative life of the forest are blurred, and the first also became embedded in the cycle of transformation and decay that are characteristic of the second.

Similarly, also in the website of le Giardiniere – Piazza d’Armi, visual elements are present and occupy an important place. For instance, it can be found a video where the key elements of the history are narrated, alongside pictures of the different areas of the spaces, like the meadow, the dense forest and the water ponds (Figure 24).



Figure 24 Pictures from Piazza d’Armi (source: Le Giardiniere)

Therefore, despite the differences between the two spaces, these images play a key role in the narration of "what is there" and the "sense of uniqueness" that they carry.

The second kind, instead, is represented by renderings that are being sketched and proposed by activists. If the first is oriented towards the present of the space, the second is more oriented towards the future and the form that the space might assume. These are indeed based on the first, but they also add further imaginative potential as a way of translating wish images into something more concrete.

In the case of la Goccia, this can be observed in some images that have been produced by a member of the group and published in the document section of the website. These images valorize the contemporary intermingling between industrial ruins and vegetation, aiming at making it a key feature also for the future project (Figure 25). Then the safeguarding of the industrial structures is also something that is wished for in the renderings. But, at the same time, it is integrated with the



Figure 25 A possible suggestion for the future project of la Goccia (Source: Comitato la Goccia)

construction and the rendering of the space with more 'traditional' architectonic features, like a gate on the entrance with the title "La Gocca Naturalistic Park". Nevertheless, what must be noted is that these images appear in support of descriptions of the principles that inspire the future project, like historical memory, biodiversity, regeneration and new perspectives.

In the case of the project presented by le Giardiniere, what seems to prevail is a rather aerial depiction of the space and its future. Compared to the project published on the website of la Goccia, it needs to be noted that 'wish images' are rather more illustrated in descriptions of possible projects (Figure 26).

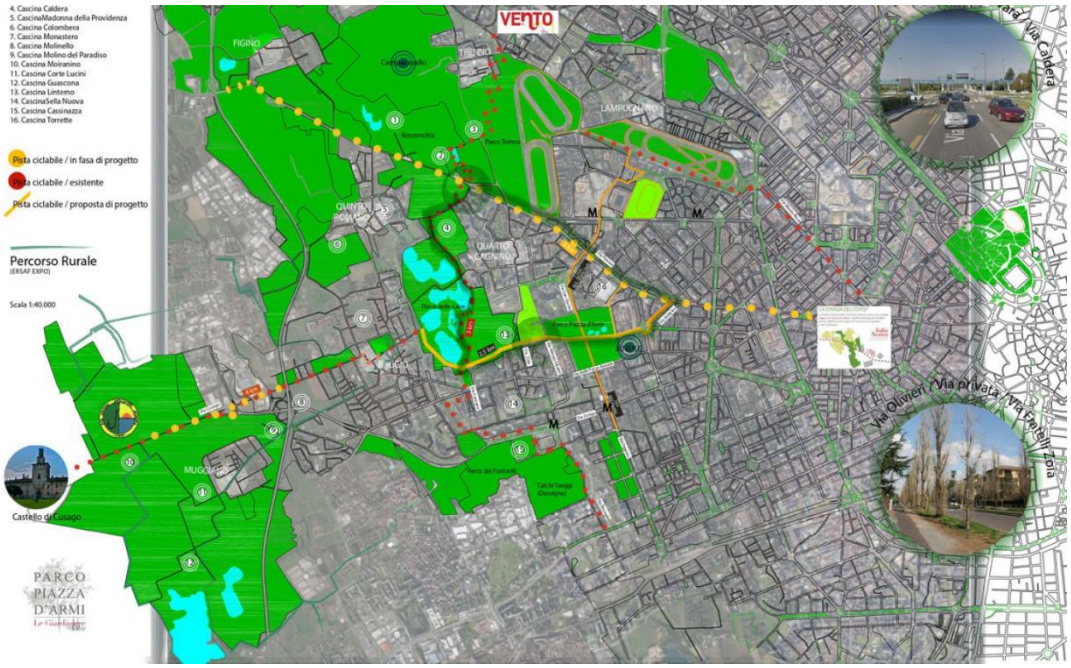


Figure 26 A possible project of Piazza d'Armi (Source: le Giardiniere)

What can be affirmed is that this production of images is central to the affirmation of the imaginary since it aims at concretely proposing the alternative and the way to differently imagine the space. This occurs both in how the space appears in its present state and its envisioned future. But, more in general, they are also fundamental for better attuning to the ecological idea of rewilded spaces. This aspect is also something that emerged in autoethnography: as a personal note of reflection, I can also affirm that every time I visited the spaces, I took some pictures. More than representing accounts of my fieldwork, I found myself using those images also to get better in tune with the sensitivity towards urban nature. At the same time, they also represented something that I also used to narrate the space and its complexity and make sense of what was at stake.

In short, it can be affirmed that the production of images and aesthetics represents a central element that contributes to the production of imaginaries, as well as the attempts to narrate a certain standpoint on the space. This intention is also reconnected with the importance that the direct realization of "what is there" or "what is possible" has in strengthening the reasons why the space must be defended or there is the need to develop a better knowledge towards it.

6.9 Ecosystems as services, between anthropocentrism and activism

One of the concepts that are mobilised by activists is one of the ecosystem services – namely, the idea that natural amenities can fulfil technical tasks, such as, for instance, the retention of rainwater (Daily, 2003). As it emerges from the analysis of the document, this concept is used in several cases and occasions as one of the reasons to justify the protection of these spaces.

For instance, an informative document that presents the park that has been published by la Goccia committee it is stressed the fact that "la Goccia is a green lung for the city: the wind that blows from North West [and goes through the forest] brings the purifying effect to the whole city". Also, regarding the reasons for the protection of the space put forward by the activists, the forest is defined as something that generates ecosystem services. Similarly, also in a text published by le Giardiniere about Piazza d'Armi as a response to the sell-out of the space, the importance of Piazza d'Armi is stressed for the fact of constituting "an area that brings important ecosystem services like climate mitigation, the filtering of polluting components, the reduction of Co2 and the pollination service". Also, in the interviews I conducted, all the members of le Giardiniere stressed the importance of valorising the ecosystem services and – in the project for the space that they presented – it clearly stated the intention of preserving the existing ecosystem services and contributing to their increase. Finally, in another text, it is defined in detail what they mean by the idea of ecosystem services:

> "[Piazza d'Armi] constitutes an extraordinary green reserve because it contributes to the maintaining of the natural environmental balance, for instance, intervening on the reduction of thermal peaks, improving the microclimate, air quality and the water cycle. A system like this increases the zones in the shade, refreshing the air with the consequent mitigation of the high temperatures and the significant positive effects on energy saving [...] the existing green, with its continuous work, forms and improves the soil by capturing Co2 [...] and, with the diversity in the vegetal cover, it prevents erosion, producing photosynthesis and wood".

Similarly, also municipal actors observe the value of ecosystem services and their importance for urban planning. For instance, in the PGT – the documents that contain the guidelines for the planning and development of the city – it is stated that

> "Starting from urban regeneration, Milan assumes – for the first time – the production of ecosystem services as a territorial asset that is useful to reduce greenhouse and Co2 emissions and to mitigate extreme climate events (heat islands, pollution peaks, torrential rains)".

And on another note, it is stressed that

> "Milano 2030 aims at being a city with new environmental standards, built starting from public and private projects that can apply advances technologies and project techniques, with integrated solutions to reduce greenhouse emissions and bring to zero the energy need of buildings [...] start rewilding processes of the surfaces – both horizontal and vertical – favour the water draining, the cooling of the micro-climate and the improvement of biodiversity, also through extensive urban reforestation projects that will lead to an ambitious greening of the metropolitan area."

To some extent, it is hence possible to affirm that one of the ecosystem services is a concept that is being put forward by activists to claim the importance of the areas that are defended, but – at the same time – it also constitutes a concept that is being increasingly embraced by municipal actors as a strategy to orient future urban planning. In short, in all these definitions, ecosystem services constitute a concept that highlights the important function that non-human entities fulfil rather than having no value, as it is often implied in perspectives that are oriented towards the construction of new buildings in vacant plots as a synonym for successful urban development.

Besides constituting a concept that gives a positive connotation to nonhuman entities, the idea of ecosystem services is often criticised from a more-than-human perspective for the supposed human-centrism that it implies and for the fact that it fosters commodification dynamics. For instance, the governance framework within which they are embedded influences their evaluation, and the evaluation on itself constitutes an attempt to price something that did not have a price before; in other words, the economic evaluation is unable to capture nature's societal value, and it ends up constituting a driver for commodification, applying an economic value also to biodiversity (Gómez-Baggethun & Ruiz-Pérez, 2011). In other words, the techniques that are used to assess and conceptualize ecosystem services involve the description of a nature that "capital can 'see'" (Robertson, 2006) and therefore is functional to

specific interests and goals. In short, despite constituting a way of claiming the value of the nonhuman, this happens within the framework of specific economic interests.

This contrast is insightful for the fact that there seems to emerge a difference between this commodification trend that ecosystem services imply and the use of the concept of ecosystem services by activists and the municipality as a form of affirmation of a non-commodified idea of urban planning. Hence, what the research seems to suggest is the fact that this use of the concept – on the side of citizen groups – might be instrumental rather than indicating a human-centric connotation of the conception of the spaces or the intent of commodifying nature's value. In other words, with the words of an activist of le Giardinere,

> "in the western world, we speak about ecosystem services, and we have to quantify them economically to show their importance just to make [people and the administration] aware of their importance and the costs that they would imply if we continue destroying them."

