

# Urban Life on the Go: Urban Transformation of Public Space

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**Abstract**—Urban design aims to provide a stage for public life that, when once brought to life, is right away subject to subtle but continuous transformation. This paper explores such transformations and searches for ways how public life can be reinforced in the case of a housing settlement for the displaced in Nicosia, Cyprus. First, a sound basis of theoretical knowledge is established through literature review, notably the theory of the Production of Space by Henri Lefebvre, exploring its potential and defining key criteria for the following empirical analysis. The analysis is pinpointing the differences between spatial practice, representation of space and spaces of representation as well as their interaction, alliance, or even conflict. In doing so uncertainties, chances and challenges are unraveled that will be consequently linked to practice and action and lead to the formulation of a design strategy. A strategy, though, that does not long for achieving an absolute, finite certainty but understands the three dimensions of space formulated by Lefebvre as equal and space as continuously produced, hence, unfinished.

**Keywords**—Production of space, public space, urban life, urban transformation.

## I. INTRODUCTION

THE urban environment underlies constant changes in space through time. This transformation process arises from a creative interaction between people and space. Alterations are, on one hand, stirred by politics and professionals, such as urban designers and planners, who try to provide a high quality of life and to anticipate preferences in living conditions. On the other hand, they are originating from inhabitants who are using these premediated spatial conditions in their own unique way or even adapt and reshape it according to their own desires. Conditions that are created by planning and design may allow, limit or even prohibit such modifications.

## II. LEFEBVRE'S THEORY OF THE PRODUCTION OF SPACE

The phenomenon of space being socially produced has been made aware of by Henri Lefebvre in his theory of the Production of Space [1]. Originally published in 1974 it, first, did not generate much interest in architects and urban planners and designers. Today, his, at that time new, concept of space being intrinsically linked to social practice is regularly referred to by researchers in social sciences, geography, architecture and urban studies, though, mostly on a theoretical level, whilst its potential for empirical research and implementation has been more or less sidelined.

Lefebvre pinpoints the fact that space in its material reality

does not exist on its own but is intertwined with social reality and, therefore, produced by society. Social practice is defined as relationships between humans created by their activities in space. Of equal importance is that space and time are interlinked too. Space allows for social actions to take place simultaneously whilst the social production of space evolves in a process through time. Both are essential aspects of social practice, where space is not only enabling social practice but simultaneously is a result of it. Space and time can, therefore, not merely be understood as independent, material factors but must be seen as intrinsically linked to social practice. In his novel, phenomenological approach, Lefebvre has, hence, developed a three-dimensional dialectic of space consisting of three moments, namely spatial practice, representations of space and spaces of representation linked to the three phenomenological dimensions of perceived, conceived and lived space that are in constant interaction [2].

Spatial practice materializes everyday simultaneous social activities and their networks of interaction in space. It denotes social practice as articulated in space through activities that interact based on the properties of the built environment and its morphology, form and structure. Perceived space is according to Lefebvre “the practical basis of the perception of the outside world” [3]. Combining it with the concept of perceived space Lefebvre shows that perception is not only a matter of the mind but is based on physical and social materiality. Representation of space is related to conceived space. It is an abstraction and relates to an image of space or rather images of space that overlap sharing similarities but also differing to certain extends. These images occur, according to Lefebvre, not only on the level of language, where meaning is articulated through words, but also on the level of visualization, where meaning is represented through plans and maps produced by specialized professions such as urban planners and designers. Whilst meaning is equated to values, such representations by specialists are understood as knowledge that enables the exercise of power, as they are enforced on people and exhibit restrictions concerning choice and practice. They preset spatial practice but also allow orientation in space and, therefore, function as organizing frame. Space of representation denotes a symbolic reading that does not relate to the material spaces themselves but an image symbolizing natural or manmade elements or a combination in form of landscape(s). Such reading evolves in an interactive process and conveys and combines gained experiences, attached values and social norms and overcomes the predetermined representation of space. Spaces of representation relate to ordinary users who change and

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appropriate space along a previous process of experience and imagination. Through linking the three dimensions of his dialectic, he abstains from synthesizing them into a coherent whole as he still recognizes them as being distinct and their various relationships ranging from being in accordance to interaction or confrontation. The analysis of these three dimensions enables the unraveling of meaning and becoming but does not aim at a definite grounding and remains at the level of uncertainties with regards to possibilities and chances [2].

