

## Gentrification & Crime

### New Configurations and Challenges for the City

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# GENTRIFICATION AND CRIME

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and Challenges for the City



# **GENTRIFICATION AND CRIME**

## **New Configurations and Challenges for the City**

Massimo Bonura

Alessio Arena

Mario Mirabile

Carmelo Cattafi

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## **GENTRIFICATION AND CRIME New Configurations and Challenges for the City**

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# Media (cinema, comics), play and urban politics: gentrification and criminality

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This volume is the editorial product of the project “Gentrification and Crime. New Configurations and Challenges for the City” started by a public conference held on May 6, 2019 at the Municipal Historical Archive of Palermo. This event was organized by Locus and endorsed by private and public bodies. During the conference, four presentations were given by distinguished academics of main fields investigated: Giovanni Semi, Marco Picone, Adam Asmundo, Antonio La Spina<sup>2</sup>. Journalist Elvira Terranova moderated the event.

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<sup>1</sup> The authors, despite having collaborated with each other, attribute the first part as written by M. Bonura, the second (from “Therefore space acts”) by A. Arena.

<sup>2</sup> Listed in order of intervention.

This publication was born from the desire to investigate gentrification and crime through a multidisciplinary approach. It draws inspiration from the urban sociologist Henri Lefebvre and his fundamental work *The Production of Space*<sup>3</sup> on how the subject in its corporeality and in its interactions with the other integrates and produces spaces. The people involved in the project stem from different fields: geographers, urban sociologists and criminologists, architects and urban planners, historians, and other representatives of civil society. That being said, given this project's cross-disciplinary nature, contributors are given some creative freedom to flesh-out their own conceptualizations. As such, it is appropriate to cultivate an understanding of the intellectual framework and foundation underpinning this work.

Crime must be understood clearly as how in its various formations—whether organized crime or petty crime—has a close relationship with the geographical places, and its urban backdrop arrangement of closed alleys, semi-hidden squares, or even locally inserted in certain neighborhoods more or less characterized by social and economic weaknesses. For gentrification, however, as Jason Hackworth notes, we mean “the production of urban space for progressively more affluent users”,<sup>4</sup> with economic (properties value) and social consequences. Therefore, the use of urban space has a relationship with the perception of crime as analyzed by James Q. Wilson in *Thinking About Crime*.<sup>5</sup> The issue of urban insecurity is also described by the sociologist Albert Hunter in *Symbols of Incivility Social Disorder and Fear of Crime in Urban Neighborhoods*.<sup>6</sup> According to Hunter, incivility had an important role in fear and in the perception of crime, and consequently, sense of security (even higher than that generated by the real crime facts). The sensation of fear derives from the symbolic meaning that it was able to have.<sup>7</sup>

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3 Henri Lefebvre, *The production of space* (Paris: Anthropos, 1974).

4 Jason Hackworth, “Postrecession Gentrification in New York City,” *Urban Affairs Review* 37, no. 6 (2002): 815–43. <https://doi.org/10.1177/107874037006003>.

5 James Q. Wilson, *Thinking about Crime* (New York: Basic Books, 1975).

6 Albert Hunter, “Symbols of incivility: Social disorder and fear of crime in urban neighborhoods,” *Annual Meeting of the American Criminological Society, Dallas* (1978).

7 Stefano Caneppele, *La tolleranza zero: tra palco e realtà. I molti perché della riduzione della criminalità a New York* (Milano: FrancoAngeli, 2009), 28.

For stories of gentrification, marginality and crime, look no further than pop-culture to find evidence and illustrations through the ages. The TV series *She's Gotta Have It* by Spike Lee.<sup>8</sup> John Cassavetes' 1959 classic *Shadows* (1959) also deals with urban policy issues that touch on the relationship between class, economics, labor and space. Even in the world of Disney comics, gentrification can be found in Scrooge McDuck's city of Duckburg, whose house overlooks the rest of the city alongside other mansions gazing into the territory.

Geographical study presents the tools for researchers to analyze these spaces and social relations that pop-culture has rendered so crystal clear: Foucault, sociologists and geographers like Lefebvre, Soja and Hooper illustrate that spatial construction is always social and reproduces relationships of power.<sup>9</sup>

Space can also act as a social mediator; becoming the center of everyday life. For example, the role of the characters in performing arts is often defined through the acquisition of spaces and distances. This is apparent in theatre, where actors move on the stage creating a system of distances, underlined by gestures and movements, in relation to other characters on stage. Not only in the arrangement of the bodies, but also in the distance between them allows the audience to recognize the different roles. Scenography therein plays a fundamental role. An empty scene can highlight the presence of one or more characters, allowing the director to highlight some of them, like a game of *chiaroscuro*. A character that keeps others at a distance defines an area of exclusive interests: therein illustrating themselves and their social roles. Other characters respecting these boundaries further illustrate social roles. In cinema, the choice of certain settings facilitates these dynamics, while the absence of *hic et nunc* (here and now) makes the specific importance of these spaces less understood, and—always—being defined by distances.

Since the turn of the century, films and TV series have popularized the gangster genre using organized crime in Italy and worldwide. Inspired by the novel of the same name, the recent Italian TV

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<sup>8</sup> The prolific author and director behind *Do the Right Thing* (1989) or *BlackKlansman* (2018).

<sup>9</sup> Gaetano Sabato, "Postfazione. Spazio, potere e memoria: riflessioni di un geografo su fumetto e cartoon di propaganda," in Massimo Bonura, *Cinema, vignette e baionette. La propaganda politica (1930-1945) nel cinema d'animazione* (Palermo: Palermo University Press, 2020), 184.

series, *Gomorra*, by the Italian writer Roberto Saviano<sup>10</sup> has further popularized the genre. The series tells the story of the Camorra clans in Campania with fictional characters partly inspired by the real Camorra. The main settings are Secondigliano and Scampia, peripheral neighborhoods of Naples, now known all over the world for their “sails”, i.e. the residential complex of buildings designed by the architect Franz Di Salvo.<sup>11</sup> The demolition of some of the aforementioned buildings is currently underway, as they are considered to be emblems of the degradation and crime of Naples. In this case, the catalyst for change is also coming from within, that is, from many inhabitants of that same neighborhood. Elsewhere, it would be appropriate to investigate whether, in this specific case, it could foster gentrification processes. Residents share mixed emotions on the demolition project: some happy, rejecting the infamous label attached to their neighborhood-ecstatic to see these symbols of marginality destroyed. Others can find it traumatic; witnessing the destructions of their homes and memories therein.<sup>12</sup>

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In the TV series, control of territory by clans plays a central role in the management of power, at times grappling with the State itself. Bosses draw boundaries that must be respected, ruling over their borders with iron fists in managing their economic activities. Drug dealing, corruption and prostitution are just some of the Camorra’s most lucrative enterprises within the big “sails” but also the neighborhood squares. These spaces, manned by various “foot soldiers”—i.e. bosses’ minions—often appear empty and bare, and decayed. In pop-culture we are shown the complete absence of the state and the control by criminal power maintaining a precarious peace, continuously interrupted by horrible crimes.

The empty space, like that of the square filled by few extras, represents the domination of the space by the main characters. Not surprisingly, in the seasons following *Gomorra*’s premiere, when bosses lose power, they are represented in small and cramped spaces, as opposed to large buildings and large squares. It is important

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10 Roberto Saviano, *Gomorra* (Milano: Mondadori, 2006).

11 Isabella Guarini, “Le case a vela di Scampia-Napoli,” in *TerPress*, <https://terpress.blogspot.com/2011/10/le-case-vela-di-scampia-napoli.html>.

12 Amalia De Simone, “Giù le Vele di Scampia, ecco cosa resta del supermercato della droga più importante d’Europa,” in *Corriere della Sera*. <https://www.corriere.it/video-articoli/2020/02/20/giu-velescampia-ecco-cosa-resta-supermercato-droga-piu-importante-europa/98e736f4-53fi-11ea963-13c45ec676cd.shtml>

to specify that this contrast is present even when the bosses are at the peak of their power: often forced to hide in small bunkers from law enforcement or other criminal clans. For them, however, this constitutes the necessary price to pay to maintain control over large portions of the territory, even if they do not live in it personally. This character is in turn distant from the space in which they grow, while the audience still perceives their presence, while not seeing them on screen. The same goes for other characters, whose actions and movements unfold dictated by these boundaries.

The study, as it is carried out in this book by the authors and editors, on gentrification and its relationship with crime is decisive in clarifying what challenges lie ahead in the future, and how to smooth out inevitable social inequalities. Furthermore, the text analyzes the relationship between gentrification and crime, and the implications of data technology.

The study sets high priority to concerns of inequality, presenting the reader with promising results and thought-provoking open-ended questions.

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# Introduction

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By 2030 more of 5 billion people are projected to live in cities. This global increasing urbanization is a huge concern for its environmental and humanitarian impacts. Urban dwellers currently experience new configurations and challenges for the city, brought on by a new phenomenon of gentrification and its relationship with crime. This upheaval calls for a paradigm shift based on the science of cities and public management innovation.

To fully address the issue of gentrification and crime, we need all the tools offered by open government partnership for sharing good practice and breath fresh life into civic participation. Moving in this direction by taking advantage of new technologies to strengthen

governance, the Alliance for Open Government was created in 2011, a multilateral initiative that already has joined about 80 States, which made cooperation between States, private companies, and civil society by intensifying dialogue between private and public sector.

In 2016, the United Nations Conference on Housing and Sustainable Urban Development (Habitat III) introduces the challenge of sustainability in terms of housing, infrastructure, living environment, basic services and public health. At the same time, the new urban agenda incorporates correlation between good urbanization and development to improve quality of life, which should be included in every urban renewal policy and strategy to boost prosperity and quality of life. The “right to the city” initiative incorporates the aim to achieve cities where all persons are able to enjoy equal rights and opportunities, as well as their fundamental freedoms.

10 According to the 11<sup>th</sup> Agenda, by 2030 all people should have access to adequate, safe, affordable housing and basic services, and upgrade slums, overall to enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries. In this context, gentrification is seen as detrimental. While it may be true that gentrification could have a close relationship with turmoil and crime, it is not always delineated by its most negative forms.

Stemming from this work’s theoretical framework, the characteristics of gentrification, its goals, and its relationship with crime is outlined. By identifying the technological elements linked to crime mapping, we are able to uncover the impact of personal data management and consumer preferences in the real estate market.

Antonio La Spina argues about types of gentrification, crime and social impact with two main ideas of gentrification. Firstly, gentrification can be understood as a production of urban space for progressively more affluent users driven by speculation. Under this definition, it requires kinds of public intervention, to ensure stability. With that in mind, it does not necessarily result in disintegration and displacement. Secondly, gentrification can be an integrative process. So, gentrification can be considered simply as social good or evil, with a either a costly or beneficial impact. From San Francisco to Bilbao, Netherlands to Montreal, benefit for individuals’ perceptions of collective efficacy and crime represent positive impacts.

Notwithstanding, gentrification may trigger insecurity because of social disorganization or deprivation. An integrative gentrification strategy may generate positive effects, but it usually needs both vast amounts of public money, and intrusive regulatory measures.

Pure speculative gentrification tends to disintegrate social bonds and white-collar criminals and mafia-type organizations are interested in it.

In Cecilia Bighelli's contribution, *Mafia-Type Organized Crime in the Gentrifying City* an analytic tool to investigate the relationship between mafia-type organized crime and gentrification is presented. After a brief overview of the mafia's defining features and the concept of 'grey area' (networks of people where *mafiosi* interact with different actors), she identifies global economic trends and public administration's measures stemming from the backdrop of neoliberalism as a way of attracting mafiosi's investment. Many mafia groups invest their capital in tourism sector looking for high profitability, transforming socialization into a market.

The research on the relationship between mafia-type organizations and gentrification, reveals how regenerating processes for more attractive private investment requires a participation of groups of residents and law enforcement. The mafia is affected by gentrification in its home territory, and takes advantage of gentrification in non-traditional territories, such as Camorra across Europe; exploiting business opportunities away from home to invest in the legal economy. Occasionally, the mafia is affected by gentrification in non-traditional territories. A direct relationship between gentrification and crime growth is not verified, but the role of public institutions in civic organizations against criminal groups is highlighted as a priority.

Dimitrios Panagiotakopoulos's *Introducing Intelligent Ticket's Dual Role in Degraded Areas: Monitoring Crime and Adapting User's Transmedia Content*, shows how new technologies are made available to researchers in cities with 'Communication Technologies' and the 'Internet of Things' advanced information focus on technology, urban cultural heritage and creative industries. Through the case study in Bologna (addressed by the author as the second smart city in Italy), Panagiotakopoulos seeks to inspire real-world participation in critical problems within the city, analyzing the ticket's conceptual

working process framework as an access point for crime control. While these discoveries are promising, their implications present serious concerns.

Intelligent Ticket, as a method used in public and private life as a new means of crime mapping, generates serious problems with privacy and access to information that need a large-scale and organized cooperation between stakeholders in both private and public sector.

Mario Mirabile, and Edoardo Cabras, analyze the new challenges and urban issues through a critical theoretical approach and their relationship with urban ecosystem and public space in *A Critical Approach to Platform Real Estate in the Urban Ecosystem*. By studying the interactions between capital, private and public space and technologies for the real estate industry, they argue that the contemporary city, or rather its government, does not see public space as a resource to be used in the social sphere, but rather in the economic one. They conclude analyzing the internal logics of platform urbanism and the identification of players, trends and practices of the global real estate industry in the last years.

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Finally, according to the 16<sup>th</sup> 2030 Agenda's goal, national and international cooperation between institutions at all levels is needed to prevent violence and promote the rule of law at the national and international levels, collaborating and sharing experiences against criminal groups and their changing methods, which lead to a decline in violence and a focus on economic activities. This calls for the co-creation of actions' exercise, combining transparency, accountability, citizen participation, and innovation where governments work with civil society to co-create concrete action plans.

While gentrification is understood through its sensitive nature; its potentially harmful side effects, and its large-scale impacts aside, it does not have to be. Gentrification can also generate better conditions and well-being for (new) residents – giving as opportunity for collaboration and greater civic participation in public affairs: fighting corruption, empowering citizens and harnessing powerful new technologies – respecting digital and human rights.

There must be a new strategy to solve these issues concerning the living environment, public health, locally, while at the same time stimulating multi-stakeholder partnerships and their resourcing

strategies of partnerships to both understand what governments do and to influence their decisions. From a public policy perspective, this implies dialogue and participation within relevant stakeholders and inhabitants, alongside academic communities. A teamwork where national, subnational and local governments are flanked by civil society, the private sector and academic communities to contribute at the 2030 Agenda's goals for Sustainable Development and guarantee the "right to the city" such as high-quality buildings and public spaces preserved as cultural heritage and thereby avoiding the growing spatial and socioeconomic segregation.

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# Types of gentrification, crime and social impact

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## 1. Two ideas of gentrification

Gentrification can be seen as “the production of urban space for progressively more affluent users”. Very frequently this phenomenon is seen as implying a willful displacement of less affluent dwellers in order to make room for the newcomers. This probably happens because more often than not it is mostly dictated by profit motives, at the cost of undermining and disintegrating

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<sup>1</sup> Jason Hackworth, “Postrecession gentrification in New York city,” *Urban Affairs Review* 37, no. 6 (2002): 815. He adds that “this general approach is chosen in place of the ‘classic’ definition – direct displacement of the working class from residential quarters – in light of several decades of research and debate that shows that the concept is usefully applied to nonresidential urban change and that there is frequently a substantial time lag between when the subordinate class group gives way to more affluent users” (*ibidem*, 839). Semi (2017, 395) refers to Hackworth’s definition, too, and notices that it does not include many of the aspects which are frequently stressed by other authors. Hackworth has recently updated his views. Among other things he (2018, 51-52) stated that “the notion that gentrification was a risky bet for real estate investors is a distant memory”, given that it has become “a high-profit-margin segment of the real estate industry”.

pre-existing community bonds. I would label SG the ideal type of a gentrification essentially driven by *speculation*, or at any rate by self-interest. However, even when that has indeed been the case, it did not mean that aggressive speculators of the SG kind have always fought against any type of public intervention. On the one hand, they might have opposed those public bodies or measures that were aimed at shielding poorer people and restricting the room for manoeuvre of large-scale investments. On the other hand, real estate investors needed favourable policy decisions from urban planners and municipalities, also “through programs that prodded the private market (‘enterprise zones, for example) rather than direct subsidy”<sup>2</sup>. “Overall, gentrification is now more corporate, more state facilitated, and less resisted than ever before”<sup>3</sup>. There was deregulation to a certain extent, but public bodies did not totally abstain from interfering. Gentrification always requires some kind of public intervention, even when it is of the SG type.

Can we argue that gentrification *necessarily* results in disintegration and displacement? The answer is no. In some relevant cases there have been efforts aimed at allowing residents to stay in their homes as well as avoiding other undesirable effects. It is advisable, therefore, to think also of another ideal type of gentrification, an *integrative* one, which I will call IG. One must also bear in mind that “gentrifier” is not a synonym for real-estate developer. Most of the times, gentrifiers are instead relatively well educated middle-class young adults, including couples with children, sometime artists, creative workers or representatives of other social groups featuring non-traditional lifestyles. Such people look for cheaper houses and comfortable locations in the city center or not far from it. They could be willing not to threaten existing communitarian relationships in many respects (unless certain local habits are unlawful or disturbing without good reasons). Grafts of newcomers can of course generate some problems. According to Hyra<sup>4</sup>, one can be “political displacement”. Another is “cultural displacement”, that occur when “newcomers seek to establish new norms, behaviours and amenities”,

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<sup>2</sup> Jason Hackworth and Neil Smith, “The changing state of gentrification,” *Tijdschrift voor Economische en Sociale Geografie*, 92, no. 4 (2001): 469.

<sup>3</sup> Hackworth, “Postrecession gentrification,” 839.

<sup>4</sup> Derek Hyra, “The back-to-the-city movement: Neighbourhood redevelopment and processes of political and cultural displacement,” *Urban Studies* 52 no. 10 (2015): 1753-1773.



and the point of view of “the new residents cohort dominate and prevail over the tastes and preferences of the long-term residents”, who can experience “resentment” and “feelings of community loss”. “Understanding” such “processes ... and attempting to minimize their effects, is critical to ensuring the sustainability of inclusive, diverse, mixed-income communities”<sup>5</sup>.

On the one hand, SG is the result of powerful economic interests and profitable strategies. Therefore, it is much likely going to prevail, unless it is not curbed. On the other hand, we can imagine some coalitions - including residents, respectful gentrifiers, grassroots movements, cultural institutions, certain local politicians and civil servants, and so on - that could - at least in some cases - countervail SG by means of IG. I add that, if a given neighbourhood is characterized by marginality, low incomes, unemployment, insecurity, and other social problems, IG could offer older residents a valuable chance for improvement, provided that it is aptly framed and implemented. Of course, this implies both actual and relevant public expenses, as well as remarkable opportunity costs for would-be speculators, given that the much lucrative opportunities would be totally or partially lost. It nevertheless possible, at least in some occasions, to envisage an IG strategy that protects long-time dwellers and at the same time grants other private actors some reasonable benefits.

It is commonplace to emphasize the negative aspects of SG, perhaps failing to distinguish it from IG. For many people “gentrification is a serious issue in their lives that is nothing but an injustice, an upheaval, a threat to the vitality of urban neighbourhoods”. “The working class and/or low-income communities ... are at best severely disrupted ... or at worst eliminated by it”<sup>6</sup>. Slater<sup>7</sup> advocates the use of “critical perspectives in gentrification research”. Atkinson<sup>8</sup> thinks instead that “gentrification has regularly divided the opinions of policy-makers, researchers and commentators”, and that “a move

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5 Ibid., 1754, 1756, 1767, 1768.

6 Tom Slater, Winifred Curran, and Loretta Lees, “Gentrification research: new directions and critical scholarship. Theme issue,” *Environment & planning A*, 36, no. 7 (2004): 1141.

7 Tom Slater, “The Eviction of Critical Perspectives from Gentrification Research,” *International Journal of Urban and Regional Research* 30, no. 4 (2006): 737-757.

8 Rowland Atkinson, “The evidence on the impact of gentrification: new lessons for the urban renaissance?,” *European Journal of Housing Policy* 4, no. 1 (2004): 109, 111, 115, 117.

away from the portrayal of gentrification as a simple social good or evil will inevitably be an analytical improvement". The "impacts" can be either costly or beneficial, but "the research evidence on the benefits of gentrification is significantly more sparse than that of its ill effects".

Given that the word has a pejorative meaning for many people, certain "large, state-led gentrification projects ... are 'rebranded' as social-mixing or urban restructuring, rather than overtly stated as gentrification"<sup>9</sup>. It might also happen that what is officially presented as an IG is actually a SG in disguise, or that an IG undergoes alterations along the way, so that it becomes a SG in due time. However, albeit a genuine IG is not easy to be realized and presumably rare, its possibility must not be excluded *a priori*.

Chaskin and Joseph illustrate what has been done in Chicago and call it an instance of "positive gentrification"<sup>10</sup>, whereby a major goal of these efforts is to integrate low-income and public housing residents into the fabric of the developments and the surrounding (regenerating) community, among higher-income residents, and in contexts of greater stability, safety, opportunity and order.

They depict "positive gentrification" as the opposite of "neoliberal urban reform". The latter has produced, among other things, "the increasing privatization of urban spaces"<sup>11</sup>. According to Freeman and Braconi gentrification can "reverse central-city decay" and "if it proceeds without widespread displacement ... also offers the opportunity to increase socioeconomic, racial, and ethnic integration ... existing residents of inner-city neighborhoods could benefit directly" from it. "Rent regulation and public housing may have a certain logic in the context of gentrification"<sup>12</sup>.

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9 Brian Doucet and Daphne Koenders, "'At least it's not a ghetto anymore': Experiencing gentrification and 'false choice urbanism' in Rotterdam's Afrikaanderwijk," *Urban Studies* 55, no. 16 (2018): 3634.

10 Robert J. Chaskin and Mark L. Joseph, "'Positive' Gentrification, Social Control and the 'Right to the City' in Mixed-Income Communities: Uses and Expectations of Space and Place," *International Journal of Urban and Regional Research* 37, no. 2 (2013): 480.

11 *Ibid.*, 484.

12 Lance Freeman and Frank Braconi, "Gentrification and Displacement. New York City in the 1990s," *Journal of the American Planning Association* 70, no. 1 (2004): 39-50.

Gainza writes that something similar to IG was accomplished in San Francisco<sup>13</sup>, a working-class neighbourhood of Bilbao where the attraction of cultural industries has been used to revitalize the area [so that] what is taking place ... cannot be described as “regeneration” or “displacement”, but as a change-in-progress that induces transformations on the built environment, population, retail activity and the symbolic dimension ... San Francisco is nowadays an open and dynamic neighbourhood where different identities coexist, provoking new forms of socialization.

Another example is that of the Netherlands, where “the more managed and mild nature of gentrification (compared with that of Anglo-Saxon countries) means that” certain “negative experiences and perceptions ... are rarely found”. “Protection against displacement means that residents are able to appreciate some tangible benefits of neighbourhood improvement without feeling threatened ... Gentrification is a dominant policy tool ... and is characterized by top-down, policy-driven approaches”<sup>14</sup>. Steinmetz-Wood *et al.* state that gentrification often does not go hand in hand with “social cohesion and informal social control”<sup>15</sup>. Nevertheless, having investigated what happened in Montreal, they found “that the effects of gentrification may not all be negative”. If certain conditions occur, it can be “beneficial for individuals’ perceptions of neighborhood collective efficacy”<sup>16</sup>.

