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Ten Points for Urban Play: a Multidisciplinary Approach

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Abstract. The importance of playfulness in the creation of cohesive and sustainable urban communities is being increasingly recognised not only in urban studies but also in other disciplines such as human-centered design, architecture and semiotics, which are devoting an increasing number of studies to the potential, the creation and the effects of various forms of playful interactions with urban spaces. This convergence of interests makes it urgent to find common concepts leading to a holistic understanding of the phenomenon. In this paper, authors with different backgrounds (semiotics, architecture and design) but with a common interest in urban playfulness initiate a multidisciplinary dialogue. Such dialogue was articulated in five phases – Exploration, Integration, Categorisation, Selection and Description – and produced a total of ten strong concepts. This list offers a platform for the understanding, study, and design of urban playfulness.

Keywords: urban play, semiotics, design, architecture.

1 Introduction

In urban studies a great importance has been given to the human dimension in urban studies, which means making urban spaces on the one side more affordable [1], and on the other side more emotional [2]. Among the others, ludic elements in urban spaces have emerged as a key strategy to make them livelier and enjoyable, as well as making people more active. Indeed, in recent years, urban studies are particularly concerned with the topic of ludic elements in urban spaces, with a particular focus on the design of urban spaces, especially on how they are explicitly or implicitly used for play [3] the possibility offered by play for a different experience and vision of the spaces [4] their direct impact on the people interaction and community building [5]; [6] and how the use of media in (hybrid) urban spaces makes them more playful [7]. A notable example to be mentioned is Volkswagen's experiment known as fun theory. To promote their BlueMotion

technology, the German company decided to test a theory rather than creating a mere advertising campaign: their main idea was to change people's behaviour by making an activity more fun to do. They aimed to promote the idea that individuals can maintain the enjoyment and satisfaction of driving while simultaneously reducing their environmental impact by lowering their gas emissions. Four public interventions were staged: A piano staircase, a bin with a fifty-foot drop, a bottle-bank arcade, fast lanes in supermarkets and subways, and a speed-camera lottery. In some cases, such as the piano stairs, more that 66% of the users decided to take a stair instead of the elevator showing that the enjoyment of doing good can be transmitted with the mediation of specific playful activities. In terms of the involved audience, the literature has focused not only on the children's perspective, especially related to the way ludic activities impact on their use of public space [8], but also on adults and on how urban play affects them and their perception of space [9]; [10]. In this context, two main concepts have been developed: "urban game" and "urban play". We can define "urban games" as the ludic activities taking place in the public urban spaces which require specific rules and dynamics proper of a structured game (e.g., the achievement of a specific objective, the competition, etc.) and "urban play" as a free ludic activity aiming to see and sense urban spaces from a different perspective [3], making cities more enjoyable [11] and citizens more active [12]. The authors of this paper, in focusing on how urban plays are of particular interest to the present work, also emphasise how processes and activities under urban play are connected, on the one hand, to the increasing integration of Information and Communication Technologies (ICTs) in urban spaces, which engage people in innovative ways. This means that, if urban play happens in physical urban spaces, it can have a direct impact on improving the people's experience and perspective on the city, digital technologies can improve and enhance the experience, giving less importance to these solutions entirely played in digital spaces (e.g., videogames). The human-centered design [13], the approach oriented to the ways people interact with each other and through ICTs, is particularly important in this field, since its aim is designing digital play solutions with usable interfaces for social relations. On the other hand, the cultural change represented by the "ludification of culture" [14], that means transforming games and play into powerful motivators and creators of meaning, when applied to urban play, allows to consider them as a solution to the partial loss of meaning of space related to the uprooting of much of social life, due to the increasing mediatisation of experience, as theorised by Meyrowitz (see [15]). For this reason, the authors do not consider as part of urban plays mainstream sports (e.g., football) in urban spaces, since in these cases the play has no fundamental impact on changing the vision of the city, considering the spaces only as a playground. In this sense, the term "gamification" is crucial: Hamari [16] defines it as the process of transforming "organisational structure into one which affords

similar positive experiences, skills, and practices as found in games", affecting technological, economic, cultural, and societal aspects. In this sense, it represents a longer process, which improves engagement and motivation in a specific field. From the perspective of this contribution, the authors talk about "urban gamification", which is oriented to the achievement of this positive experience in urban spaces through games and plays. The increasing importance of urban play is reflected in academic literature across disciplines, as well in the purposeful attempts to make use of urban play in design, marketing and architectural projects [17; 18]. Despite the transdisciplinary nature of the subject, there is still a clear gap when it comes to joining the descriptive and prescriptive approaches to urban play. In other words, most studies focus either on explaining and describing accurately the role and potential of play in the city (often offering valuable insights) or on designing and testing activities and applications that make use urban play (often leading to frameworks and best-practices), but there is a lack of approaches that connects these two aspects.

The authors believe that the field is ripe for more ambitious approaches to urban play that, building on the solid literature produced on the topic in various disciplines, try to bridge between them and initiate the creation of a common language. The aim of this paper, hence, is to outline a list of crucial points capable of working both as heuristics and as strong concepts [19] and therefore of bridging between different approaches to urban play, so to guide our understanding of urban play and promote an effective application of playful and gameful strategies in the city spaces. To reflect the complexity and the many epistemological layers involved in the study of cities - and of play - the authors adopted a multidisciplinary approach to offer a stereoscopic view on the topic. In particular they focused on three main disciplines: semiotics, architecture and design. Each of the authors has a strong background on one of these disciplines, and the synergy and contamination between the three perspectives is at the centre of the ambitions of this paper.

In summarising the main contributions and methods that these disciplines (which are, of course, just a part of a larger body of works on the topic) use to engage urban play, the authors initiate a conversation between these perspectives so as to identify convergences, recurring patterns and fertile areas of dialogue. From this conversation they emerge several key points for understanding, studying, and designing urban play. These will constitute a framework highlighting the main elements to consider for the application of urban play in a city environment.

The framework addresses a wide audience. It is meant to offer a useful analytical tool to scholars from different backgrounds (ranging from urbanism to gamification) to study and conceptualise different examples of urban play. It is meant to offer guidance to architects, urban and game designers, activists and

stakeholders that are planning an urban play activity for diverse reasons and objectives. In general, it helps consider urban play in a multi-layered way.