The experience in the perceived space is mediated through expectations on conceived space into the lived space so that the three spaces have a high degree of cohesion. The first, perceived space, is defined through sensual perception of space and refers to all material parts that together amount to space. Without having already developed an idea about space, though, it cannot be perceived. The precursor of perception is the conception of space, the capturing of space in thoughts and the intellectual combination of all parts in a larger whole, an understanding that produces knowledge. The lived space is the third dimension and is linked to the experience of space in everyday life practice. This experience, though, cannot be completely represented as it is linked to feelings and emotions and encompasses more than just the sum of its parts [2]. The link between experience and space is reinforced when feelings and emotions are strong [4]. A physical setting entangled with a strong experience evokes a sense of place [5] or local identity. The three dimensions cannot be separately seen as they are equivalent and simultaneously produced in time [2]. They exhibit a porosity that enables them to interact with one another and the wider social, economic and political context [6].

Within daily lives and their routines enacted in space people can imagine other, new ways of living and reshape the space accordingly. Harvey refers to this capacity as geographical imagination, where people conceptualize and transform space in a material and symbolic way. Individuals' understandings of their environment are an interpretation of their experience depending on their individual situation and the realization that space is neither an objective nor a fixed and finalized reality. It also enables an extended comprehension of their 'being' in relation to others and the physical world [7], [8].

Conceived urban, public space turns into differential space, when capital and/or state lose interest in its maintenance, development or exploitation. When such a withdrawal is perceived by the ordinary user and understood as a chance of individual intervention, the rights to this space are actively asserted through appropriation for a use different from its original purpose. The resultant change of conceived to lived space entails not only functional adaptation but also a transformation of spatial form and structure [6], [9]. Vacant space is not only seized by humans but also by natural, biological communities embedding new conflicts of use but also often maintaining a subtle balance.

### III. TOOLBOX OF URBAN ANALYSIS

The above analysis of Lefebvre's theory of the Production

of Space and the derived criteria provide a toolbox for the analysis of a mature urban setting. It is set about starting from Lefebvre's three dimensions, the spatial practice, based on the observation of social activity and interaction in space, the representation of space, which is the organizing scheme set up by town planning authorities and professionals, and the space of representation, the change and appropriation through the actual users. The investigation of these three dimensions defined by Lefebvre offers an insight into perceived, conceived and lived space. The first and second question how space is perceived and conceived approaches the analysis from a perceptual and cognitive point of view. It also looks into the first, influential research on how observers read and understand their urban environment, the Image of the City by Kevin Lynch [10] and the relation between spatial characteristics and human use as studied by Jan Gehl [11]. It includes theories on how space is not solely perceived through vision but also through the entire repository of human senses by Pallasmaa [12] and how affordances allow for a varied perception of the same space [13].

#### A. Perception of Space

Concerning spatial practice, it is important to look into the perception of space, specifically, what is perceived and how it is perceived. Humans perceive signals from their environment through their senses by seeing, hearing, smelling, touching and tasting. These signals are then processed in the brain; stimuli are screened along previous gained experience and knowledge. This cognitive process allows humans to interpret the space surrounding them, which is then deposited as a mental representation of space. Information about the environment, that is directly perceived, is subjected to a comparison to individual patterns [14], [15].