As a matter of fact, displacement of low-income people can be caused by factors other than gentrification. There is a “heightened threat of displacement that the poor disproportionately face in all urban areas, regardless of whether there are undergoing gentrification

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13 Xabier Gainza, “Culture-led neighbourhood transformations beyond the revitalisation/gentrification dichotomy,” *Urban Studies* 54, no. 4 (2017): 953, 955, 962.

14 Doucet and Koenders, “At least it’s not a ghetto anymore”: 3636, 3645-3646.

15 Madeleine Steinmetz-Wood, Rania Wasfi, George Parker, Lisa Bornstein, Jean Caron, and Yan Kestens, “Is gentrification all bad? Positive association between gentrification and individual’s perceived neighborhood collective efficacy in Montreal, Canada,” *International Journal of Health Geographics*, 16, no. 24 (2017): 1-8.

16 On collective efficacy, also with regard to crime, Kozey (2020).

or not". "A fuller theory of vulnerability" is therefore needed<sup>17</sup>. In Billingham's opinion<sup>18</sup>, research has been overwhelmingly focused on a few megacities (such as New York or London and not many others). Secondly, it is necessary to study not only neighbourhoods, but also "socioeconomic and demographic change at the municipal and regional levels... More importantly, municipal and regional policies affecting economic activity and class-specific migration patterns have profound influences on the trajectory of gentrification"<sup>19</sup>.

## 2. Gentrification and insecurity

The choice to buy or rent a flat in a gentrifying neighbourhood is a bet. The idealtypical newcomer is prepared to adjust herself to the new situation, to accept some initial or even durable discomfort not only because she likes the place and is a tolerant person, but also on the basis of a rational expectation of certain benefits that must significantly exceed the costs, be they monetary, psychological, transactional, adaptive. In this respect the size and the types of criminal threats that are *perceived* with regard to a given neighbourhood can deter the would-be gentrifier from betting on it.

Anticipation of increasing crime in "central cities" is regarded, together with racial motivations, as one of the reasons behind the "white flight" to the "suburbs during the middle part of the twentieth century"<sup>20</sup>. "Crime had an adverse impact on net migration and population size", although this was not so for the "black

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17 Chase M. Billingham, "Waiting for Bobos: Displacement and Impeded Gentrification in a Midwestern City," *City & Community* 16, no. 2 (2017): 147, 163. On displacement as opposed to "demographic change" occurring "through normal housing succession" see Freeman and Braconi (2004, 48), Freeman (2005), Slater (2006). Newman and Wyly (2006) point out some of the difficulties that emerge when studying displacement and criticize some of the points made by Freeman and Braconi. They agree that "public regulation of the market" can help "to mitigate displacement pressures". "Low-income residents who manage to resist displacement may enjoy a few benefits from the changes brought by gentrification, but these bittersweet fruits are quickly rotting as the support for low-income renters are steadily dismantled" (*ibidem*, 42, 52). Easton, Lees, Hubbard and Tate (2020) review the methodological problems that are met in several studies concerning the quantification of displacement.

18 Chase M. Billingham, "The broadening conception of gentrification: recent developments and avenues for future inquiry in the sociological study of urban change," *Michigan Sociological Review* 29 (2015): 75-102.

19 *Ibid.*, 80,81.

20 David S. Kirk, and John H. Laub, "Neighborhood Change and Crime in the Modern Metropolis," *Crime and Justice*, 39 (2010): 441-502.

population”<sup>21</sup>. In the reverse case, when members of certain social groups begin to consider moving towards neighbourhoods amenable to gentrification, we therefore expect that they will be inclined to do so only if they estimate a low risk of becoming victims of serious crimes.

Taylor and Covington studied Baltimore in the seventies and argued that gentrification, implying “social disorganization” and “relative deprivation”, was linked to a certain increase of murders and aggravated assaults<sup>22</sup>. They added, however, that such “findings may no longer be current if, since 1980, the locations have become more homogeneous and thus, perhaps, have developed into ‘defended neighborhoods’”. Barton, among others, notes that “gentrifiers” vis-a-vis “incumbent residents” are “more likely to possess high-value goods”, which will be presumably be protected by means of updated technologies that they can afford<sup>23</sup>. Covington and Taylor, again with regard to Baltimore in the same period, found that in “gentrifying neighborhoods” “robbery” was on the increase and “larceny” was not diminishing<sup>24</sup>.

Such trends might however be related to specific places and times. Moreover, as emphasized by Kirk and Laub<sup>25</sup> (quoting McDonald 1986) among others, after the initial years of a gentrification process it can be expected that “crime declines long term as neighborhoods stabilize and informal social control increases”. “Gentrification appears to lower crime, especially in the long run”<sup>26</sup> (Kirk and Laub, 2010, 463-465). This conclusion is shared by Barton and Gruner, who reviewed the main “criminological theories”<sup>27</sup>. In their view, “a more nuanced approach to the topic” is needed, and “research can contribute to the policy discussion”<sup>28</sup>. “Property prices” in given

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21 Ibid., 456, 457, 459.

22 Ralph B. Taylor and Jeanette Covington, “Neighborhood Changes in Ecology and Violence,” *Criminology* 26, no. 4 (1988): 579, 580, 582, 583.

23 Michael S. Barton, “Gentrification and violent crime in New York City,” *Crime & Delinquency* 62, no. 9 (2016): 1184.

24 Jeanette Covington and Ralph B. Taylor, “Gentrification and Crime: Robbery and Larceny Changes in Appreciating Baltimore Neighborhoods during the 1970s,” *Urban Affairs Quarterly* 25 (1989): 148, 159, 161.

25 Kirk and Laub, “Neighborhood Change and Crime,”: 463-465.

26 Ibid., 463-465.

27 Michael S. Barton and Colin P. Gruner, “A Theoretical Explanation of the Influence of Gentrification on Neighborhood Crime,” *Deviant Behavior* 37, no. 1 (2016): 30-46.

28 Ibid., 39, 43-44.

neighborhoods and certain types of crimes appear to be inversely related in a significant way<sup>29</sup>. Boggess and Hipp emphasize that gentrification must be seen as a “spatially diffuse process”<sup>30</sup>. Crime, therefore, should be studied not only in gentrified or gentrifying neighbourhoods, but also in the surrounding ones. By doing so they found “a positive relationship between gentrification and crime rates” in “isolated neighborhoods”, i.e. those “surrounded by areas that are *not* undergoing... home value increases”.

Ellen and O'Regan discuss the “dramatic decline in total crime rates”, which has taken place in U.S. cities since the nineties<sup>31</sup>. “Crime rates” in central “cities... declined more sharply than crime in their own surrounding suburbs”. Because suburbs were less affected, the authors suggest that the “reductions... may have disproportionately benefited traditionally disadvantaged groups”<sup>32</sup>. “The crime decline... likely contributed to the rapid gentrification of cities”<sup>33</sup>. Papachristos, Brazil and Cheng agree on the “absolute reduction” but argue that a “crime gap” (that is “the disparity in crime rates across urban neighborhoods”) is still present<sup>34</sup>. “The concentration of homicide and violent crime is especially acute in disadvantaged black communities”. Moreover, in their view at least in some cases – the one they focused upon being Chicago – the reduction of crime was more beneficial to “safer communities” and has “generated additional inequalities by widening the crime gap”<sup>35</sup> (*ibidem*, 1052-1053, 1067). Papachristos, Smith, Scherer and Fugiero <sup>36</sup>, having

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29 Nils Braakmann, “The link between crime risk and property prices in England and Wales: Evidence from street-level data,” *Urban Studies* 54, no. 8 (2017): 2005.

30 Lynnsay N. Boggess and John R. Hipp, “The Spatial Dimensions of Gentrification and the Consequences for Neighborhood Crime,” *Justice Quarterly* 33, no. 4 (2016): 608.

31 Ingrid G. Ellen and Katherine O'Regan, “Crime and U.S. Cities: Recent Patterns and Implications,” *Annals of the American Academy of Political and Social Science* 626 (2009): 22-38.

32 *Ibid.*, 24-25, 30.

33 Rachael A. Woldoff and Christopher Uggen, “Community and Crime: Now More than Ever,” *City & Community* 17, no. 4 (2018): 942; Barton, “Gentrification and violent crime,” 1183; Kirk and Laub, “Neighborhood Change and Crime,”: 465-466; Amy E. Schwartz, Scott Susin, and Ioan Voicu, “Has falling Crime Driven New York City's Real Estate Boom?,” *Journal of Housing Research* 14 (2003): 101-135.

34 Andrew V. Papachristos, Noli Brazil, and Tony Cheng, “Understanding the Crime Gap: Violence and Inequality in an American City,” *City & Community* 17, no. 4 (2018): 1051-1074.

35 *Ibid.*, 1052-1053, 1067.

36 Andrew V. Papachristos et al., “More coffee, less crime? The relationship between gentrification and neighborhood crime rates in Chicago, 1991 to 2005,” *City & Community*, 10, no. 3, (2011): 215-240.

operationalized gentrification by referring to the presence of coffee shops<sup>37</sup>, also stress differences between neighborhoods with regard to racial composition and proximity to certain other neighbourhoods, even when they exhibit similar patterns of gentrification. Some “white neighborhoods ... experience greater crime declines because they are spatially adjacent to neighborhoods with higher levels of social control”, while the opposite could be true if some of the “nearby surrounding areas” are ones where crime is frequent<sup>38</sup>. Secondly, “Whites, Blacks, and Hispanics gentrify and experience gentrification in different ways”. Thirdly, the racial composition of each neighborhood matters. “Coffee shops are present almost entirely in areas with declining homicide”, and “the robbery models ... produce somewhat similar findings”, albeit the reverse applies in Black neighborhoods, where anyway coffee shops are rare<sup>39</sup>. With regard to New York, Barton also found that “concentrated disadvantage was positively associated with assault and homicide”, while “gentrification” is “negatively associated” with “robbery” and “violent crimes” (2016, 1193, 1195)<sup>40</sup>.

Alongside with hard data on crime rates, subjective beliefs can be very influential, too, when a person chooses to move to a new neighbourhood. Taylor and Covington (1993) argue that “population composition”, “unsupervised ... troublesome teen groups”, “physical” and “social incivilities”, which by definition do not amount to criminal behaviours, are nevertheless related to “fear of crime”, insofar they are seen as indicators of dangerous attitudes in certain urban spaces<sup>41</sup>.

More recently, Hwang and Sampson voiced a note of caution in their critical evaluation of the efforts which were done in Chicago, where

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37 Barton (who uses a different methodological approach) in “Gentrification and violent crime in New York City”, 2016, noticed that “the location of coffee shops” is “influenced by city planning efforts, individual tastes, and residential preferences”, and that they “were clustered in the central business district” (ibid., 1190). This weakens the reliability of the indicator.

38 “With few exceptions, notably highly segregated residential areas and gated communities” (Alex Hirschfield, *et al.*, “How Places Influence Crime: The Impact of Surrounding Areas on Neighbourhood Burglary Rates in a British City,” *Urban Studies*, 51, no. 5 (2014): 1057, 1060). See also Boggess and Hipp (2016).

39 Papachristos *et al.*, “More coffee, less crime?,” 219, 228, 232-235.

40 Barton, “Gentrification and violent crime,” 1193, 1195. Kreager, Lyons and Hay (2011) studied urban revitalization in Seattle, with analogous results.

41 Ralph B. Taylor and Janette Covington, “Community Structural Change and Fear of Crime,” *Social Problems*, 40, no. 3 (1993), 376-378, 385-386, 391.

anyway “racial integration that satisfies particular thresholds is the norm” and residents are protected “against displacement”<sup>42</sup>. Their analysis (based also on Google Street View) has a general relevance, beyond the specific case treated.

Perceptions are shaped by racial-ethnic composition, independent of socio-economic standing, actual crime rates, objective measures of disorder [...] are resistant to short-term changes and even contrary evidence [...] gentrifiers may have preferences for racial or ethnic diversity [However] the durability of race-based residential stratification suggests that gentrifiers’ preferred level of diversity is limited [...] the racialized order of gentrification leads most poor minority neighborhoods to remain so<sup>43</sup>.

### 3. Integrative gentrification and crime

A successful IG strategy is supposed to satisfy several coexisting and potentially conflicting objectives and demands. The most intricate aspects have to do with low-income residents, shopkeepers or craftsmen. If they are not organized and vocal, their needs might be overlooked. Even when such needs are taken in due consideration, each of the options that are open to policymakers has disadvantages and can generate “tensions”<sup>44</sup>. If rents are blocked so that residents can stay where they are, this will for sure be a problem for their landlords, but also for tenants and homeowners, in case the cost of living goes up after the arrival of gentrifiers<sup>45</sup>. Apart from this, the main goal of a GI is to improve social integration and welfare in targeted neighbourhoods. Atkinson mentions “increased social mix”, “rehabilitation of property both with and without state sponsorships”, “change of image” which “may invite further investment and alter preconceptions”, “deconcentration of poverty” among the expected beneficial outcomes of gentrification<sup>46</sup>. If the concentration of poor people is

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42 Jackelyn Hwang and Robert J. Sampson, “Divergent Pathways of Gentrification: Racial Inequality and the Social Order of Renewal in Chicago Neighborhoods,” *American Sociological Review* 79, no. 4 (2014): 726-751.

43 Ibid. 729-731, 748.

44 Chaskin and Joseph, “‘Positive’ Gentrification,” 480-502.

45 These and other “negative impacts of gentrification processes” are treated among others by Atkinson (2004, 111-117).

46 Atkinson, “The evidence on the impact of gentrification,” 112, 118.



high, it might indeed be expedient to propose some of them to move outside targeted neighbourhoods, provided that poor households accept to live in a new apartment<sup>47</sup>. This of course presupposes a generous allocation of public funds to be devoted to low-income groups. At the same time, well-to-do gentrifiers are “an articulate and vigorous lobbying group” and “generally take more from the city coffers than they contribute”<sup>48</sup>. There is also a risk that troublesome cases of social marginality and criminality are merely shifted elsewhere, without solving them<sup>49</sup>. Hochstenbach and Musterd speak of a “suburbanization of poverty” with regard to the Netherlands, where one finds “large social rental stock, extensive tenant protection ... rent regulation” and “limited ... direct displacement”, so that “individual neighborhoods may remain or become more mixed due to gentrification”<sup>50</sup>. Nevertheless, in their perspective “the aggregate effect at a higher scale may instead be the opposite”, if “lower income households are increasingly confined to a shrinking social rental sector or to affordable segments of the owner-occupied sector, and to low status or declining neighborhoods”<sup>51</sup>.

Any option of intervention may be flawed in some respect, but also doing nothing has a cost. To tackle certain problems through action is sometime necessary, so as to prevent bursts of discontent. Even when the weakest members of the community are not capable of exerting pressure, it is unfair to leave them behind. Therefore, an approach which is almost totally “conservative” of the status quo can be questionable as well. Each available line of action, fallible and imperfect as it may be, should be carefully and honestly weighted against the alternatives.

An IG strategy usually needs both vast amounts of public money and intrusive regulatory measures. Both might generate opportunities for particularism, patronage, outright corruption. Such risks can in principle be mitigated or avoided through careful design and implementation.

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47 Chaskin and Joseph, ‘Positive’ Gentrification”, 497-499. Kirk and Laub, “Neighborhood Change and Crime”, 469-470.

48 Atkinson, “The evidence on the impact of gentrification,” 117.

49 Kirk and Laub, “Neighborhood Change and Crime,” 444, 465, 468, 473-474, 485.

50 Cody Hochstenbach and Sako Musterd, “Gentrification and the suburbanization of poverty: changing urban geographies through boom and bust periods,” *Urban Geography* 39, no. 1 (2018): 26-53.

51 *Ibid.*, 31, 30, 47.

The great and long-lasting reduction of violent crime rates is the result of several factors, including law-and-order policies more or less loosely inspired by criteria such as zero tolerance, technological advances enhancing crime prevention and detection, demographic changes. IG in turn targets marginalized social groups in order to improve social conditions in the city, with expected effects on crime, too.

According to Sharkey, Torrats-Espinosa and Takyar, academic research has “largely overlooked” the role of those “local nonprofits” that “influence the level of social cohesion within a neighborhood” and “create social capital”<sup>52</sup>. They found “strong evidence that ... community nonprofits had a substantively meaningful negative effect on murder, violent crime, and property crime”<sup>53</sup>. Therefore, nonprofits working in targeted neighbourhoods should be thought of as central actors in IG programs<sup>54</sup>.

In more general terms, Ramey and Shrider argue that “local crime control or neighborhood improvement efforts” should be “bolstered by public-level assistance” and “outside support” and discuss the experience of the Neighborhood Matching Fund in Seattle (NMF, which has been imitated by “several European cities”, but not much in the U.S.)<sup>55</sup>. The NMF co-finances “parochial” projects with earmarked resources and by doing so stimulates residents’ mobilisation. The authors maintain that such an approach is an effective tool of crime prevention for “struggling neighborhoods – those with high crime rates and high disadvantage”<sup>56</sup>. Publicly sponsored mortgage investments are obviously related to the physical aspects of gentrification/revitalization, such as buildings renovation. Shrider and Ramey emphasized that the NMF aids “organizations that want to make physical improvements or foster social relationships in the

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52 Patrick Sharkey, Gerard Torrats-Espinosa, and Delaram Takyar, “Community and the Crime Decline: The Causal Effect of Local Nonprofits on Violent Crime,” *American Sociological Review* 82, no. 6, (2017): 1214-1240.

53 *Ibid.*, 1215, 1218, 1234

54 One example is that of the Greater Astoria Historical Society in New York, quoted by Ranaldi (2014, 187-188) in her comparison between Astoria and the Roman Testaccio. With regard to Italy, Giulia Bonafede and Grazia Napoli (2015) discuss the historic centre of Palermo, while Semi (2015) compares experiences in Rome, Milan, Turin, Genoa.

55 David M. Ramey and Emily A. Shrider, “New Parochialism, Sources of Community Investment, and the Control of Street Crime,” *Criminology & Public Policy* 13, no. 2 (2014): 193-216.

56 *Ibid.*, 194, 199, 212, 211.

community”, providing a “public benefit that is free and open to anyone”, and often having “community building as a primary goal”<sup>57</sup>. Without public support “mortgage lending” would cluster “in more advantaged areas”, where it is less needed<sup>58</sup>. The authors argue that the NMF program is conducive to violent crime reduction<sup>59</sup>.

Other IG tools – which like the NMF program are “not aimed specifically at crime reduction”<sup>60</sup> – could be “school investments”, especially those concerning “early childhood”. Madero-Hernandez et al. offer evidence that, although such investments “have received little empirical attention”, they can produce significant results both in the “short term” and in the “long run”, also because they foster prolonged interaction and cooperation between different types of private and public actors<sup>61</sup>.

#### 4. Speculative gentrification and crime

IG must meet multiple urgent and sometimes elusive social needs. Consequently, even when policymakers want to pursue a real IG, the risk of failure is high. SGs are in many respects ambitious, but not so much when compared to IGs. When certain neighbourhoods are gentrifying without a specific commitment to IG, one might expect the even if SG prevails, anyway and eventually it will bring about some crime reduction there. However, if offenders are displaced, crime

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57 Emily A. Shrider and David M. Ramey, “Priming the Pump: Public Investment, Private Mortgage Investment, and Violent Crime,” *City & Community*, 17, no. 4, (2018): 996-1014.

58 Nicholas Branick and John R. Hipp, “Growing pains or appreciable gains? Latent classes of neighborhood change, and consequences for crime in Southern California neighborhoods,” *Social Science Research* 76 (2018): 78, 80, 81, 90: Branick and Hipp used mortgage “loan... data for the city of Los Angeles over the decade of 2000-2010” which includes the subprime crisis started in 2007. They notice that those neighbourhoods where loans are “disproportionately unavailable ... may experience worsening disadvantages over time that may exacerbate local crime levels”. Crime rates are also positively influenced by the “relative quickness” of “demographic ... change”, as well as by the disruption of “social networks and ties”.

59 Ibid., 997, 1000-1001, 996. Albeit they “cannot claim causality” and “cannot directly test” their “mechanism”. Furthermore, “Seattle is somewhat unique compared to other cities”, and “the NMF program” helps “building social ties”, while other “forms of public investment” have different goals (Shrider and Ramey, 2018, 1011-1012).

60 Ramey and Shrider, “New Parochialism,” 193.

61 Arelys Madero-Hernández, Rustu Deryol, Murat M. Ozer, and Robin S. Engel, “Examining the Impact of Early Childhood School Investments on Neighborhood Crime,” *Justice Quarterly* 34, no. 5 (2017): 760, 763-765, 781.

can be supposed to reappear elsewhere, and maybe its total amount would even grow<sup>62</sup>, also as a consequence of “increased resentment and conflict”<sup>63</sup>. Unlike with IGs, this would not be - strictly speaking - a substantial mishap for a SG, but rather only one of its side effects, however annoying it may be.

Gentrifying and even more gentrified neighbourhoods as such must be rendered and kept attractive for both existing and potential residents. Among others Lanionu<sup>64</sup> emphasizes that this implies, among other things, the reduction or suppression of “social disorder” - “rather than serious crime” - through “aggressive ... order maintenance policing” (OMP)<sup>65</sup>. He argues that “the intensity of OMP policy will not follow demand for services” expressed by the citizens, but rather “perceptions of threat felt by dominant sociopolitical groups”. Furthermore, he shows that “significant policing” tends to be pursued in “lower status ... adjacent or neighboring tracts”, more than in gentrifying tracts proper<sup>66</sup>. Kellogg speaks of “residential segregation”, “mass incarceration”, “increasing crime rates simply by virtue of increased surveillance”, “criminalization of cultural behaviors”, “unfair and often illegal behaviors in an effort to push ... long-term residents” out of gentrifying areas<sup>67</sup>.

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Gentrification can either take place through scattered purchases or rentals of flats or be guided by big investments and powerful real estate developers, who can acquire, renovate, demolish, re-build, resell entire buildings or blocks. Even when the latter is the case, each and every step of the necessary decision-making processes (involving also municipalities, banks, professionals, residents, corporations, and so on) can in principle be fully lawful. Of course, when considerable sums of money are implied the risk that certain offenses are committed grows, especially where mafia-type organizations are

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62 Kirk and Laub, “Neighborhood Change and Crime”.

63 Atkinson, “The evidence on the impact of gentrification”.

64 This author speaks of “revitalization” or “growth strategies” as almost equivalent to what I call SG (Lanionu, 2018, 899). Others, like Kreager, Lyons and Hays (2011) instead speak of “urban revitalization” in Seattle in a sense that is more akin to IG.

65 Ayobami Lanionu, “Coffee Shops and Street Stops: Policing Practices in Gentrifying Neighborhoods,” *Urban Affairs Review* 54, no. 5 (2018): 902, 899-900.

66 *Ibid.*, 905, 906, 920, 924.

67 Casey Kellogg, “There Goes the Neighborhood: Exposing the Relationship Between Gentrification and Incarceration,” *Themis: Research Journal of Justice Studies and Forensic Science* 3, no. 1 (2015): 178, 180, 187, 190, 191-192.

active in the region, or there are opportunities for corruption or other white-collar crimes.