2 Perspectives on Urban Play

2.1 The Many Perspectives on Urban Play

Urban play, as we have mentioned, is a timely topic, engaged in many disciplines (urbanism, architecture, human geography, semiotics, sociology, anthropology, psychology, design) and fields (game studies, gamification research, cultural studies). In this paper the authors will focus on three of them, namely semiotics, architecture, and design. Despite some areas of overlapping, these disciplines, individually, focus on three cardinal building blocks of cities: citizens and meaning making (semiotics), spaces, places, and the built environment (architecture), technological artefacts and augmentations of the urban spaces following the human wants and needs (design). Furthermore, in the last decades we have seen the rise of the so-called "revolutions from below" [20], referring to specific actions that aim to subvert urban spaces toward subaltern purposes to trigger citizens' appropriation, protest, and subversion. These actions motivate the inhabitants to imagine alternative spaces and set different urban conditions for these spaces to arise. The major objective of these very proposals is to re-conceptualise urban theory through new methods and tools. Urban play - and its implementation - stands precisely in an interesting intersection between the demand for political change and the need for new instruments through which to vehicle that desire. Nevertheless, assuming to be able to subvert the existing situation, underlies the need to further understand and interpret the urban reality in which people are submerged, especially in terms of capturing the true meaning of urban spaces and the dynamics expressed in them. For this purpose, the field of semiotics studies is of sure help for its intrinsic meaning of meaning-making (or "semiosis") and interpretation. From this perspective, the discipline has been used to study both cities and play - as well as their intersections. In this paper, the authors introduce some highlights and main concepts of urban semiotics and of the semiotics studies on play in relation to the discipline of architecture and urban design. The use of games - and playful dynamics, in architecture is not a novelty and has a long history since the 1960s [21]. Researchers have often focused on playfulness as a possible answer to the current need to rethink traditional urban models and project meaningful perspectives on the urban spaces we dwell in our everyday life for the purpose to optimise them toward a common and more democratic good. The 'hack' [22] in urban spaces, underlies the idea of playfully and creatively working around the day-to-day limitations of our cities. In the

design field, different branches collaborate in the implementation of urban games for a variety of purposes. Design plays a pivotal role in urban games and the gamification of urban spaces by transforming public areas into interactive and engaging environments. Effective design elements, such as augmented reality, interactive installations, creative signage, and user experience design principles, can significantly enhance the user experience, encouraging exploration and social interaction. By integrating playful elements into the urban fabric, designers can foster a sense of community, increase foot traffic, and promote physical activity. On the one hand, human-computer interaction and interaction design have been largely contributing in studying new modes of interaction to urban spaces with the support of digital technologies, in order to make cities more "human" in people's eyes. For example: augmented reality applications overlay digital information onto physical spaces, creating a multi-layered experience that encourages users to explore and interact with their environment in novel ways; interactive installations, such as digital murals that change with user interaction or street furniture that responds to presence, make the urban environment more dynamic and engaging. Moreover, a good part of game design studies is devoted to these issues too, in particular by providing urban games the most appropriate dynamics, aesthetics and mechanics for the set objectives. Creative signage and wayfinding systems make the city more accessible and adds an element of discovery to everyday commutes and explorations. Well-designed user interface ensures that the interactive solution is intuitive, accessible, and engaging: creating seamless interactions enhances user satisfaction and encourages repeated engagement. This is particularly important since urban spaces are complex environments which require to focus on the person as core of the experience, mediated and supported by technology within a context with specific characteristics, and influence and is influenced by people in an unpredictable way [23]. Such game design solutions often make use of co-design or participatory design in order to allow citizens to participate in the creation of the games, and therefore to have a say in how the games will affect urban spaces [24]. This ensures that the games are contextually relevant and resonate with local culture and needs. By involving the community in the design process, the resulting urban interventions are more likely to be embraced and sustained. Moreover, incorporating playful elements into the urban environment, designers can foster a sense of community. Urban games often involve social components that require collaboration or competition, encouraging people to interact with one another, also around social and environmental issues: games designed around themes such as sustainability, cultural heritage, or public health can raise awareness and encourage civic participation. Finally, gamified urban spaces promote physical activity by encouraging users to move around the city. Whether through walking tours, cycling challenges, or dance-based installations, these activities contribute

to healthier lifestyles, motivating people to be more active and explore different parts of their city (on this aspect, refer to [25] where a theoretical framework for the design for wellbeing is proposed, mainly in large techno ecosystems like smart cities, considering people experience in this field in a multidimensional way and influenced by the characteristics of people, processes, and places). The three listed approaches (semiotics, architecture, and design) do not exhaust the possible approaches to urban play, and future work should extend the discussion to other disciplinary perspectives so as to create an even wider understanding and consensus. This study, therefore, has the ambition to be a starting point, to initiate a dialogue and to do so by highlighting some cardinal characteristics of urban play putting together heterogeneous fields related to urban studies under one common perspective. To ground our discussion, in this section, we will propose a brief overview of the key elements of urban play, rooted in a multidisciplinary take that combines ideas and perspectives of semiotics as common vector through which architecture and design fit together to design new actions for urban spaces relying on the possibilities of urban play.

2.2 The City as Text, Intertext and Design Space

Urban spaces are designed and created according to many material and pragmatic needs, relating to logistics, supply chains, habitability, traffic, and many others. Not to be forgotten is the notion of public spaces, to be intended as socio-spatial territories with the intrinsic capacity to facilitate and regulate social and interpersonal relationships [26; 27], as an agglomeration of the myriad of urban spaces in it contained, cities are then deeply meaningful objects, which crystallise within themselves the cultures they host, their histories, their practices, and their artefacts. Urban semiotics attempts to consider the abundance of meaning and communication of which urban spaces are imbued and free them from being mere spaces of consumption and branding as part of the political economy [28, 29]. To do so, several authors proposed different ways of understanding the semiotic dimension of cities. Barthes [30], the first to acknowledge the possibility of a semiology of the city, imagines it as a discourse (continuously going on) and as a language (spoken by the citizens while walking and inhabiting it). Benveniste [31] put forward the concept of pedestrian enunciations to describe how the city exists and acquire meaning thanks to the choices of the people moving through it. Michel de Certeau, in *L'invention du quotidien* [32], states that a city can be understood as a text, stable and actualised by the movement of its citizens. Later, Volli [33] proposes a perspective of synthesis: he describes cities as expressive realities that continually renew and redefine themselves - like discourses - but that at the same time cast behind themselves stable patterns - like texts. Recent works in urban studies also adopt a semiotic perspective to engage, for example,

with making sense of segregated spaces [34], describing urban strategies in terms of risk taking [35], and mapping transportation choices and valorisations [36]. These two semiotic natures of cities, that of texts and that of discourses, coexist, making them complex meaning-machines. From a static or synchronic perspective, the city can be read as a text. It is a text created by countless authors across many centuries. Urban spaces encompass numerous historical and political stratifications emerging from the transformations of the city and the tensions between different powers (civil, military, religious, economic) petrified in the geographical struggle for prominence, height, centrality, or traffic.