On the other hand, when the concept is used by municipal actors, an implicit commodifying connotation is what seems to prevail. In fact, in the quoted segments, there is no explicit reference to the non-commodification feature of urban ecologies, but rather they see it as an integrated element of urban governance that could be easily integrated into the private-public urban development. This is further stressed in another passage, where Piazza d'Armi is defined as "highly strategic" and as a "fundamental axis for the quality of urban life".

To sum up, it can be stated that the concept of ecosystem services constitutes another example of socio-technical assemblage that can be used to describe the "work that plants do" (Ernwein et al., 2021), despite the fact that they are not able to render the complexity and scientific richness of the web of life (Gandy, 2022, p. 249). However, what still remains critical is its dominantly human-centred concept, for the fact of constituting a service "for someone" – which inevitably is the human actor. At the same time, despite these critical concerns, it is worthy of notice how, in the case of Milanese civic struggles for the protection of rewilded green spaces, the concept is mobilised with a political connotation, framed within the broader goal of achieving protection for the spaces. In the next section, I will illustrate how this also happens with another contradictory concept, the one of pollution.

6.10 Pollution as a contested concept

As illustrated in the theoretical section, one of the merits of Actor-Network theory is the one of bringing a new perspective on nonhuman entities, highlighting how what is social is not really only social and what is nonhuman is not really nonhuman, but always emerges in an intermingled discourse and unexpected chains of relations. The role that pollution plays in these contested territories constitutes another example of this ontology, for the fact that it becomes a socio-political entity and raises political issues regarding the relationships between the human and the nonhuman world.

The theme of pollution is a dominant feature of the Milanese context. It could be stated that, in general, Milan well represents the imaginary of the "city of pollution". This is due both to geographical features – like the fact of being enclosed within the mountains, a feature that prevents the formation of the wind that would "carry away" pollution or the fact of being a territory where many factories are located, or also the fact, as a result of the modernist development of lacking the natural amenities that would allow carbon capture – and socio-infrastructural features – like the massive use of the automobile vehicles and large investments on this mode of transport, or the polluting character of many heating systems in the city (Boatti, 2007, pp. 187–192).

In reaction to this fact, both institutional and civic actors took action. One of the main initiatives from the municipality was the promulgation of the "*Piano Aria Clima"* – namely, a document that contains a series of measures with the intent of reducing pollution in the city (Comune di Milano, 2022c). In a presentation made by the institutional actors, it is clarified that it has been promulgated for four main reasons: to respect some agreements that have been performed at a supranational level, the fact that Milan air quality does not respect the values indicated by EU norms, the goal of becoming a Carbon Neutral city and, in general, to improve the quality of life in the city. Thus, these goals are aimed to be reached through a change in the mode of governance of the city and the way of including also the private, civic and public actors to achieve these goals.

What needs to be noticed, however, is the fact that the focus of the municipality remains at the governance level, and it does not take into account the structural causes of pollution. In fact, a more thorough critique of these causes has been elaborated by groups of civic activists that denounce how pollution is a constant feature of Milan's air quality. One of those instances is represented by another project called *Centraline*

dal basso. This project consists of a series of workshops in collaboration with other movements and organizations worldwide (especially in Europe) and consists of building a network of independent air quality monitor sensors. This is both to denounce the lack of data on air pollution and quality and to raise awareness of the problem[31]. In short, also civic actions – through these actions of *commoning* – help define air as a more-than-human commons towards which care must be exercised.

This negative framing of pollution and the urban development that produces it can also be found in the public documents published by the activists of Piazza d'Armi and la Goccia, and the fact of constituting something that provides what are defined as *ecosystem services* – in this case, the one of carbon capture – the protection of those spaces is advocated. Nevertheless, at the same time, in the case of la Goccia, pollution assumes an ambivalent role as both an issue and something that provided an opportunity potential because of the fact that there exists pollution of the soil.

First of all, pollution appears as a problem of space, and it is framed as a critique of the industrial development that produced it. However, at the same time, it also emerges as an opportunity potential to develop a different relationship with the more-than-human. Namely, la Goccia committee always criticised the industrial remediation techniques that involved removing the existing land – hence destroying the spontaneous ecosystem that developed – proposing an alternative: one of phytoremediation.

Phytoremediation, as a technique, is hence politically mobilised as an alternative *practice of care* towards the space. It is a more-than-human assemblage where the works of plants (Ernwein et al., 2021) is framed with a certain human relationality to the space. However, rather than merely constituting a sort of more-than-human politic, this technique is also mobilised framed against the destructive remediations-as-usual as a technique that would, because the latter is accused of not constituting only a way to remediate the space, but also a way to promote a speculative development. In other words, they are seen by the committee as a strategy merely oriented towards edification. Arguing that pollutants are not on the surface and hence not immediately dangerous, they seem to suggest that the area could be made accessible in the areas that do not present contamination.

[31] For more information, it is possible to refer to the website of the project: https://sensor.community/it/

Although it could be stated that there is not yet a "scientific" analysis of the risk of the pollutants, it can be affirmed that these statements can be inserted in the general discourse regarding the remediation of polluted sites, where it is often argued that remediations are not always necessary (Hamilton & Viscusi, 1999) and also have a costly impact on affected neighbourhoods (Noonan et al., 2007). Nevertheless, the main reason why I mentioned this use of the concept of pollution is to provide another instance of how the human, the nonhuman and the political are intertwined in claims, mobilisations and stances over space that unsettles traditional understandings that the concept assumes in a human-centric perspective.

At the same time, pollution is also framed by the committee as a feature that had an unexpected desirable outcome since it is what prevented the development and soil sealing in the first place. In fact, in many instances, it is noted that high remediation-as-usual costs prevented or rendered development impossible. This is because urban development – within the regulation – would have demanded a specific type of remediation and interventions that are particularly costly. Furthermore, these operations, for the fact that they would have implied digging until a 4-meter depth, would risk making "come to the surface" pollutants that are now stored at that depth.

In this case, it is interesting to observe the different processes that led to the creation and the annihilation of value. Firstly, industrial urbanisation is something that created value for the capitalist system of those times through the appropriation of the environment. After its dismissal, this mode of capitalist urbanisation has been something responsible for the lack of value of the territory – since the fact of being polluted prevented forms of development that would have created value. On the contrary, the work of nature has ended up creating ecological value, or a sort of value in itself, since it is what allowed the improvement of the space. At the same time, it can also be stated that what the committee did was an attempt to recognize the value that nature brought. And, at the present moment, it could be stated that also institutional actors are finding new ways of defining and extracting value out of that place that – because of the processes of regeneration of the peripheries – holds value potential. And the re-reading of the idea of pollution, the interventions that are less costly and related facts push towards this change of perspective. It is therefore interesting how the intermingling between human and non-human action has been central in producing certain outcomes, the creation and the un-creation of value. I will develop more into this in the next section of this analysis, where I centre the attention and the

reflection around the way that urban nature emerges as a matter of more-than-human politics.

6.11 Urban nature as a matter of more-than-human politics

The multiple dimensions of rewilded spaces that have emerged in this analysis highlight how their assemblage constitutes a matter of politics and the meaning they acquire changes depending on the actants that are involved in a particular assemblage.

One peculiar assemblage that emerges from the way they are being appropriated by citizens committees, activists and other citizen associations is the one of rewilded green spaces as non-commodified spaces, as an alternative to the “neoliberal city”. In this conception, rewilded green spaces are depicted as something that has been reclaimed "from the bottom” and contrast with the commodified top-down and private-oriented production of space. This mainly happens for the fact that the struggle itself to preserve urban nature is seen as something that contrasts the commodity-driven conception of the city as a space that is appetible for urban development.

Similar spaces can acquire a political outcome simply because they challenge the commodification of urban soil and space that transforms what is labelled as urban land into something to be sold, and that can generate a form of revenue. Zinzani and Curzi (2020, p. 168), for instance, specifically see the case of the contested space of Piazza d’Armi as a demonstration of communities that struggle to preserve and protect a natural area and reclaim the right of management in a collective form, against the form of development oriented towards residential units and commercial spaces, driven by capitalism interests. Similarly, they illustrate how also another struggle in Bologna – emerging as a result of the coalition of different actors – has the goal of defending a similar former military area with the political intent of subtracting it from speculative development (p.181). Hence, they conclude that urban forests are especially valuable in terms of strengthening socio-environmental knowledge and socio-environmental justice.

This conclusion is also something that is further remarked on in this analysis, which shows how this argument is also valid in the case of the protection of la Goccia. In fact the documents that the committee published on its website, it is expressed a critical stance towards the processes of urban development. Namely, they raise the issue of the impact that they have on soil sealing, on a territory that is depicted as saturated by it and on nonhuman life in general. This reason arises from a lack of green

spaces in the given territory where the development should take place and against the destruction of the spontaneous ecosystem. In particular, this factor is worth noticing because what is contested is a broader form of urban development that embodies a human-centric view towards nature.

However, at the same time, what I aim to add to Zinzani and Curzi (2020) argument is the fact that this vision is not only a reaction to the forms of top-down appropriation of the city but also ecological features are embedded and central to the construction of this alternative vision, and they are often put in contrast with other approaches to urban green. In other words, the struggle to defend them is framed not only to ask for the construction of a park but for the very reclamation of a different ecological assemblage.

This also emerges in the interviews, where similar spaces are opposed to other "ontologically natural" spaces like Biblioteca degli Alberi and City Life. The core of the contestation is hence directed towards the idea that urban nature is only something that arises from a "planned" perspective, connected with certain culturally produced aesthetics and modes of use. For instance, an activist of la Goccia claimed that

> "Biblioteca degli Alberi under the skyscrapers is particularly alienating. This is because you are neither in nature nor in the city, you do not understand where you are. […] The real difference between Biblioteca degli Alberi and la Goccia is the fact that, in Biblioteca degli Alberi, nature is dominated, made "by humans for humans", under the skyscrapers. It is not a nature that can expand itself. But, in la Goccia, the nature that is present there is free, and it is a nature that destroyed the asphalt, that appropriated the space and started a new path that has never been seen before."