Smith has analyzed the relationship between gentrification and “gang homicides” in Chicago, on the basis of her distinction between “three types of gentrification” which she titles “(a) *private economic investment* ... measured [by] coffee shops”; “(b) *forced state intervention* ... measured ... as public housing demolition”, when “public lands” are turned over to “private investors”; “(c) *changing demographic composition*”, defined as “the im-migration of particular residents ... into previously poorer neighborhoods”<sup>68</sup>. Having analysed data concerning the range of time from 1994 to 2005, she found both an inverse relationship with (c) and another negative albeit weaker correlation with (a). Given the link between “demolition” and “increased gang conflict and fear of relocation”, “highly concentrated in areas of disadvantage”, it is “noteworthy” that type (b) “*significantly increases gang homicides over time*”. “Just as crimes are not equal, neither is gentrification”.

## 6. Concluding remarks

It is now evident beyond doubt that the answer to the question about the relationship between gentrification and crime begs other questions. Which type of gentrification? Which crimes? Here I have sketched just two types of the former which obviously require to be refined and could be complemented by other types. For the time being I add that actual cases of gentrification can be located along an ideal continuum between SG and IG. Many or perhaps most of them will gravitate towards straightforward SG. Whether gentrification of certain neighbourhoods will be a success, but also whether crime reduction, social integration and human development will actually be reached, is something which depends on the ex-ante features of given cities and also, crucially, on national, sub-national and municipal policies (to which European Union ones must be added when appropriate). Therefore, generalisations should be treated with great caution.

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68 Chris M. Smith, “The Influence of Gentrification on Gang Homicides in Chicago Neighborhoods, 1994 to 2005,” *Crime & Delinquency* 60, no. 4 (2014): 570, 574, 578, 584-585.

Not only, as we have seen, pure SG tends to disintegrate social bonds. It can also be doubted that it manages to reduce ordinary crime, if we rightly have in mind - besides refurbished neighbourhoods - the whole urban constellation. By definition, white collar criminals and mafia-type organisations will be interested in SGs, while at least the latter are instead counter-interested in IGs. I repeat that this does not mean that all SGs will necessarily be ridden with bribes or dominated by mobsters. It is a possibility that may not materialize at all, if rigorous and very effective checks, rules, penalties and guardians are in place.

As I have already hinted at, when a potential for gentrification exists, it will often be exploited by certain economic interests and other actors in order to generate a SG, *unless* this “natural” tendency is counterbalanced by a sufficiently powerful IG. Like all other public programs, IGs can fail. Yet, we have mentioned a number of ingredients that, if aptly dosed and melted, can form an effective antidote to failure: public housing; protection of low-income residents from displacement, as well as with regard to their purchasing power; rent control; enhancement of community ties; local nonprofits; schools, education, human capital, civicism; dedicated institutional actors, such as Seattle’s NMF. When these and other elements are actually put in motion, so that the relevant measures go beyond paper provisions and reassuring declarations, an appropriate IG program can prove to be *better suited* than a SG one to reaching the blanket reduction of both ordinary and more serious crimes, fostering inclusive growth, social integration, satisfaction of basic needs, enjoyment of citizenship rights, avoiding the perils of crooked exchanges and racketeering. While a SG stands on its own feet and does not bother to throw problems out of the neighbourhoods it targets, an IG becomes meaningful only if it is part and parcel of a comprehensive strategy for governing the city as a whole.

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PEER REVIEWED

# Mafia-Type Organized Crime in the Gentrifying City.

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## KEYWORDS

*Organized crime, grey area, gentrification, touristification, Italian mafia*

## ABSTRACT

This article aims to propose the analytic tools to investigate the relationship between mafia-type organized crime and gentrification. The topic is introduced by a brief overview of the mafia's defining features and the concept of "grey area". Subsequently, global economic trends and public administrations' measures are seen as the basis of a neoliberal framework attractive for mafioso's investment. In order to analyze how mafiosi behave about urban transformation, I propose two frames: "participation" and "marginalization" in their turn decline according to the territorial variable, considering traditional and non-traditional areas. The former case is more likely to happen in relation to mafia's activities in the legal economy. The latter case refers more to the decrease of the mafia's territorial control. Overall, the main research question concerns what transformations occur in the grey area in terms of actors and their position in the network in a gentrifying city.

## Introduction

On 16th January 2019, the media reported a bomb blast in front of the famous pizzeria Sorbillo in the heart of Naples. The mafia was immediately held responsible for the attack, many identifying it as a mechanism of intimidation in an extortion racket. This had a considerable echo in the media and the tourism sector was hastily labeled as the new victim of mafia-type organized crime.

If we want to understand more about the relation between gentrification – in the case of Naples as touristification – and the mafia, we need to adopt a wider perspective, and we need to consider the various levels of current transformations. On the one hand, tourism is one of the growing industries of recent decades and increasingly attractive for investors looking for high profitability<sup>1</sup>. Many mafia groups have capital to place on the market (derived from an illicit source or from activities in the legal economy) and in various cases their choices are taken as if they were “normal” investors, contributing to main capital flows. On the other hand, a macro-phenomenon like globalization cannot explain alone micro-level decisions of mafia groups. The territorial power must be considered as it represents an essential resource for the reproduction and expansion of the mafia.<sup>2</sup> Lastly, it is useful to follow a path considering, first, the macro-society level, secondly, the micro level. Studying the changes at the micro level can help to explain the changes of the macro ones<sup>3</sup>.

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The direction and the scope of the influence between urban transformations and mafia-type organized crime are not defined: mafia groups can participate in a gentrification process increasing their activities, especially in the legal economy, but they can also be negatively impacted by these changes on the territory. Actors, who use methods typically mafiosi, can lobby on the interests about the transformations of urban environment. Further investigations must focus on specific cases in order to build medium-range theories to enhance the existing literature.

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1 Sergi Yanes – anthropologist, interview 1, October 2018.

2 Sciarrone Rocco, *Mafie vecchie, mafie nuove*, (Roma: Donzelli, 2009), 26.

3 The path presented is clearly similar to the Coleman Boat, for an explanation of this analytical tool see, among others, Filippo Barbera, “A Star is Born? The Authors, Principles and Objectives of Analytical Sociology,” Papers 80 (Barcelona: Península, 2006); David C. McClelland, *The Achieving Society*, (Princeton: Van Nostrand, 1961).

This article aims to propose four ideal-types of relations between gentrification and mafia-type organized crime, focusing especially on the consequences that external interest on an urban area have on the presence of mafia groups, as a guide for further investigations. Due to the particular complexity of variables: different mafias (Cosa Nostra, 'Ndrangheta, and camorra)<sup>4</sup>, different characteristics of mafia groups, and differences between mafia's traditional and non-traditional territories, a contextual framework and general understanding of these variables needs to be outlined.

### The mafia and the "grey area": a brief overview

The definition of the mafia is particularly complex and often misrepresented and stereotyped in the common thought. It is useful to recap some features before delving into how it evolves when its territory undergoes a process of gentrification. The mafia can be considered an ideal-type of organized crime that is deeply embedded in the society through forms of control and regulation of political, institutional, and economic spheres at the local level<sup>5</sup>. The mafia's power comes from a specific use of violence and, especially, from *external* relationships with different actors. To study of this network of people, the concept of "grey area"<sup>6</sup> fits the purpose. Going deep inside, we find an entwining of relations and businesses composed of relationships of collusion and interpenetration between *mafiosi* and members of the political, administrative, entrepreneurial, and liberal profession universe, mostly part of the ruling class<sup>7</sup>. Mafia members are not usually the center of this network, they use their social

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4 The different configurations of the mafias take shape "according to the structure of the organization, which may be centralized to a greater or lesser extent, and the management of their activities, which may be coordinated or conflictual in character" Rocco Sciarrone and Luca Storti, "The territorial expansion of mafia-type organized crime. The case of the Italian mafia in Germany," *Crime, Law and Social Change* 61 (2014).

5 Salvatore Lupo, *Che cos'è la mafia* (Torino: Donzelli, 2007), VIII.

6 On the opportunity to consider the grey area as an "organizational field" see especially Sciarrone et al., "Mafia e comitati di affari. Edilizia, appalti ed energie rinnovabili in provincia di Trapani," in *Alleanze nell'ombra. Mafie ed economie locali in Sicilia e nel Mezzogiorno*, ed. Rocco Sciarrone (Roma: Donzelli, 2011).

7 Rocco Sciarrone, "Tra Sud e Nord. Le mafie nelle aree non tradizionali," in *Mafie del Nord. Strategie criminali e contesti locali*, ed. Rocco Sciarrone (Roma: Donzelli, 2014). See also Maurizio Catino, "Colletti bianchi e mafie. Le relazioni pericolose nell'economia del Nord Italia", *Stato e Mercato* 112, no.1 (2018).

capital as a bridge<sup>8</sup>, often connecting parts of the network that, otherwise, would not interact with one another. This ambiguous activity as “middle-men” is also a relevant resource for mafia reproduction through time and space. In a gentrifying city, we must understand what transformations occur in the grey area in terms of actors and their position in the network.<sup>9</sup>

As far as the mafia phenomenon is concerned, I would like to point out that within the mafia, different levels of action overlap. First, a mafioso is a member of a mafia group, but also an individual with its own business, strategy, and social capital. They often have an entrepreneurial career independent of their group, where they manage profits coming from illegal activities and from legal personal businesses. Second, inside mafia organizations there are different levels of hierarchies between groups, families, or business cartels<sup>10</sup>. Third, alliances between mafia groups exist especially in non-traditional territories.

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Because of the complexity of mafia organizations, and the social dynamics therein, empirical studies require a combination of research methods. The methods most frequently employed are the examination of judicial documents and of reports made by institutional or independent research institutes, a press review, as well as interviews to privileged witnesses such as journalists, members of the law enforcement, judges, anti-mafia associations, other people informed or involved in mafia activities. Moreover, when the purpose is to investigate the mafia's role in the gentrifying city, research should try to reconstruct the network of the grey area and an analysis of the entrepreneurial activities which can relate to mafia's interests in the legal economy<sup>11</sup>. An urban geography perspective is encouraged in order to maintain the analysis connected to the territorial space<sup>12</sup>.

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8 Rocco Sciarbone and Luca Storti. “The territorial expansion of mafia-type organized crime.” *Crime, Law and Social Change* 61 (2014): 37-70.

9 I suggest ideal questions that can lead a study, remembering the grey area is not quantifiable, it is hard to map and even more to interpret when changes occur.

10 Adaptation of Sciarbone, “Le mafie nelle aree non tradizionali,” 32-3.

11 For a detailed dissertation on mafias in the legal economy see Rocco Sciarbone and Luca Storti, *Le mafie nell'economia legale* (Bologna; il Mulino, 2019).

12 For an application of urban political geography to criminal activities in Naples see Luigi Mascellaro, “Territorialità e camorra: una proposta di lettura geografica dell'attività criminale, in *Traffici criminali. Camorra, mafie e reti internazionali dell'illegalità*, ed. Gabriella Gribaudo (Torino: Bollati Boringhieri, 2009).

## Toward a neoliberal city

Gentrification is embedded in the process of a neoliberalization of the city, which in turn gives public administration more tasks and expectations<sup>13</sup>. According to Bauman, administrators are “desperately overworked”<sup>14</sup>. The motivation should be sought in the connection between global and local dynamics. Global problems, or “over-local” issues, that originate far from the local view are perceived as remote and obscure. These issues only become a political issue when they have a local impact<sup>15</sup>. Examples of over-local problems are, *inter alia*, de-industrialization, destruction of means of support, economic crisis, pollution, and in general, the environmental crisis. These issues of globalization occur on a local level, particularly cities, thereby city dwellers and their politicians are called to deal with an impossible task: “find local solutions to global contradictions”<sup>16</sup>.

Overall, public administrations are losing economic power and are trying to find new ways to recover income and rent. This contributes directly or indirectly to extracting richness from the city and opening the door to the market- to private interests. After the 2008 financial crisis, two methods adopted by many public administrations were the flexibilization and the deregulation of certain sectors to encourage economic recovery<sup>17</sup>. These measures left space for national and foreign investment (including capital of “dubious” origin), while local communities were unlikely to take advantage of this “growth”. Through the frame of neoliberalism, gentrification gives a name to a radical urban transformation that is attractive to investors, companies, visitors, commuters, and the few inhabitants able to take advantage of their newfound higher social positions. The gentrified city is depoliticized, sterilized, and “subdued” meaning that conflicts are hidden or calmed. Terms such as “touristification”, “disneyfication”, or “museumification” all refer to forms of gentrification – highlighting what galvanizes the process – “Everything is the same: cities

13 Giovanni Semi, Speech given at the conference: Gentrification and crime: new configurations and challenges for the city, Palermo, May 6, 2019.

14 Zygmunt Bauman, *Fiducia e paura nella città* (Milano: Mondadori, 2005), 20.

15 Ibid., 18.

16 Ibid., 19. My translation.

17 Josè A. Mansilla, “Hem d’entendre el turisme com una fàbrica social,” filmed April 2019 at Betevè, Spain, Video, <https://beteve.cat/terricones/jose-a-mansilla/?fbclid=IwAR1Tjh9FKfRuoRti-WCFWz9ut1P5ZERmaAxPUap5uXHUVmheGsVV1xcNhE>.

have ended up being a place where socialize, turning themselves into a market”<sup>18</sup>.

### **Mafia's behaviors in gentrifying areas**

When studying a gentrifying area where at least one mafia group is locally active, the main question concerns how mafiosi interact with urban transformation and, specifically for the grey area, how actors and their balance of power change. This can be understood through two frames: “participation” and “marginalization”. Participation implies active mafia groups contributing to the process by investing in gentrifying areas as entrepreneurs in the legal economy. Since they have at their disposal large amounts of capital, these organizations are likely to choose expanding markets and sectors where they can also employ their skills and resources. Both in areas of historical genesis and territorial expansion, mafiosi prefer certain types of activities. These activities are called “traditional” sectors that, according to Dagnes et al. are

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Characterized by low barriers to enter the market, and do not imply any particular technological content but rather reward the ability to stay on the territory and the organizational flexibility, such as construction, trade, and catering, in which it is also possible to recycle money directly earning higher revenue than profit originating from solely these activities<sup>19</sup>.

As such, mafia's members are also familiar with the import-export sector. This is often used as a vehicle for illegal trafficking. In addition to import-export, mafiosi are active with private security, especially for nightlife where they apply their distinctive specialized use of violence<sup>20</sup>. Today, the transforming urban environment – particularly in the form of touristification – seems to open the doors to mafia activities as the “traditional” mafia sectors encounter fast-growing opportunities. As companies that are created solely for money

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18 Ibid. My translation.

19 Joselle Dagnes et al., “Le mafie italiane all'estero: un'agenda di ricerca”. *Meridiana* 87 (2016): 168. My translation.

20 Ibid.

laundering purposes “distort European economies because their constant cash flow gives them an unfair advantage in the marketplace”<sup>21</sup>, mafia-type organizations can contribute to disorganized and decentralized fast-growing urban transformations. At the same time, the mafia tries to reduce glaring crimes in order not to attract the attention of antimafia counter-action and of the public opinion<sup>22</sup>.

Moreover, mafia-type organizations can also suffer the consequences of gentrification. I have identified three possible ways.

First, a common issue in regenerating processes is the fight against street drug sale usually made by groups of residents (often organized in association) and law enforcement. This counter-action leads to a necessary reorganization of drug selling methods and/or to a displacement of sales area: a change that may affect negatively mafia groups<sup>23</sup> in their narcotics traffic. According to research conducted in Manhattan’s Lower East Side from March 1999 to March 2001 to analyzing the changes in the drug market during the process of gentrification, the street sale disappeared. This gave way to a new curriers and a growing importance of secondary markets, “the use of a person who is not a “professional dealer” to facilitate the purchase of drugs, a person who, in essence, works as an agent for the consumer rather than the distributor”<sup>24</sup>.

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Second, still regarding the increased law-enforcement control, mafia activities are likely to be investigated with greater intensity in order to pacify the neighborhood. By “cleaning up the neighborhood”, law-enforcement makes it more attractive for private investment. This in turn leads to a reduction of racket extortion or, as previously mentioned, street-level drug dealing. However, this counter-action is focused only on “visible” criminal activities, there is still no evidence suggesting increased investigations regarding whole mafia groups.

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21 Felia Allum, “Italian Mafia activities are expanding abroad and European police forces are still unprepared”, *The conversation*, December 13, 2018, <https://theconversation.com/italian-mafia-activities-are-expanding-abroad-and-european-police-forces-are-still-unprepared-108714>.

22 Giuseppe Pignatone and Michele Prestipino, *Modelli criminali* (Bari: Laterza, 2019), 83.

23 Sometimes drug dealers form part of a mafia group, but most frequently they report to a smaller and less-organized criminal group which deals only with drug deal.

24 Ric Curtis et al., *We Deliver: The gentrification of drug markets on Manhattan’s Lower East Side* (Rockville: National Institute of Justice, 2002), 4.



Third, mafia groups usually exercise regulative power in their territories, but when the process of gentrification starts, the area involved becomes more and more attractive to various actors – i.e. investors, entrepreneurs, financial holdings – that can compete with mafiosi. The mafia group then must work out a strategy to preserve its power and its activities as urban transformation affects all aspects of the city: from residents to real estate market, to the local economy, to even illegal activities. According to Sciarrone, the mafia phenomenon is able to adapt to social changes thanks to the variability of its organizational structure<sup>25</sup>. Of course we cannot operate under the assumption that this general character is always the case, especially when rapid wide urban transformations are taking place. Therefore, mafia groups can be marginalized in their territory if they are not able to adjust and impose new forms of regulation and to take advantage of emerging economic opportunities.

Both kinds of mafia roles concerning a gentrification process – “participation” and “marginalization” – can decline according to the territorial variable, considering both traditional and non-traditional areas<sup>26</sup>. We should remember that, in the latter case, we can also see significant differences depending on the length of presence in a new territory and on the prevalent activities conducted by mafiosi (illicit trafficking, control of the territory, economic activities).

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MAFIA BEHAVIOUR	HOME TERRITORY	NON-TRADITIONAL TERRITORY
PARTICIPATION	REINFORCING	INVESTMENT OPPORTUNITIES
MARGINALIZATION	UNDERMINING	UNATTRACTIVENESS

FIG. 1 Mafia's behaviours in gentrifying areas in its home territory and in non-traditional ones

25 Sciarrone, *Mafie vecchie mafie nuove*, 22.

26 A vast literature exists on mafia's expansion. For the Italian case see, among others, Rocco Sciarrone, ed. *Mafie del nord* (Roma: Donzelli, 2014); Nando Dalla Chiesa, *Passaggio a Nord: La colonizzazione mafiosa* (Torino: Gruppo Abele, 2016). For the international expansion see, inre alia, Federico Varese, *Mafie in movimento: come il crimine organizzato conquista nuovi territori* (Torino: Einaudi, 2011); Felia Allum, *The invisible Camorra*, (New York: Cornell University Press, 2016); Anna Sergi and Anita Lavorgna, *Ndrangheta* (Basinstoke: Palgrave Macmillan, 2016).

The table (Fig. 1) presents four ideal-types of effects on mafia's behavior by a gentrification process, it can be used as a guide for the analysis when approaching both phenomena in a certain territory. The typology considers gentrification as the independent variable: the mafia's behavior is influenced by this urban transformation. With a lower degree, we have to consider also that actors related to mafia groups can have a role in shaping the urban transformations, accelerating it, or slowing it down. In order to explain each category, I will provide examples narrowing it down to the camorra, a mafia-type organization historically based in Campania<sup>27</sup>.

### **Reinforcing: the mafia takes advantage of gentrification in its home territory**

Getting back to Naples, the city of the pizzeria Sorbillo, we can find a common thread between the urban transformation and the interests of the clans embedded – not without conflicts – in the various neighborhoods. I will present the case of the Spanish neighborhoods, an area in the historical center delimited by via Toledo and Corso Vittorio Emanuele and characterized by straight streets mostly in a grid pattern that in some places create enclosed narrow spaces which lend themselves to be controlled by criminal groups<sup>28</sup>. Historically, it was a place of artisan workshops, but also of illegal activities as smuggling and prostitution in relation to the vicinity to the harbor<sup>29</sup>. Indeed until the 1990s, it was the emblem of insecurity and of the territorial control of the camorra where extortion, and cigarette and drug trafficking were commonplace<sup>30</sup>. But looking at today, in the part of the neighborhood closer to via Toledo, an arterial road, restaurants, bars, and bed and breakfasts (including Airbnbs) are opening; mixing tradition and innovation to create a protected

27 When analyzing a mafia-type organized crime, it is important to take into account its specific features, for the camorra see especially Luciano Brancaccio, *I clan di Camorra*, (Roma: Donzelli 2017); Gabriella Gribaudo, eds., *Traffici criminali. Camorra, mafie e reti internazionali dell'illegalità*, (Torino: Bollati Boringhieri, 2009).

28 Gabriella Gribaudo, "Clan camorristi a Napoli: radicamento locale e traffici internazionali," in *Traffici criminali. Camorra, mafie e reti internazionali dell'illegalità*, ed. Gribaudo Gabriella (Torino: Bollati Boringhieri, 2009), 196.

29 Ibid.

30 Antonio Acierno, "Periferie napoletane: recinti di insicurezza," Paper presented at the national conference *Planum Quante periferie? Quali politiche di governo del territorio*, Naples, 2007.

and thrilling environment all in favor of tourists and non-local students. In addition to the changing makeup of the city, other less visible transformations are occurring, first and foremost being in the real estate market.

While Spanish neighborhoods are no doubts gentrifying, other central areas of Naples are going through this process as well. The starting point dates back to the 1990s when an urban renewal program began and the city center became a popular residential area for university students. This first change in the population of the residents leads to an increase in foot traffic in the alleys. “Some [camorra] clans – such as Lo Russo, Iorio, Ragosta – already began to invest in commercial activities in the center, especially in catering and street food”<sup>31</sup>.

42 Nevertheless, at the beginning of the 2000s the urban renewal process suffered a setback due to the so-called “waste emergency” (where other camorra clans played an important role together with some entrepreneurs and politicians). Only around the year 2010 that the urban transformation bounced back: “Naples had changed its face, becoming a place to go to enjoy the historical center where it was possible to have local handicraft (first of all nativity scene arts), quality dining at reasonable prices, very high artistic and cultural heritage, and extraordinary experiences”<sup>32</sup>. The tourist industry has increased – and still is increasing – very rapidly, so much so that in 2018, Naples was visited by 3.7 million tourists, positioning itself as the fourth city in Italy for number of visitors after Roma, Venice, and Milan<sup>33</sup>.

To understand the new position of the camorra in this gentrifying city, we have to consider two dimensions: *power syndicate and enterprise syndicate*<sup>34</sup>. Starting from “power syndicate”, law enforcement succeeded in many antimafia investigations that weakened some

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31 Mariano Di Palma, “Come cambia la camorra dentro la gentrificazione,” *Jacobin Italia*, January 29, 2019, <https://jacobinitalia.it/come-cambia-la-camorra-dentro-la-gentrificazione>. My translation.