These multi-layered complex texts are easy to identify as a whole (the city) but also encompass an immense number of texts of smaller scale (buildings, parks, shop windows etc.) each meaningful on their own, but also participating in the choral meaning of the city. Larger elements can be the context of the smaller ones (a neighbourhood becomes the context of a building) but also the opposite is possible (monuments lessen the meaning of everything around them, creating a semiotic void that allows them to "shine") [37]. When it comes to "writing" the urban text, the possibility of exercising an authorship on the urban spaces is distributed unequally: political and economic powers have almost a monopoly on urban writing and use it to shape the city to their image. This writing can be direct, but also depend on a wide range of policy or economic drivers, including national and local policies, different forms of funding and even funding cuts grant private companies and investors more influence. These factions have been indicated as "tyrannical" approaches that potentially undermine the creation of the built environment as a collective endeavour [38]. Various forms of authorship are still available for citizens, both in organised and institutionalised ways (committees to save monuments or parks from renovation plans, NGOs establishing social housing etc.) and in emergent and direct ways. The latter, however, are often criminalised, and include creative forms of writing (graffiti, DIY urbanism) or destructive forms of erasure (vandalism, fires, looting, toppling monuments). If we look at the city from a dynamic and diachronic perspective, the city is a discourse continuously being interpreted and enunciated. First, citizens moving through the city need to be able to understand it, to interpret it correctly (i.e., not getting lost or run over by a car, being able to navigate it and to move through it). This requires a literacy in regard to the city that can vary greatly between different cities and cultures [33]. This competence guides the citizens moving, living and experiencing their city, while their actions enunciate the urban space - in other words, they "read it out loud". The presence and actions of citizens in the city allow them to influence the meaning of these spaces. Actions such as protest marches, sightseeing or shopping shape the meaning of the spaces and, in time, affect the urban fabric as well. In parallel with the definition of de Certeau [32] that the city can be seen by our eyes in a textual form shaped by the

system of interactions and actions by citizens, from an architectural perspective the urban space can be seen not a static form, not changing through time, but rather an evolutionary system based on a system of equilibrium and inner entropy and energy generated by the meaningful codes continuously created and overwritten by its agents [39].

The city, then, can be compared to a complex system showing macroscopic and therefore clearly visible characteristics. Nevertheless, the latter might be hardly understandable only focusing on the single structures of agents that behave within it [40; 41; 42). In order to overcome this issue, we can start reflecting that, rather than trying to understand urban spaces only from their physical appearance and materiality, we must focus our attention on the cognition embodied in its agents - for example citizens [43] - and, therefore, their peculiarity of being a system of experiential re-writings constantly overlapping [1; 44].

The consolidated idea of the city as an immanent and static entity should be reconsidered in connection with to the emergence of new technologies and devices, that expand his textual dimension to the dimension of a hypertext [45] where the simultaneous presence of IT and information within the environment defines a richer metalanguage that can in-form meaningful design actions to rewrite the urban spaces. Augmented Reality, for example, allows one to get a closer sense of connection with the city, at the same time facilitating communication and interaction between digital and physical spaces [46]. Moreover, the possibility that citizens access and appropriately use open data released by cities is an example on how new technologies can empower citizens, making them active in the city change processes [47]. More recently, the focus is also on the new urban interfaces that emerge from the presence of AI and IoT systems in the urban environment [48; 49]. Opromolla and Curtis [50], analyzing technologies such as GPS, social media, digital signages, etc. demonstrated how the introduction of technologies are transforming the traditional categorisations between different types of urban spaces, letting emerge new forms of urban spaces. The final impact of the application of new technologies in urban spaces can be manyfold, improving the experience of citizens in the city environment, developing services, increasing connections with urban heritage [51], and making cities more sustainable and inclusive [52].

In addition to this, if we go deeper in the meaning of the word “hypertext”, as the use of computer to transcend the fixed linear and bounded qualities of the traditional urban text towards a non-sequential model, we can briefly also describe the city as a variable structure, built upon (meaningful) “text-blocks” [or “lexia” as Roland Barthes would say [30] activated and put together by an electronic link. With these premises, we find very fascinating this potential spatialisation that extends the physical limit of the desktop to rooms, spaces and the whole city at large. In the methodological part of this contribution, we will discuss also how we

can continuously motivate citizens to appropriate the “hyperphysical” space they inhabit to discover new paths, write new stories, co-create new perspectives for tomorrow and visualise their playful thoughts that can be then transferred in more in-formed design actions.

2.3 Play, Gamification and Serious Games

Many perspectives, concepts and definitions exist when it comes to play. In this section, the authors touch on a possible semiotic perspective of playfulness, as well as two key concepts: gamification and serious games.

From a semiotic perspective, the process of playing can be understood as a behaviour founded on a specific mode of interpretation of reality [53]. In particular, play involves a resemantisation of the objects, spaces and subjects that it encounters. These elements are interpreted in a different way during play: dolls “come to life”, friends become adversaries, the floor becomes lava and chess pieces acquire new values and competences [54]. What is of interest from this semiotic perspective, is that play is, first of all, a way of changing the meaning of things - albeit in a temporary and fictional way.

Play and its ability to create meaning have always been a fundamental element of all human cultures, but in today's society it is gaining an unprecedented prestige, which multiplies its effectiveness as a meaning-making strategy. Following a trend that starts from the enlightenment, western culture has undergone a “ludic turn” [55]. Today digital games are continuously finding new applications in a multitude of domains (e.g., games for health and game-based learning). This cultural shift has been named “ludification” [14] and explains the success of “gamification”: the strategy of designing systems, applications or activities that afford similar experiences as games to make them more engaging and effective [16] or also “the use of elements from game design in contexts not playful” that it “refers primarily to games, and not to play" [56]. Furthermore, Gamification can be intented as a trend [57], a methodology [58], a process [59; 60], a strategy [61], or even a semiotic study field [62].

Nevertheless, Gamification has sometimes acquired the connotation of a simplistic marketing and top-down control strategy. In this paper the authors agree with Bonenfant and Genvo’s [63] theorisation of “ludicisation” as a gamification that focuses more on the processuality, and indeed methodological, attitude to understand play as a fundamental tool to comprehend, analyse, and design, the everyday condition of urban spaces with descriptive purposes. The concept of “gamification”, when understood in such a way, can be useful and include many legitimate attempts to motivate and even empower users [64] and, as stated by [65] a resistance mode which, rather than simple application of playful components in contexts non-playful - aims to make the user experience truly

playful and the designer and to avoid the so-called exploitationware dynamics [66] triggered by corporations through their distorted use of gamified tools

Another term related to this is that of "serious games" which Ferri & Coppock [67] define as "activities employing game-based mechanics for purposes different from simple entertainment". The concrete difference between these and gamification is not always clear and varies across authors; but the main point of divergence is that for serious games the gameplay, intended as the presence of a proper game experience is a central part, while in gamification gameplay is absent [68]. This means that the former are proper games, but designed with a specific purpose, different from mere entertainment; the latter are not: their mechanics are borrowed from games but applied in platforms and experiences that are clearly not game.

2.4 Playing with / in / for the City

Beyond the peculiarities of different forms of play, it should be noted that, when applied in urban spaces, they are not aimed at purely recreational or entertainment purposes, but also with serious purposes. In this section we will present a short overview of some of the potential that urban play can have to improve cities.