Similar words are also used by a member of Piazza d'Armi le Giardiniere:

"According to me, Biblioteca degli Alberi is a pure matter of design that can be pleasant to look at, but it is not possible to talk about green there. There are trees that are put in circle, but this does not mean safeguarding urban nature or having biodiversity within a city. All of this is without forgetting that they are, in fact, not public but managed by a private actor. […] Lots of Milanese people might like it, but we agree on the fact that it is not a step forward to understanding what the environmental crisis is and – I add – the human crisis. It feels that [la Biblioteca degli Alberi] is fake. It is a spot for a nice picture, that's all."

Struggles and civic initiatives like the one of la Goccia and Piazza d'Armi hence make evident the political character that urban nature acquires. The city becomes the contested terrain between different interests, imaginaries and ideas regarding the practice of "building and dwelling". Rather than advocating for the provision of a form of commodified nature through what can be defined as typical 'greening' public-private attitudes that I also described in the review of the green spaces in the Milanese context, activists advocate for a different kind of idea of nature in the city – which, according to them, is represented by the spaces they aim at defending. The activity of space reclamation that is taking place in la Goccia and Piazza d'Armi can therefore be considered what Gandy (2022, p. 250) calls "alternative portals towards a different idea of modernity" that challenge a certain idea of progress and development. This is because this imaginary of space also entails a form of interaction with nature, but one that is more attentive towards its temporalities and rhythms, as well as the presence of non-human entities and rationalities; the human subject is hence in a position of understanding rather than dominating. This is exemplified by the recognition of "the work that plants do" (Ernwein et al., 2021) is also what supports the idea that plants can both become an agent in interventions of phytoremediation. At the same time, there is also the intent of producing a different framing of the "landscapes arising from the ruins of capitalism" (Tsing, 2021). Namely, they emerge against the understanding that sees them as residual "waste spaces", an involuntary product of capitalist urbanization.

Despite the different meanings that they acquire according to the different assemblages of actants, one last thing that needs to be noticed is that, from another standpoint – both in the case of Piazza d'Armi and la Goccia – it seems to emerge a seemingly shared intent among citizens and institutions towards protect the spaces for their green character. To some extent, it can lead to hypothesizing that the cultural and aesthetic sensitivity towards urban "unruly" wild spaces has changed (Laage-Thomsen & Blok, 2021). For instance, in the video presented by Renzo Piano Architects to illustrate the idea of the project for la Goccia, there is, in fact, an apparent celebration for some of its actual features, motivated by the spontaneous rewilding that took place and the industrial memory that it bears.

At the same time, also some affirmations and presentations concerning la Goccia that have been carried out by municipal actors might seem to indicate a new attitude towards these green spaces. For instance, in a map of an "itinerary of the regeneration" that has been organised by Milan Urban Center on 05/11/2022 – namely, an open public tour to illustrate the redevelopment of the area – the "wild part" of la Goccia is present in the sketch. This is important because, using Walter Benjamin's concept of "wish images" (Beveridge et al., 2022), it can be stated that could represent a "wish image" that actors that have a stake in the redevelopment have about the area. As can be seen in Figure 27, it is an itinerary that illustrates the developments that are taking place and – included in the drawing – there also is the area of la Goccia – where also the spontaneous urban forest is depicted.

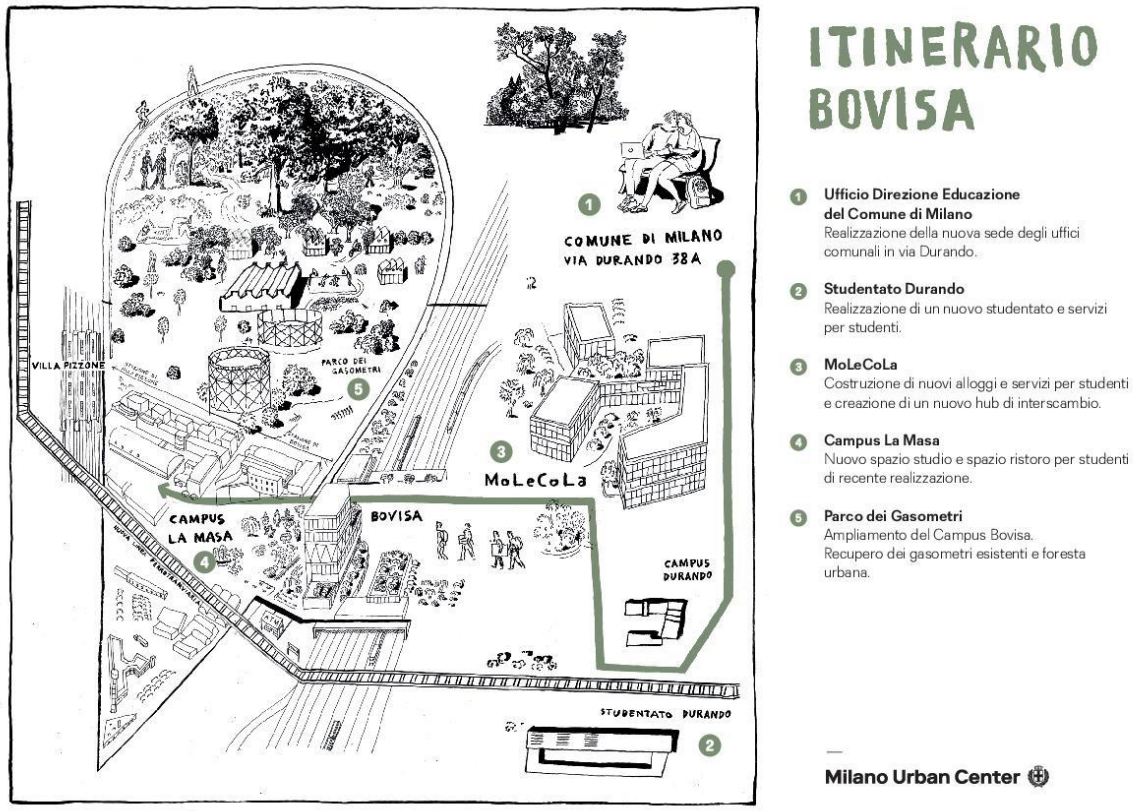


Figure 27 Itinerario Bovisa to illustrate the "regeneration of the neighbourhood (Source: Milano Urban Center)

Nevertheless, what also must be noted is the contested character of who has a voice over the stake of the city and who has the right to "transform the city" (Harvey, 2008) according to their own tastes. What emerges is the fact that the presentation of the space illustrated by Renzo Piano is not that different from the one presented by the

activists. In fact, as it emerged from the analysis, some key points that characterised the counter-narration of la Goccia framed against one that conceived it as a polluted and non-valuable space are actually the fact of considering it as a testimony of the historical past, intertwined with the one of a spontaneous nature that claimed its presence during the abandonment – some of the facts that are also highlighted by the architect. The reason why I am highlighting this similarity is not to claim that there has been an appropriation of knowledge. It is rather to point out the fact that the narration put forward resonates with a post-political one, where the *actual history* of the space, or its "social history" is obscured and not taken into consideration. There is no mention of the fact that, at a certain moment, with the project of Rem Koolhaas, there was the intent of radically transforming it without accounting for its character of rewilded space. There is also no mention of the fact that a citizens' committee of people is putting forward a political struggle for ten years – a struggle that might have played a role both in the safeguarding of the space with the characteristics that have been highlighted. Finally, what is also absent in these descriptions is the ecological narration – an aspect that civic groups particularly tend to stress.

Despite all this, a political analysis, therefore, highlights how this change in the attitude – in this case – is merely apparent and – at the moment – it did not produce practical implications. This is because it still remains at a very general and descriptive level that mainly revolves around the aesthetic or imaginary dimensions. Besides this, it is also informative of the orientation that determines who has a stake and a voice over the imaginary of the city, who is included and who is excluded and – ultimately – who has the right to shape it.

At the same time, something that was not possible to be carried out in this analysis because of the lack of sufficient data is an inquiry into whether tendencies of co-optation and inclusion of the rewilded imaginary are also present in the perspective of institutional actors, as forms of strategies of finding new narrations for the developments, similar as the way it happened in the case of the High Line that I inquired in the literature review. However, it can be hypothesized that the latest redevelopment project proposed by Piano and the way that the space is framed within the regeneration politics that have a speculative character in the 'regeneration tour' organised by Milan Urban Centre seem to suggest that this constitutes a theme that is worthy of further inquire one more material to conduct the analysis will be available.

To sum up, the contrast between the two visions of the spaces that are put forward by civic groups and by institutional actors indicates two different conceptions of modes of governance and who has the right to decide over the transformations of the city. The one embodied by the first seems to be closer to the idea of the creation of socio-ecological commons through the action of commoning – namely, through a dialectical, participative and bottom-up strategy. By contrast, the vision embodied by institutional actors has a rather technocratic attitude that distinguishes between experts and actors that are entitled to sketch a vision and a project for a certain urban space and hence aims at creating private-public goods that incorporate the "imaginary of the green" and the idea of sustainability. Nevertheless, the main difference between these two visions is the political claim that civic activists associate with ecological facts – like the presence of certain species of trees or the fact that it constitutes a refuge for the fauna. In short, it can be argued that – despite both civic groups and institutional actors seem to devise the idea of transforming the space in a park that might apparently have similar features in the vision, the political role that each subject assigns to ecology distinguishes the politics towards the nonhuman that they enact.