Kevin Lynch was researching on how people perceive the image of an urban environment and asking people to reproduce such mental images in form of maps of their urban area. By comparing those he extrapolated some common findings on how people identify urban elements, how they are set in relation with other elements and the observer, and how meaning is created. His general conclusion was that individual images overlap and are collapsed into public images which are held by specific groups. They support individuals' operations and collaboration with others, provide legibility and identity and enable orientation. These images represent the visualized, physical form of the environment and are classified by Lynch into five elements; paths, edges, districts, nodes and landmarks. All these elements should not be seen in isolation but overlap and form together the image as a whole. Likewise, the image is the outcome of a mutual process between the form of the environment or what is perceived and who perceives it, the observer. Lynch's research solely focuses on visual perception, excluding the senses of hearing, touch and smell that are of equal importance. It also focuses on physical form setting aside history, function, social meaning and activities [10].

The latter has been researched by Jan Gehl who studies public life and how people use public space. His systematic

analysis and documentation of social and spatial patterns allowed him to identify the properties of public space that influence its use. Success of spatial components is measured by pedestrian flows and stationary activities. These are affected by accessibility and visibility, modes of transport, functional and spatial density, and physical properties such as building heights, entrances, edges or facades [16]. The type of activities is similarly important. Whilst necessary activities in public open space occur in every condition, optional ones only take place when there is a desire and the spatial setting facilitates them. Social activities are, according to Gehl, often the resultant of necessary and optional activities as they occur spontaneous when people meet and start socializing [17]. His office and institute developed research methods or tools that measure pedestrian flows and stationary activities by counting, mapping, tracing, tracking, photographing and test walks [16].

The perception of space through the body and all of its senses has been researched by Juhani Pallasmaa who considers that the entire body plays a significant role for perception, thought and consciousness. He questions the dominance of vision putting the significance of other, often ignored senses, back into perspective [18].

Gibson contributed to the understanding of visual perception by his theory of affordances. By affordance he means the qualities of an environment that enable or afford the performance of an individual's action. Different ways of looking at the world and imagination of individuals related to more constrained or open horizons produce a singular affordance in comparison to a variety of affordances [13].

### B. Conception of Space

A further question to be investigated is how space is conceived. Conceived space is often equated with the representation of space and the planning of the urban environment. It denotes spatial practices that exert social and political power through the design of space and the manipulation of the people that live within this dominant space. Conceived space materializes in urban development plans that are monopolized by urban planners, designers, architects and landscape architects. According to Lefebvre the representation of space is characterized by ordinariness, generalization and repetition that alienates and dominates people through abstract spatial concepts [2]. But specialists are not the only ones that conceive space based on prior perception and agenda. When space is perceived, this perception is further processed in the brain and also compared to individual expectations. If these expectations are not fulfilled, the information is further explored and concepts are mentally constructed or conceived aiming at the formulation of a solution and directing further behavior [14] such as urban, informal appropriations that also compete and transform formally and legally conceived space.

### C. Living in Space

Another question to be investigated is how we live space. As explained above, people perceive space, process the collected data mentally and compare it to their individual

expectations. Not met expectations lead to a supplementary exploration and newly developed concepts that direct behavior and the implementation of a solution [14]. Regarding this, space is seen as a container, a channel that enables or a limitation that restricts. People manipulate space in their everyday life, mostly driven by practical needs. Spaces that have been set up a priori do not remain rigid but are fluid and dynamic with regards to change during their further existence. Organized space or representation of space is changing into lived space or space of representation, when the existing condition is turned into a desired one by spatial interventions of the individual decision maker, the user. Space is personalized by affirmation or remediation [19].

Spatial appropriation happens on three levels of scale which are named by Cihangar formation, repetition and composition. Whilst formation refers to the smallest scale, the singular intervention with a temporary character, repetition denotes a recurrence of a category of temporary, spatial transformation, and composition constitutes are more permanent and larger scale spatial arrangement. Formations derive from the motivation of people for space making and are usually a simple addition to an existing physical setting in proximity to their private property they live in, and especially the space in-between the private gardens and the public street. These spatial appropriations of individuals happen either when spatial satisfaction of functional needs is limited and/or when spatial possibilities are opening up through abandonment and lack of maintenance by reading the vacant space as a possible container for new spatial intervention. Cihangar defines repetitions as interventions by a group of actors on a larger scale. As the word repetition indicates, these interventions share similarities and reoccurrence in the same spatial categories. Due to their repetitive character and occupation of a larger area, they create a visual continuity and exhibit a publicly more visible image. Sharing similar needs or desires seem to channelize people and encourage others to follow prime examples. As such, they show the way forward to interfere successfully but also sustain informal space appropriations under a common umbrella. Compositions refer to complete urban configurations of informal settlements where the urban layout is a social product created by its occupants. They differ from repetitions in scale, time and numbers of actors and are based on rules and cultural codes generated by repetition [19].