First, if we look at a city as a textual form, urban play often acquires political or activist undertones due exactly to the semiotic feature of cities and of play described above. For example, the anti-democratic division of authorship in cities (shaped in large amounts by municipalities and councils) can be contrasted with play, which allows citizens to assign new meanings - and therefore new functions - to the objects and spaces of the city. Moreover, urban play is often very social: citizens enunciate together the city in new ways, actualising it and reshaping its meanings. The effects of contexts that we have mentioned above, finally, allows relatively small playful enunciations to become the context for large spaces (sometimes the city itself) resemantising and gamifying it. While play is not a solution to every urban inequality, notable examples still showcase its potential. In parkour, for example, buildings and barriers are resemantised to become supports for acrobatic free movement in an attempt to reappropriate urban spaces [24]. Flash mobs, conceptualised as playful urban enunciations, transform urban spaces thanks to a performative act, often for political protest [69].

A similar point can be made from an architectural perspective. The city is often intended as the unavoidable reification of a top-down power that, however, necessarily needs to interfere, and orient within its own complex system of rules and prescriptions. Even though a "soft" central decisional system is auspicious to exist in these processes - mostly to supervise and define a clear legal development framework - we see the need of an overlap between the latter and a grass rooted

methodology that could empower and engage citizens to appropriate [70] their spaces and concur to their modifications and resemantisation. If grassroot practices have been very useful in transitional moments, especially in former dictatorial countries during the transition towards a democratic governmental system - very interesting is indeed the case of Albania during the 90s after the fall of Hoxhaist regime [71] - how can we guarantee the survival of such processes even where there is a more articulated interaction between such opposite actors? What could be interesting indeed, is the definition of a middle-field that, through a specific approach, could embody all the different pressures and needs of society.

Secondly, urban play is also often used as a mean to encourage citizens to carry out positive behaviours in urban spaces, for example to use sustainable transportation [e.g., 72] and in general sustainable behaviours, or to improve people's physical condition [e.g.: 73] In these solutions, the teaching objective is central: people learn something and for this reason they are able to carry out specific behaviours. In this kind of solution, the use of real time data in the implemented digital game solutions is useful to spread awareness towards specific topics [e.g., 74]. In this and in the former case, urban playcan be understood as a form of gamification that affords playful interactions and experiences in a context - urban spaces - that is not traditionally playful. For this reason, it is fundamental to analyse and design the user experience that people will have in interactive with this complex system.

Third, beside activist goals or pedagogical aims, urban play, even when designed for entertainment, has an undeniable effect on urban spaces. "Pervasive games" make use of the ubiquity which more and more characterises ICT (Information and Communication Technologies) and contribute to make play interstitial in cities. In their work Arango-López et al. [75] provide a general overview of the meaning of pervasive games in different areas. According to the authors these games break "the boundaries of the game world making reality part of it and the elements in that reality have an influence during the game". User interaction with pervasive games occurs especially through mobile devices, also considering the embedding in the smartphones of an increasing number of technologies. GPS - Global Positioning System is one of the basic technologies for these games, by allowing the spreading of the "location-based games". Bluetooth and beacons too are employed in the games where the position of the player enables the gameplay: they allow them to receive specific messages when they are near the area where the device is located [76]. In this regard, the work of Papangelis et al. [77] investigates how these games are integrated into a player's daily life and how they influence the mobility of the players through the city and their perception of places. Also, AR - Augmented Reality is largely used in pervasive games: according to Hinske et al. [78] this technology allows to create a mixed reality (physical and digital), where the "real" part of the created

environment is more present than the virtual one. Finally, also technologies like QR Codes [79] and NFC - Near Field Communication [80] are largely used in pervasive games; in this case the required interaction is with a specific object in the urban space.

Although the smartphone, with its embedded technologies, is the most used device in urban play, it is not the only one. The growing trend represented by the dissemination of digital technologies in the urban environment also affects the field of urban play. On the one side we refer to the presence of screens and interactive totems; on the other side, we refer to the application of the famous paradigm of ubiquitous computing (ubicomp) in this sector. With this term - in contrast to desktop computing - we refer to the possibility of using any device at any time, in any form and in any location [81]. Its three basic forms (*tabs, pads, and boards)* were proposed by Mark Weiser [82] and are all centered around flat devices of varying dimensions, each equipped with visual displays. Recent applications of ubicomp (such as the MIT's Project Oxygen) aim for the creation of platforms or interfaces that can improve or empower user's intentions in relation to a specific topic. The latter allows us to talk about "ubiquitous games". With this expression we refer to the use of sensors [83], microprocessors and smart objects disseminated in urban spaces as game tools. These interactive solutions enable actions and behaviours which create new meanings of the urban spaces, by allowing people to relate to the city in a different way. Also in this case, it is fundamental to analyse and design the user experience that people will have in interactive with these complex systems.

Fourth, following a structuralist anthropology approach [84] that analyses and uncovers the structures that underlie all the things that humans do, think, perceive, and feel, we can therefore identify the needs of implementing games (both analog and digital/intelligent ones) and ludic spontaneous practices as new speculative tools to address a variety of issues related to multi-scalar urban design practices. If a "game is a form of structured play" [85], and players move through spaces constantly seeking for "bugs" or provoking the environment, with this work the authors sustain that the use of play tackles three main fields linked to the idea of civic engagement and empowerment that can be then used in architectural design: procedures, self-determination, and motivation. While the act of playing constitutes a progressive decontextualization and re-contextualization of the substances that compose reality, the analysis of such dynamics can help create a collective imagination of 'possible' spaces that architects can interpret and shape in the physical realm. The "Third Space" defined by Oldenburg [86], where people gather and meet each other in a playful mood and establish bonds with one another can be used as a proper investigation tool for several aspects of urban planning procedures such as design issues, stakeholder's negotiation and deliberation, and self-organisation practises [87; 88; 89].

In connection to this point, the realisation of interactive solutions which simulate real cities represents another important example of relation between cities and games. Here we do not refer to video games which simply use real environments as background, but to solutions which refer to real cities' characteristics, in order to simulate the effects of specific measures or actions. It is particularly useful in decision making processes (e.g. [90]). The active engagement of people towards urban spaces is indeed another common purpose of the urban games; it can take different forms: it can be applied in citizen sensing (e.g., [91]) or in developing civic skills [92]. The collaboration among different stakeholders (e.g., citizens, government, investors, etc.) to encourage sharing different perspectives represents another objective of these games. The objective is building and strengthening the community and enhancing social interaction.

For this purpose, in order to grasp the inner complexity of urban environments, the impact of games' mechanics and dynamics represents a valuable perspective to transfer within the architectural discipline and, as a consequence, within the organisation and further modification of its public spaces. Even though the last years have seen a rise within the use of games as a favourite tool for spatial modelling and simulation, and public participation [93; 94; 95], and the rise of urban play as a tool for community building and city-making [96; 97], in many cases ludic activity is still seen by designers and practitioners as a childish and meaningless matter [98] and confined in a "black" area completely detached from the adult creativity and, indeed, of scarce utility [17, 99]. A reason for this strict categorisation can be found in the modernist idea of the city where the main purpose of the urban environment was to "free" people through a strict subdivision of time and space - time for work, time for leisure, etc. [100] where, nevertheless, the main idea was to consider inhabitants as a means of production and the city as the functional infrastructure to do so. Compared to an industrial linear chain, the urban environment was indeed organised upon the concept of "zoning" where either time or space were regulated and subdivided in homogeneous bands to optimise the overall production means.