6.12 More-than-human commoning as a learning process

As a final note for the analysis, it can be affirmed that the idea of more-than-human commoning constitutes something that emerged at many levels in the fieldwork and the analysis that I have been conducting in both cases.

The first instance of more-than-human commoning is simply derived from the recognition of the worthiness of attention to the presence of nonhuman life in a space where – in the general framework – it is conceived as absent. In practical terms, it is the "acknowledgement that an ecosystem is there" and the development of a specific sensitivity towards the space through the reclaiming of its ecological character and feature. It is, in other words, an outcome of the idea of "caring for" the nonhuman, making it emerge as a "matter of care" (Puig de La Bellacasa, 2017). This is mainly represented by the claims to protect the existing vegetation that took over the space and the fauna that conceives it as an ecosystem. In particular, this is a central discourse in the case of Piazza d'Armi, where the presence of a certain animal, *triturus carnifex,* is central in the formation of the discourses and the imaginaries over the preservation of the existing natural amenities in the space (Figure 28). This is a recurring element in the public presentations that they have conducted – often mobilising experts'

knowledge – and in the symbol of the groups of citizens that struggled for its defence. It is, in other words, the recognition of the "right of the nonhuman to the city" (Shingne, 2022), because it implies considering more-than-human entities as part of the urban context – an approach that can also be found in Latour (2011) idea of "parliament of things".

Besides an implicit pre-requisite for certain politics to take place, more-than-human commoning also emerges during the activity of engaging with the space. Engaging with it has thus been fundamental in the development of sensitivity and a certain perspective on nature in the city. From my perspective, I can affirm that this has been the case in my personal experience. There is, in fact, a direct influence between the way I was increasingly becoming engaged and familiar with the cases and the sensitivity that I developed. An example of how this commoning character of the



Figure 28 Images that depict and communicate the presence of triturus carnifex in Piazza d'Armi. On the right, the use of the symbol of the animal as an icon for the civic struggle (Source: le Giardiniere)

engagement takes place can be highlighted by referring to the event of collective mapping of la Goccia that Terrapreta organised. In this case, it is possible to witness more-than-human commoning "in the unfolding". This is because the mapping has been done as a form of citizen science[32]. What is interesting is the fact that this event witnessed a plurality of actors with different background knowledge; on the two extremes, there were those that had expertise both in botanic and mapping techniques and those who almost did not have any previous knowledge. This, in fact, clearly exemplifies how commoning has the character of action and an interrelation among

[32] Citizen science, intended as the action of public engagement in scientific research of experts and non-experts (Vohland et al., 2021)

different humans and nonhumans. It is not about the definition of space as a commons based on certain background knowledge that can be mobilised, but it is rather about the outcome of the unfolding of this relationality.

This relationality happened as a form of "socio-technical" assemblage that saw the mobilisation of different technologies. Among the several, it can be noted that the digital played a role in determining the process. This is visible in an excerpt of the ethnographic account of the process:

> Through the use of software (iTree), it has been decided the areas and plots that were subjected to observation for the mapping process. Therefore, the mapping has been conducted as follows: depending on the group size, different groups have been created to map different plots. The composition of the groups was influenced by the fact that, in each one of them, at least one person with the knowledge must have been present. The first step was the identification of the geographical coordinates with the GPS. Once identified, a string with "four rays" was placed at the centre in order to divide the space into four quarters (Figure 29).
>
> The division had merely the intent of simplifying the identification of what needed to be mapped. Then, the measuring was divided into several rounds of data collection. First of all, we identified four features of the sample we mapped: 1) vegetation cover 2) tree cover 3) shrubs cover 4) ground. Then, we looked at the trees that measured more than 20cm of circumference; we identified 1) species 2) circumference 3) height 4) health status. If the first two were easy to be defined thanks to the aid of technological instruments, for the third and the fourth, we developed a method to collectively assess these values. Regarding height, we made an estimate: we discussed how tall the tree could have been based on our perception. Later on, a person with a drone decided to fly it over the highest



Figure 29 Mapping la Goccia forest (Source: author's picture)

tree to determine the maximum height to have a reference point. However, at some point in the day, he left, and so an architect found an alternative method based on looking at a pencil length. The two last methods are something that would be defined as "scientific" in the classic definition, while the first one has a rather collaborative character. But, looking at this matter using Latour's (1995) perspective, it could be stated that they highlight different forms of collaboration with different actants.

Then, regarding the health status, we looked at the top of the tree, taking out a tenth in the final assessment for each dead branch. Then, we also looked at whether *Edera Helix* or *Parthenocissus quinquefolia* were present as further indicators of the tree health status. In short, with this methodology, we mapped all the remaining plots that were necessary to produce an account of the mapping.

Similarly, also in the interviews and the informal conversations that I conducted with the actors, the moment of actively engaging has been fundamental for the development of more-than-human sensitivity and knowledge about it. For instance, one activist of la Goccia narrated to me how she did not know that brambles are shelters for birds that nest there to defend themselves from other predators. Similarly, another one claimed that he was born and raised in Milan, and hence the dimension of Nature was not present in his childhood. And according to him, it was thanks to the discovery of la Goccia that he started to develop this sensitivity towards it by engaging with the space and learning about it. It is from these assumptions that it can be understood his claim that "before even defending a space, it is important to know it", hence directly engaging with it to become aware of its specificity.

These instances can be depicted as a way of enacting the "politics of conviviality" (Hinchliffe & Whatmore, 2006), hence cultivating a kind of attentiveness that is focused towards the understanding of the spontaneous nature that emerged instead of framing it as "non-valuable", as it appears in the documents that depict the space as a dismissed industrial area. It is, therefore, thanks to the engagement that aims at "reconnecting with the space" that a different form of relationality and way of thinking about urban nature are mobilised.

Moreover, it is also interesting to observe the interactions among the participants: one the main dynamics that could be observed was the fact that those that did not have previous knowledge learned from the actors who had it, and – by the

end of the event – they acquired new knowledge and started developing a form of relationality with the space. This interpretation can be derived from the fact that participants, after having performed mapping operations in different repetitions, improved their ability to recognise the different kinds of trees, as well as cultivating attentiveness to the complexity of the assemblage – like, for instance, the fact that different factors determine the health status of a tree. Similarly, I also acquired by participating in this event knowledge about ecologies that I did not have before. In short, the collective mapping had the outcome of producing a "common aesthetic sensibility" (Lachmund, 2013, p. 171) among the participants towards the place.

To some extent, this reflection is developed through my direct experience and the fact that I engaged with the materiality of the space. Nevertheless, these “acts of care” have also been fundamental for other people that are part of the committee to develop a better knowledge and relationality with the space. For instance, another woman part of la Goccia committee narrated talking about the process that saw some committee members creating walking paths in the forest:

> “So, by creating these paths, we discovered more things about nature that we did not know before because [usually] you are not in contact with nature when you live in the city. But also if you go for a walk on a path in the Bergamo area, you have your walk, you say ‘how nice is it here, how nice is it there’, and then you return back home. But, it’s not the same thing compared to living it and taking direct care of it. Taking care [of the forest] is a completely different thing.”

These words constitute a fitting example of how the dimension of care (Puig de La Bellacasa, 2017) is central towards the development of a different relationality with a certain space – a relationality that revolves around the principles of more-than-human commoning, since it is framed as a particular way of acting towards something. Also, the action and the engagement are stressed as fundamental to developing this kind of relationality – which, according to the person that has been interviewed, cannot be developed by simply having a walk alongside an already defined path. If, on the one hand, it has been stated that the recognition of the existence of an ecosystem already constitutes an act of more-than-human commoning, on the other hand, this act of recognition should be accompanied by another act of further knowledge and engagement with it.

As an additional note, it can be added that these actions of engagement are also fundamental for the development of better knowledge and understanding. Drawing from my personal experience can affirm that, after a year of fieldwork, this involvement played an influence on myself and my knowledge of the place. What I mainly learnt is not something more about the history of the places – since, on this matter, I mainly retrieved the information from historical books. The main thing that I learnt is how to actually identify and observe these emerging ecosystems. For instance, I learnt that it is an area that does not appear even. Depending on the geography of the terrain and the socio-natural assemblage, it is possible to find different varieties of plants. At the same time, I also learned to pay more attention to the several layers of the forest. I acknowledged that it is not only composed of trees and ground vegetation but trees and ground vegetation in constant interaction.

To conclude, it can be affirmed that commoning as an action is particularly visible in the features of the spaces that I inquired about, for the fact that they are being imagined "from the bottom" and there is a direct engagement with them by a plurality of actors that "care about" them. These actions both involve the interaction with nonhumans, developing a different understanding towards them. Viewed from Latour's (2011) perspective, it can be affirmed that this action of more-than-human commoning is central to the unsettling of the modernist conception of Nature that is framed against and in contraposition with what is constructed and imagined as the "realm of the human". Conversely, acts of more-than-human commoning indicate that a different conception and relationality towards urban nature can also take place in Milan, despite its urbanization that determined the destruction of many of the ecosystems during the expansion of the city. In other words, it suggests that a different imaginary, beyond human-centrism, towards spaces and features that are already existing can also be developed within this context. However, this is only possible if a different form of relationality and sensitivity towards the nonhuman is performed. This different relationality is, therefore, the one that more-than-human commoning embodies.