32 Ibid.

33 Istat, “Turismo in Italia nel 2018,” Accessed October 18, 2019, <https://www.istat.it/it/archivio/232137>.

34 Alan Block (1980, cited in Sciarone, *Mafie vecchie, mafie nuove*, 44) proposed to distinguish analytically the mafia’s organizational formula between *power syndicate and enterprise syndicate*. The former refers to the ability to control a certain territory, the latter refers to the practice of illegal trafficking from which derives the ability to take action over legal and illegal markets.

historical clans like Giuliano, Contini e Mazzarella and worked to pacify the city center. But another type of clan – called “gangster” clan<sup>35</sup> – is taking this empty space in the territorial control. They are younger, more violent, and without strongly held values: “blurred” and always in conflict with one another and the historical clans<sup>36</sup>.

In gentrified areas, the power syndicate can frequently move from a criminal group to another but, overall, street-level crimes and intimidation decrease. While the enterprise syndicate tend to stay in the hands of historical clans. As far as the enterprise-syndicate dimension is concerned, the historical clans have all but disappeared from the Neapolitan city center. According to one Italian prosecutor who conducted the last operation against the Secondigliano Alliance, this mafia-type organization had a precise strategy: “It resorts to homicide only in exceptional cases [...], exercises a suffocating extortive pressure on every kind of commercial activities, and controls directly or with front men an impressive number of companies in the most disparate sectors”<sup>37</sup>. “The judiciary’s arrest warrants focused on activities between 2011 and 2016, seizing real estate and goods with a net worth €130m”<sup>38</sup>. Assets include restaurants, bars, supermarkets, shops, car parks, garages as well as cars, motorbikes, diamonds, and luxury watches<sup>39</sup>. According to a press report, camorra groups frequently buy properties at judiciary auctions at very low prices and convert them for the tourist industry, just like a private holding<sup>40</sup>.

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35 Gribaudo, “Clan camorristi a Napoli.”

36 Felia Allum, “Mafia in Naples is still going strong and we must not forget how it affects everyday life in the city,” *The conversation*. July 17, 2019, <https://theconversation.com/mafia-in-naples-is-still-going-strong-and-we-must-not-forget-how-it-affects-everyday-life-in-the-city-120177>.

Di Palma, “Come cambia la camorra dentro la gentrificazione.”

37 Felice Naddeo, “Camorra, scacco all’Alleanza di Secondigliano: 126 arresti. La base logistica era un ospedale di Napoli”, *Corriere del Mezzogiorno*, June 26, 2019, [https://corrieredelmezzogiorno.corriere.it/napoli/cronaca/19\\_giugno\\_26/camorra-scacco-all-alleanza-secondigliano-oltre-100-arresti-160fa744-97df-11e9-b6e5-18c900c5070a.shtml?refresh\\_ce-cp](https://corrieredelmezzogiorno.corriere.it/napoli/cronaca/19_giugno_26/camorra-scacco-all-alleanza-secondigliano-oltre-100-arresti-160fa744-97df-11e9-b6e5-18c900c5070a.shtml?refresh_ce-cp). My translation.

38 Allum, “Mafia in Naples.”

39 Ibid.

40 Rossella Strianese, “Napoli sotto sfratto. Povertà, camorra, turisticazione: è allarme sociale,” filmed in December 2018 by OttoChannel, video, <https://www.youtube.com/watch?v=oX7eljCHULL>.

## **Undermining: the mafia is affected by gentrification in its home territory**

It is more difficult to understand whether a mafia group undermines gentrification compared to the case of participation, first because it is less interesting for judicial purposes or journalistic inquiries. As such, social scientists cannot count on them for documentary sources. In the Neapolitan case, the most relevant disadvantage for camorra clans seems to be hurdles to street-level drug deal and illegal traffics in the gentrifying areas; more precisely, they need to reorganize these activities, moving to other areas of the city or changing the way of dealing illegal goods to the new clientele that throngs the city center.

Changing commercial activities are also a challenge for mafia groups that want to keep their territorial control, especially when they deal with big retail chains. In wider terms, when new external actors come into play, the mafiosi must negotiate a beneficial relationship. They can count on their reputation but they are dissuaded from using violence for intimidation because of the easy outbreak of public attention, which in turn, may trigger a wave of law-enforcement counter-action and public mobilization.

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## **Investment opportunities: the mafia is taking advantage of gentrification in non-traditional territories**

In the mafia's territorial expansion, gentrification is mainly related to an increase in its investment opportunities in the legal economy. When the mafia moves from its home territory, the accumulation of wealth often prevails on the search for power<sup>41</sup>. The following illustrative case study will be about the mafia's expansion in Europe, especially in Spain.

Organized crime groups exploit business opportunities in non-traditional areas, above all, thanks to their constant cash flow supplied by illegal activities that allows them to easily set up companies mainly for money laundering purposes<sup>42</sup>. Spain can be viewed as a

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41 Sciarrone, *Mafie vecchie mafie nuove*, 27.

42 Allum, "Italian Mafia activities."

privileged destination for mafia members in Europe for various context factors, above all for camorristi. The study of the clans' presence in this country helps us understand how mafia-type organized crime takes advantage of investment opportunities in processes of urban transformation, also in this case mainly related to the tourism industry.

In the 1990s, the Nuvoletta clan began to invest in the Canaries, and in 2011 an investigation led to the confiscation of real estates, bank accounts, yachts, and a tourist resort, called “Marina Palace”, in Adeje (Tenerife). The only attempt at the mafia's infiltration in local politics in Spain was also discovered<sup>43</sup>. The Nuvoletta were soon flanked by the Polverino, a clan emerging exactly from the former one, progressively carving out space of autonomy in absence of violence<sup>44</sup>. The Polverino clan was active in drug trafficking and, again, investment in the real estate market in apartments and commercial premises near Tarragona and in various towns in Andalusia. More recently, in 2017, members of the clans Nuvoletta, Licciardi, and Contini were arrested between Italy, Spain, and Germany for drug trafficking and money laundering. Their aim being to open and close businesses and restaurants frequently changing their management. The investigation focused on two restaurants and one bar, all located in the center of Barcelona.

According to a Spanish Lieutenant Colonel who coordinates counter-action against the Italian mafia, these are only a few examples of widespread presence of the camorra clans, which can manage to take control of some service sectors- for instance, motorbike rental in Ibiza<sup>45</sup>. The most important Italian mafia activity is the buying of real estate, mainly earmarked for tourist rent. All established Italian mafia investment in Spain is located in tourist destinations with a particular connection to the Mediterranean coast and to the islands – both Canaries and Baleares – and to the capital Madrid. The progressive touristification of cities – such as Barcelona, Valencia, Palma de Mallorca, Malaga, and Madrid – opens more and more opportunities

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43 Spanish Lieutenant Colonel, interview 3, November 2018.

44 Carolina Castellano, “Narcotraffico e camorre: storie e rappresentazioni”, in *Affari di Camorra*, ed. Luciano Brancaccio and Carolina Castellano (Roma: Donzelli, 2015).

Joan Queralt, *La Gomorra catalana* (Barcelona: Angle Editorial, 2011).

45 Spanish Lieutenant Colonel, interview 3, November 2018.

for mafia investment in the “confusion” of these markets often deregulated and even with speculative dynamics.

In conclusion, in Spain (as in other countries besides Italy) investigations on money laundering or organized crime are perceived as less important compared to illegal trafficking and drug dealing, leaving space for the mafia’s expansion in the legal economy, often attracted by profitable investments in the urban environment and also in touristic areas. Indeed, the Spanish journalist Joan Queralt affirms that when someone invests money it does not matter where it comes from<sup>46</sup>.

### **Unattractiveness: the mafia is affected by gentrification in non-traditional territories**

In some cases, gentrification can change the urban environment in the direction of reducing context factors that make a place fragile – or even attractive – to the mafia’s infiltration and reproduction. With regards non-traditional territories where the mafia is embedded, the situation might be similar to the case of marginalization in traditional areas, where urban transformation reduces favorable conditions to the proliferation of mafia activities. Meanwhile, when considering mafia’s attempts of expansion, the category referred to unattractiveness is less verifiable compared to the others, because it concerns what lacks in terms of favorable context factors rather than what can be possibly attributed to mafia’s activities. Even so, it is useful to make some assumptions.

As far as Jason Hackworth is concerned, gentrification is “the production of urban space for progressively more affluent users”<sup>47</sup>. Mafiosi who try to integrate into the social tissue, clash with the difficulty of adapting the services they offer or, more in general, their interests to the changing urban environment. The new influential actors of the city are usually big companies with considerable economic power that may compete with the mafia’s resources. Moreover, relationships and balances can be modified in the grey area. For instance,

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46 Joan Queralt – Spanish journalist, interview 2, October 2018.

47 Jason Hackworth, “Postrecession gentrification in New York City,” *Urban Affairs Review* 37 (2002): 815.

the limitation of power in the city government – with which mafiosi often maintain good or corruptive relationships – gives way to large companies and financial powers.

## Conclusion

Although it is complicated to understand the trajectory of criminal affairs, this brief analysis of the Neapolitan case shows as the displacement of the camorra's interests follows economic opportunities and changes in the social tissue. The fast-growing tourism industry is a breeding ground for historical camorra clans, and in general for “well-organized” mafia groups, as they can easily invest their capital remaining in their well-known city. Also non-traditional territories, as shown in some touristic Spanish regions, offer a similar situation, where the camorra can put to good use its money in sectors where it is typically involved, such as catering, hospitality, construction and real estate<sup>48</sup>.

Considering the role of public institutions in the complex relationship between gentrification and organized crime, at the political level, governments should try to regulate timely fast-growing sectors in order not to let the mafia do it for them. Today, one of the most important sector to pay close attention to is certainly the tourism industry. Prompt investigations without any prejudice<sup>49</sup> would be useful to prosecute the mafia's expansion especially in non-traditional territories, and in the legal economy. Moving on to the social level, social antimafia can be affected by the weakening of the local social bonds involved in gentrification and also by the mafia's changing methods, which lead to a decline in violence, focusing instead on economic activities. Fast-growing economies often have a low level of regulation thus creating an attractive environment for investment where the mafia's interests can enter as a single mafioso, as a

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48 Direzione Investigativa Antimafia, *Relazione del Ministro dell'Interno al Parlamento*, July-Dicember 2017, 277.

49 According to Pignatone and Prestipino (*Modelli criminali*, 79), many people who work in the antimafia counter-action share the collective imagination of a mafia embedded in the areas of historical genesis in southern Italy, which should have a large number of members, a system of strict rules, a military-like control of the territory where it is rooted and a continuous use of violence. This stereotypical image of the Italian mafia is also widespread abroad and affects negatively the recognition of mafia groups that, instead, are adapting to current transformations.



group or in partnership with other actors (probably involved in the grey area). As Martone suggested, the mafia can adapt to the neoliberal model thanks to the reticular context where it is inserted and not because of a mere acquisition of abilities<sup>50</sup>.

Nevertheless, a direct relationship between gentrification and the growth of organized crime is still not verified. The consequences of urban transformation can vary leading to reinforce criminal organizations or to weaken them. The former case is more likely to happen for economic activities, the latter for the territorial control. The entrepreneurial activities of mafia groups – and organized crime in general – are inserted both in specific territorial dynamics and in international economic trends. Future research on the subject of economic trends and organized crime should focus on the relationship between gentrification and mafia-type organized crime in order to understand whether there are any peculiar aspects of these criminal organizations that facilitate the participation in the urban transformation towards a neoliberal environment; or whether these groups make their investment choices mainly according to the opportunity of current economic contingencies. Furthermore, social studies should also be concerned with the type of participation in the process of gentrification: how the mafia is able to adapt to the new urban configurations, how, and if, the mafia contributes to gentrification processes, and whether the mafia is negatively affected by gentrification. Further research that combines the study of urban transformation and of the mafia – always thought as part of a grey area – is essential to investigate this relationship that today is particularly interesting as both phenomena spread globally.

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50 Vittorio Martone, Lesson. University of Turin, April 2017.

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## **Interviews**<sup>51</sup>

Interview 1, Sergi Yanes – anthropologist, Autonomous University of Barcelona.

Interview 2, Joan Queralt – Spanish journalist.

Interview 3, Spanish Lieutenant Colonel.

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<sup>51</sup> The interviews were conducted between October and November 2018 by the author.

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PEER REVIEWED

# Introducing Intelligent Ticket's Dual Role in Degraded Areas: Electronic Monitoring of Crime and Transmedia Content Presentation to Users

## KEYWORDS

*Intelligent ticket, RFID, NFC, Crime monitoring, Transmedia, Gentrification*

## ABSTRACT

Smart cities may be considered a contemporary developing research field, principally as new technologies are made presented to the research community. Despite technological advancement and gentrification, smart cities continue to experience many challenges regarding crime and people's indifference towards important city issues. This work aims at the synchronization and cooperation of the city's authorities and user experiences through a conceptual framework of an intelligent ticket with the incorporation of RFID - NFC technology which constitutes the amalgam of coexistence and organized design. The proposed ticket's duality supports a tool for crime mapping-monitoring and the user's information through transmedia narratives. While it is widely accepted that transmedia has been used extensively to create fictional worlds, this work seeks to inspire real-world participation in criminality city problems. This paper describes the ticket's conceptual working process framework as an admittance point for crime monitor scenarios and the transmedia approach of multimedia users, presenting a use case on the Piazza Giuseppe Verdi in Bologna that allows its use.

## 1 Introduction

Recently, the demand for RFID (Radio Frequency Identification) technology has increased in many applications that are quite related to tracking traffic, improving inventory management, tracking equipment, and ensuring the identity of objects or living things.<sup>1</sup> In addition, RFID systems are set to play an important role in the IoT (Internet of Things), paving the way for IoT's main goal, the interconnection of physical objects.<sup>2</sup> One of the most popular RFID applications is human identification or where a tag is located external or internal on the human body,<sup>3</sup> as well as the "EM" (Electronic Monitoring) which concerns the electronic tracking of criminal offenders.<sup>4</sup>

The technology today is connected to the IoT, and with individual personalized human tags, the Internet can evolve into the "IoP" (Internet of Persons or People), networking digitally and socially people, contributing to the Big Data.<sup>5</sup> In this regard, the AmI (Ambient Intelligence) resulting from the use of RFID and different combined technologies, such as IoT, Internet of Everything, the 5G (fifth-generation mobile network),<sup>6</sup> thus giving a greater meaning in the commercial industry of smart tourism and smart cities in general.

Many cities around the world have begun adopting smart city programs to improve urban life, due to the expected population increase of 70%, envisioning smart cities and communities, as stated

1 Rodríguez, Marcela D., Alain Diaz-Montes, Carlos G. Verdin, Carlos A. Puga, José M. Ramírez, and Ángel G. Andrade, "An RFID-Based Digital Bracelet for the Timely Assistance of Indigents," *Proceedings 2* (19) (2018): 1259.

2 Ahmed Khattab, Zahra Zahra, Esmaeil Amini and Magdy Bayoumi, "RBS RFID Security and the Internet of Things," *Analog Circuits and Signal Processing* (2016): 150.

3 Tajchai Pumpoung, Pitchanun Wongsiritorn, Chuwong Phongcharoenpanich and Sompol Kosulvit, "UHF-RFID Tag Antenna Using T-Matching and Double-Ended Rectangular Loop Techniques for Wristband Applications," in *Theory and Applications of Applied Electromagnetics* Vol 379, ed. by Soh P., Sulaiman H., Othman M., Abd. Aziz M., and Abd Malek M. (Springer, Cham, 2016), 98.

4 Robert S. Gable and Ralph Kirkland Gable, "Remaking the Electronic Tracking of Offenders into a "Persuasive Technology"," *Journal of Technology in Human Services* 34 (1) (2016): 13-31.

5 Demetrius Klitou, "Human-Implantable Microchips: Location-Awareness and the Dawn of an "Internet of Persons"," in *Information Technology and Law Series* (The Hague: Asser Press, 2014), 175.

6 Dimitrios Buhalis, "Technology in Tourism-From Information Communication Technologies to Etourism and Smart Tourism Towards Ambient Intelligence Tourism: A Perspective Article," *Tourism Review* 75 (1) (2019): 267-272.

in European Commission Decision C (2015) 6776 on 13th October 2015.<sup>7</sup> The term “smart cities” is commonly used in academic literature to designate a type of city with heavy investment in advanced ICT’s (Information and Communication Technologies)<sup>8</sup>, with urban infrastructures and home appliances to be automated by sensors.<sup>9</sup> Despite the technological evolution, smart cities continue to experience crime with an increasing focus on worsened social inequalities spearred by the gentrification of affluent neighborhoods.<sup>10</sup> Under this context, it is particularly important today, to track a city’s crime. The process of recognizing and monitoring lawbreaking is systematically and deliberately divided. Mapping areas that show high criminal mobility, is a technique that has already been used on a large scale, and serves not only the reduction of criminal incidents but also in the prevention, by identifying specific patterns, based on the area and time of requested zones, which have been affected. This recognition process personalizes the respective areas that are automatically converted into crime hotspots. For this reason, various technological methods for crime mapping and crime data analysis data have been proposed, based in a variety of research in which GIS system with spatial patterns is applied, helping to locate the criminals in specific areas in collaboration with local authorities.<sup>11</sup> Jointly with the conceptualized GIS system, there have been attempts to use RFID technology to assist police work<sup>12</sup> through bracelets and wristbands integrated with RFID chips monitoring lawbreakings and providing security to communities in real-time.<sup>13</sup>

However, smart cities focus not only on technology but also on culture which may include urban cultural heritage or urban creative

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7 Eleni Tracada, “Foreword IV: European Smart Cities: Current and Future Enterprises and Research Activities,” *Smart Economy in Smart Cities* (2017): xiii-xiv.

8 Allam and Newman, “Redefining the Smart City: Culture, Metabolism and Governance,” 15.

9 Elmo Gonzaga, “Precarious Nostalgia in the Tropical Smart City: Transmedia Memory, Urban Informatics, and the Singapore Golden Jubilee,” *Cultural Studies* 33, no 1 (2018): 149.

10 Bernard Cathelat, *Smart Cities: Shaping the Society of 2030* (Paris: UNESCO, Netexplo, 2019), 7.

11 Zhou, Guiyun, Jiayuan Lin, and Xiujun Ma, “A Web-Based GIS for Crime Mapping and Decision Support,” *Forensic GIS* (214): 222-223.

12 V. Daniel Hunt, Albert Puglia and Mike Puglia, “RFID Technology in Homeland Security, Law Enforcement, and Corrections,” in *RFID-A Guide to Radio Frequency Identification* (New Jersey: Wiley-Interscience, 2007), 74.

13 Mirko Akrap, “RFID Implementation: Testing in Prisons and Parolees for the Greater Good,” *The John Marshall Journal of Information Technology & Privacy Law* 33 (1) (2016): 26-27.

industries. The latter is being addressed by the notion of “smart culture”, which indicates the significant contribution of cultural heritage to the economic development of a city. It is exactly within these smart cities’ environments that multimedia interaction can be utilized in many applications, such as with the “SmaCH” (Smart City Cultural Heritage).<sup>14</sup> Multimedia claims that users learn more from pictures and words and that meaningful learning should be supported with the use of multiple mediums.<sup>15</sup> This tendency is called “smart learning”, which constitutes the smart city’s exemplary learning concept and is characterized by autonomous adaptive learning environments.<sup>16</sup> More concretely, the users, both individually and collectively, are driven by different devices and platforms, disseminating collective action instead of passively receiving information from only one channel.<sup>17</sup>

In this context, TS (Transmedia Storytelling) appears as a tool that fully adapts the media’s content related to time and space - sparking the idea of the global village that Marshall McLuhan envisioned in the ‘60s.<sup>18</sup> Thus providing new learning opportunities, where different channels and texts allow for different ways of meaning. Due to its interactive nature, TS is not just a modality of smart learning but also shows the game-based character of smart learning that connects to Gamification<sup>19</sup> and Edutainment<sup>20, 21</sup>

The proposed framework takes RFID and NFC technology into account by incorporating them into the conceptual ticket process design. It should be clarified that the term “intelligent ticket” is used to refer to the two technologies that are thought to give access to the TM content through an app. The technologies provide an approach

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14 Zois Koukopoulos, Dimitrios Koukopoulos, and Jason J. Jung, “A Trustworthy Multimedia Participatory Platform for Cultural Heritage Management in Smart City Environments,” *Multimedia Tools and Applications* 76, no. 24 (2017): 25947.

15 Richard E. Mayer, “Cognitive Theory of Multimedia Learning,” *Psychology of Learning and Motivation* 41 (2002): 85.

16 Dejian Liu, Huang Ronghuai and Marek Wosinski, “Contexts of Smart Learning Environments,” *Lecture Notes in Educational Technology* (2017): 16.

17 Renira Rampazzo Gambarato, “Transmedia Project Design: Theoretical and Analytical Considerations,” *Baltic Screen Media Review* 1, no. 1 (2013): 84.

18 André Jansson and Karin Fast, *Transmedia Work: Privilege and Precariousness in Digital Modernity*. (New York: Routledge, 2019).

19 Gamification is the principle of designing games in traditional non-game environments in order to improve user engagement, flow and learning.

20 Edutainment (Education + entertainment).

21 Ekaterina Tour, “Transmedia Storytelling in Education,” *Encyclopedia of Educational Innovation* (2019): 4.



to the ticket's application process, increasing the flexibility in co-operation between the city's authorities and users. However, the framework focuses on understanding the ticket's duality, which can be understood as translating to crime monitoring, by spatial patterns that use identification through RFID technology to map law offenders providing statistics on degraded areas and probably a crime. In addition, the ability of RFID and NFC technology to store and process data offer the ability to integrate TS narratives, and users can be reached by common social problems. In this way, local authorities can create TM interactivity strategies in areas that are considered to be degraded and bring cultural gentrification on the areas (Fig. 1). This will be discussed later in a conceptual case study on Piazza Giuseppe Verdi in Bologna surrounding the ticket's dual role.

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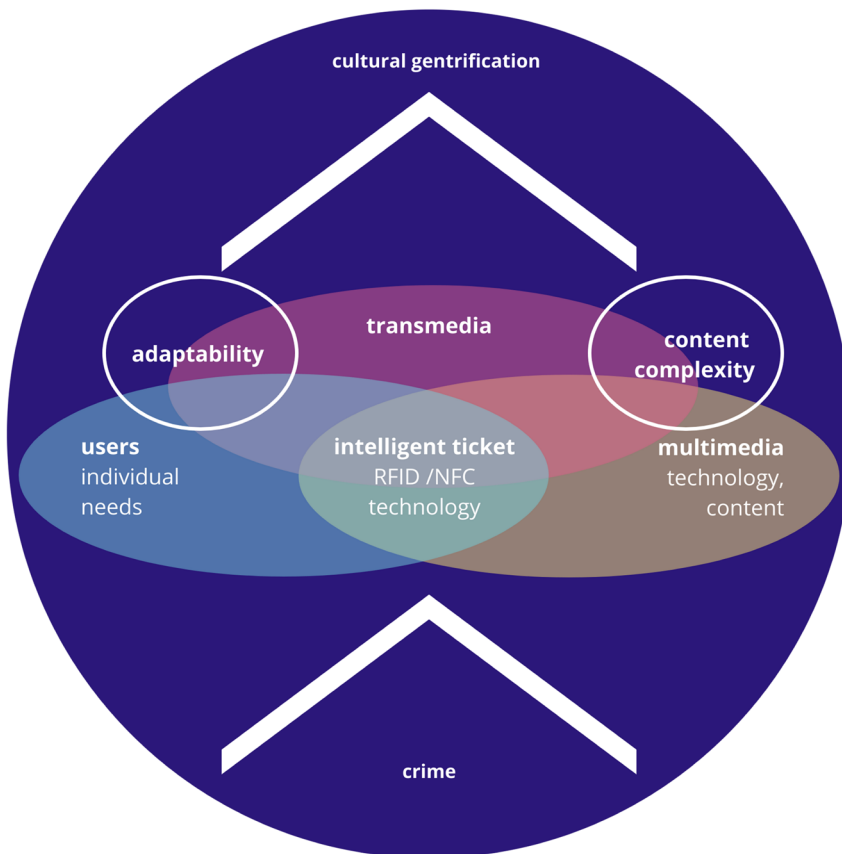


FIG. 1 Presentation of key research axes.