Fifth, a valuable contribution of design in the urban games field, closely connected with the last investigated point concerns the co-design practices. In this sense, game elements are applied during co-design sessions in order to motivate people to give their contribution and to bring out ideas for the improvement of specific urban spaces, in particular during the brainstorming and the co-creation phases. In this case digital technologies are almost not used at all: most of these games are analogical games which use different game tools, such as cards, board games, 3D representations [101] and puzzles in order to stimulate creativity or prototype urban services.

As showcased in this short overview (which does not claim to be exhaustive) play (and gamification and serious games) has a complex and multilayered relation

with the city. However, even though games and play have entered the mainstream in a wide range of different contexts, and the combined study of games and cities [11] has gained more and more attention by researchers and practitioners during the last decades, we still lack an operative methodology that could define some categories that can be transferred as tools to in-form the urban environment and cities as meaningful-machines [53]. This contribution to filling this gap starts from our multidisciplinary reconnaissance identifying the major applications of design in the field of urban play grounding and guiding our efforts on outlining our 10 points for effective urban play. These 10 points do not constitute a new methodology, but rather a first step towards one, as they aim to be a multidisciplinary conceptual foundation for future efforts of methodological innovation.

3. The Elaboration of Ten Points for Urban Play

3.1 Methodology

The methodology of this paper was oriented by the desire of creating a common language to bridge between the three disciplinary perspectives adopted in this paper. This was not responding to a lexicological desire to ensure mutual understanding, but rather to the realisation that a stereoscopic perspective on the key elements of urban play would allow one to draw from the insights offered by different disciplines in a synergetic way. After discussing different ways to create such bridges and on how to avoid getting stuck in a definition game (see [102]), the authors decided to crystallise the results of their multidisciplinary approach to urban play in an exploratory list of key points.

Each of the points has the double ambition of being, at the same time, a heuristic and a strong concept, both pertaining to the territory of intermediate level knowledge, between abstract theory and practical instances. On the one hand, each point functions as a heuristic, in that it is a possible key of interpretation of existing activities of urban play, an analytical tool to understand the inner dynamics of the relationship between play and cities. On the other hand, each point is also a strong concept, that is, "design elements abstracted beyond particular instances" [19, p. 5], which work as design tools for the creation of activities of urban play.

Once decided to compile the list of points, the authors created and followed an ad hoc methodology articulated in five main phases:

1. Exploration phase. In this phase the authors have identified and discussed the major contributions from each single discipline (semiotics, architecture, and

design) in the field of urban play. The identification of the academic contributions was based on their background knowledge on the topic and a narrative literature review [103]. It is at the basis of the summary present in the above section. The discussions were oriented towards border work [104] and to understand and negotiate how the different epistemologies of their respective disciplines could be integrated. The result of the first phase was a shared understanding for the key approaches, concepts and theories applied to urban play in the three different disciplinary contexts.

2. Integration phase. In this phase the authors have identified recurring patterns among their own disciplines in relation to this topic. Each author proceeded first in a deductive way, listing a series of key theoretical concepts from their discipline that have been widely applied to the study of urban play (e.g., "resemantisation" and "authorship" for semiotics, "gamification" for design, and "augment" and "populate" for architecture). Second, authors proceeded in an inductive way by scoping existing research work from their field for additional key concepts and recurrent terms (e.g., "actualisation" in semiotics, "human-centered approach" for design, and "engagement" for architecture). Based on these processes each author produced a list of key concepts and terminology that they deemed of particular importance for understanding urban play. Each list contained one or two dozen of different concepts from different abstraction levels and without any attempt of systematisation. The main result of the second phase were the three lists which were then shared with the other authors.

3. Categorisation phase. In this phase the authors have confronted their lists and explained to each other the specific meaning of each item within their discipline. This allowed similarities and differences in the list. The authors then wrote each item on post it notes, and made use of affinity diagrams to group and combine different elements. Particular attention was made at grouping concepts from different disciplines together, instead of recreating disciplinary divides. A few keywords that could not be grouped with others as too specific were excluded at this stage. This allowed the creation of 18 groups of keywords, some rather cohesive, while others rather heterogeneous. Finally, the authors discussed the affinity of the keywords in different groups and assigned to each group a label. After several attempts, based on the nature of the affinity groups, the authors decided to have all labels to be *actions* related to both conceptualising and implementing urban play. At this stage two affinity groups were excluded as they did not respond to this requirement. The final result of this phase were 16 groups of keywords, each labelled as an urban play action.

4. Selection phase. In this phase the authors first individually ranked the 16 actions in order of groups of relevance, bringing together actions that were central to their approaches, and indicating other actions as secondary, or not specific to urban play (e.g., actions such as “enjoy” and “challenge”). The authors then confronted and discussed their lists. This allowed us to redefine the summarised categories identified, by excluding items that were not deemed crucial by all authors and finally identifying a set of final key points, which happened to be 10.

5. Description phase. In this phase, after discussing the different disciplinary understandings of the 10 points, the authors have written some short descriptions, highlighting the contribution of each discipline in their creation and describing key actions associated with each and mentioning related relevant examples as well as suggestions regarding their application in designing the related solutions.

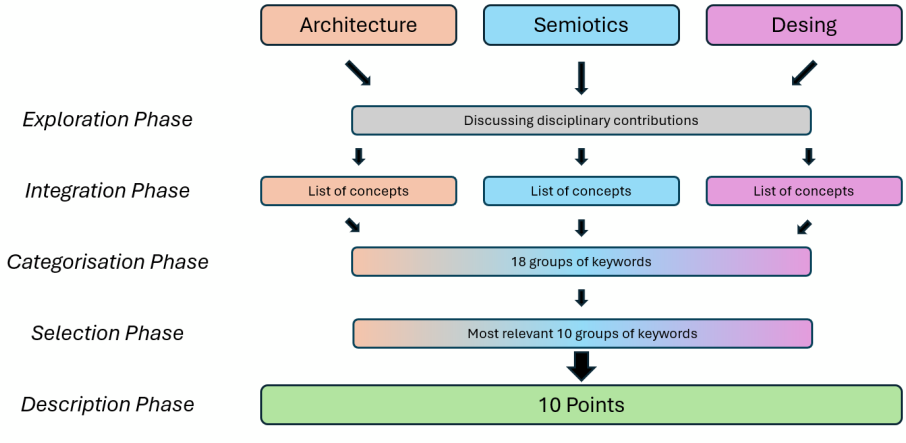

Fig. 1.. Visualisation of the methodology used to realise the 10 points.

Through these five steps, starting from different disciplinary perspectives, the authors tried to go beyond the single contributions of each single discipline, and to focus on the points of conjunction which link the three disciplines, with the aim of building a dialogue that until now was not yet explicitly evident in the academic literature on this subject. Moreover, the interdisciplinary nature of this work is particularly evident in the choice to "operationalise" this dialogue, since with the objective of synthesising its focal points, tools and methods for the application of play in urban context have been identified.