7 DISCUSSION AND CONCLUSIONS

7.1 More-than-human politics and their role in re-conceptualizing urban nature

In the introduction, one of the first premises that have been raised concerns the idea of urban nature and the implications that it produces. The main conclusion that can be derived from the analysis hence reconnects with this point for the fact that these emerging struggles over rewilded green spaces are oriented towards the sketching of new forms of environmental struggles and modes of framing the environmental question, producing a specific social construction of nature. This reconnects with Cronon's (1991, 2002) critical analysis of traditional environmentalism and the conception of human-environment relations that implicitly commodify nature. By presenting the reasoning, I will provide the arguments that are behind this observation.

The main object of critique of William Cronon is the idea that the protection of a certain kind of nature and the removal of any human activity from it justifies the neglect and the destruction of another one – an assumption that, according to him, is also implicit in environmental struggles that celebrate and aim at defending nature only when it is "far away". This is because the reasoning in these terms leads to implicit answers affirmatively to the interrogative: "is human removal from it the only way to protect Nature?" The affirmative answer to this question would be in either case absurd for its implications, since – on the one hand – it would signify that Nature's preservation is in humanity's extinction, or the inevitability of Nature's destruction in the long run, or the perpetration of ideas of population control that might have eco-fascist connotations, in a similar manner that Hardin (1968) advocated for measures to protect the commons. Therefore, mirroring the idea of Trepl (1996), he suggests that it is not possible to avoid human activity over an environment – hence framing protection in these terms appears as something absurd.

However, there is a pitfall to this reasoning that must be avoided. By conceiving human intervention and action in the space as inevitable, Cronon's reasoning might seem to suggest that the perspective of those that aim at expanding urban development to those spaces have good reasons to do it; however, the implication of Cronon's reasoning is another one – namely, the idea that there is the need to take constant care

to *the place where we live*. Put differently, it is not by leaving a space *untouched* a space that is "far away" from the city that we are allowed to forget about the nature where we live and freely abuse it. There should be a discussion on how we use and relate to nature also in the very place where we live instead of protecting one nature at the expense of the other by celebrating some far away wilderness as a substitute for the one we destroy. Put in his words:

> "It means that deep reflection and respect must accompany each act of use, and means too that we must always consider the possibility of non-use. It means looking at the part of nature we intend to turn toward our own ends and asking whether we can use it again and again and again—sustainably—without its being diminished in the process. It means never imagining that we can flee into a mythical wilderness to escape history and the obligation to take responsibility for our own actions that history inescapably entails" (Cronon, 2002)

Therefore, this conclusion implies that the target is getting closer to the environment in which we live, discovering its ecology and specificity. It is towards this end that the work of urban ecologists acquires a particular significance. And with this research, I also aim to suggest that it is towards this end that the struggle to protect spaces like Piazza d'Armi and la Goccia is aimed at.

If at first glance, it might be easily assumed that the struggles aim at idealizing nature as something that must not be touched, when observed more in detail, it seems that they respond more to other implications of Cronon's affirmation – namely, the idea of taking care of the environment in which we live, also enacting "non-use". As it emerged from the analysis, what is really at stake is not the alteration of the natural environment, but firstly its preservation against the process of soil sealing – especially for the fact that they are located in a territory that, as the history of Milan urbanization highlights, has undergone a significant process of soil sealing. It is, therefore, against this backdrop that struggles to preserve spaces like Piazza d'Armi or la Goccia should be interpreted. They are calls to question the possibility of "non-use" in a space where "use" has become the norm. That is why it could be more insightful to answer no and highlight what this implies. In other words, the point is to replace the division between what is pristine or 'untouched' nature and what is not, advocating protection only for the one that it is, with another more complex understanding. This understanding

would therefore analyse more in detail the different typologies of nature that can be found, spurring critical questions (for instance, what is the value of the ecosystem? How to intervene on it? What will be the impact of a certain action/activity?), regarding how to relate with them. This, therefore, would imply that if an ecosystem does not fall under the socially constructed idea of "pristine nature", this does not necessarily mean that it can be destructed. The difference is that this second one does not adopt a binary logic but allows constant reflexivity and is open to be applied to different contexts and situations.

Therefore, this different imaginary that tells of taking care of the place where we live, refusing to make our home in the wilderness, also demands the necessity of developing a new language and imaginative framework for nature where we live. This act of imagination is also provided by urban ecology. Besides Kowarik's (2012) idea of four natures, Baker's (2019) concept of novel ecosystems constitutes another promising formulation to adopt new lenses to read the multiplicity of natures beyond the traditional dichotomy. This is because the concept – that arises from the idea that natural environments are always in transformation, which also includes the action of the human – allows naming new assemblages with additional socio-ecological complexity. It is, therefore, in this light that these struggles can also be read as an attempt (voluntary or involuntary) to name new assemblages. In fact, against the narration that considers these spaces as empty, the civic actions oriented towards their protection claim that they constitute new kinds of ecosystems. In other words, these novel ecosystems are nothing but the ecosystems that emerge within the place where we live or in the ruins of capitalism (Tsing, 2021). Even if this is not a direct outcome of these struggles, they still imagine the existence of new types of ecologies beyond the human-centric conception of the city.

Moreover, these civic actions also seem to suggest that they do not struggle against the idea of human intervention in nature but rather towards the 'cultivation of attentiveness' (Hinchliffe & Whatmore, 2006) towards it, which integrates humans into ecosystems instead of believing that they are superior to them and adopting interventions with a degree of reflexivity concerning the impact these might have.

Besides criticising the traditional idea of urban nature, these struggles also seem to suggest that nature can also be used as an anchor for political ones. Social groups and citizen committee mobilisations are an instance of the intertwining between urban nature and urban politics. And, like the case of La Goccia, what is being reclaimed is

not a general idea of the green, but a specific one, connected with a specific ontology of the green. At the same time, this ontology also has a certain political connotation that conflates the struggle for the protection of urban green within the broader critique of neoliberal governance that commodifies urban space. To this extent, these civic actions seem to contrast the rhetoric of "green as good" – which has been described by Angelo (2021) to define the way that municipalities and developers often adopt the idea of *greening* in a de-politicised manner. If Angelo seemed to suggest that the provision of green spaces can become a substitute for social policies, in the Milanese case, the struggle for green spaces is something that is indirectly used to demand more attention for the creation of urban commons against the rationality of speculative development. Because of this claim, this political struggle also gains a marked material character for the fact that, in a context where urban soil has mainly been considered a commodity, this attitude directly clashes with these economic-material conceptions. In other words, it also suggests the possibility of "non-use" as a political strategy to subtract from the development of what could be defined as profitable land.

Therefore, connected with this last point, another thing that emerges as a political matter is the theme of the Anthropocene. On a first level, this is because these environments – in particular, la Goccia – emerge as the outcome of anthropic activity on the territory. This anthropic activity is therefore framed in negative terms, and the process of rewilding is depicted as a "non-human" political response to these scars. However, at the same time, the Anthropocene is a dimension that also emerges in the claims for the preservation of space. This is highlighted by the idea of fostering the provision of ecosystem services, which picture rewilding and phytoremediation processes as anthropic interventions that can improve the space. In short, discourses over the spaces develop the duality of the idea of the Anthropocene, as highlighted by Gandy (2022, p. 208), which led to the emergence of a dystopian and adaptive Anthropocene. The first one well coincides with the alterations that are brought about by the industrial development of space, and it is used to refer to the damages that this kind of human activity produces – namely, pollution and soil sealing. The second one, instead, is framed as a response to the dystopian Anthropocene, and it represents an opportunity how to reconstruct environments through the use of technologies, which could also be based on the knowledge of ecological processes.

This dualism is hence visible in the framing of the spaces – especially of la Goccia – which are considered as the result of the anthropic activity of the past but also an

opportunity to imagine the future environments differently. Related to the second dimension, there is the stress on ecosystem services that depicts the more-than-human as an asset that can be beneficial for living in a 'healthier' city that adopts 'natural' technologies, and the idea of phytoremediation as a particular technology that is derived by the strategic use of certain nonhuman elements, with the intent of 'repairing' the damages of the dystopian Anthropocene, hence repairing a territory.

As a final note, it can be stated that more-than-human politics seem to follow Latour's (2011) main argument regarding the proliferation of hybrids, for the fact that what can be referred to as a political argument is the outcome of the mix of human and nonhuman elements, because the fact that "the are all caught up in the same story" (*ibidem*:1) and are what form the world. Hence, it can be affirmed that this can be seen as the main contribution brought by this research, illustrating how environmental struggles in the context of Milan can be read through these lenses.

7.2 Thinking about commons from a more-than-human perspective

In the theoretical debate, it has been inquired the concept of commons analysed some of its declinations in their potential and limits. This analysis, therefore, further helps to stress the idea of looking at commons mainly as the outcome of a form of more-than-human action.

One of the main arguments that have been put forward in the theoretical framework is the idea that commons are not resources, but rather actions or relations among entities, based on the understandings put forward by Hardt and Negri (2009), Linebaugh (2008) and Dardot and Laval (2019). This research further expands on this argument by further stressing the importance of the action and the direct engagement of civic groups with a certain space to develop their imaginary of them as commons. However, the cases analysed also illustrate that, in the construction of these imaginaries, what is central is the relationality with the nonhuman; in this light, it can be affirmed that it also strengthens Metzger (2015) declination of more-than-human commoning as the developing of a different relationality and sensitivity towards the nonhuman, and this appears to be the focus of the action of commoning. For instance, the presence of a certain protected specie (*Triturus carnifex*) is one of the main reasons that activists in Piazza d'Armi used as a claim to protect the space – similar to

the presence of the skylark as a reason to defend Berlin's Tempelhofer Feld (Carver & Gardner, 2022).