## IV. THE CASE OF THE CYPRIOT SETTLEMENT OF THE DISPLACED *STROVOLOS III* IN NICOSIA

As highlighted before, the material reality of space is linked with social reality. Space is not only a frame for and enabler of social actions but it is also a result, a social construct, produced by society and its actions in space through time [2]. Social, economic, and political conceptions and actions overlap in space and coproduce space as in the case of the Cypriot settlement of the displaced *Strovolos III* in Nicosia, Cyprus. Space is, hence, partly the historic product of these actions.

### A. Conflicted Space Forcing Conceived Space

The settlements of the displaced in Cyprus came into existence after 1976 as a consequence of violent conflicts between Greek and Turkish Cypriots in 1963 and the subsequent war in 1974. The latter determined the lasting separation of the north and the south that forced Greek Cypriots to live in the Cypriot Republic and Turkish Cypriots under Turkish occupation. Consequently 200,000 Greek Cypriots were internally displaced which urged the planning and building of new housing estates by the town planning department of the Republic of Cyprus [20].

### B. Conceived Space

Specific planning principles were applied concerning the general location of the settlements of the displaced. Considerations of affordability drove the decision to place them in undeveloped areas. The provision of new job opportunities influenced their positioning next to industrial areas. Good access determined their close connection to the main road network [20]. These decisions affected the settlement directly as much as they influenced further city growth accelerating urban sprawl. As the settlements were disconnected from existing urban fabrics, they were conceived to function autonomously providing space for shops and services related to daily needs. Further planning criteria guided the planning and design and influenced form and structure. The decision to achieve a medium urban density led to a combination of apartment and row houses. A variety of typologies was thought to circumvent monotony. All residential buildings were orientated with regards to sufficient sun and light exposure. And, row houses were designed in such a way so to offer a certain degree of privacy [20].

*Strovolos III* exhibits all the above characteristics. Shops and a kafeneion are located in the north and arranged around an internal square that is connected with a small park and a basketball field. Entry into the area is provided by a ring road from which dead end roads access the row and apartment houses. Small squares, conceptualized as turning points for cars, are connected via paths to a larger, very comprehensive pedestrian network. Pocket parks are spread all over the area and carefully inserted in-between row houses. They are varying in size and floors; three typologies offer either one or two bedrooms on one floor and three provide two or three bedrooms on two floors. All apartment houses provide three floors but differ in form and number of residential units, nine to fifteen, along three typologies. The original plan also foresaw space for future adaptations such as a church, a kindergarten, a cafeteria, and further shops that were never implemented.

### C. Interactions between Conceived and Lived Space

Conceived urban space converts to differential space when the state loses interest in development and maintenance. Ordinary users view abandoned space as a chance to appropriate space adapting it to individual needs and changing form and structure [6]. A reduced engagement of responsible authorities in the upkeep of public open spaces and the

pedestrian network goes in the case of *Strovolos III* hand in hand with residents taking over the relevant spaces. The comprehensively planned space has been altered along real life conditions integrating necessary, new functions and people's desires in provisional and neglected public, open space.

One of the most noticeable re-appropriations is owed to the increasing dominance of the car since its coming into existence. Many spatial elements in public space have meanwhile been converted by people into informal parking spaces covered by temporary shelters. This concerns the turning points at the end of the cul-de-sacs and many public green spaces along streets and in-between the row houses, the pocket parks, supported by a failure of public authority to maintain it.

