Nodes-Connectors Network of Public Spaces as a Manifestation of Power in Cairo's Heterotopias

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Abstract— Heterotopia is where every community lives, works, and socializes, and within which there is a network of public spaces supporting its social life and connecting it to other heterotopias within a metropolitan. Cairo is a metropolitan with distinct heterotopias that represent the manifestation of power that shaped their public spaces' network. Nodes and connectors are a new typology introduced by this paper, constituting the network of public open spaces within each heterotopia to understand the manifestation of power over their articulation. Two distinct heterotopias are investigated: Nasr City, which represents public-sector power over its public spaces' articulation; and New Cairo, which represents the empowerment of private sector over the same. Through this investigation, it is concluded that in Cairene context since 1952, public sector is more concerned about the resilience of movement for individuals by providing accessible public spaces (connectors) to ensure the proclaimed equality and global connectivity. However, it is not concerned about the public spaces' social nature (nodes typology). While private sector, on the contrary, provides more concern about the social nature of nodes typology regardless of giving equal opportunities among the whole society to access these nodes through their connectors network.

Index Terms—Connectors, Heterotopia, Nasr City, New Cairo, Nodes, Power, Private sector, Public Sector, Public Space.

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1 INTRODUCTION

Cairene public spaces have witnessed a huge mutation in its network production, that is changed due to the transformation happened in the sociopolitical conditions of Cairo context, since the power gained by public-sector over public spaces' production during Nasser reign till the empowerment of private-sector over its' production started with Sadat reign until the contemporary metropolitan.

Thus, this paper aims to understand how different powers over public spaces production control the mutation of public spaces' network in Cairo metropolitan since 1952. So, it develops a conceptual framework to understand this mutation by providing a node-connector typology of public spaces governing this network articulation, besides understanding the constituted power over their production. Afterward, two distinct heterotopias are investigated (Nasr City and New Cairo) by this deduced framework, with which the final conclusion about the mutation of public spaces' network are comprehended.

2 RESEARCH PROBLEM

Through the research paper a set of questions are asked:
What is the nature of public spaces' network? Which power governing this network articulation? And, how does this power manifest in the socio-spatial relation to this articulation?

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3 METHODOLOGY

The methodology of this paper firstly depends on inductive methodology to develop the mutation nature of public open spaces' network regarding the power controlling this mutation, through discussing literature reviews from various disciplines of these research areas of interest, especially sociopolitical ones, regardless of addressing the notion of quality of built environment, which is considered as a must for conducting any investigated public space.

Secondly, using deductive methodology by selecting two heterotopias, Nasr City and New Cairo, from Cairo governorate are investigated using the developed utopian network to understand mutation of public spaces' network under two different types of powers, from public-sector to private-sector development.

Various tools are used to manage the applied studies, including land-use map analysis, observation, Google Form questionnaires survey, and Excel software.

4 PUBLIC SPACES' NETWORK

4.1 Public space Concepts and Definitions

4.1.1 Public sphere Vs Private sphere

In normal life, people transmit from private to public spheres while at the same time they feels and behaves accordingly, and they move from the most private sphere of their home to the most public sphere of their city [1]. Within this transition, a space of 'local publicness' is located. Public spaces shape a big part of this outside arena of everyday life, where individuals interact freely to express themselves with others. At the beginning, the difference between public and private spheres are being discussed as they affected on social life of entire society, where a clear distinction between the two terms should

be clarified to show how the approach to them is structured.

The term 'public' has a wide range of meanings, and it is originally obtained from the Latin word 'Populus,' which means 'people' [2]. As a noun, the word's meanings refer to an open place accessed by general individuals, a community, a state, or what can be related to them [3]. However, the term 'private' as an adjective means a specific group of individuals, "not sharing their thoughts or feelings with other people," or where anyone could be sequestered [3]. Besides, we elaborate the spatial manifestation related to private sphere as "a set of human behaviors and cognitions for a person or a group based on perceiving a physical space" [5]. So, a legal power over a property could be entitled owner-ship; however, this power could exist without legal owner-ship [1].

Thus, public and private spheres exist in reality in forms of oppositions, as Foucault [6] argues that the life is powered by a certain number of contradictions that cannot be reached, contradictions that could be between "private space and public space, between the space of leisure and that of work."

Hall [7], observed that people use interpersonal spatial relationships 'proxemic patterns' in four major categories, varying from the interpersonal spaces, then the community spaces of the neighborhood, which he described as the understanding and realization of spaces, followed by the impersonal public sphere and modes of social gathering associated with spaces' categories. In the same notion of Hall, Olsson et al. [8] provide four major categories: the private sphere which represents the people who live together; the neighbors' sphere in which individuals share the same entrance, staircase, courtyard and street; the local publicness that represents the interpersonal relation happened at a neighborhood level; and the global publicness that is distinctive by a wide diversity of individuals.