Therefore, it is possible to affirm that – as stressed by Mezger (2015) – more-than-human commoning is about developing "politics of conviviality" (Hinchliffe & Whatmore, 2006) between humans and non-humans. And – as the insight of this research would add – these also constitute a series of politics that can be enacted by conceiving the co-constitution and co-habitation of human and nonhuman entities as a *matters of care* and something *to take care of* (Puig de La Bellacasa, 2017).

In short, this research further develops towards the suggestion of considering commons as a relation between human and nonhuman entities, alongside the *practices of care* and mutual learning that this implies. It therefore indicates that more-than-human commoning can become an ethic to be adopted to imagine these new alternative ecological futures that see in the redefinition of the relationship between humans and the world one of the key strategies to tackle the socio-environmental crisis. This ethic can therefore illustrate how it is possible to do it starting from "the place where we live".

7.3 The influence of the context in mediating struggles

Besides the main conclusions discussed in the sections above, this research also brings further insights into some of the other related theoretical issues that have been raised. For instance, it also seems to stress the importance of the context in structuring assemblages.

Looking at the history of green spaces and civic actions connected with them, to some extent, the actions directed towards la Goccia and Piazza d'Armi seem to emerge in line with the activism, voluntarism and participation traditions connected with the context. This tradition hence demonstrates being "more progressist" than the dominant conception of urban planning: this, for instance, has been demonstrated by the way that Parco Nord and Boscoincittà took place as responses to the capitalist expansion of the city that took place with the modernist development. These initiatives anticipated what today is defined as the 'liveable city', built on a different relationality between humans and nature that renders the city as a desirable place where to live besides working. In the same way, the actions for the protection of rewilded spaces can be seen as a way to put forward the idea of novel urban ecosystems with a more

ecology-oriented perspective that aims at challenging the idea that urban nature manifests mainly in the idea of 'traditional' urban parks.

With this finding, what I aim to argue is that each context is also fundamental for the realization of certain socio-ecological assemblages, both for ecological and social features. For instance, in Berlin – as it is possible to read in the literature that tells about the history of the green spaces and biotope areas of the city – the assemblage has different features compared to the one that is characteristic of the city of Milan, and hence explains why in that context urban ecology has emerged as a more integrated framework of governance, besides an issue that civic groups raised during different historical times. This difference is due to the presence of good connections among municipal actors and ecologists, with the latter that also occupied important positions in the governance of the city. In other words, the context assemblage explains why Berlin has witnessed the creation of a biotope protection program (which can be translated into regulations that conceive the city as an ecological space), while in Milan, the discourse on urban nature has mostly remained framed in human-centric terms on the side of institutional actors. In this second case, the politicization of environmental issues also implied the fact that experts often acted in collaboration with civic groups.

Therefore, it can be stated that this research also stresses the interconnection between the context, the ecologies and the imaginary that take place, further suggesting the development of what Löw (2016) defined as the sociology of space.

7.4 The ambivalent Anthropocene of toxicity and pollution

Adopting a more-than-human perspective, it is possible to affirm that this inquiry illustrates how the agents that fall under the umbrella of what is defined as pollutants assume an active role in influencing the emergence of certain environments and social phenomena. This is because they assemble in different forms with a plurality of other human and nonhuman actors, leading to different configurations. Therefore, I aim to sum up some of the different characters that they assumed.

One of their most evident features is the one of constituting something that emerges from the destructive relationality between humans and the land, inspired by the modern and capitalist sensitivity that conceives the earth as a resource and the spilling of pollutants as an inevitable outcome of that activity. In other words, they are scars on the land, which both affect the landscape and the bodies. At the same time,

they also represented something that enabled the idea of “non-use” and “inoperative praxis” (Pellizzoni, 2020) – even though it is an indirect decision motivated by the economic costs of remediations. Hence, it is possible to affirm that the presence of pollutants represented active actants that allowed the growth of la Goccia forest and the growth of the actions to depict an alternative imaginary for the space.

Finally, another thing that emerges from pollution is the creation of «living laboratories» on which to conduct research and experiments. In other words, if, on the one hand, actions towards the protection of these spaces seem to challenge the modern distinction between the human and the nonhuman, on the other hand, they reproduce the scientific narration typical of the modern way of thinking, applying the scientific methods in novel ways. This is something that emerged in the case of la Goccia when actors openly framed it as an opportunity for science to study the effects of pollution on the environment and the effect that plants have in conducting remediation. This fact also reminds the response to the Seveso disaster analysed by Centemeri (2014) in the way that the affected population became viewed by the scientists as an opportunity to create a living laboratory situation, and citizens themselves started to perceive themselves as test subjects for the production of scientific knowledge rather than seeing the study as something that could have a good impact for their health.

In short, what seems to emerge is the fact that pollution might play an ambivalent role. This conclusion, however, rather than having the intent of underplaying the seriousness of the topic, aims at highlighting how different nonhuman agents can assembly differently with humans, producing specific configurations that can differ depending on the mutual agency and interaction, depending on what is being mobilised.

7.5 Where to locate the agency?

Another contribution of the research can be found in the idea, put forward by Actor-Network theory, that agency cannot be located in a single entity but rather emerges out of a network of interdependences. This can be seen by asking the question: “what comported the emergence of x?” – with “x” that indicates the different phenomena.

The discussion about pollution presented in the former section constitutes an example of how nonhumans are capable of agency, enabling non-use and the emergence of the forest. Nevertheless, they also have agency in shaping human actors'

thoughts and imaginaries over spaces and the very existence of civic movements. This holds especially true in the case of la Goccia, since – without the agency of spontaneous nature and, in particular, of the plants that managed to grow despite the polluted soil – the space would have remained empty, and probably no actions to defend it would have taken place. Another instance is represented by the fact that – without the plants that are able to perform phytoremediations – remediations might not have emerged as a matter of politics and discussion.

At the same time, the rewilding process of the space would not have been possible without the abandonment by human actors. As well, attention could not have been raised without human actors that discovered the area and made it emerge as a political matter, sensitising towards its transformation. But, what must be stressed is the fact that there's always an alliance between humans and nonhumans that rendered this possible. This can also be seen in the case of Piazza d'Armi, where the appropriation of some areas of the space by *Triturus Carnifex* preceded their discovery by human actors who – at their turn – mobilised them to appeal to protection laws and made a significant legal claim regarding the protection of the area.

In short, all these instances seem to suggest that, rather than looking at whether the imaginary played an influence in the depiction of a certain space, it must be inquired how they are mutually co-constitutive, as Callon (1984) illustrated in the politics and relationality towards the scallops of Saint-Brieuc bay. This study on rewilded spaces in Milan could hence be taken as a further instance of this complexity and as a guide to follow to look at other emerging socio-natural assemblages and how these are co-constitutive of both the actions of the human and the nonhuman also in other contexts.

7.6 The benefits of approaching urban ecologies through a comparative relational approach

One of the goals of this research that I stated in the methodology section was the adoption of a comparative relational approach among contexts. Despite having been limited in its outcomes, this approach has been valuable in highlighting specific aspects of urban ecologies.

Firstly, by looking at the case of Berlin, I realized that it is fundamental to inquire about the history of the context to properly understand the complexity of present assemblages. In fact, as stated by the term, assemblages consider the intertwining of a

plurality of dimensions, among which also history plays a significant role. For instance, the biotope protection regime of Berlin cannot be understood without looking at the history of the divided city, the socio-materialities that allowed the emergence of wastelands, the work of ecologists that has been conducted and the relationship that those ecologists had with municipality officials and regulators. Despite a similarity in some of the conditions – like the fact that also Milan had many areas abandoned areas as a consequence of World War II bombings – a similar sensibility towards them did not develop. This was due to the fact that they have been quickly redeveloped: reconstruction processes have been characterised by permissive regulations on the new edifications, hence allowing speculation to take place (Oliva, 2002, pp. 128–129). Therefore, because of different factors that promoted a quick redevelopment, there has been no time for ecological assemblages to take place. But, besides this, the industrial growth of the city put pressure on urban development, and – despite the general absence of green spaces – those have been quickly transformed into housing or offices and neither into parks. In other words, in the history of Milan, vacant space has mostly been considered as space for urban development. In both contexts, these historical and contextual dependencies played an influence on contemporary policies and politics regarding urban green. It is hence not a chance in Berlin spaces like Südgelände or Glesisdreieck have been preserved (at least, in part) despite not constituting the urban nature of 'traditional' parks, while in Milan, a green space like Bosco di Gioia that unfolded due to processes of abandonment was not preserved – among the many reasons – because it both did not constitute a park and for the fact that trees that were there have initially been artificially planted. Therefore, looking at the same time at two ecologies allowed us not to take for granted the way they unfolded and provided a better insight into the mechanisms in place and the difference assemblages that give the character of more-than-human commons to them.

In the second instance, it also emerged the implication of each city in each other history. In fact, to some extent, Berlin served as a model for the imaginary creation of wild nature in the Milanese context. Looking at the public presentations of the space organized by la Goccia committee, Südgelände park often was taken as a reference for sketching the imaginary of the future of the area, specifically to bring forward the idea that rewilded nature is also worth consideration and the fact that it is also possible to create an urban park with elevated walkaways where the primacy is given to the

spontaneous ecological assemblage that took place. This also often emerged in the informal conversations I had with the activists, who also often stressed how the image of that park allowed the imaginary of wild urban that coexist with humans to take place.