## 2 Background

### 2.1 Intelligent Ticket: RFID and NFC Use

When comparing levels of “smartness” and “intelligence” in operating systems, it becomes apparent that they share many similarities. Both terms refer to material-sensitivity, as well as the technical application for digital applications.<sup>22</sup> In other words, intelligence focuses on the ability to store and process data to exchange information as a system capable of performing intelligent functions. To elaborate further on this, the intelligence may be cataloged under the detection, recording, tracking, and communication for decision making.<sup>23</sup>

RFID systems have conquered the market with a great example of public transport tickets.<sup>24</sup> Large scale public transport systems were utilized RFID-based credit-card-sized reusable tickets<sup>25</sup> or paper made tickets, combining or replacing them with different technologies, such as SMS, Wi-Fi, QR Codes<sup>26</sup>, or even solely digital - online tickets through ticket booking apps, proposed mainly by the airline industries.<sup>27</sup> The known “smart card” applications are also related to RFID systems, where data is stored on an electronic data transfer device - the transmitter and data transfer is achieved using magnetic or electromagnetic fields.<sup>28</sup> In particular, the development of smart cards is related to secure data transfer, large memory capacity, and high reliability, resulting from the use of two communication technologies RFID and NFC.<sup>29</sup> Smart cards or even bracelets with RFID

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22 Σπυρίδων Ι. Νομικός, *Νέες Τεχνολογίες Εκτύπωσης - Τυπωμένα Ηλεκτρονικά* (Αθήνα: Εκδόσεις Τσότρας, 2008), 163.

23 Kit L. Yam, Paul T. Takhistov and Joseph Miltz, “Intelligent Packaging: Concepts and Applications,” *Journal of Food Science* 70, no. 1 (2005): 2.

24 Klaus Finkenzeller, *RFID Handbook: Fundamentals and Applications in Contactless Smart Cards, Radio Frequency Identification and Near-Field Communication*, trans. Dörte Müller, Third Edition, (John Wiley & Sons Ltd, 2010).

25 Roussos, George and Vassilis Kostakos, “Rfid in Pervasive Computing: State-of-the-Art and Outlook,” *Pervasive and Mobile Computing* 5 (1) (2009): 112.

26 Campos Ferreira, M., Dias, T. G., and Falcão e Cunha, J., “Is Bluetooth Low Energy Feasible for Mobile Ticketing in Urban Passenger Transport?,” *Transportation Research Interdisciplinary Perspectives* 5 (2020): 100120.

27 Norazah Mohd Suki and Norbayah Mohd Suki, “Flight Ticket Booking App on Mobile Devices: Examining the Determinants of Individual Intention to Use,” *Journal of Air Transport Management* 62 (2017): 146.

28 Finkenzeller, *RFID Handbook: Fundamentals and Applications in Contactless Smart Cards, Radio Frequency Identification and Near-Field Communication*, .

29 Campos Ferreira, M., Dias, T. G., and Falcão e Cunha, J., “Is Bluetooth Low Energy Feasible for Mobile Ticketing in Urban Passenger Transport?,” 100120.

or NFC tags are used in many museums to control the number of viewers, as well as to analyze user behavior and interaction.<sup>30</sup>

Usually, RFID refers to a long-range wireless communication, while RFID's subject, NFC, allows communication within a few centimeters.<sup>31</sup> The RFID's operating frequency, coupling method, and the range of the system are some of the most important criteria.<sup>32</sup> RFID frequencies ranging from 135KHz, 13.56MHz, 2.45GHz, 5.8GHz, 860 - 960MHz, 433MHz<sup>33</sup> to 5.8 GHz long wave in the microwave range.<sup>34</sup> Certainly, the referred frequencies are classified into four basic RF (Radio Frequency) signals, the LF (Low Frequency, 125kHz~134kHz), the HF (High Frequency, typically 13.56MHz), the UHF (Ultra-High Frequency, 860-960 MHz) and the MW (Microwave Frequency, > 1 GHz).<sup>35</sup> RFID technology uses RFID tags (not visible or at a perfect angle) for the identification and storage of data.<sup>36</sup> RFID reader sends continuous CW (continuous waves) to identify the RFID tags<sup>37</sup>, which can be considered "active" when a transmitter and a battery are used, as "passive" when they need the power source by the reader, "semi-passive" tags when tag's electronics need a battery.<sup>38</sup>

NFC technology allows a better information rate, ease of use, low consumption of power, tag invisibility through the objects, and a unique tag ID number verified by a server. This means that the two devices (reader/starter - tag/listener/label/target) can be near to each other (3-8 cm) with a frequency range between 13.56 MHz, while

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30 Ulyana V. Aristova, Alexey Y. Rolich, Alexandra D. Staruseva-Persheeva and Anastasia O. Zaitseva, "The Use of Internet of Things Technologies within the Frames of the Cultural Industry: Opportunities, Restrictions, Prospects," *Communications in Computer and Information Science* (2018): 151.

31 Dimitrios Panagiotakopoulos and Konstantina Dimitrantzou, "Intelligent Ticket with Augmented Reality Application for Archaeological Sites," in *Strategic Innovative Marketing and Tourism 8*, Springer Proceedings in Business and Economics, ed. Kavoura A., Kefallonitis E., Theodoridis P. (Springer, Cham, 2020), 43.

32 Finkenzeller, *RFID Handbook: Fundamentals and Applications in Contactless Smart Cards, Radio Frequency Identification and Near-Field Communication*, 21.

33 Stephen Statler, "Barcodes, QR Codes, NFC, and RFID," in *Beacon Technologies: The Hitchhiker's Guide to the Beecosystem* (Berkeley, CA: Apress, 2016): 326.

34 Finkenzeller, *RFID Handbook: Fundamentals and Applications in Contactless Smart Cards, Radio Frequency Identification and Near-Field Communication*, 21.

35 M Ayoub Khan, Manoj Sharma, and Brahmanandha R Prabhu, "A Survey of RFID Tags," *International Journal of Recent Trends in Engineering* 1 (4) (2009): 68.

36 Mirko Akrap, "RFID Implementation: Testing in Prisons and Parolees for the Greater Good," *The John Marshall Journal of Information Technology & Privacy Law* 33 (1) (2016): 22.

37 Khan, Sharma, and Prabhu, "A Survey of RFID Tags," 68.

38 Stephen Statler, "Barcodes, QR Codes, NFC, and RFID," 326.

the information exchange is up to 424 Kbps.<sup>39</sup> In some cases, NFC communication can take place between two active devices, such as mobile phones, designated as active or even between an NFC device and a label designated as passive. On the active mode, both the reader and the target produce the RF signal (Radio Frequency) where data are transmitted. On the passive mode, the RF signal is generated only by the starter and the target communicates it back.<sup>40</sup> The information's exchange between two NFC devices, while the target uses more power than the reader due to the use of its supply, is referred to as peer-to-peer mode.<sup>41</sup> The characteristics of both technologies are summarized and compared in Table 1.

	RFID	NFC
Technology	RF (Radio Frequency)	RF (Radio Frequency)
Set up time	<0.1ms	<0.1ms
Operating frequency	125 or 134kHz	13.56MHz
Range	With a handheld UHF reader ~10 feet (3 meters) for passive tags. Active tags can be read from 100-1,500 feet (30-457 meters). Many variables	Up to 8 inches (20 cm)
Data exchange range	Up to 640Kbps	422Kbps
Active/passive	Active/passive/semi-active	Active/passive/semi-active
Communication modes	Read/write	Read/write/Peer to Peer emulation
Line of sight	Not required	Not required
Data storage	Generally 2KB	Varies by tag, on average 64, 128
Technology native to data mobile	No, requires an RFID reader	Yes

TAB. 1 RFID and NFC comparison. Adapted from Trivedi<sup>40</sup>, and Statler<sup>41</sup>.

39 Dimitrios Panagiotakopoulos and Konstantina Dimitrantzou, "Intelligent Ticket with Augmented Reality Application for Archaeological Sites," 43.

40 Garima Jain and Sanjeet Dahiya, "NFC: Advantages, Limits and Future Scope," *International Journal on Cybernetics & Informatics* 4 (4) (2016): 2-3.

41 Rohde and Schwarz, "Near Field Communication (NFC) Technology and Measurements," White paper, Roland Minihold (2011): 10.

## 2.2 Electronic Monitoring

EM tracking systems monitor violators 24 hours a day from satellite or terrestrial location tracking systems as they are moving around in the community. There are various technologies used, such as GPS (Global Positioning System) devices, in which the signal is often lost, CDMA mobile phone towers, location technology using wireless WiFi signals and others.<sup>42</sup> RFID is also applied to criminal cases and this is an interesting aspect introduced first by Motorola<sup>43</sup>, integrating RFID with different technologies. GPS and biometric identification and its use as a police crime-fighting tool being an example. The company decided that RFID could be adapted to prisons for tracking and monitoring prisoners due to the high rates of violence between the staff and the prisoners.<sup>44</sup> RFID labels are used with a unique ID number for each offender, transmitting a signal up to 100 meters (300 feet) in the case of active tags, and up to 10 meters (3 feet) if passive tags are used.<sup>45</sup> Similar projects, use RFID to allow authorities to locate the criminal's car by collecting their information on tolls.<sup>46</sup> Electronic bracelets or labels are used in everyday social situations, such as the new pilot actions of the Dutch Ministry of Justice to monitor alcoholics, helping offenders to show that they have changed their ways.<sup>47</sup> All of the above uses are important technological aspects of EM's external use.

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42 Stuart S. Yeh, "Cost-Benefit Analysis of Reducing Crime Through Electronic Monitoring of Parolees and Probationers," *Journal of Criminal Justice* 38 (5) (2010): 1090-1096.

43 Motorola, Inc. is a telecommunication company.

44 V. Daniel Hunt, Albert Puglia, and Mike Puglia, "RFID Technology in Homeland Security, Law Enforcement, and Corrections," 76-77.

45 Robert S. Gable and Ralph Kirkland Gable, "Remaking the Electronic Tracking of Offenders into a "Persuasive Technology,"" *Journal of Technology in Human Services* 34 (1) (2016): 13-31.

46 Kwangho Jung and Sabinne Lee, "A Systematic Review of RFID Applications and Diffusion: Key Areas and Public Policy Issues," *Journal of Open Innovation: Technology, Market, and Complexity* 1 (1) (2015): 8.

47 Esther Verkaik, "Dutch Drink Offenders to Get Teetotal Tag to Keep them Dry," *Reuters* (2020).

## 2.3 Media Convergence: Multimedia, Cross-media, Transmedia

In the last decades, new technologies, services, and capabilities on user interaction modes, content types, formats, semantics, metadata editing, and management, have emerged.<sup>48</sup> Currently, the media environment is constantly changing with digital audiovisual software, enabling more and more people to participate in the content production process.<sup>49</sup> The media's convergence has evolved with the IS (Information Society) and the opposing technologies trying to gain market share. Most theories examine new possibilities that arise from the audience's needs for complementary multimedia channels: changing from a single product to multimedia content. However, the content must be adapted to each channel, with different bitrate and coding ranges. For instance, the use of different communication networks for data transmission is due to the conversion of analog to digital communication, typically referring to Internet access.<sup>50</sup> On the other hand, in the field of Communication, Jenkins defined convergence as contents flow across multiple media platforms, with the audience "migrating" on many different media forms.<sup>51</sup>

The multimedia field is characterized by a wide range of subcategories. Various researches examine the fact that multimedia combines interactive media by dividing them into two categories. The first is related to the inability to change content, while in the second, dynamic content can be explored and create new navigation paths.<sup>52</sup> The "multi-" suffix means 'many'; combining text, graphic art, audio, animation, and video provided by a computer. This combination implies an imaginative representation of words and images that can be expressed with any audiovisual format.<sup>53</sup> The multimedia, as described, is based on a traditional communication model, while

48 Andreas Veglis, Charalampos Dimoulas and George Kalliris, "Towards Intelligent Cross-Media Publishing: Media Practices and Technology Convergence Perspectives," *Media Convergence Handbook 1* (2016): 132.

49 Chiras Christodoulos, Andreas Veglis, Charalampos Dimoulas and Georgios Kalliris, "Audiovisual Information Management Training Demands in the New Media Environment: The AVIMAN Learning Portal Case," (2012): 1.

50 Ioannis Deliyannis, "Converging Multimedia Content Presentation Requirements for Interactive Television," *Media Convergence Handbook 1* (2016): 231.

51 Sabiha Ghellal, Annika Wiklund-Engblom, Ann Morrison and Damjan Obal, "Transmedia Perspectives," *Media Convergence Handbook 2* (2016): 310.

52 Γιάννης Δελγιάννης, *Η Κοινωνία της Πληροφορίας και ο Ρόλος των Διαδραστικών Πολυμέσων* (Fagotto books, 2nd ed., 2010): 145-146.

53 Stephen D. Sorden, "The Cognitive Theory of Multimedia Learning," (2012): 1.

their use has more dynamic communication processes that are relevant to the paper's framework and will be discussed below.

Many have already stated that multimedia technologies and IDN (Interactive Digital Narrative) are somewhat different from the non-digital interactive narrative, from the perspective of a post-classical narrative, African oral traditions, French transcendence, transmediality, and new media-specific views, generating new definitions.<sup>54</sup> These definitions are studied concerning the semantic chaos, increasing the digital's communication complexity with neighboring concepts such as "cross-media", "multimodality", "multiplatform", "enhanced storytelling" and more.<sup>55</sup> Certainly, cross-media has been created by the convergence of computing and HCI (Human-Computer Interaction), supporting multiple media to deliver a story, directing the receiver from one media to another, while supporting a specific goal through functions distributed across all media.<sup>56</sup> According to Bolter and Grusin, new media do not replace existing ones but complement them by increasing the exposure time of information.<sup>57</sup> The basic design of cross-media applications is the layout of various media, for example, after using Media A the user must go to Media B.<sup>58</sup>

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A different term may be used similarly, indicating a new media aesthetic, dependent on the active involvement of users. As Henry Jenkins, the creator of the term "TS", points out, this is the art of creating the world, with users collecting pieces of stories to have richer entertainment.<sup>59</sup> TS was officially created in 2003, while it first appeared in the 1990s, and it refers to the integrated experience

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54 Hartmut Koenitz, Mads Haahr, Gabriele Ferri, Tonguc Ibrahim Seze, and Diğdem Sezen, "Towards Mapping the Evolving Space of Interactive Digital Narrative," LNCS 8230 (2013): 285–286.

55 Carlos Alberto Scolari, Transmedia Storytelling: Implicit Consumers, "Narrative Worlds, and Branding in Contemporary Media Production," *International Journal of Communication* 3 (2009): 585.

56 Katarin Segerståhl, "Crossmedia Systems Constructed Around Human Activities: A Field Study and Implications for Design," *International Federation for Information Processing* (2009): 354.

57 Jay David Bolter and Richard Grusin. *Remediation: Understanding New Media* (MIT Press, Cambridge, Mass, 1999).

58 Katarin Segerståhl, "Crossmedia Systems Constructed Around Human Activities: A Field Study and Implications for Design," 354.

59 Henry Jenkins, *Convergence Culture* (New York: New York University Press, 2006): 21.

of media communication, engaging the public to interact.<sup>60</sup> Both cross-media and TS concepts refer to productions taking place through different media and platforms, while TS pays attention to UGC (User-Generated Content), finding a narrative dimension that cross-media does not include as much.<sup>61</sup> In particular, the TS consists of the main story, transmitted through a particular channel, while external narratives enrich the story through various channels, contributing to the whole world of the story.<sup>62</sup>

According to Jenkins, most TM examples are based on a fictional scenario, as opposed to non-fiction stories. In fact, many alternative TS definitions have been presented and explain social change by spreading social messages across multiple media platforms, as Sasha Costanza-Chock proposes.<sup>63</sup> In other words, the main TS task is to recognize the right environment and experiences, which may lead to social change and personal development. More contemporary researchers have used this concept, and they have proposed the TS umbrella term of “T4C” (Transmedia for Change).<sup>64</sup> This results in the utilization of TS in different fields whether the subject is society or culture. A more functional definition is certainly possible, like “Transmedia in Tourism”, a recognized prime tool, particularly suitable for promoting sites and cultural heritage. However, in addition to the industrial part of tourism and culture, the use of TM may have more social dimensions.

When developing TS applications that focus on society, it is important first to investigate how the community is structured and which strategies are best at bringing different people together. Major TS projects are briefly summarized below while the basic strategies are being extracted and outlined to help as a guideline for the case study section. Certainly, in the case of political change in Colombia, transmediality generated social campaigns to inform people about

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60 Davidson Drew, *Cross-Media Communications: An Introduction to the Art of Creating Integrated Media Experiences* (Pittsburgh, PA: Carnegie Mellon University: ETC Press, 2010): 6.

61 Renira Rampazzo Gambarato, “Transmedia Project Design: Theoretical and Analytical Considerations,” 83.

62 Emet Gürel and Öykü Tıgılı, “New World Created by Social Media: Transmedia Storytelling,” *Journal of Media Critiques* 1, no. 1 (2014): 47-48.

63 Tanya Notley and Alexandra Crosby. “Transmedia Activism: Exploring the Possibilities in West Papua.” *Transmedia Practice* (2014): 79.

64 Mara Dionisio, Valentina Nisi, Nuno Nunes, and Paulo Bala, “Transmedia Storytelling for Exposing Natural Capital and Promoting Ecotourism,” *Interactive Storytelling* (2016): 351.



the city's social problems.<sup>65</sup> Also, TS has been used in North America's tourism, with stories based on locations; introducing visitors to the site's history with interactive multiple social narratives, and cultivating an emotional experience. The paper's framework conceptually integrates the use of alternative TS terms through the ticket's content adaptability in order to raise awareness on the city's social issues.

### 3 Ticket as a Method – Use case

It is generally agreed that today RFID and NFC technology are used in daily public and private life. We build on this analysis to identify possible two-level RFID ticketing possibilities, on crime tracking, and the presentation of digital content for the cultural gentrification of infamous areas. The intelligent ticket is a research area with a connection between cultural information<sup>66</sup>, which allows the ticket to be used as an access point for the adaptation of multimedia content.

The use case of this section is the square of Piazza Giuseppe Verdi in Bologna in Italy, analyzing particularly the dual role of the ticket's intelligence. A key objective is to understand the traceability of crime and at the same time TS strategies processes within social contexts and how these practices affect the area's cultural gentrification. Bologna is a city in northern Italy and the capital of Emilia Romagna. Today, the city has a population of 380,000 inhabitants, while the metropolitan area has about one million inhabitants. The city is renowned for its University<sup>67</sup>, attracting many students. The city has a formal vision of becoming a smart city, providing opportunities for citizens, making Bologna the second Italian smart city after Milan.<sup>68</sup> During the '70s and '80s, around Piazza Giuseppe Verdi, political clashes took place between students and the police,

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65 Camilo Andres Tamayo Gomez and Omar Mauricio Velásquez, "Transmedia Projects in Contexts of Armed Conflict and Political Change," *Global Convergence Cultures: Transmedia Earth* (2018): 140-156.

66 Dimitrios Panagiotakopoulos and Konstantina Dimitrantzou, "Intelligent Ticket with Augmented Reality Application for Archaeological Sites."

67 University of Bologna, the first in the Western world (founded in 1088 AD - Alma Mater Studiorum).

68 Antonio Caperna, Guglielmo Minervino and Stefano Serafini, "Smart Cities, Local Community and Socioeconomic Development: The Case of Bologna," *Smart Economy in Smart Cities. Advances in 21st Century Human Settlements* (2017): 602.

linking the square to the concept of political participation rather than entertainment. Today, the area is at the heart of the debate on security, fear of crime, injustice in the city, and public image.<sup>69</sup>

The evolution of smart cities affects many societies stricken with crime due to social inequalities. The ticket's bracelet integration with RFID technology and TS narratives provides new means of city control against crime with the mapping - monitoring of criminal users, and the parallel TM approach of all users. A conceptual scenario involves the case where the city's authorities use the RFID system in contexts of crime mapping - monitoring in Piazza Giuseppe Verdi in Bologna. As shown in Figure 3, the system consists of four categories; users 1 (law offenders), users 2 (legal users), the city, and the police authorities. Specifically, for users 1, RFID bracelets are used to monitor the users, while for users 2, NFC cards are preferred. For both users, an app is required to bring both users together through a gameplay mode and the UGC around the square.

### 3.1 Users 1 and Users 2

Considering the case of illegal citizens, there are several important reasons for preferring RFID bracelets as it may be waterproof and dust resistant. In terms of technology, it does not require visual contact and human intervention to work with readers, while RFID reader systems can recognize hundreds of tags per second from any location up to 30 meters (100 feet) apart, while the direction of the bracelet-tag considering the reader does not always play a significant role.<sup>70</sup> For this scenario, active RFID tags are selected as they have a built-in battery that communicates with the reader, transmitting its identity once every few seconds from several tens of meters to several hundred meters.<sup>71</sup> Some other advantages lie in the battery life of about a year, the security is secure, and the cost is around ten

69 Amadeu Recasens and Eric Marlière, *Violence Between Young People in Night-Time Leisure Zones* (Brussels: VUBPress, 2007): 99.

70 Stephen Statler, "Barcodes, QR Codes, NFC, and RFID," 327.

71 Shingo Kinoshita, Miyako Ohkubo, Fumitaka Hoshino, Gembu Morohashi, Osamu Shionoiri and Atsushi Kanai, "Privacy Enhanced Active RFID Tag," in *International Workshop on Exploiting Context Histories in Smart Environments* (2005): 1.

dollars.<sup>72</sup> The operating frequency bands of UHF-RFID systems can be divided into the frequency bands of 433/860/960 MHz which depend on the standard of each country. The universal UHF-RFID frequency band is between 860 and 960 MHz.<sup>73</sup> According to GS1 Global<sup>74</sup>, in Europe and therefore in Italy, the UHF band (865.6-867.6 MHz), and the ETSI<sup>75</sup> EN 302 208 prototypes are used.<sup>76</sup>

RFID readers placed around areas where already observed to experience high rates of crime will be able to process user's recognition by transferring the bracelet's ID number on a server, where the authorities receive information about the time spent and possible gathering with other lawbreakers. Furthermore, the process of recognizing the increasing delinquency would be accomplished in two ways. Initially through the user interaction with the app. In case a user is attacked then he will be able to update the app and a notification will be automatically transferred to the authorities and the police units that are located near the scene of the incident so that at the first level there is a quick response so that the criminal cannot fend off the area and secondly to automatically record the incident in the police database to facilitate the investigation procedures.