Similar to the invasion of public open space by shelters for cars, informal storage spaces have spread just outside the boundaries between public and private space. Most of them manifest just as mere act of storing items but some take on the form of temporary, simple constructions that protect against unauthorized use. Unfortunately, public open spaces have also been discovered as a handy space to get rid of unwanted, bulky waste. Unmaintained, public, open spaces have not only caught the eye of residents but have also been overtaken by nature conceding to each other their own right of existence.

Less functional desires have been satisfied too within public spaces, where gaps have been created by insufficient maintenance of formally planned, green, public spaces. This affects pocket parks and distance green that have been turned into vegetable gardens, fruit gardens, or flower beds. In some instances, people have introduced stairs of temporary or permanent character to overcome the low walls surrounding their private gardens and access the adjacent public open space or the network of public paths. Some even extended their private gardens by prolonging private plot borders and fencing of some of the public land.

The most obvious space to be transformed by legal action is, of course, the private space, may it be the residence or the open space surrounding it. Front yards of row houses and the open spaces surrounding the apartment houses have often been taken over by temporary shelters for parking. Row houses were also adapted to actual needs. More rooms were added on an additional floor to accommodate larger families more comfortably. Or, the ground floor was expanded to adapt to the needs of an ageing population due to the difficulty to use stairs.

The above interventions are evident as formations, a simple addition to private properties, in front yards and the plots of apartment houses or nearby, just behind back gardens and in the distance green along streets and sidewalks. It is evident that singular formations became role models as in the case of informal car ports that have been repeatedly set up, now constituting repetitions, based on social proof and acceptance [21].

The re-appropriations also disclose a lack of maintenance, which is an inherent vulnerability of the abstract space conceived by the town planning department. This has been

lately further accelerated through the transfer of title deeds to residents, which also affected maintenance responsibilities that seem to be in a transitional state without formal hand over to the municipality.

Recent actions conceived by the government also provide the ground for further transformation of properties. Old apartment blocks were replaced by new ones, south of the central area. In addition, in 2006, a law was enacted by parliament to pass title deeds on to residents of the settlement [20]. According to Jacobs, control being transferred from authority to individual owners can be seen as positive change as it overcomes management of decline due to missing capacity and motivation which affects creativity and innovation negatively [22]. Despite that this transfer is still in progress, today first impacts can be observed. Being in possession of the property allows people and their family, now, not only to live within but also to rent and sell. Effects that can be observed in row houses range from altering the fencing and erecting boundaries that block the view to 'beautification', changing surface and façade materials that stand out from the otherwise unified image.

The central area has only undergone detrimental change, as not all spaces dedicated to retail and services are in use and the square is lacking maintenance. This is caused by negative influences of a general harmful urban development that still fosters new shopping centers at the periphery and the introverted character of the square and the orientation of shop entrances towards it that is limiting the visibility from the main road.

## V.CONCLUSION

The physical characteristics of the urban space of the settlement is, at once, defining people's actions as the very urban space is produced by people through time, and vice versa affecting its physical characteristics. The original design of the town planning department equating representation of space is an abstract, rational and efficient set up that constitutes a container of social life but also a constraint. Bourdieu claims that by imposing a social use assumed by specialists based on their own mental structure, the mental structures of the future users, their needs and desires, are disregarded. This leads to them being distant in social space despite of their spatial proximity and renders the space into a constraint [23]. On the other hand, it can be argued that the envisaging of provisional space and the mere quantity and distribution of public, open spaces together with the withdrawal of governmental maintenance responsibility facilitate opportunities to render conceived into lived space or space of representation that allows people to re-appropriate space to fulfill their own needs and desires. Human interventions in public open space are, thereby, going hand in hand with pioneering plants invading marginal spaces.

Needs and desires become obvious in physical space through material interventions by residents. Re-appropriations comprise basic needs such as shelters for cars, which have not been duly taken into consideration, and the storage of building material for which the residences and plots are too small. But

they also reveal desires of extending the small private gardens of the row houses or substituting their lack as in the case of apartment houses as well as the attention and care given to their living environment by planting and setting up flower beds and vegetable and fruit gardens. Sometimes these are singular formations which are often reproduced and socially proofed and accepted turning formations into repetitions as in the case of informal car shelters. Bodily interventions, optional activities and social interaction in public, open space that constitute a substantial public life, though, are only marginally observed.