Then, regarding the ambivalent role of rewilded nature's preservation, engaging contexts with a relational approach also raised questions and hypotheses on possible trends. As highlighted in the literature review, there are different cases in which urban nature plays and ambivalent role, fostering gentrification and supporting neoliberal governance. The analysis of Angelo (2021) that has been presented well highlighted these contradictions and the dynamics that are at play. Regarding the context of Berlin, taken as a key case to inquire about urban ecology dynamics, it is possible to observe that similar trends are visible in the cases of Gleisdreieck and Tempelhofer Feld – as highlighted by the literature that has been reviewed. Nevertheless, it must be noted that there are different levels of appropriation and co-optation of urban natures. In this light, the case of Milan can provide insight into the different levels of socio-natural construction. The most evident one is urban natures that are linked with the model of Bosco verticale, as a project that is being framed as green and sustainable and the strategy to achieve urban sustainability. Besides this, the form of co-optation that is characteristic of Gleisdreieck and Tempelhof appears to be largely missing. Rewilded spaces, in the case of Milan, are mainly framed as commons by the activists, and – as highlighted – they constitute examples of more-than-human commoning.

A key insight on how "a city could be implied in the future of the other" is derived from the fact that models of Berlin have been taken as examples for sketching the socio-ecological imaginary of the Milanese context. For instance, this can be seen in the renderings presented for the future of la Goccia, which have a strong similarity with the Südgelände park in Berlin. Or, the fact that parks and modes of dealing with the pollution that are typical of the Berlinese context are also considered by municipal officials as examples to take inspiration from. This point, therefore, suggests that a comparative relational approach helps see how ideas travel from different contexts.

Another key insight derived from looking at the Berlinese *brachen* is the necessity of focusing on the idea of the *functional indetermination* that these spaces provide. In this case, it can be affirmed that – besides merely raising an interrogative –also emerged a similarity in the fact that in both contexts, such spaces stimulate a sort of indetermination in the use and appropriation. If, in the rewilded spaces in

Berlin, it is possible to witness a creative use of the space for a variety of recreative functions, in the cases of Milan that has been taken into consideration this indetermination translated in the experimental features that the spaces adopted and have creatively been appropriated by civic groups.

7.7 Addressing the limits of the nonhuman turn

One aspect that has not been addressed in full in this thesis concerns the limits that the nonhuman turn implies. This concerns specifically the politics within the groups. In fact, as Bulle (2022) highlights by inquiring about the case of the ZAD is the fact that the framing of the battle as a more-than-human affair obscures the internal divisions that exist among the activists, alongside the tensions that arise from different ideas on how to relate to the space. It can indeed be hypothesized that similar differences might also exist within the civic groups that I have taken into consideration – both among the groups and within them. However, it also needs to be noted that I intentionally decided to rather focus on the theoretical level, paying more attention to how a certain idea over the nonhuman was manifesting itself and affecting a certain space in the particular context of Milan rather than observing group dynamics. In other words, this limitation could be addressed by broadening the focus on civic action, which – as noted before – remained limited in this research.

Nevertheless, although this limitation concerning the nonhuman turn has not been addressed, it addressed the second one concerning the tension between ANT and theories derived from Marxism. In this regard, it can be stated that it contributed to highlighting how more-than-human entities produce political and conflictual perspectives over the spaces. In Piazza d'Armi, the struggle to defend the space accompanied itself with the broader critique of the speculative development of the city. Similarly, the struggle to defend la Goccia also strengthened the critique of the post-industrial transformation of the Bovisa neighbourhood and the actors associated with in, in favour of a re-appropriation of the right to decide of the neighbourhood inhabitants. In this regard, these instances resonate with the claims raised by Tola (2022) about the necessity to focus on situated perspectives that involve the formation of alliances between heterogeneous groups of humans and nonhumans rather than searching for the affirmation of truths.

7.8 Notes on limitations, contributions and possible research developments

One of the main limits of this research is the fact of being mainly focused on the perspective of the *stakeholders* over rewilded spaces – whether they are developers that aim at promoting construction projects or citizen groups that aim at defending them from their destruction. This choice has been performed for the highly theoretical orientation of the research, which mainly aimed at inquiring about the perspective of the actors that are already actively involved or mobilised towards a specific goal and the way they constructed nature in those spaces. Focusing mainly on these actors (human and nonhumans alike) left out the perspective of the inhabitants that live around those spaces. Or, at least, it was mainly the perspective of the inhabitants that were involved in the activity of the committee. But, in both neighbourhoods, there is a plurality of actors that is not represented within the action of the committees, or they do not take a direct part in them. It will thus be interesting to research how they conceive urban nature in those spaces. For instance, it would be insightful to inquire to what extent the participation in those committees influences the idea of urban nature and the knowledge of city politics or simply to better inquiry the perspective of people that are not interested in such struggles. Nevertheless, it must also be stated that such a study would not be feasible for the methods that I adopted. Ethnography and document analysis, in fact, are insightful methodologies when applied to specific case studies, but they are weak when they aim at giving what is defined as the "general picture" of the neighbourhood. This would require the adoption of mixed methods, with the distribution of questionaries aimed at reaching all the categories of the neighbourhood inhabitants. Therefore, this is an option that will be taken into consideration concerning ideas on how to expand this research.

Always related to the action of human actors, another limitation that this research has not taken into consideration is the evolution of the sentiments towards green spaces. If, on the one hand, it has illustrated that civic and institutional actors have different ways of theorising and conceiving green spaces, on the other hand, it can also be hypothesized that – despite the differences – these conceptions might have shifted over time and been subjected to modifications. It could hence be informative an analysis that inquires whether these transformations actually took place and how they were structured. This, in particular, could be an interesting analysis to conduct on the projects that are sketched for both la Goccia and Piazza d'Armi, observing whether

institutional actors and developers deployed a more ecologically-oriented imaginary. In the same way, it could also be interesting to conduct an analysis of the reaction of civic groups to these projects and possible changes in the perspective.

Finally, another limitation that has already been briefly discussed is the fact that the comparison with Berlin has not been made in an extensive manner. This has been both a consequence of the time constrains that did not allow pursuing a comparison with sufficient rigour but also of the fact that the main focus of the study was the context of Milan, and the context of Berlin has been used as a context to "stimulate questions" on urban ecologies, for the fact of constituting a key example for the discipline. Therefore, as a response to this limitation, the research could develop a more thorough comparison that could better look at the similarities and differences among the contexts. For instance, it could be better analysed how the actors mobilised in Berlin and how they mobilised in Milan, what kind of government arrangements allowed the flourishing of the discipline of urban ecology in Berlin and how they compare with the arrangements that are in place in Milan. Or, more specifically, who are the real estate stakeholders that have an interest in the redevelopment of green spaces in both cities, and whether an interconnection among them can be found.

When thinking at the practical contribution that this thesis might bring is bringing forward the idea of making space for non-humans in the city as a new policy and change of attitude.

For instance, this research also suggests that a discipline like architecture must not think about how to get rid of this vegetation but make space also for the spontaneous vegetation that emerges from processes of rewilding and must incorporate it into the planning and the design of the urban. However, this must be done with the principles of more-than-human commoning in mind. It means developing a reflexivity that goes beyond human-centric ideals, a reflexivity that also recognizes the agency of the plants and critters that made space in the urban environment, that always existed and that found a home thanks to human activity and influence (Alagona, 2022; Hinchliffe & Whatmore, 2006).

Then, the idea of more-than-human commoning can also be considered as valuable for the fact that it can also constitute a political tool that challenges property relations. In other words, it suggests that the ideal of property must be subordinated to the imaginary of the commons, to achieve ecological justice. There are instances where this happened – like, the case of Tempelhofer Feld in Berlin, with the protection

that has been granted to the skylark. This idea is also the one that is being put forward in the struggle for la Goccia, where activists demanded the protection of the whole space despite the fact that the different property regimes render it difficult.

The main takeout of this research is the idea that humans and non-human entities exist in forms of interrelations, giving rise to peculiar assemblages. Rather than constituting a context-specific feature, it takes different shapes and assemblages according to where it emerges. That is why the application of the framework and the research questions to new urban contexts could always be valuable in developing new insights. For instance, one of the key contexts to look at them could be one of *shrinking cities* – namely, cities that are losing population for socio-economic regions. What can be referred to as the *vegetative stratum* (Brighenti, 2018) is expected to be particularly evident because of the abandonment processes that have taken place. The studies on Detroit that I analysed in the literature review are a key example of this research trend – even though, as they affirm, Detroit is a city that is witnessing new waves of development and reinvestment. Hence, it would be interesting to observe what role urban ecologies play in the imaginary of *shrinking cities* (Martinez-Fernandez et al., 2012), whether they tend to remain unnoticed or whether they tend to inspire new ecological imaginaries, as well as the networks of actants that mobilise around them.

Another theme that has emerged in the research concerns the different modes of action of civic movements. Namely, I am referring to the fact that the struggle for contested green spaces is being conducted both by civic groups in the form of committees and in the form of associations. As briefly highlighted, this played an influence in the structuring of the different modes of action and strategies that are being pursued, as well as the interactions that different groups had with different actors. However, since my main research interest was mainly aimed at researching how rewilded nature is framed in the urban context and becomes an object of contestation, I did not inquire in detail, and this question did not find sufficient space in the analysis. It will thus be interesting to deepen this analysis, also by expanding it to civic movements connected with other struggles. Furthermore, this analysis could also be done focusing on the outcomes of both kinds of struggles, analysing how dynamics of politicisation and de-politicisation take place.

As a concluding note, it can be stated that the analysis that has been performed in this thesis has been dense, but, at the same time, it also brought up many insights that future research could better illustrate and elaborate on. Nevertheless, as a general

statement, it can be affirmed that it aims at fostering the adoption of an interdisciplinary approach in sociological analysis – an approach that aims at dialoguing among disciplines to narrate the complexity of the contemporary urban world.