66 Correspondingly, on the occasion that a carrier of the singular bracelet is around the delinquent action, the system will be automatically updated again to proceed with the necessary investigative actions. This, of course, is not the cornerstone of resolving the attack, but a first assumption that will be put forward under specific examination and scrutiny. At the same time, all other nearby stakeholders of the system will be automatically informed so that there can be a social undertaking so that possible witnesses can be activated and constitute the turning point for the consolidation of the event and the administration of justice.

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72 Isamu Yamada, Shinichi Shiotsu, Akira Itasaki, Satoshi Inano, Kouichi Yasaki and Masahiko Takenaka, "Secure Active RFID Tag System," in *UbiComp*, (2005): 2.

73 Tajchai Pumpoung, Pitchanun Wongsiritorn, Chuwong Phongcharoenpanich, and Sompol Kosulvit, "UHF-RFID Tag Antenna Using T-Matching and Double-Ended Rectangular Loop Techniques for Wristband Applications," 2.

74 <https://www.gs1.org/>

75 ETSI (European Telecommunications Standards Institute) is a European Standards Organization (ESO). <https://www.etsi.org/>

76 *Regulatory Status for Using RFID in the UHF Spectrum*. 2010. PDF. GS1 EPC Global. <http://www.veryfields.net/wp-content/uploads/2011/10/UHF-RFID-Tag-Regulations.pdf>.

The pre-trial and arrest procedure is carried out as already mentioned with the creation of patterns. This method is done by default by monitoring the attacks through the app. The process of mapping the incidents and scrutinizing them through a scheme could lead to important terminations about the location and time of most of them. The result of these findings is the greater preservation of these areas and the increase in police surveillance. However, the purpose of this proposal is not to create an institutionalization (which may raise the sharp dissatisfaction of the citizens) innermost these zones that will be strengthened by only the precaution of the police force, but the establishment of a safe city that could operate effectively at all levels as a full and secure organization.

On the other hand, the monitoring of users 2 for the export of statistics will be done with NFC cards with passive tags, and with the use of an app to connect the data of the users' geographical location to the same GIS pattern of users 1 in order authorities to receive an image for city's mobility. It is important to mention that users 1 will also be able to get the NFC card, as the community does not want to choose different media for its members and on the other hand wants to integrate them with users 2. In addition, a second identification of their geographical location for extra security is added (Fig.2)

67

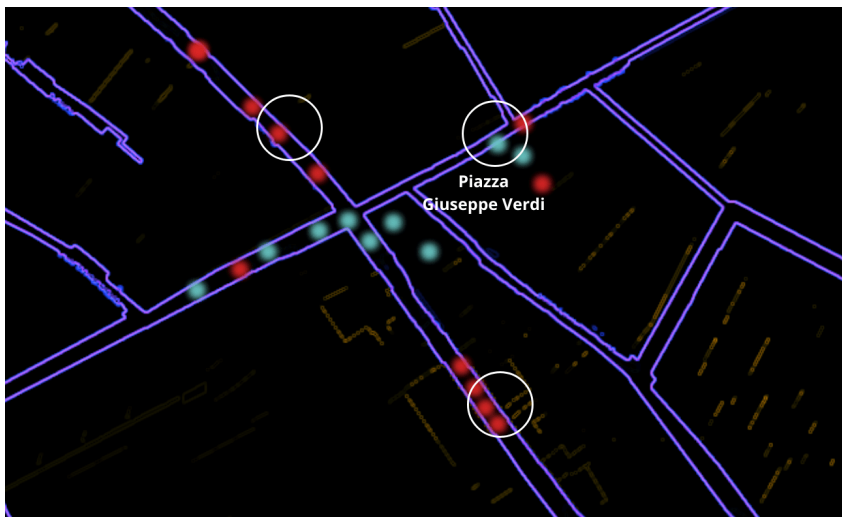


FIG. 2 Visual conceptual representation of the mapping and monitoring of illegal acts in Piazza Giuseppe Verdi in Bologna with the use of RFID technology. The red dots represent people who have already been identified by the authorities for criminal acts, while the blue ones do not. The white circles represent the RFID readers<sup>77</sup>.

77 Map source: Google maps. 2019. Piazza Giuseppe Verdi Bologna. Online map. Accessed November 11, 2019. <https://www.google.com/maps/place/Piazza+Giuseppe+Verdi,+40126+Bologna+BO,+Italy/@44.4962824,11.3498762,18.43z/data=!4m5!3m4!1s0x477fd4bb8de1baod:ox7a39a7224d40275f!8m2!3d44.4962584!4d11.3506682>.

With the purchase of the card, the registration of the user's data is completed with the parallel entry of the data in a database. Then, with one tap of the NFC card on the mobile device, the user's data is transferred to the app. The user is required to accept GPS authentication settings so that he can receive information from the area in which he is located, as well as its position will be transferred to the base for the export of traffic statistics. In no case will their geopolitical position be shared with third parties, unless this is deemed necessary and the whole of society is threatened. Having completed this step, the app is ready for full navigation, offering a wide range of personalized information. Figure 3 summarizes the operation of the system.

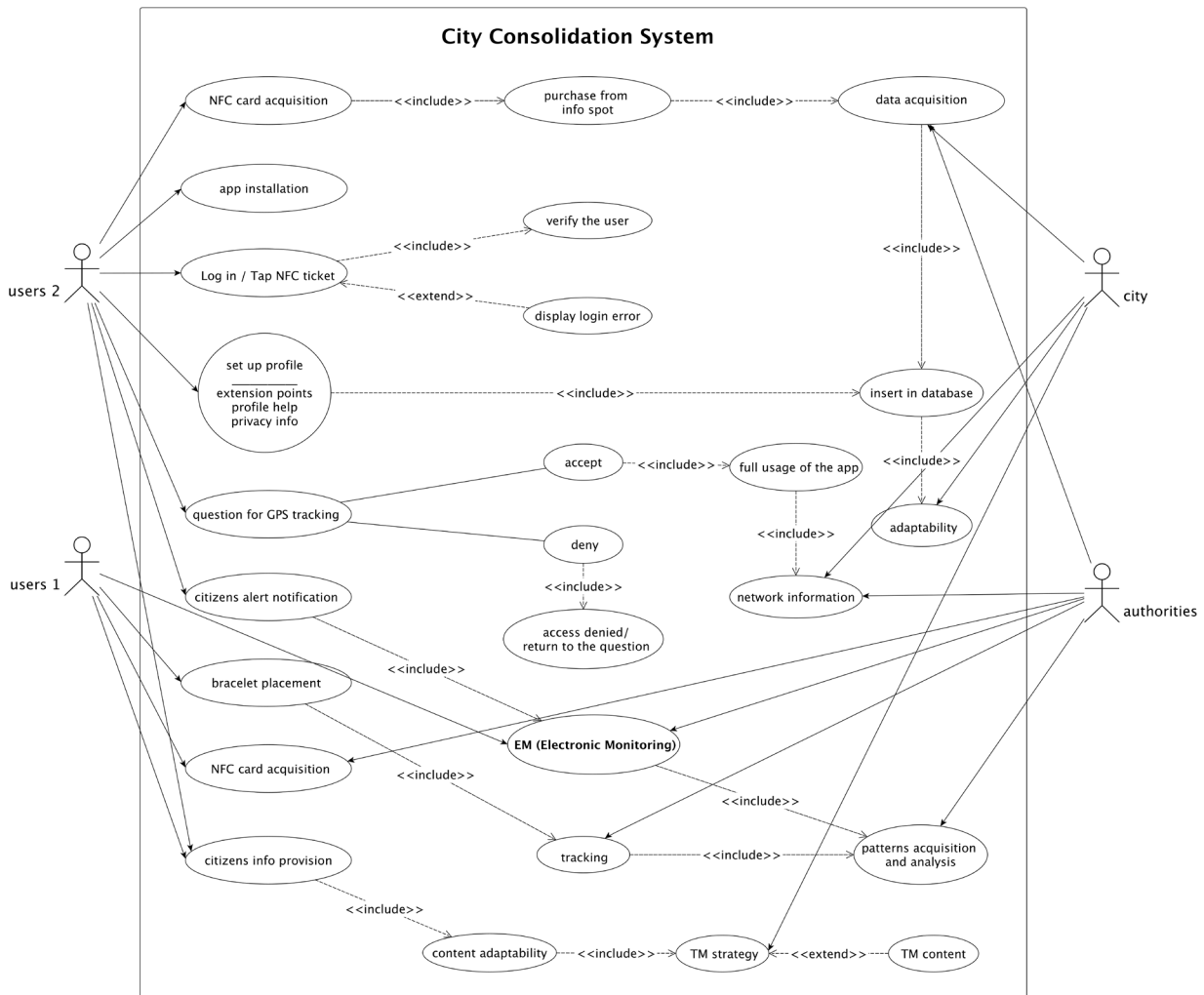


FIG. 3 City consolidation system; all four parts that contribute to the system are presented. Users 1, 2, the city and the authorities.

### 3.2 The case of TS

The above crime scenario shortly describes the process by which the city could be informed in real-time for crime areas, while at this point, the aim to create social awareness through TS should be considered. A variety of scenarios and approach models can be proposed to implement the alteration of the public's idea on critical social issues. Harkening back to earlier, most TS projects are based on a fictional scenario. Instead, the conceptual methodology focuses on alternative TS definitions for social change. The main characteristic of T4C is to approach the local community on social issues through campaigns. The evidence from these studies suggests a variety of factors related to the dimensions of user experience. Thus, following this reasoning, it is hypothesized that the user's experience lies in various media content.

At this point, TS's main task is to create and present an environment where the users need to collect pieces of information through different media to contribute to their own story. The underlying TS strategies can approach the square's historical importance for the city, highlighting crime issues. This results in the crime issue destroying the square's importance. Thus, it is clear that the square's public image needs to be recovered to its importance. By developing TS strategies, the main aim is users to be educated around the square about the problem of crime and enable them to recognize it in the context of the square's degradation.

Persuasive TM narrative is proposed to inform and change people's attitudes and behaviors on social issues in the real world, while a gameplay mode is reminiscent of ideological messages.<sup>78</sup> TM social campaigns trying to bring the community into public debate, communicating with all users (residents, students, shopkeepers, law offenders, etc.). For this purpose, the creation of a narrative of changing the square's public image is needed. Introducing and discovering through the app the square's history can be the first step into changing people's ideas regarding the area's public image. Specifically, the narrative can be presented through different media channels, such as a game supporting also AR and VR utilities, while participants

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78 Mizuki Sakamoto and Tatsuo Nakajima, "Augmenting Yu-Gi-Oh! Trading Card Game As Persuasive Transmedia Storytelling," *Design, User Experience, and Usability. Health, Learning, Playing, Cultural, and Cross-Cultural User Experience* (2013): 587.

have the opportunity to create their own stories for collective memory and finally to notice their digital and personal impact in the public space.

The TMG (Transmedia Gaming) campaign is considered ideal, as it promotes a narrative system for bridging gaps in media types through a central platform, that is, a coherent interface for both users.<sup>79</sup> In our case, the platform is related to the app that users already need to have installed on their mobile devices to contribute to the content. The created gaps would allow viewers to act as protagonists to the game narrative, such as the online interactive weekly film “Beauty Inside<sup>80</sup>” by Intel and Toshiba.<sup>81</sup> Users themselves become the main characters where they are free to create an identity and personal history.<sup>82</sup>

Besides that, users will experience a learning method that combines information (content) and emotional immersion (user experience), creating an information process concerning conditions (Edutainment) and way of implementation (interaction, UGC, Gamification). It is a popular belief that multimedia interaction leads to the positive user experience through the four dimensions of experience: practical, cognitive, emotional and sensual involvement.<sup>83</sup>

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The media content may come from representative projects selected to serve the strategy of the scenario, while the content will be designed to adapt to the individual needs of each user (age, physical disabilities, educational background and preferences), a factor that was introduced by storing personal information on the NFC card. In particular, as shown in Figure 4, the strategies are to be adapted from the data collected by users' mobility 1 and 2. That is if a street is observed to attract more users 1 than users 2 and at specific times, it

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79 Herlander Elias, “The Bridge – A Transmedia Dialogue Between TV, Film And Gaming,” *Design, User Experience, and Usability. Theories, Methods, and Tools for Designing the User Experience* (2014): 548-559.

80 Doremus, Drake. 2012. *The Beauty Inside*. Film. United States: B-Reel Films.

81 Zuhail Akbayır, “Transmedia Storytelling as a Corporate Communication Strategy and its Effect on Corporate Culture,” in *Handbook of Research on Transmedia Storytelling and Narrative Strategies*, ed. Recep Yılmaz, M. Nur Erdem, and Filiz Resuloğlu, (Hershey, PA: IGI Global, 2019): 408.

82 Ademir Pasalic, Nikolaj Hollænder Andersen, Christopher Schinkel Carlsen, Emil Åberg Karlsson, Markus Berthold, and Thomas Bjørner, “How to Increase Boys' Engagement in Reading Mandatory Poems in The Gymnasium: Homer'S “The Odyssey” As Transmedia Storytelling with the Cyclopeia Narrative as a Computer Game,” *Smart Objects and Technologies for Social Good* (2018): 218.

83 Sabiha Ghellal, Annika Wiklund-Engblom, Ann Morrison and Damjan Obal, “Transmedia Perspectives,” 320.

may mean that there is a reduced reputation and fear for that street. Thus, interactivity through the app, that is, by discovering a certain piece of story, may increase street popularity.

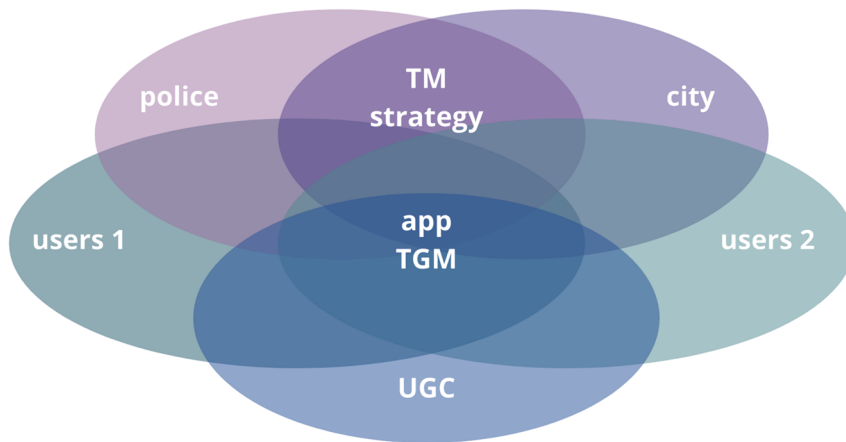


FIG. 4 Visual representation of how the content TM strategy and UGC are produced.

#### 4 Discussion and Conclusion

Ticket's intelligence provides new means of crime mapping - monitoring and TM narratives, guiding users efficiently through social issues. The conceptual methodology approaches the ticket's dual intelligence through the development of a process capable to monitor criminality in degraded areas and to contribute TS narratives, actualizing a media message arranged to approach people's social interest. The system's procedure is heterogeneous and continuous. It must deliberate differently but at the same time simultaneous functions so that the ultimate goal of ensuring the security of society as a whole can be carried out with the greatest efficiency. Towards this aim, the proposed framework combines a conceptual methodology of RFID - NFC. By using RFID-NFC technology, it will be possible to extract statistics on crime and the concentration and interaction of users in degraded areas. As such, several issues need addressing. To demonstrate the framework, a method using the ticket (RFID bracelet for users 1 and NFC card for both users connected through an app) was selected, showing that the ticket's intelligence can process user experience.

The framework can be applied in the context of AmI, as RFID and NFC technology are used, while the actual creation of this project would require the use of IoT, while considering that the personal transfer



of an RFID bracelet of a personalized card can also be considered IoP, connecting people with a gamified content. At the same time, the concept of the smart city is being adapted to the framework, as the city and the police work together. This is particularly important today, as the city user's experience requires the cooperation of many fields and institutions (city planners, managing organizations, etc.) and individuals (population - users). This certainly indicates that city administrators and authorities should develop projects and social campaigns, while the campaign's speed by which the information is approached, presented and adopted by the to the user should be well considered. This, in real-life scenarios, involves various fields and institutions being integrated, such as computer science - engineering, city administration, police authorities, and legal assistance, in the design and implementation of proposed application and testing.

The RFID technology has not been expanded, with major obstacles being the lack of standardization and privacy concerns. Additional questions are related to the offenders' bracelet and safety monitoring. While RFID technology has many potential benefits for the scenario developed, ensuring the privacy of both categories analyzed, is vital to information systems. All technologies are faced with the possibility of being abused by criminals and for this reason, technological developments must be dealt with by a legal framework so that users have reliable security, while the technology itself must ensure security and protection mechanisms to prevent criminal activity, which will help in the widespread acceptance of users.<sup>84</sup> Therefore, more work needs to be done to standardize and address privacy/security issues to increase the application of RFID as well as NFC technology. To give a future aspect as well, as the external use of RFID bracelets raise several questions about safety and its ability to be publicly transported by the lawbreaker. In this direction, according to Steve Aninye, the American justice system has shown interest in human microchip implants.<sup>85</sup> The human implants - paving the way for boundless future applications. This is not uncommon in real-life scenarios, as the FDA (Food and Drug Administration) has

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84 Gerald Quirchmayr and Christopher C. Wills, "Data Protection and Privacy Laws in the Light of RFID and Emerging Technologies," *Trust, Privacy and Security in Digital Business* (2020), 155-164.

85 Klitou, Demetrius. 2014. "Human-Implantable Microchips: Location-Awareness and the Dawn of An "Internet of Persons"", 157-249.

already approved VeriChip<sup>86</sup>, two decades ago as a human implantable device that can be used for medical records. That being said, financial and personal identification applications are still under discussion.<sup>87</sup>

However, personalization and adaptation tools offered by RFID - NFC technology approach each TM medium to contribute to a story's narrative and approach transport channels with a story that remains appropriately sized and appropriately placed, while highlighting measurable behavioral changes. Through the TMG function and gamification will consolidate these areas as there will be a continuous live flow of social mobility. The result would be the suppression of criminality in the recorded zones, the abolition of any deplorable ghetto, and the accession of these districts to the safe social and commercial city mobility. The participation of both categories of users is going to unravel the social barriers between them, while it is also possible to re-approach the lawbreakers in society. It will essentially be a digital link with which both categories of users will interact with a game around the area. The ability to change the content allows the stories of both categories to be heard and to create a digital collective memory for the area. For these reasons and if it turns out that such a system can have these effects, then the term "cultural gentrification" can be used, while, at the same time, it will be able a new role for multimedia, transmedia and RFID-NFC technology to be identified in the functional context of the smart city.

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86 The VeriChip is the first microchip implant for humans. It contains a 16 digit number and is described as a passive chip.

87 V. Daniel Hunt, Albert Puglia, and Mike Puglia, "RFID Technology in Homeland Security, Law Enforcement, and Corrections."

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PEER REVIEWED

# A critical approach to platform real estate in the urban ecosystem

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## KEYWORDS

*Platform Real Estate, Urban ecosystem, Contemporary urban capital, Platform urbanism, new technology-driven re-development practices*

## ABSTRACT

The paper addresses some of the new challenges and urban issues through a critical theoretical approach. Following the framework of human ecology, and its subsets, the digital transformation on the real estate market is analyzed, focusing on the role of proptechs in correlation with urban ecosystem and capital. In particular, the paper focuses on digital transformation in real estate industry, contemporary urban capital and new technology-driven re-development practices. Therefore, changes in urban public space and the relation with the private one are addressed, emphasizing how the typical ecosystemic mechanisms act.

The paper uses primary and secondary sources. Its aim is to investigate the balance net of the implementation of digital technologies in the ecosystemic equation.

## Introduction

The paper analyzes at first the challenges of new urbanism under a critical theoretical perspective, in the framework of human ecology. Thus, it focuses on the conceptual analysis of the term ‘property technologies’ (proptechs). Therefore, the article addresses the digital transformation on the real estate industry, with a focus on the role of specific platforms in terms of funding. However, a differentiation between digitization, digitalization and digital transformation is not operated.

The second part of the article starts with the theoretical analysis of urban ecosystem and public space in relation with the process of capital extraction<sup>1</sup>. Then two predominant perspectives on technology and urban ecosystem are analyzed.

Finally, the discussion concludes with the exposition of the internal logics of platform urbanism and the identification of players, trends and practices of the global real estate industry in the last years.

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## Digital transformation in the real estate industry

The individual and collective experience into the digital world has been described in relation to the production-consumption binomial.<sup>2</sup> This is described by the research group Ippolita<sup>3</sup> in terms of a sacrificial ritual in which a body-mind-data part of the ‘prosumer’ (producer-consumer of digital contents) is offered to the machines in order to elaborate them and to give back a ‘revealed truth’, while the other is given back to humans and consumed in the libation in which the same users participate.<sup>4</sup> According to Zuboff, a new economic order emerged. This looks at “human experience as free raw material for hidden commercial practices of extraction, prediction,

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<sup>1</sup> David Harvey, *The Enigma of Capital and the Crises of Capitalism* (New York: Oxford University Press, 2010).

<sup>2</sup> Ippolita, *Anime elettriche: Riti e miti social* (Milano: Jaca Book, 2016), 61-62, [https://books.google.it/books/about/Anime\\_elettriche.html?id=-RR2jwEACAAJ&redir\\_esc=y](https://books.google.it/books/about/Anime_elettriche.html?id=-RR2jwEACAAJ&redir_esc=y).

<sup>3</sup> Ibid.

<sup>4</sup> Ibid.



and sales”.<sup>5</sup> Indeed, as stated by the author<sup>6</sup>, the sustaining element of this economic logic is the behavioral surplus resulting from the processing and collection of personal data, which is fed to “advanced manufacturing processes known as ‘machine intelligence,’ and fabricated into prediction products that anticipate what you will do now, soon, and later”.<sup>7</sup>

Data-driven companies exploit data to create predictions and to make considerable profits, as clearly stated by Nissenbaum: “Personal data is the ‘gold’ of a new category of companies”.<sup>8</sup> In the internet entrepreneurs’ culture: “the amount of money to be made, and the speed at which the money is made, are the supreme values... Money-making becomes the benchmark for success...”.<sup>9</sup> But data must be mined in order to extract useful information even from the urban environment. Indeed, as stated by Mezzadra and Neilson: “The productive front of data mining is particularly amplified in urban environments, which have been reshaped in many parts of the world by the stretching of work beyond traditional points of production. The urban landscape has become a site for new processes of data extraction that function through various ‘smart city’ and remote-sensing technologies”.<sup>10</sup> So, the focus is not merely on the speed at which data are collected, but also on the amount of data collected. Thus, according to Braesemann and Baum: “more data actually make models perform better, which usually attracts more users, and thus more data”.<sup>11</sup>

According to Mazzucato, “capitalism has always excelled at creating new desires and cravings. But with big data and algorithms, tech companies have both accelerated and inverted this process. Rather than just creating new goods and services in anticipation of what people might want, they already know what we will want, and are selling our

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5 Shoshana Zuboff, *The age of surveillance capitalism: The fight for a human future at the new frontier of power* (New York: Profile Books, 2019), 9.

6 Ibid.

7 Ibid., 21.

8 Helen Nissenbaum, “Privacy as Contextual Integrity,” *Washington Law Review* 79, no. 1 (2004): 103.

9 Manuel Castells, *The Internet Galaxy: Reflections on the Internet, Business, and Society* (New York: Oxford University Press, 2001), 57.

10 Sandro Mezzadra and Brett Neilson, *The Politics of Operations* (Durham-London: Duke University Press, 2019), 145-146.