3.2 The Ten Points for Urban Play

In previous sections between semiotics, architecture and design on urban play have already emerged. In this section the authors intend to go beyond them and use a multidisciplinary approach to outline the key points for the study and design of urban play. Each of these points, grounded in all three disciplines, is articulated around an actionable keyword describing one of the possible actions facilitating urban gamification.

Each point, therefore, offers both a way of interpreting existing examples of urban play and a guideline to design new ones. These points, however, should not necessarily be considered as alternatives; the same action of urban play can be understood across several of them, and several keywords can be combined strategically to maximise the effects of urban gamification. In each definition, individual disciplines contribute in their specific domain, focusing on the interpretative relations between citizens and urban spaces (semiotics), on specific design guidelines (design), and on strategic actions (architecture).

4. The 10 Points

4.1 Activate

The ability of urban spaces to create moments of sociality seems to be increasingly challenged by the development of ICT. Already Meyrowitz [105], writing about television, underlined the uprooting effects of mass media. From a semiotic perspective, connectivity and digital technologies have a strong desemantising power over urban spaces, transforming them more and more into spaces to traverse and not spaces to encounter. Urban gamification can address this lack of meaning by "activating" citizens, i.e., encouraging them to assign new meaning to the urban spaces, opening new possibilities of interaction among them and with the urban spaces. The values, narratives and constraints put in place by urban play can all become cue for engagement (see point 2). Some serious urban games intend explicitly to activate citizens: as is the case in Cruel 2 B Kind (Bogost & McGonigal), an "assassination game" in which players use a series of prosocial behaviours as weapons, e.g., "mistaking someone for a celebrity" or "complimenting someone's shoes", thereby invading the city streets with kindness and ending up complimenting passers-by caught in the crossfire. From a design perspective, activating citizens means identifying which social relationships urban play can generate and devising new ways for people to interact with each other, for example by catalysing conflict between different actors and then helping them

to develop common goals and awareness. In this sense, the designer can consider the possibility of transforming the city features into game elements, exploiting their characteristics to foster interaction among people. From the perspective of architecture, on the city-scale, activating citizens opens up the discussion to the possibility of bottom-up practices [106] instead of centralised top-down ones, which root on co-creation dynamics where the dialectic among citizens and administrators stays on a horizontal and more democratic level. To make this point actionable, meaning applicable in real urban context, the authors suggest to think: how can the elements present in urban spaces (e.g.: benches, sidewalks, walls, etc.) be considered as game 'tools' that lead people to interact with the city and the other citizens in a different way?

4.2 Engage

According to semiotician J.M. Floch play is one of the fundamental ways of creating and catalysing value [107] and, therefore, to motivate. Games' objectives and victory conditions orient the actions of the players; urban play can motivate citizens to behave differently, to engage the city in unusual ways. Different forms of urban play can aim to promote different behaviours, often to reach prosocial goals. The Volkswagen project Fun Theory, for example, promotes a series of initiatives such as the Speed Camera Lottery, the World's Deepest Bin, and the Piano Staircase that gamify desirable behaviours - respectively, respecting speed limits, not littering, and taking the stairs instead of the escalator. From the point of view of design, engaging players is a highly desirable outcome. The engagement can be implemented considering different levels: a low or middle level of engagement simply ensures that people understand the message that the game intends to convey, whereas a high level of engagement ensures, for example, that the players assume specific behaviours coherent with the conveyed message or interact through the game in more meaningful and intimate way with the city. From the design perspective, implementing these dynamics through ICT integrated in different ways with the urban spaces represents a high potential for engagement purposes. According to architecture, engaged citizens, through the game, will develop a higher degree of agency over the urban spaces and therefore a more personal connection to them. The suggestion is to think: what are the desirable actions to direct people to (e.g., related to mobility, environment, health issues)? Which city elements are involved and, metaphorically, how can they be transformed into a gaming platform?

4.3 Populate

The ability of play to create value and to activate and engage citizens (points 1 &

2) can be used to attract people. Urban gamification, then, can become a means to populate deserted urban spaces, to attract people into them with interesting activities, sounds, and colours. This creates a virtuous semiotic circle: meaningful places attract citizens, and the presence of citizens makes these spaces more meaningful. Playable city projects, such as Bristol's water slide or Shadowing (Matthew Rosier, Jonathan Chomko), work in exactly this way: they attract and aggregate citizens around moments of playfulness, recreating a sense of community through shared meaningful experiences. From a design standpoint, this implies a reflection over the affordances of deserted spaces, and on the ways, these can be used to create moments of play that are safe and prosocial, and that for this reason can make the spaces more attractive. In this sense, design can create a strong connection between digital media and urban spaces, that is to say it can contribute to make spaces and initiatives known, creating a coherent user experience between these different parts (e.g.: online environments create promises of play for specific spaces). From an architectural standpoint, populating the "void", be it by re-using unnoticed spaces, or by mending the connection between different spaces, revitalises them to be part of a heteronomous playful urban scenario. At the same time, populating a space refers to the progressive emptying of our public spaces. Considering the actual unstainable expansion trend of our urban patterns, we see more and more the need of re-evaluating those interstitial areas suffering phenomena of abandonment and weakening. Architecture can be used as a medium that bears meaningful messages that can persuade people to meet and aggregate together to repopulate the space. Which artistic and creative interventions and installations can reactivate spaces? How to involve local residents in imagining these possible interventions? How can they create playful interactions among people?

4.4 Actualise

According to semioticians Barthes [30] and Benveniste [31], moving and acting through the city is a way to enunciate and actualise it. In other words, if the city is a text, when we move within it, we are reading it out loud. This enunciation and actualisation of urban spaces, however, is not neutral: different actions can bring about different meanings, so the walking of a *flâneur* cannot be the same as someone going shopping. Playing in the city, therefore, actualises it in a specific, ludic, way. Flash mobs, for example, transform urban spaces into unexpected stages, and by doing so, they actualise such spaces in a ludic way. Urban play, then, can be used to design situations and practices that change the meaning and function of the spaces that host them. To this end, architects and designers must identify the areas and needs they want to address (in coherence with the characteristics of the city itself and their inhabitants), and explore their various

possible solutions so that a playful act can become a trigger for change and renewal. These two disciplines can contribute to studying which type of social playful activities can be performed in which type of spaces (with its proper characteristics) and how the characteristics of these spaces can be used by people to surprise. How actions and activities, even if impromptu, within empty urban spaces can surprise people and to live a playful and happy experience?