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9 ANNEXES

9.1 Content analysis codebook

9.1.1 Codes - Analytical coding

Name	Description
CAPITAL-NATURE DYNAMICS	This code revolves around the relationship between capitalist dynamics and nature
green as an asset	
greenwashing	This is also another node that comes from theory. Namely, it gathers all the 'false interventions' towards the protection of the green. In other words, it is used to label some things that are depicted as green while in fact they are not - or not enough
speculation	This code is used when a discourse that relates to the idea of speculative development is mobilised
CARE	The concept of care is rather dense and has different declinations. My aim is to inquire how it emerges in its different forms also when applied to non-human entities, based on the conception put forward by Bellacasa (2017)
- lack of	
care about	
encounter, discovery	
practices of care	
COMMON(ING)	This code indicates the emerging of the idea of the commons in its several declinations. I specify both when it emerges because actors are openly adopting the concept and when it emerges as an interpretation inspired by the theory - in particular in the case of more-than-human commoning.
beni comuni (reference to)	
common space	

Name	Description
more-than-human commoning	
HUMAN-CENTRISM	Human-centrism can be defined as a way of thinking that puts the human at the centre of the reasoning. I use this code to identify when a human-centric sentiment is emerging in the text. Ex:[la Goccia] le aree versano ormai da decenni in condizioni di degrado e comunque di inutilizzo -> it is human centric because it does not take into account the wild nature that reclaimed the space
invisibility	This concept is applied to describe something that is not being taken into consideration, or something about which not so much is known
MORE-THAN-HUMAN ONTOLOGIES	This code indicates all the constructs based on ideas close to more-than-human understandings. An instace of this could be the recognition of the ways that more-than-human entities can be found in a certain space
non-human agency	This codes indicate when the agency of the nonhuman is stressed or pointed out
temporality	I adopt this code to highlight when a kind of temporality is taken into consideration. Further analysis would indicate which is the temporality that emerges and how it relates with the rest of the fragment.
third landscape	This code indicates when there are references (implicit or explicit) to Gilles Clément's idea of third landscape
NATURECULTURE	"Natureculture is a synthesis of nature and culture that recognizes their inseparability in ecological relationships that are both biophysically and socially formed" (Fuentes 2010 and Haraway 2003 as paraphrased in Malone and Ovenden 2016)
nonhuman right to the city	Also this node has been inspired by theory - namely, by all those approaches that, opposing nature/culture division, claim the right of the non-human to the city
urban-rural relation	
POLITICAL	I apply this code to identify all the content that falls under the domain of the political. Despite the fact that I should find a proper definition of political, with this code I indicate when something that

Name	Description
	is usually treated as neutral and general becomes object of contestation and clashing opinions.
anti-speculation politics	
bottom-up	
committees activity	
critique of urban development-as-usual	
demand for more green spaces	
informal dwelling	
raising awareness	
request for participation	
request for transparency	

9.1.2 Codes - Descriptive coding

Name	Description
abandonment	I adopt this code whenever an interview participant or a segment of the text in a document refer to the feature of "abandonment". I do not want to use it in a conceptual way [that is why I labelled it in orange], but rather simply when the words or the ideas are used. Nevertheless, there is the need to make a further distinction, between when it emerges as a feature with negative characteristics and one with positive ones -- like, for instance, when it allowed rewilding.
aesthetics	Rather than finding a theoretical definition of aesthetics, I use this code to group all the references to aesthetics - both to group features of visual elements and to stress how aesthetics are being mobilzed by actors.

Name	Description
ruins	
covid	WIth this code, I indicate all the references to covid-19 or the effect of the pandemic
emotions	This code indicates when emotions emerge and the type of it. This is mostly used in people's sentiments towards green spaces
contrast of emotions	
curiosity	
dissolution of fear	
familiarity	
fear	
insecurity	
surprise, wonder	
governance	This code indicates when governing arrangements are highlighted, both for the humans and the non-humans
citizens participation	Participation is also a contested concept. However, I use it here simply to indicate where the idea of "including someone in something", or when citizens or other actors demand for it.
collaboration	This code identifies when the idea of collaboration between different actors is mentioned
economic efficiency	This code is used when actors refer to the economic efficiency as a principle
GFU (Grande Funzione Urbana)	This code is used to identify when actors refer to the governance planning instrument of the Grande Funzione Urbana
innovative and experimental governance	This code indicates when reference to governance techniques are referred to as “innovative”
institutions-dwellers relation	This code is used whenever a relationship with citiezens is mentioned. It can be whatever kind - be it of collaboration, conflict, inclusion.

Name	Description
committees-institutions collaboration	This code indicates when reference are made to a collaboration between committees and institutions
conflictual relationship	This code indicates when reference are made to a confict between committees and institutions
maintenance	At a first glance, this code could also be inserted in the care practices. And yes, maintaining could also be considered a practice of care. However, here I am rather interested in seeing how maintenance emerges as a technical arrangement towards things.
private	This code is used when the dimension of “private” is being mobilised
private-public	This code is used when there is a reference to private-public agreements
public	This code is used when the dimension of “publc” is being mobilised
temporary use	This code is used when the idea of spaces temporary use is mobilised
historical dimension	This code is used when there is a reference to the history of the space, or to history in general
issues framing	Also in this case the term is referred in the way that it is used and conceived by the actors that employ it
biodiversity loss	
criminality	
difficulty of development	
economic issues	
lack of care	
lack of consideration	I adopt this code to refer to the feeling of the citizens of "not being heard"
lack of green spaces	

Name	Description
lack of services	
lack of space	
lack of transparency	
loss of historical meaning	
privatization	
spatial unaccessibility	
laws and regulations	This code indicates when there is a reference to laws and regulations. It can often be found in activists' writings or political claims to protect certain spaces
reference to institutions and institutional agreements	
reference to laws and regulations	I use this code to indicate how arguments and claims are embedded in a framework that has legal basis.
legal limitations	
legal protection of plants and animals	
patti di collaborazione	This code refers to the instrument for governance denominated “Patti di Collaborazione per la gestione dei beni comuni” adopted by Milan municipality
learning-by-doing	This code is used when there is a reference to ways of learning something by enganging it empirically. For instance, this is the case of the sentences where activists state that, by engaging into a struggle, they acquired a better knowledge regarding something (e.g. the forestry or botany)
remediations	Remediations are a feature that frequently emerges in different actors opinions and ideas. With this code I indicate where it emerges, but the way they talk about it needs further analysis, since it often becomes a political issue

Name	Description
nature-based remediations	
remediations-as-usual	
research activity	This code is used when the potential of a space for scientific research is stressed
sentiments and opinions	This code is used to indicate values of judgment employed by actors
'degrado'	This 'in-vivo' code indicates when actors mobilise the concept of 'blight'
sense of opportunity potential	This code indicates all the times that actors see an opportunity potential about some spaces or features of them.
sense of uniqueness	This code indicates when some spaces and feature of them are framed as unique in their way of presenting
URBAN DEVELOPMENT AND PLANNING	This code generally indicates when ideas about development and planning are presented. They can be ideas on how to transform a space or desireable outcomes
community gardens	
'funzione urbane'	This in-vivo code is derived from the lexicon of Grande Funzione Urbana to indicate the funcitons that a certain space has.
green as a service	This code identifies when green amenities are depicted as a service for the city
ecosystem services	I apply to this code to everything that relates to ecosystem services. It can be the direct use of the term in document, or when certain features (like co2 reduction, heath wave reduction, water absorption etc...) that can be grouped under the concept of 'ecosystem services' are mentioned.
nature-based solutions	This codes is used when nature is referred as an instrument towards the achieving of a certain goal
greenways	This code is used to indicate when actors talk about 'corridors' of green spaces that streches alongside infrastructure or between neighbourhoods

Name	Description
large scale developments and projects	This code highlights when there is a reference to large development projects that are taking place
'modello milano'	This in-vivo code refers to the specific mode of private-public goverance that has its model from Milanese policies
parks	
reference to 'best practices'	This code is used when actors name key references from other contexts for the development of green spaces
rewilding (as an intervention)	This code indicates the ways that rewilding is being used and framed as an urban planning intervention
'rigenerazione'	I adopt this in-vivo code to identify when the actors mobilize the concept of urban regeneration, hence to highlight what different actors mean with the term
'riqualificazione'	This in-vivo code indicates when actors use the idea of 'regeneration', but with a more aesthetic connotation
translation of things in numbers	This code indicates when there is a translation of concepts in numbers (e.g. when the number of tree planted is used to indicate the attention to the environmental question)
tree planting	
'vuoti urbani'	This in-vivocode indicates when spaces are defined as 'empty'
URBAN ECOLOGY	I adopt this code to indicate when the discussion revolves around ecological features in the city, or the theme of urban ecology more in general. Moreover, I also adopt it to code how it appears - based on a theoretical standpoint that looks at the city with a multispecies perspective.
autoctones-alloctones dichotomy	The autoctones-alloctones division regarding plants is something that recurs in ecology. Here I just indicate when it emerges; how it overlaps with other features or how it gets political is something that should emerge from the analysis
alien species	
autoctonous species	

Name	Description
biodiversity	This code is used when the concept of biodiversity is used by the different actors
ecological description	This has the aim of locating where texts from activists, institutions or other actors illustrate something through the ecological lenses.
endangered species	
pollution	The code indicates when there is a reference to the concept of pollution of any kind.
soil sealing	This code indicates when there is a reference to the process of soil sealing by pouring concrete over it, hence "consuming" it and degrading its ecological value
spontaneous rewilding	This code refers to all the instances that spontaneous rewilding is mentioned
urban ecosystem	This code is used when the urban environment is referred to as an ecosystem
urban woodlands	This code indicates when there is a reference to urban forests