11 Fabian Braesemann and Andrew Baum, *PropTech: Turning real estate into a data-driven market?* (Oxford: Said Business School, 2020), 4-5.

future selves”.<sup>12</sup> Following this logic, exploitation of data permits to accurately predict what we desire. Therefore, their implementation into the decisional process provides companies and public administrations with a considerable competitive advantage. As such, the data sector acts as a central attraction for other fields, such as real estate. Indeed, digital data create value for all players involved in the sector, at every step of the pipeline.<sup>13</sup> As stated by Graham: “we live in cities where we navigate landscapes of not just bricks and mortar, but also data and algorithms”.<sup>14</sup> Thus, a wider understanding of the effects of technology adoption into our life is needed. According to Baum, internet and mobile telephony have changed all aspects of our lives: education, health, jobs, leisure, finance, romance and homes.<sup>15</sup> The Real Estate Sector (RES) as well, has been strongly influenced by technologies, while historically being recognized as a conservative sector, characterized by gradual evolutions.<sup>16</sup>

In recent years, the implementation of technology in the RES has caused disruptive transformations leading to the birth of a neologism: ‘proptech’. The term derives from the crisis of ‘property’ and ‘technology’, but it does not yet have a clear and universally shared definition. Baum and Dearsley describe it as a part of a wider process of digital transformation of the property industry made possible by the fourth industrial revolution, as “a movement driving a mentality change within the real estate industry and its consumers regarding technology-driven innovation in data assembly, transactions, and the design of buildings and cities”.<sup>17</sup>

Proptechs create connections among different industries, Baum and his colleagues summarizes them in the report *PropTech 2020: The future*

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12 Mariana Mazzucato, “Preventing digital feudalism,” *Project Syndicate*, October 2, 2019, [https://www.project-syndicate.org/commentary/platform-economy-digital-feudalism-by-mariana-mazzucato-2019-10?a\\_la=english&a\\_d=5d9465098e70173938ebab34&a\\_m=&a\\_a=click&a\\_s=&a\\_p=homepage&a\\_li=platform-economy-digital-feudalism-by-mariana-mazzucato-2019-10&a\\_pa=spotlight&a\\_ps=](https://www.project-syndicate.org/commentary/platform-economy-digital-feudalism-by-mariana-mazzucato-2019-10?a_la=english&a_d=5d9465098e70173938ebab34&a_m=&a_a=click&a_s=&a_p=homepage&a_li=platform-economy-digital-feudalism-by-mariana-mazzucato-2019-10&a_pa=spotlight&a_ps=).

13 Braesemann and Baum, *PropTech: Turning real estate*, 2.

14 Mark Graham, “Regulate, Replicate, and Resist – the Conjunctural Geographies of Platform Urbanism,” *Urban Geography* 23 (2020): 1.

15 Andrew Baum, *PropTech 3 - The future of real estate* (Oxford: Saïd Business School, 2017), 5.

16 Marc Feth and Holger Gruneberg, *Proptech - The Real Estate Industry in Transition* (January 10, 2018), 1.

17 Baum et al., *PropTech 2020: The future of real estate* (Oxford: Saïd Business School, 2020), 5.

of real estate.<sup>18</sup> At the same time, Bellintani et al. define proptechs as the whole of solutions, technologies, and tools for the innovation of processes, products, services and market in real estate industry.<sup>19</sup>

However, a more critical understanding is gaining ground. This is emphasizing the role of digital platforms and radically changing the way we work, socialize, and create value in the economy or compete for the resulting profits.<sup>20</sup> Thus, Shaw refers to proptechs as “platforms”, i.e. “something connecting users, and pulling things together into new aggregations and somehow relating to value”.<sup>21</sup> Indeed, as stated by Fields and Rogers: “the term ‘platform real estate’ better encapsulates the connective capacities and paths of action related to ownership, use, and exchange of land and buildings afforded by the digital advances”.<sup>22</sup> Moreover, the authors assert that data technology was already known in the real estate industry, but its innovative scope has increased significantly during the last decade<sup>23</sup>. Furthermore, Srnicek associates new technologies, organizational forms, modes of exploitation, types of jobs, and markets, to the creation of a new way of accumulating capital, which is “platform capitalism”.<sup>24</sup> But even, platforms can be source of inequalities, racism and exclusion, as explained by McElroy.<sup>25</sup>

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In accordance with these basic assumptions, it is possible to revisit “proptech” as “Platform Real Estate” (PRE), as suggested by Shaw.<sup>26</sup> This approach is useful to understand the digital innovation of the real estate industry avoiding technological essentialism, expanding the analogy of platform and providing a more accurate assessment of the inner logic of digital real estate technology.<sup>27</sup>

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18 Ibid., 7.

19 Bellintani et al., *PropTech Monitor. Tecnologie, strumenti e servizi innovativi per il Real Estate* (Milano: Politecnico di Milano, 2018), 7.

20 Martin Kenney and John Zysman, “The Rise of the Platform Economy,” *Issues in Science and Technology* 32, no. 3 (Spring 2016). <https://issues.org/the-rise-of-the-platform-economy>.

21 Joe Shaw, “Platform Real Estate: theory and practice of new urban real estate markets,” *Urban Geography* (2018): 10.

22 Desiree Fields and Dallas Rogers, “Towards a Critical Housing Studies Research Agenda on Platform Real Estate,” *Housing, Theory and Society* (2019): 4.

23 Ibid.

24 Nick Srnicek, *Platform Capitalism* (Cambridge: Polity Press, 2016), 40.

25 Erin McElroy, “Property as technology,” *City* (2020): 1-18.

26 Shaw, “Platform Real Estate,” 10.

27 Ibid.

Although the PRE sector is considered “a temporary fad” by many in the real estate market, the sector hit record investments in recent years.<sup>28</sup> Indeed, business trends in the RES suggest future implications for the industry. The report shows that, in recent years, an exponential increase in funding in the Proptech sector has occurred.<sup>29</sup> Indeed, according to data published by Venture Scanner in March 2018, the Proptech market has globally accelerated rapidly in terms of funding obtained, between 2011 and 2017 with a compound annual growth rate of 63%.<sup>30</sup> In this scenario, updated data for the second quarter of 2019 shows a significant increase in funding. Expectations for the second half of 2019 have even been exceeded, with funding reaching close to \$30 billion, virtually doubling the results of Q4 2018. The quarterly update for the Q1 2020 shows, however, a considerable decrease, which resulted in a 49% drop compared to the same period of time in 2019.<sup>31</sup> Furthermore, Bellintani et al. suggest a general trend for investors to increase funding in the sector, while funding tend to concentrate into a smaller selected number of PREs.<sup>32</sup> The trend is confirmed by the scenario elaborated by Baum et al. describing, among others, the number of proptechs founded between 1998 and 2018.<sup>33</sup>

It would be necessary to contextualize these results, which are not very encouraging for the market, with the disruption that SARS-CoV-2 has brought around the world. But it is too early to speculate about the future of the sector. The opinion of commentators on the future of the market seems to fuel the hopes of those who see in the platforms the future of the RES. This could be strongly conditioned by the push to digital transformation that is crossing over most of the sectors of society, heavily burdening those whom are resistant towards a digital transformation of their infrastructures and processes. According to Xiarewana and Civelek, the RES has suffered

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28 Baum, *PropTech* 3, 81.

29 Bellintani et al., *PropTech Monitor*, 4.

30 “Real Estate Technology Funding in 2019 Projected To Approximately Match 2018,” Venture Scanner, last modified September 29, 2019, <https://www.venturescanner.com/2019/09/29/real-estate-technology-funding-in-2019-projected-to-approximately-match-2018>.

31 “Real Estate Technology Q1 2020 Funding,” Venture Scanner, last modified May 1, 2020, <https://www.venturescanner.com/2020/05/01/real-estate-technology-q1-2020-funding>.

32 Bellintani et al., *PropTech Monitor*, 5.

33 Baum et al., *PropTech* 2020, 9.

major damage being a mainly offline industry, while the largely automated and informed industries are proving to be more resilient. The current context of crisis is pushing new ways of thinking and organizing online business, automation, but also promoting zero-touch working methods. Thus, the authors describe digital transformation “as a new way of survival”.<sup>34</sup> Indeed, despite the direct impact of COVID-19 on the RES – e.g. on land acquisition and contract sales – the digital transformation is breaking into the market scene. This represents an opportunity for PRE industry, where major real estate companies started launching measures to put together their everyday work practices with new technologies such as VR, big data, AI, cloud computing, and to promote new business models.<sup>35</sup> The authors ensure that “the human-centered management model will become a trend, and the management of human resources will gradually change from process-oriented one to scene-oriented one, from hierarchical to network-based and from modular to interactive. Digitalization brings not only the continuous evolution of technology to human resources, but also unprecedented opportunities for innovation and change”.<sup>36</sup> Under a critical perspective, some questions should be raised about the above considerations, asking who are the humans these models address? Who can afford access to certain services? Do these models stimulate the creation of power relationships in cities that tend to include the most vulnerable sections of society? Or could they foster further inequalities and the creation of (new) societal, geographical, economic and cultural barriers? In order to respond, it will be necessary to study these phenomena in depth with a multidisciplinary approach in the short, medium and long term. Aspiration that this writing cannot have.

Nevertheless, over hundreds of thousands of deaths and millions of infected people, millions of workers worldwide have already lost their jobs, been dismissed or placed on temporary, unpaid leave of absence. In particular, according to the International Labour Organization: “young people constitute major victims of social and economic consequences of the pandemic, and there is a risk that

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34 Baikeli Xiarewana and Mustafa Emre Civelek, “Effects of COVID-19 on China and the World Economy: Birth Pains of the Post-Digital Ecosystem,” *Journal of International Trade, Logistics and Law* (2020): 154.

35 Ibid.

36 Ibid.

they will be scarred throughout their working lives – leading to the emergence of a ‘lockdown generation.’” Indeed, “young people are disproportionately affected by the COVID-19 crisis, with multiple shocks including disruption to education and training, employment and income losses, and greater difficulties in finding a job”.<sup>37</sup> This can only have significant effects on the ability of individuals to access credit or pay rents, mortgages and household expenditure.<sup>38</sup>

Anyway, commentators, industry operators and entrepreneurs are becoming increasingly interested in PREs. But they tend to point out these platforms as a possible solution for the future of the RES, not only to mitigate the effects of the crisis caused by COVID-19, but also to improve the performance of the services offered, to improve development and decision-making processes, and so on and so forth. But, at least in Italy, they believe that new technologies should be combined with in-person practices, thus focusing on hybrid models.<sup>39</sup> Finally, KPMG, in its third Global PropTech Survey, explains that proptech companies are “hugely optimistic” about the future growth of their market.<sup>40</sup> Indeed, 87% of those who participated in the survey believe that real estate companies will increase spending on implementing proptech solutions in the next twelve months. While none of them expect investment to stop or decrease.<sup>41</sup>

## PREs and the urban ecosystem

Cities are desirable locations, even for entrepreneurs working in the real estate industry. Due to the contemporary characteristics of cities, e.g. socio-economic capital (concentration), opportunities, entertainment, it is no surprise that real estate developers and those working within the sector are drawn to them. The extraction of value

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37 International Labour Organization [ILO], *ILO Monitor: COVID-19 and the world of work. Fourth edition* (May 27, 2020), 2.

38 Maria Nicola et al., “The socio-economic implications of the coronavirus pandemic (COVID-19): A review,” *International Journal of Surgery* 78 (2020): 189.

39 Adriano Lovera, “PropTech, soluzioni digitali per le compravendite ai tempi del virus,” *Il Sole 24 Ore*, March 12, 2020, [https://www.ilsole24ore.com/art/proptech-soluzioni-digitali-le-compravendite-tempi-virus-AD8djj?refresh\\_ce=1](https://www.ilsole24ore.com/art/proptech-soluzioni-digitali-le-compravendite-tempi-virus-AD8djj?refresh_ce=1); Angelica Donati, “PropTech e tecnologia nel Real Estate post Covid-19,” *Key4biz*, June 5, 2020, <https://www.key4biz.it/proptech-e-tecnologia-nel-real-estate-post-covid-19/308941>.

40 KPMG, *Is Your Digital Future in the Right Hands?* (October 2019), 32.

41 Ibid.

from online and offline spaces and users' data is undoubtedly one of the most disruptive approaches of our age, since it influences lifestyles and habits. Thus, according to Zukin: "Cities today are crucial sites for both the creation of — and resistance to — a powerful interplay of land, labor, culture, and capital that forms the base of the new economy: the 'innovation complex'."<sup>42</sup>

This is the reason why we analyze the urban ecosystem underlying the relations with PREs. But before that, it is necessary to investigate the urban ecosystem approach, taking advantages of the concept of human ecology to better delineate the theoretical framework. Starting from Robert E. Park,<sup>43</sup> a founder of the Chicago School, the term "ecosystem" transcends the boundaries of biological sciences to approach social studies. According to Strassoldo, it takes the features of an "architectural" discipline, capable of producing macroscopic visions that peer into biosphere's processes.<sup>44</sup> Interestingly, three years later, in June 1996, Ben Carpenter, a system engineer at CERN, described the connectivity which marked the internet's development using architectural terminology in *Architectural Principles of the Internet*, a seven-page written memo.<sup>45</sup> The document centers on the principle of constant change, which is coupled with an architectural analogy. Indeed, according to Carpenter: "a good analogy for the development of the Internet is that of constantly renewing the individual streets and buildings of a city, rather than razing the city and rebuilding it. The architectural principles therefore aim to provide a framework for creating cooperation and standards, as a small "spanning set" of rules that generates a large, varied and evolving space of technology".<sup>46</sup>

Otis Duncan's definition of "ecological complex" is able to bring together elements such as population, organization, environment

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42 Sharon Zukin, *The Innovation Complex. Cities, Tech, and the New Economy* (New York: Oxford University Press, 2020), vii.

43 Wikipedia, The Free Encyclopedia, s.v. "Robert E. Park," [https://en.wikipedia.org/wiki/Robert\\_E.\\_Park](https://en.wikipedia.org/wiki/Robert_E._Park), accessed June 5, 2020.

44 Raimondo Strassoldo, "Ecologia," in *Enciclopedia delle scienze sociali* (Treccani, 1993), [http://www.treccani.it/enciclopedia/ecologia\\_\(Enciclopedia-delle-scienze-sociali\)/](http://www.treccani.it/enciclopedia/ecologia_(Enciclopedia-delle-scienze-sociali)/).

45 Ben Carpenter, *Architectural Principles of the Internet* (USA: RFC Editor, 1996), <https://dl.acm.org/doi/pdf/10.17487/RFC1958>, accessed June 10, 2020.

46 Ibid., 2.

and technology in a paradigmatic approach.<sup>47</sup> Dunlap and Catton give a further contribution to the theory of human ecology, expanding on Duncan's model adding three main systems: cultural, social and personality, in addition to population and technology, and placing the environment at the center of the interactions.<sup>48</sup>

The important novelty of the model of interaction between environment and society is in demonstrating the fallacy of the monocausal explanations of environmental degradation, whether they focus on the increase of the population, the distorted use of technology, organizational dysfunctions and other aspects.<sup>49</sup> Thus, as stated by Strassoldo, a certain level of indeterminacy makes these variables both dependent and independent into the analysis of human ecology.<sup>50</sup>

Finally, the public space, as the "natural area" of the city, is here conceptualized being a crucial dimension suffering the competition for territory, invasions by new groups, inequalities and socio-economic exclusion, and extraction of resources. To encapsulate the concept of public space in a definition implies, first of all, accepting its duality. The public space is, on one side, the whole of streets, squares, roadways, parks, car parks, which together are the negative of the "private". As suggested by architect Franco Purini, Gian Battista Nolli outlined in 1748's, *Map of Rome*, there exists visible contrasts in the Italian Capital between private and public spaces.<sup>51</sup> The latter is the physical extension of the public architectural space, measurable through Euclidean geometry. On the other side, according to Simmel,<sup>52</sup> Goffman<sup>53</sup> and Hall,<sup>54</sup> excluding its physical component, the public space can be considered the social space of the city, the

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47 Otis Dudley Duncan, "Social organization and the ecosystem," in *Handbook of modern sociology*, ed. Robert Faris (New York: Rand McNally, 1964), 36-82.

48 Riley Dunlap and William Catton, "Environmental Sociology: A Framework for Analysis," in *PROGRESS IN RESOURCE MANAGEMENT AND ENVIRONMENTAL PLANNING*, eds. Tim O'Riordan and Ralph Clair d'Arge (Chichester, England: John Wiley & Sons, 1979), 68.

49 Luigi Pellizzoni and Giorgio Osti, *Sociologia dell'ambiente* (Bologna: il Mulino, 2008), 75.

50 Strassoldo, "Ecologia."

51 Franco Purini, "Spazio pubblico," in *Enciclopedia Italiana* (Treccani, 2007), [http://www.treccani.it/enciclopedia/spazio-pubblico\\_\(Enciclopedia-Italiana\)](http://www.treccani.it/enciclopedia/spazio-pubblico_(Enciclopedia-Italiana)).

52 Georg Simmel, *Sociologia* (Torino Edizioni di Comunità, 1998).

53 Erving Goffman, *Interaction ritual: Essays on Face-to-Face Behavior* (New York: Anchor Books, 1967).

54 Edward T. Hall, *La dimensione nascosta* (Milano: Bompiani, 1968).



stage of interactions. While taking into account these working definitions' complexity, the public space must be understood as a single body: two faces of the same object, connected by a strong relationship of cause and effect, where intensity and direction have no obligatory directions. Craftsman and artifacts produce the cultural, societal, political and economic factors which characterize the city, due to their continuous tension. As pointed out by Guido Martinotti: cities constitute an inextricable whole, where material and immaterial components of the urban phenomenon all become equally important.<sup>55</sup>

Yet, the construction of the ideotype of public space remains incomplete without an additional step forward to delineate the qualities of the object under analysis in a more clear-cut way. Indeed, the main characteristic of the public space is its multifunctionality, not only because other characteristics derive from it, but because it is from this that the social dimension of spaces emerges. A variety of primary functions ensures the production of positive externalities at societal, economic and political levels, as pointed out by Jane Jacobs: "The district, and indeed as many of its internal parts as possible, must serve more than primary functions; preferably more than two".<sup>56</sup>

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Another peculiar trait of public space derives from the consideration of its accessibility. The more a space is usable, the more it guarantees a multiplicity of its primary functions. As Purini emphasizes: public space means the outcome of the coexistence of several categories aimed at ensuring a specific ideal, iconic and behavioral shade to the enjoyment of streets and squares.<sup>57</sup> A good degree of accessibility produces a space that becomes a resource for the city. Alfredo Mela points out that: it is a territory not appropriated by anyone; it is a meeting point on which everyone can stake the same claims.<sup>58</sup> Thus, a neutral, or intermediate ground that does not eliminate differences, but instead highlights disparities; leaving the outcome of comparison open to a wide range of possible scenarios.<sup>59</sup>

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55 Guido Martinotti, *Sei lezioni sulla città* (Milano: Feltrinelli, 2017), 30.

56 Jane Jacobs, *The Death and Life of Great American Cities* (New York: Vintage Books, 1961), 158.

57 Purini, "Spazio pubblico."

58 Alfredo Mela, *Sociologia delle Città* (Roma: Carocci Editore, 2015), 194.

59 Ugo Perone, *Filosofia e spazio pubblico* (Bologna, il Mulino, 2012).

Public space is a confrontation that is political first of all, as emphasized by the urbanist Darshini Mahadevia: what makes a great city are the public spaces within it. Cities in history are remembered for their public spaces, the Greek Agora, the Roman Forum, the European squares, and Indian 'chowks' (quadrangle open spaces). The experience of 'public' is the experience of a city.<sup>60</sup>

Historically, public space is the first place of deliberation. From the Athenian Agora, Occupy Wall Street's Zuccotti Park, to Gezi Park in Istanbul, public spaces have always contributed to the proper functioning of democracy. David Harvey expands on this further illustrating public spaces as a historically vital and fundamental part of democratic governance.<sup>61</sup> The public space is that place able to represent cities, to differentiate them from each other, and to produce unique cultural matrices.

However, the characteristics of a city requires a different reflection when it comes to contemporary public space. It is well established that urban public space is experiencing a period of severe crisis, which inevitably erodes and modifies the assumptions described above.<sup>62</sup> The leading cause of this crisis is globalization, which has radically changed the structure of cities and, in particular, of public space. This occurred due to the mutation in power relations between politics and economy, to the detriment of politics. Thus, Giovanni Semi highlights that the contemporary city – characterized more and more by neoliberal policies – has emphasized competition and entrepreneurship to the detriment of planning and full employment.<sup>63</sup> With the passage from Fordism to post-Fordism, during the 20th century, the economy has become particularly central to the sphere of individual experiences. According to Ulrich Beck, we can now talk of imperialism of the economic system.<sup>64</sup> This paradigm

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60 Darshini Mahadevia, "Public spaces make cities," *Down to Heart*, June 7, 2015, <https://www.downtoearth.org.in/blog/public-spaces-make-cities-44492>.

61 David Harvey, "The Political Economy of Public Space," in *The Politics of Public Space*, eds. Setha Low and Neil Smith (New York: Routledge, 2006), 17.

62 Michael Sorkin, *Variations on a Theme Park: The New American City and the End of Public Space* (New York: Hill and Wang, 1992); Mike Davis, "Fortress Los Angeles: The Militarization of Urban Space," in *Variations on a Theme Park*, ed. Michael Sorkin (New York: Hill and Wang, 1992), 154-180; Don Mitchell, *The Right to the City: Social Justice and the Fight for Public Space* (New York-London: The Guilford Press, 2003).

63 Giovanni Semi, *Gentrification. Tutte le città come Disneyland?* (Bologna: il Mulino, 2015), 48.

64 Ulrich Beck, *I rischi della libertà. L'individuo nell'epoca della globalizzazione* (Bologna: il Mulino, 2000), 22.

shift shows the economy not only reshaping other spheres, such as politics, but also stands as the only possible model for other areas of experience, including public space. We can argue that the contemporary city, or rather its government, sees in the public space, not a resource to be used in the social sphere, but rather in the economic one. One of the epigones of this kind of policy is the “entertainment city”. According to Amendola, this is that type of city where the party never stops, with “events” of all kinds and leisure that follow one after another relentlessly.<sup>65</sup> Today everything must be visible to exist. Just as people’s selfies have become a tool to demonstrate their existence and happiness, then so too the ‘event’ is the instrument that the city uses to assert its presence on globalization’s stage. Consumption and consumerism then too turn into an event, in the guise of shopping, where the showcases reflect the new mindscapes, culture and imaginary desires of the metropolitan man.<sup>66</sup> The fairs, the mega-events, the concerts, the contemporary art festivals are transformed into a medium to “live” the city, while consuming it at the same time. On the other hand, the further Amendola’s epigone is the “city-enterprise”. It arises from the need of the contemporary city to overcome two macro-problems that characterize our late-modern age: 90 deindustrialization and the depletion of resources received from the central state.<sup>67</sup> The increased mobility of companies has accentuated the need to go to the global market and compete with other cities to acquire the scarce resources mainly from the private sector. Private companies and capital have thus freed themselves from the constraint of proximity to production plants and have felt relatively free to move, choosing places with more significant advantages and attractiveness for both natural and legal persons.<sup>68</sup> Creativity and innovation become the basis for a new phase of regeneration aimed at attracting capital. On the political level, local governments must be thoroughly equipped to manage economic and development policies, which very often are implemented through forms that refer to the so-called “urban regime theory”.<sup>69</sup> Basing their action in

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65 Giandomenico Amendola, *Tra Dedalo e Icaro. La nuova domanda di città* (Bari: Laterza, 2010), 35.