### A. Holistic Approach to Design

It will be discussed in the following what the above revelations yield for reshaping the approach to urban design, how this settlement of the displaced can be induced with meaning and how redevelopment can fulfill needs and desires of the ordinary users. It seems most promising to focus on the lived space, the space of representation, where the users themselves can shape their environment. But as urban space is created in a process that constantly moves between the three dimensions of spatial practice and where interaction creates new meaning, it seems not viable to concentrate just on one dimension, even if this is subordinated. It is significant to look into the mind sets of all involved in the creation of space, the planners and users, and open their horizons.

With regards to the representation of space it is significant that the visions for redevelopment reproduce the values of the inhabitants. This entails providing sufficient scope to people to inhabit space in accordance with their needs and desires and their social and cultural background. This will propel identification of residents with the space they live in, lead to diversification of use, spatial form and structure [24] and revive urban life through spontaneous, bodily interventions and activities in urban space.

### B. Analysis

A priori analysis of physical space should also concentrate on the users, the way they perceive and conceive space and act in space and time. Lynch's approach to the visual perception of the urban context, the image of the city, held by individuals and groups, supports the understanding of legibility, orientation and identity and their contribution to people's operation and collaboration within the urban environment [10]. This should be complemented by a study of sensual experience that integrates tactile and audio perception as rich, sensual experience generates strong feelings and emotions that when combined with spatial experience fosters identification with space [4], [5].

Physical space analysis should, of course, also look into lived space. Cihangar suggests the method of spatial design ethnography to reveal space of representation. Merging urban analysis and design ethnography provides insight into the interaction of people with their urban context in relation to time. The method combines a spatial survey with written and visual documentation of urban space created by people where spatial and architectural characteristics are traced on photos

[19]. This can be applied to transient urban spaces as well as to those spatial modifications that are more permanent in time, such as singular formations and repetitions.

An often overlooked aspect of analysis is the study of public life and the use of space by people. This is done using public life tools to count, map, trace, track and photograph people moving in space but also taking account of people spending time in one place. It is also important to count people based on age and gender, to understand who feels comfortable, and to conduct an intercept survey for social mixing that investigates who is interacting and how [16], [25].

### C. Planning and Design

Space needs to be consciously understood not only as a container but also as an opportunity that enables or a constraint that limits activities. Seeing it also from the perspective of affordances and spontaneity implies considering spatial and architectural qualities that allow for imagination, creative, personalized and affirmative use of space and spontaneous, temporary, bodily interventions.

Spatial design is associated with numerous uncertainties due to the fact that space is in a constant process of being produced within the three dimensions of spatial practice, representation of space and space of representation. These can be embedded within the design of public, open space that is not merely prescriptive but offers spatial characteristics of openness allowing for active engagement and the reshaping of space. This is achieved by avoiding regulated or over defined space, offering provisional space or introducing flexible and movable installations rather than rigid, conventional furniture. Moving away from uniform, dictated space, where quantity rules over quality, also facilitates diversification of space and users.

Parameters of perception, such as legibility, orientation and identity, and sensual stimuli, especially related to touch, hearing and seeing, need to be enhanced to foster a sense of place based on the preceding analysis. The same applies to activities and social interaction including an understanding of necessary, optional and social activities, routines and instances as well as pedestrian flows and stationary activities and their interdependencies and relation to urban characteristics as important aspects generating public life.

Last but not less central is the reflection of needs and desires in design as disclosed in the analysis of formations and repetitions, the conduct of surveys and the use of questionnaires. However, it is best to incorporate users directly in the design process through design charrettes, collaborative design workshops that are organized on site and open to a variety of actors [26]. They allow the sharing of knowledge, enable work flow and creativity and lead to tacit knowledge and ideas that evolve “underground... in obscure corners of the mind” [27].

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