4.5 Narrate

According to semiotics, narrativity is one of the primary ways in which humans give meaning to the world and understand actions and consequences [108]. The city, on the other hand, is the perfect setting for stories - so much that Rousseau [109] linked urbanisation to the success of novels: people would leave the countryside, because cities are where stories happen. In the polymorphic urban spaces, then, stories are a way to guide citizens. Urban play can offer a narrative to its players, one that guides them in their exploration and movement through the city. Games such as Being Grunberg [110] mix storytelling and urban play, using the city as a setting to tell a story and, in that way, conveying emotions and information. From the point of view of design, this requires a focus on the expected people's experience in interacting with a planned solution, by identifying the specific channels to employ for the different moments of interaction and, for each of them, the messages to communicate and the actions to require. More in detail, the design can study the different stages of the people's experience within a city (related to a specific activity or to a more extended one), identifying how actions, activities, and elements present in the context can gamify this experience. Referring to the urban scale, architecture can be used to prefigure narrative palimpsests where stories can be displayed and modified with a free interaction with the spatial elements that are inserted within the physical space, and which are open to citizens' appropriation practices. These stories and scenarios, therefore, contribute to defining and redefining the city itself and, through their relationship, the citizens themselves. In the citizens' experience and journey within the city, what are the different phases and steps of interaction people go through in order to reach specific goals? How can the activities in each phase and the interactions with the relevant stakeholders and touchpoints be made more playful?

4.6 Blur

While play is often described as separated from real life by a "magic circle" [111] or by several boundaries [112] most forms of urban play are pervasive - that is, they expand the spatial, temporal, and social boundaries of play [113]. From a

semiotic standpoint, pervasive play mixes the values and meanings that belong to the game and those of ordinary life. It blurs the separation between game and nongame and lets the players oscillate between the two. There are many examples of pervasive games that take place in the urban spaces: treasure hunts (such as geocaching), assassination games, AR games (such as the already mentioned Pokèmon Go that allows the user to occupy the space both physically and digitally through the blurring of their boundaries [114; 115]. These blur the boundaries of play, mixing it with everyday life. To blur this boundary, architects and designers must identify the ways in which urban play activities can be aligned with citizens' normal and everyday experiences and interactions with the city, by exactly identifying the "spaces" and moments in which game can be present and interrelated with other activities. Once these are identified, urban gamification can be used to create a porosity at the edge between the space of play and the "normal" space, so to allow a continuous dialogue and contamination between the two. In its effects "Blur" is similar to "Narrate": both focus on how to make people's everyday activities more playful. However, if "Narrate" focuses more on practical activities (e.g. moving within the city, performing administrative tasks, etc), "Blur" has not this practical application, being more focused on a general interaction with the city.What spaces, situations, actions can be upturned through play? Where is it safe to bring playfulness in the picture? Where play can be most effective in breaking the normality of routine?

4.7 Disrupt

According to semiotics, the meaning of the urban text is the result of countless acts of authorship that collaborate (and conflict) to create choral meaning. Every action of urban play, hence, will be positioned in a context of existing urban meaning and will have to interact with it. In particular, the ability of play to resemantise objects, subjects, and spaces - to propose new meanings for them - puts it in direct contrast with the traditional meanings of the urban spaces, as play will have to enrich or challenge them. The semiotic activity emerging from playful practices has the potential to disrupt the urban text, and therefore to mess with the normal life of the city and, in extreme cases, to create situations of danger. It is the case, for example, of the playful use of vehicles such as skateboards or e-scooters that disrupt ordinary circulation and give rise to new ways of interaction with the urban spaces, but sometimes involve risky behaviours. Designing an action of urban gamification, therefore, requires wondering about the place that the play activity will take in the urban context. Does it challenge it, or offer critical perspectives on it? Does it use it to reinforce its own resemantisations? From this point of view, "disrupt" means reflecting on innovative and unexpected ways for people to interact with the city, where its

architecture is not intended as the reification of mono-directional messages but as a complex playground to be therefore 'hacked'.

The disrupted scenario, then, allows for unusual kinds of actions, and letting the citizens embrace a scenario different from daily life, enhances their capacity and ability to interact with the city. A clear example in the field of architecture comes from the way in which former dictatorial buildings have been "hacked" by the population and their borders re-semantized due to the fall of pre-established conditions. In the city of Tirana we can still see the so-called "Pyramid", the erstwhile mausoleum of the Albanian dictator Enver Hoxha. After the fall of the Communist regime, the Pyramid, even though completely abandoned and in very deplorable conditions, has been slowly transformed by the citizens into an urban slide. It is not uncommon to see adolescents sliding up and down the side of the old mausoleum; children playing football using the front door as the goal, or families enjoying their time looking at the sunset and chatting at the top of it. In this case, the previous hard borders have been softened a re-semantized through inserting again the Pyramid in the active cycle of the city life and in transforming it in the biggest technology hub in the Western Balkans [116]. Furthermore, from the design perspective, the disruption can be particularly evident in encouraging the inclusion of extreme and minority points of view (e.g., of some underrepresented groups) in modifying urban spaces according to their needs and desires, which also mean adapt these spaces to a diverse and unusual setting (that at the end can influence the dominant one). What are the ideological values that are upheld in a certain space, and how could we use play to challenge them? What is perceived as "normal" that could be challenged with a playful activity?

4.8 Augment

Today cities feature digital prosthesis and augmentations such as hypertextual maps and photographical reconstructions. Similarly, citizens are also augmented by the technological gadgets they bring along, allowing them to connect to the internet, be tracked by a GPS system, take pictures and videos of the urban environment etc. From a semiotic perspective, these technologies afford new ways of generating and circulating meaning. Urban play can make use of these augmentations (of the city and of the citizens) to its ends. The digital urban spaces can then become part of a hybrid playground, and the citizens' gadgets can become playful affordances. For example, AR games such as Pokémon Go use an electronic prosthesis of the city, perfectly superimposed to the real one, so as to let players transform the entire city-space in a playground, without having to make any actual changes to the physical reality of the city. From a design point of view, this entails focusing on the technologies and tools required to reach the defined objectives and to reflect on how to implement these in the physical spaces of the

city, so how the latter can be transformed and augmented in features, contents and services by and through technology, having in mind that the goal is to integrate technologies so that they are completely transparent to people. From an architectural point of view, urban prosthesis can also be understood as hackable infrastructures, for citizens and designers to use for new, playful, ends. Citizens' collectives can project a new layer over the existing physical one and can address problems and opportunities which are of less interest for local institutions but are fundamental issues for local communities. Such a hacker mentality leads to the rise of new bottom-up city-making practices to kick-start complex issues starting from some simple off-the-shelf intelligent devices.

How can ICTs augment the possibilities of a playful interaction of citizens with the urban environment? How can we play with the mappings and digital infrastructure of the city?

4.9 Transform

The amount of semiotic authorship that the citizens can exercise on urban spaces is generally very limited, and many attempts to write on the city are criminalised and repressed (e.g. street art and graffiti). Urban play, from this perspective, offers to the citizens a new way to exercise their right to the city: several forms of urban gamification allow more or less temporary forms of urban writing that, at least within the game, allow players to engrave themselves and their actions in the urban fabric. The most ludic forms of DIY urbanism, such as yarn bombing, or the portable pedestrian crossing (carpets to put on the street where you wish to cross), do exactly this, allowing citizens to playfully transform the city. Transforming the city, from the design point of view, means identifying which elements of the urban space should and could be transformed through the play activity, and defining how these elements will be reshaped: the objective is not completely flip the elements of the city, but exploiting the ones that can appear and be used as game tools. For this objective, the integration of technologies in urban elements can contribute more and more to transforming urban spaces. From an architectural standpoint, all these transforming actions concur in the creation of a collective imaginarium of possible spaces (playscapes) that establish an isomorphic relation between ludic activity and the formation of physical spaces. If we can play with it, we can imagine a new landscape influenced by the act of play and, subsequently, if we can imagine it we can also design it.