66 Ibid.

67 Ibid.

68 Ibid., 27.

69 Karen Mossberger and Gerry Stoker, “The Evolution of Urban Regime Theory: The Challenge of Conceptualization,” *Urban Affairs Review* 36, no. 6 (July 2001): 810-35.

managing phenomena, administrations assume entrepreneurial attitudes, starting from the almost complete exclusion of weaker and marginalized social groups. Moreover, it is precisely in the degree of multifunctionality that public space shows its greatest changes. According to Semi, in a city that is increasingly dedicated to the entrepreneurship of itself, through emulation and competition, a willingness to construct squares, roads, parks and avenues and other places to cater towards value production is triggered.<sup>70</sup> This process reflects the systematic restructuring of the primary functions of these spaces. The contemporary public space is increasingly less accessible and increasingly dedicated to specific social groups. Thus, Mela points out that this leads to a “caricaturizing” of the city defined by a spatial structure consisting of sets of strictly controlled places, often monofunctional, where citizens and tourists are herded along predetermined routes.<sup>71</sup>

As mentioned, the urban ecosystem and the public space are characterized by strong changes that put them in a situation of crisis. Not for a lack of investment, but exactly for the opposite reason, i.e. the unbreakable bond between production of space and accumulation of capital since at least the mid-nineteenth century onwards.<sup>72</sup> Under a critical perspective, urban capitalism is using the extraction of excess capital as a lever capable of generating economies. However, the superseding of the Fordist system marked a watershed in the structure of urban system, no longer based on distribution of resources, but rather on competition and entrepreneurship, generating phenomena of territorial competition and emulation.<sup>73</sup> Following Duncan’s thesis, the technology is a type of stimulus for the ecosystem.<sup>74</sup> As illustrated by Hawley, it is “conditio sine qua non” for development processes.<sup>75</sup> If we focus on the main phases of urban development, we can see that technology has played a critical role

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70 Semi, *Gentrification*, 94.

71 Mela, *Sociologia*, 195.

72 Harvey, *The Enigma of Capital*.

73 Semi, *Gentrification*; Robert Jessop, “La transizione al postfordismo e il welfare state postkeynesiano,” in *Stato sociale e mercato mondiale. Il welfare state sopravviverà alla globalizzazione dell’economia?*, ed. Maurizio Ferrara (Torino: Edizioni della Fondazione Giovanni Agnelli, 1993); David Harvey, “From Managerialism to Entrepreneurialism: The Transformation in Urban Governance in Late Capitalism,” *Geografiska Annaler: Series B, Human Geography* 71, no. 1 (1989): 3-17.

74 Duncan, “Social organization.”

75 Amos Hawley, *Human Ecology. A Theoretical Essay* (Chicago: University of Chicago Press, 1986).

in the production of space and on the organizational components of society. Technologies such as iron, glass, cast iron and steel have been intensely traded all over the world, especially starting from the industrialization of the second half of the nineteenth century, coinciding with the second urban revolution and the urban transformations of Paris initiated by Baron Haussmann.<sup>76</sup> But also, oil, internal combustion engines, rubber and, in general, technologies related to mobility in Fordist cities. While, in our age, sensors, AI-based surveillance systems<sup>77</sup> robots collecting and sharing information moving through personal spaces and territories<sup>78</sup> etc. are spreading in cities all around the world. They are assuming an increasingly important role in the creation of the ‘civitas’ and the ‘urbis’. The common thread linking creation of space and technology is that of consumption through urbanization, which has become, or perhaps has always been, an absolutely central dynamic of urban capitalism.<sup>79</sup> In this new context, after a void left by the disappearance of factories in the urban skyline, cities return to be a basin of new models of development and entrepreneurship, thanks to new technologies and new forms of work and capital organization.<sup>80</sup> Thus, according to Zukin: “The reality is riskier and more complex. Under the radar, the city government plays a major role. It subsidizes business investment and specialized education so that tech companies will create jobs. It sets up tech hubs and innovation districts for real estate developers to thrive. And it deals with tech-related ‘disruptions’ in local markets and communities: ride-hailing services and short-term housing rentals, self-driving cars and electric scooters, and collection of private data by companies that offer ‘smart city’ gear. Even if they try to ride the tiger of digital innovation, mayors are held in thrall by a larger context: the reshaping of global capitalism”.<sup>81</sup> As stated by Fields and

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76 Bernard Stiegler, “New Urban Engineering, New Urban Genius,” Shanghai, November 22, 2018, trad. Daniel Ross, [https://www.academia.edu/37849730/Stiegler\\_New\\_Urban\\_Engineering\\_New\\_Urban\\_Genius\\_2018\\_](https://www.academia.edu/37849730/Stiegler_New_Urban_Engineering_New_Urban_Genius_2018_), 8-9.

77 Liza Lin and Newley Purnell, “A World With a Billion Cameras Watching You Is Just Around the Corner,” *The Wall Street Journal*, December 6, 2019, [https://www.wsj.com/articles/a-billion-surveillance-cameras-forecast-to-be-watching-within-two-years-11575565402?mod=hp\\_listb\\_pos1](https://www.wsj.com/articles/a-billion-surveillance-cameras-forecast-to-be-watching-within-two-years-11575565402?mod=hp_listb_pos1).

78 Matthew Rueben et al., “Themes and Research Directions in Privacy-Sensitive Robotics,” in 2018 *IEEE Workshop on Advanced Robotics and its Social Impacts (ARSO)* (IEEE, 2018): 77.

79 Harvey, *The Enigma of Capital*; Fields and Rogers, “Towards a Critical Housing,” 1-23.

80 Srnicek, *Platform Capitalism*.

81 Zukin, *The Innovation Complex*, viii.

Rogers, the role of the platforms concerns three specific spheres of capital management: “facilitating capital circulation and surplus capital absorption... coordinate and secure capital turnover... help constitute real estate as a financial asset class”.<sup>82</sup>

The reason for this is to be found in the nature of capitalism, understood as a phenomenon characterized by a high degree of adaptation to the perpetual changes taking place. It is not by chance that the financial crisis of 2007-2008 coincided with the collapse of the real estate market. According to Srnicek: “Capitalism, when a crisis hits, tends to be restructured. New technologies, new organizational forms, new modes of exploitation, new types of jobs, and new markets all emerge to create a new way of accumulating capital”.<sup>83</sup> In the same way, platform capitalism orients real estate investments impacting on the real estate market.<sup>84</sup>

A further topic of discussion concerns the impact of technology on society, in this case the technology applied to the real estate market. As Martins points out, the two main perspectives concern the Promethean and Faustian vision. The first is characteristic of Enlightenment and positivist thought, which sees in technology the strength capable of leading humankind towards a future of greater well-being. The second, matured thanks to Weber, Adorno and Heidegger, assumes that technology is an increasingly pervasive instrument of power, able to enslave man to the imperatives of scientific technical rationalism.<sup>85</sup> On the one hand, adopting the Promethean vision, the benefits of digital technology for the RES are innumerable: it spreads risk and creates an easier link between surplus savings pools and surplus housing demand, generating huge fortunes for all those actors who had the economic capacity to invest. On the other hand, the conditions of cities are mutating, making platforms the catalysts for those dynamics that Harvey indicates as “creative destruction”, such as gentrification, touristification or depopulation of urban centers.<sup>86</sup> Harvey developed this

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82 Fields and Rogers, “Towards a Critical Housing,” 14.

83 Srnicek, *Platform Capitalism*, 42.

84 Fields and Rogers, “Towards a Critical Housing,” 14.

85 Hermínio Martins, “Technology, Modernity, Politics,” in *The Politics of Postmodernity*, eds. James Good and Irving Velody (Cambridge, UK: Cambridge University Press, 1998), 150-181.

86 Harvey, *The Enigma of Capital*, 184-214.

concept in Marxist terms, but according to Reinert and Reinert, the expression was first brought into economics by Werner Sombart, and not by Schumpeter.<sup>87</sup>

The PREs, in the context of the urban ecosystem, operate in taking advantages from the ‘smart management’ of real estate properties settled on the urban space through “extractive platform-based business models”.<sup>88</sup> The inner logic of the platforms aims “to orchestrate maximum use-value from urban contexts by actively intervening to produce higher volume data-intensive interactions”.<sup>89</sup> Finally, according to Barns, ‘platforms urbanism’ is not a far experience for individuals, but, on the contrary, “it is intimately experienced as multi-sensory connection to ‘ambient’ environments of information... [platform urbanism] is a daily, habitual one of ambient and relational connectivity that alters our sense of space and knowledge of the urban in myriad ways”.<sup>90</sup>

Following Aalbers,<sup>91</sup> Semi and Tonetta delineate a categorization of the players actively participating within the economic urban and real estate scene. Thus, these players are: “Corporate landlords, profiting from large investment funds... Transnational wealthy elites and upper middle classes, buying deluxe apartments mostly as a ‘safe deposit box’ to preserve their surplus capital... New players of platform capitalism, such as Airbnb landlords and large corporations that contribute to channel capital flows in the most central, touristic zones”.<sup>92</sup> But, according to Shaw, despite the broad interest demonstrated by scholars investigating a wide range of issues related to PREs like Airbnb, “little is being said about the myriad other platforms that are being developed in the so-called PropTech or RETech

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87 Hugo Reinert and Erik S. Reinert, “Creative Destruction in Economics: Nietzsche, Sombart, Schumpeter,” in *Friedrich Nietzsche (1844-1900). Economy and Society*, eds. Jürgen G. Backhaus and Wolfgang Drechsler (New York: Springer US, 2006), 56.

88 Trebor Scholz, *Platform cooperativism: Challenging the corporate sharing economy* (New York: Rosa Luxemburg Stiftung, 2016): 5.

89 Sarah Barns, *Platform urbanism: negotiating platform ecosystems in connected cities* (Singapore: Springer Palgrave Macmillan, 2020), 129.

90 Ibid.

91 Manuel B. Aalbers, “Introduction to the forum: From third to fifth-wave gentrification,” *Tijdschrift voor Economische en Sociale Geografie* 10, no. 1 (2019): 1-11.

92 Giovanni Semi and Marta Tonetta, “Marginal hosts: Short-term rental suppliers in Turin, Italy,” *Environment and Planning A: Economy and Space* (2020): 6.

sectors”,<sup>93</sup> starting from the automatization of landlord’s work,<sup>94</sup> to the ‘smart homes innovations’, which have “only amplified existing inequalities within the home and reinforced dominant dynamics of property ownership and coercive economic relations”.<sup>95</sup> According to Hall, a more critical understanding is needed to investigate “three main issues – the way in which connected devices shape domestic spaces as sites of labour and social interaction, the collection of domestic data to categorize citizens and the relation of smart housing to gentrification and financialisation”.<sup>96</sup>

In this sense, the implementation of sensory equipment could be interpreted in Jameson’s terms as “the last symptom of that dissociation of the private and public, the subject and the object, the personal and the political, which has characterized the social life of capitalism”.<sup>97</sup>

Thus, according to Moreno, it is necessary to understand tech companies’ involvement in urban development processes emphasizing five trends that reflect the characteristics of the new urbanism shaped by the internet’s development.<sup>98</sup> This is strongly interfering with the urban processes and architectural practices of real estate investment. The first trend is the one of internet companies putting the real estate development at the center of their competitive strategies.<sup>99</sup> Thus, even Google is demonstrating great interest in urban development and real estate. The company presented the redevelopment project of North Bayshore to the City of Mountain View in

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93 Joe Shaw, “Platform Real Estate,” *Oxford Internet Institute*, November 7, 2019, <https://www.oii.ox.ac.uk/blog/platform-real-estate-by-joe-shaw>.

94 Desiree Fields, “Automated Landlord: Digital Technologies and Post-Crisis Financial Accumulation,” *Environment and Planning A: Economy and Space* (May 2019): 1-22.

95 Miranda Hall, “Beware the Smart Home,” *Autonomy* (November 2018), <https://autonomy.work/portfolio/beware-the-smart-home/>.

96 Ibid.

97 Fredric Jameson, “Progress versus Utopia; Or, Can We Imagine the Future? (Progrès Contre Utopie, Ou: Pouvons-nous Imaginer L’avenir),” *Science Fiction Studies* 9, no. 2 (1982): 148, [www.jstor.org/stable/4239476](http://www.jstor.org/stable/4239476), accessed June 16, 2020.

98 Louis Moreno, “Fracking sociality: architecture, real estate, and the internet’s new urbanism,” in *Data Publics, Public Plurality in an Era of Data Determinacy*, ed. Peter Mörtenböck and Helge Mooshammer (Abingdon-New York: Routledge, 2020), 131-132. [https://books.google.it/books/about/Data\\_Publics.html?id=gH\\_oDwAAQBAJ&redir\\_esc=y](https://books.google.it/books/about/Data_Publics.html?id=gH_oDwAAQBAJ&redir_esc=y).

99 Ibid.



2018.<sup>100</sup> This high-impact plan is designed to be developed on two areas widely owned by Google itself, Shorebird and Joaquin, and could include offices, homes, hotels, restaurants, shops, parks, etc. Here we notice a paradigm shift in Google's approach to the urban ecosystem and to real estate properties. Indeed, as stated by Moreno: "Google is looking to create a new image of the city, one where nature, knowledge, and society circulate in a state of dynamic equipoise".<sup>101</sup> The second one refers to hiring architects and urban designers, giving technologies an environmental form, constructing urban ecologies and complementing the communication of knowledge with internally developed technologies. According to the author, this implies "the notion that knowledge can be socially and spatially engineered through a mix of architecture and urban design marks out a new kind of real estate company".<sup>102</sup> The third trend regards the logics surrounding PEs such as WeWork and Airbnb in management and provision of real estate properties. The fourth one concerns the emergence of sensor-based technologies aimed at making more efficient and profitable the economy of the buildings, e.g. Google's Nest Labs. The fifth trend is represented by "the new urbanist ideology of collaboration and education... as a fundamentally divisive process. In Google's case, this is most clearly seen in urban housing and transport conflicts, with protests in San Francisco and Berlin over private shuttle services for Google workers and rent increases that price out the poor from urban centers".<sup>103</sup> Strictly connected to this latter trend, the project Sidewalk Toronto, proposed by a Google-affiliated company Sidewalk Labs, created conflicts among local government and citizens for concerns regarding privacy issues as well as the extent of the territory Sidewalk was going to control.<sup>104</sup> CEO Daniel L. Doctoroff announced on May 7 the impossibility to carry

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100 "A neighborhood vision for North Bayshore," Google, last modified n.d. <https://realestate.withgoogle.com/northbayshore/>, accessed June 16, 2020; "North Bayshore Precise Plan Bonus FAR," City of Mountain View, last modified n.d. [https://www.mountainview.gov/depts/comdev/planning/activeprojects/northbayshore\\_nbppbonusfar.asp](https://www.mountainview.gov/depts/comdev/planning/activeprojects/northbayshore_nbppbonusfar.asp), accessed June 16, 2020.

101 Moreno, "Fracking sociality," 131.

102 Ibid., 132.

103 Ibid., 132-133.

104 Adam Carter and John Rieti, "Sidewalk Labs cancels plan to build high-tech neighbourhood in Toronto amid COVID-19," CBC, May 7, 2020, <https://www.cbc.ca/news/canada/toronto/sidewalk-labs-cancels-project-1.5559370>.

on the project due to “unprecedented economic uncertainty”.<sup>105</sup> A similar case is the one of Facebook’s Willow Village,<sup>106</sup> “wedged between the Menlo Park neighborhood of Belle Haven and the city of East Palo Alto, both heavily Hispanic communities that are among Silicon Valley’s poorest”.<sup>107</sup> Furthermore, office spaces have been dramatically resized down to “1.25 million square feet of office space, down about 29 percent from the 1.75 million that was envisioned previously for the ambitious Menlo Park development, which is located a short distance from the tech titan’s headquarters”.<sup>108</sup>

Waiting will be necessary in order to see further updates regarding these projects. At the same time, it will be necessary to observe with critical approach the internal contradictions and societal issues these type of plans could imply for the future of the urban ecosystem, focusing on all its subsets.

Here we conclude just underlining some ideas developed along this piece.

## Conclusions

Under a critical theoretical perspective, the present contribution focused on new urbanism issues, e.g. digital transformation in real estate industry, contemporary urban capital and new technology-driven re-development practices, in the framework of human ecology. The conceptual analysis of ‘property technologies’ leads to the identification of two different terms in the scientific debate, in particular: ‘Proptechs’ and ‘Platform Real Estates’ (PREs) – used in the critical literature. While Baum’s approach is fundamental to an organic understanding of the Proptechs ecosystem, the term ‘PREs’

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105 Daniel L. Doctoroff, “Why we’re no longer pursuing the Quayside project – and what’s next for Sidewalk Labs,” *Medium*, May 7, 2020, <https://medium.com/sidewalk-talk/why-were-no-longer-pursuing-the-quayside-project-and-what-s-next-for-sidewalk-labs-9a61de3fee3a>.

106 “Willow Village,” City of Menlo, last modified n.d. <https://menlopark.org/1251/Willow-Village>.

107 David Streitfeld, “Welcome to Zucktown. Where Everything Is Just Zucky.,” *The New York Times* (March 21, 2018), <https://www.nytimes.com/2018/03/21/technology/facebook-zucktown-willow-village.html>.

108 George Avalos, “Facebook dramatically reshapes plan for village,” *The Mercury News*, May 20, 2020, <https://www.mercurynews.com/2020/05/20/facebook-huge-silicon-valley-willow-village-plan-menlo-park-tech-real-estate-develop-office-housing-hotel-retail-supermarket-restaurant-park/>.

is used along in the text as we believe it allows to observe the inner logics and contradictions which are typical of platforms. The analysis continues with a focus on the process of digital transformation in the real estate industry. In recent years, experts and business operators are paying more and more attention to these innovations, as confirmed by the increasing funding at the global scale. However, it will take time to understand if it is a trend that will be maintained: according with the analyses, emerges that the drive to digital transformation, provoked at a global scale by the pandemic, has created favorable conditions for the adoption of technologies in the sector, e.g. video calling to visit apartments, VR headsets, etc.

The second part of the paper introduces the theoretical analysis of urban ecosystem and public space in relation with the process of capital extraction. It is emphasized how the production of the urban ecosystem has become more and more tied to the accumulation of the capital. The urban ecosystem, in this post-Fordist phase, or rather neo-liberal, is characterized by the change of typical ecosystemic mechanisms. There are new groups and actors entering the global real estate market where new resources are linked to real estate rent. Thus, this implies the emergence of conflicts for the competition of the territory. In this scenario, as mentioned, PREs have become an increasingly functional tool for the extraction of resources by capital, contributing in a central way in the processes of space production: “facilitating capital circulation and surplus capital absorption... coordinate and secure capital turnover... help constitute real estate as a financial asset class”.<sup>109</sup> Ultimately, this context reverberates considerably on the urban ecosystem. Starting from Pellizzoni and Osti’s assumption, borrowed from Gallino’s thought, which underlines that the calculating and instrumental rationality of capitalism favors the development of a technology incorporating the same principles and, in turn, it is strengthened by them.<sup>110</sup> This produces an imbalance in the urban ecosystem in favor of the Promethean vision of technology, for which it is the bearer of the promise of greater well-being. However, this imbalance heralds some significant changes on the public space side. Firstly, the removal of those social groups that are not suitable for the extraction of capital, with

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<sup>109</sup> Harvey, *The Enigma of Capital*, 14.

<sup>110</sup> Pellizzoni and Osti, *Sociologia*; Luciano Gallino, *Tecnologia e democrazia. Conoscenze tecniche e scientifiche come beni pubblici* (Torino: Einaudi, 2007), 153.

the relative impoverishment of cultural capital, in favor of economic capital, as in the case of San Francisco studied by Opillard.<sup>111</sup>

Secondly, in the face of technological support always aimed at simplifying everyday life, an increase in weak social ties tending to individualism emerge. Therefore, it is understandable how to run the risk, not only the one of seeing diminished the multifunctional public space, dear to the author, urbanist and activist Jane Jacobs, but also the decreasing in the pedagogical and creative function of public opinion, proper to public space. Cities of stone and cities of flesh are parts of the same body, one essential to the other and vice versa, in a continuous flow of contamination, which determines the process of structuring, theorized by Martinotti.<sup>112</sup> What emerges from the analysis is a shift in the balance within the urban ecosystem. The current trend seems to show that the stone city is increasingly assuming a dominant position, to the detriment of the city of humans. If this is analyzed with the ecosystemic approach - and specifically through Dunlap and Catton's model of interaction between environment and society<sup>113</sup> - it is possible to observe that a new hierarchy within the urban ecosystem is being defined between the variables in play. The impact of platform capitalism on the urban ecosystem elevates technology to a pivot around which the other variables rotate. No longer just cities of humans and cities of stone, cities of data are becoming increasingly concrete and capable of transforming individual and collective human experiences into extractable capital. Thus, platform urbanism plays a key role in this process. As Barns has already argued, it is part of the daily experience of humans.<sup>114</sup> And since such a multi-sensory experience is capable of covering every area of our human life, then it is not only capable of altering our sense of space and urban knowledge in myriad of different ways, but it operates a real socio-spatial reconfiguration through the reproduction of the city "as a relational resource for data governing", but also as "an algorithmically fine-tuned" means for governing applied to environmental behaviors, that mediates the norms of sociality and

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111 Florian Opillard, "Resisting the Politics of Displacement in the San Francisco Bay Area: Anti-gentrification Activism in the Tech Boom 2.0," *European Journal of American Studies* 10, no. 3 (2015): 1-23.

112 Martinotti, *Sei lezioni*.

113 Dunlap and Catton, "Environmental Sociology," 68.

114 Barns, *Platform urbanism*, 150.

connectivity.<sup>115</sup> Thus, the main scenario considered by Braesemann and Baum implies that the RES is converting into a data market, as evidenced by the authors in their data analysis regarding more than 7,000 proptech businesses<sup>116</sup>. This trend is supported by the evidence that “there are substantially more acquisitions in the data analytics sub-sector of PropTech than in any other part of the industry”.<sup>117</sup> In addition, proptech is widely recognized as a global phenomenon, although it concerns mainly some economies: North America, Europe, China and India.<sup>118</sup>

In conclusion, two critical aspects need to be stressed. First, the steadily rising funding allocated to a more and more selected number of PREs, thus appearing to confirm Braesemann and Baum’s conclusions on data markets being usually characterized by oligopolistic market structures - where few companies or monopolies offer the sole digital services available.<sup>119</sup> Thus, it seems relevant to observe that such data commodification of the whole RES fabric leads not only to the customization of services offered to users and to the maximization of profits for the few companies dominating the market, but also to the scientific production of (physical and digital) spaces. Not only real estate properties could be subjected to a process of commodification, but also social relations, weighing this system, as said, on the entire urban ecosystem and its internal logics, which extend, among other things, towards the dissolution of the blurred line separating public and private space, more than their dissociation.

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115 Ibid.

116 Braesemann and Baum, *PropTech: Turning real estate*, 1-22.

117 Ibid., 20.

118 Ibid.

119 Ibid., 19-20.

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