How can people be actively involved in co-creating and co-implementing ludic solutions for the urban spaces they live in? What kind of traces can players leave in the urban fabric?

4.10 Reappropriate

Urbanistic phenomena such as gentrification, privatisation of space and segregation alienate citizens from the spaces they live in. The technocentric approaches to the cities do little to bridge over these issues and propose an impersonal datafication of urban life. Urban gamification, however, offers citizens the possibility to reappropriate and reclaim the urban spaces [15]. From a semiotic perspective, through play the citizens can devise new ways of interacting with the space, they can assign new meanings to the urban spaces, draw new relations between objects and subjects. In other words, they can make these spaces their own and redesign - even when only in a pretend way - around themselves. Playful practices, such as parkour and pride parades, allow marginalised groups to be present and represented in the urban spaces, and to claim them, temporarily, for themselves. From a design perspective the challenge is to determine which actions and structures will afford the citizens with the power and will to playfully reclaim their city. Empowering citizens through play means allowing them to look at the city with new eyes and to create new intimate connections with them through their actions, also creating a more solid community and social interactions. From the point of view of architecture, this is also a way of negotiating the purpose and functions of the built environment. What new uses of spaces and objects can be negotiated through play? What new relationships can we draw between people and urban spaces thanks to play? How can we support urban reappropriations in playful ways?

The ten key points are summarized in Table 1.

Table 1. Summary of the 10 key points for urban play.

10 Points for Urban Play	Description	Examples
Activate	Open new possibilities of interaction between citizens and urban spaces	*Cruel 2 B Kind*
Engage	Motivate and involve citizens	*Fun Theory projects*
Populate	Aggregate citizens around moments of playfulness and shared experiences	*Shadowing*
Actualise	Transform urban spaces in unexpected stages for play	*Flash mobs*
Narrate	Create a story around the citizens interaction	*Being Grunberg*
Blur	Overlap play and ordinary life	*Geocaching*
Disrupt	Challenge the urban context with new practices	*Skateboarding*
Augment	Create and play with technological prostheses of the city	*Pokémon Go*
Transform	Use play to materially change the spaces of the	*DIY Urbanism*

	city	
Reappropriate	Use play as a tool for citizens to reclaim urban spaces	*Pride parades*

The 10 points that were constructed to this approach, while on a similar abstraction level, are still very different in many respects. The actions comprising the 10 points, while all supporting playful interactions with urban spaces, differ, for example, in terms of scale, duration, and possible impact. As declared before in the methodology phase, the selection of the main concepts comes from a collective discussion of the disciplinary fields of each author to highlight the connections - and also the boundaries and discrepancy - and to find a set of points that could be used to create a common ground among the three discipline that are on focus in this work. Akin to Plato's horse, the main challenge was to find and to keep together transversal points of interest - sometime pointing at different directions - through which the three disciplines could be used to analyze and discuss the points listed in table 1. For architecture, it was the idea of reactivation of public spaces and how they can be turned into unexpected stages for play; from a semiotic perspective, the main theoretical idea was the possibility to narrate stories regarding citizens' interaction and the enunciation of possible reality in the idea of the 'city as a text'; design-wise, the objective was to highlight practices, and also minimal actions, that could materially change the space of the city but also project new layers on them through the use of technology and prosthetic devices. Nevertheless, the ten points are an attempt to show how the possible conceptual boundaries among the disciplines could be overcome for a more holistic and integrated perspective challenging different scales and users.

Some actions, for example, can involve large numbers of people (Actualise) or engage with large spaces (Transform), while others can be very punctual (Activate). Similarly, the duration of these interventions ranges from very ephemeral experiences (Actualise), to medium term (Populate, Engage), to possibly long-standing changes in the urban fabric (Transform). These terms, in turn, lead to different possible levels of impact: a DIY Urbanism project can have a long-standing effect on an entire neighborhood - while a Cruel 2 B Kind game can last just a few hours, and hopefully brighten the day of a couple dozen people.
The 10 points, therefore, should not be looked at as interchangeable, but rather as different possible tools that can be used both as alternatives, or combined strategically according to the goals of an urban play intervention.

5 Conclusions

The aim of this contribution is to show how the research on urban spaces according to a "human" point of view requires a multidisciplinary approach to get positive outcomes. A human-centered approach to the city is becoming more and more important in the academic literature, where the aim of improving the people's wellbeing and social relations, also through their active involvement in finding the most appropriate (physical and digital) solutions that go in this direction, is central in different studies [117; 118]. Moreover, also the measurement of the increase of well-being and smartness of human-centred cities is important [25] in order to define the impact of specific activities implemented to exactly make cities human [25].

In this contribution, this assumption is demonstrated in reference to the presence of game elements in the urban environment. Indeed, as shown, this presence can contribute to making cities more centered on the people's needs and desires. Since the academic literature on this topic belongs to different research fields, in this paper the authors intended to better explore this aspect, by sharing the academic discussions from their fields (semiotics, architecture and design) and identifying not only elements of conjunction among these different disciplines, but also how each of them can contribute with their characteristics and methods in the analysis and application of urban play. The list of points described in section 4.1 has this double objective: on the one side it aims at identifying the points of union of the three disciplines (crystallised in the final 10 points, intended as objectives or macro-actions urban play allows to realise) on this specific topic; on the other side it intends to demonstrate as each discipline can give its particular contribution and point of view for each point, by also providing some questions on which to reflect to implement urban play solutions and activities according to that specific point.

The methodology adopted to create the 10 points also has some limitations. For example, while all authors are specialised in their fields, the exploration phase could still have missed some secondary relevant works and perspectives. Additionally, the selection phase could have outlined a different number of focal points with more inclusive or exclusive criteria. The authors have selected the ten above because their importance was recognised in all the three disciplines, but different kinds of selections could have been implemented. The elaborated approach, therefore, does not intend to be a permanent solution to the topic of play in urban environments. On the contrary it has to be intended as a framework addressed to researchers and professionals (e.g.: sociologists, urban architects, urban designers, decision makers, etc.) who are interested in the topic and that could be used to carry out interdisciplinary activities through a game-based critical lens. For example: they can analyse how specific cities or urban spaces

contain game elements potentially to be strengthened; they can verify if urban play already implemented have worked well or can be improved; they can refer to this framework in order to rethink specific urban spaces, not only with the aim of implementing game solutions, but to give a more "human" side to them; they can implement specific urban play, by following all the 10 described points or only some of them; etc. Moreover, the concept of "impact" has only been briefly considered in the 10 points. So, in future work, we intend to demonstrate the application of the elaborated framework for different purposes and in different environments, by also translating the general indications on how to implement urban play solutions according to the 10 points in practical and precise actions, as well as to evaluate its impact at the societal level.

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