However, it should be recognized that these categories of public life might differ from one society to another upon the culture, customs and traditions of a given community.

As a result, at the global publicness level, all people can access that sphere, where it acts as the real common ground for all of them.

4.1.2 Tracing the definition of Public Space

UN-Habitat's concern since 2011 and what has been discussed conceptualize public spaces' principles while grounding the discussion of tracing public space definition.

In the 2013 Biennial, UN-Habitat defined public spaces as "all places publicly owned or of public use, accessible and enjoyable by all for free and without a profit motive," while each public space "has its own spatial characters, environmental, social and economic features"[9]. The charter argues that public space "must be the place where citizenship rights are assured, and variation are respected and appreciated." The last definition was strongly considered a profit motive in public space management, as many contemporary public spaces are privately managed, attracting consumers instead of the entire society [10]. The notion of diversity is challenging to achieve in public spaces, where social diversity should be admitted, and their social well-being is represented [9].

Therefore, public spaces have features that cannot be found in other spaces committed with personal or local publicness use; hence, they exist at the cosmopolitan/global publicness level.

So, they are public spaces managed or owned by either public-sector or private sector too, which should give a great concern to maximize the affordability issues of entire society. Consequently, the role of public spaces became a place for sociability, a network emphasizing many identities, and for making the connection among the society [1].

4.2 Typology of Public Spaces…a literature review

Many approaches classifies public spaces all over the metropolitan, from which four typologies are discussed.

Carmona [11] identifies three categories: the first category is the places existing in between private territories while obviously accessible by all people such as public squares, parks, streets and highways, parking lots, etc.; the second category is internal public spaces represented in public institutions such as expo centers, public libraries, mass-transit stations, etc. The last category is external and internal spaces 'quasi-public space' which might be managed or owned by private sector such as sportive arena, university campuses, and shopping centers [12].

On the other hand, public spaces provides three main categories: gray, green, or grey-green space. In the grey category, it includes the spaces of transportation facilities, streets, and plazas; while the green category includes incidental spaces, parks and food-production areas; and lastly, the gray-green category refers to recreational spaces lying between the two precedent categories such as sport facilities, plazas, squares, etc. dedicated to local publicness level [13] [14].

UN-Habitat [10] differently traces the publicly/privately managed typology comprising four major categories of pub-lic spaces all over the metropolitan transacting indoors and outdoors ones.

The first category is considered as spaces, publicly owned and managed, available at all daily times, multi-uses, of accommodating various socio-cultural and political events, of free of charge access such as squares, plazas, etc. The second category is open spaces publicly owned and managed, available to all individuals without charge during only daylight time, such as parks, playgrounds, and waterfronts. The third category includes publicly owned and managed urban public facilities, accessible to individuals on certain conditions, such as sport facilities or municipal markets. Finally, the fourth category is physical/nonphysical spaces supporting the public power over their city management, such as cyberspace and socio-political forums.

The fourth typology is the transformative typology 'heterotia'[6], which is a "single place [created of] different spaces or sites that are in themselves incompatible." Mead [16] and Dehaene et al. [17] argue that 'heterotopia' derived from Ancient Greek, which literally means 'other place.'

But utopia is an ideal image that is not real or exists, but illustrating a perfect society [6], while dystopia is where everything is faulty [16], and heterotopia is where things are located between those two terms "utopia and dystopia," as the 'other

place' that really, we can live in [6].

Shane [18] and Cenzatti [19] argued that the origin of the term concept, according to Foucault's vision, is obtained from biological science, where a cell might host to another from a diverse environment, strangely, that both of them could live together within a single environment. These conditions and circumstances give heterotopia a huge resilience of change, enabling its dwellers to expedite various changes within its perimeter.

Foucault [6] emphasizes that heterotopias are often min-nature prototypes of an urban environment. For example, if the metropolis is disordered, a small town within it could take various forms, then we could invert the construction order with the perimeter to get different heterotopia [20].

Shane [21] summarized different heterotopias' principles into three categories: heterotopia of crisis, deviance, and illusion. In the heterotopia of illusion, the rule is to represent a space of illusion expressing real life, such as shopping malls where people are separated despite being gathered in the same space. The concept also, as the opposite, is to create a space in which an actual space is perfectly coordinated, such as gated communities that bring their inhabitants' dreams.

Finally, all definitions that explained typologies are different based on its terms of power holders (publicly/privately managed), manners (gray/green), or ages of transitions (heterotopia). However, all different typologies of public spaces are needed to be related to each other, "connecting them all together," so this paper analyses different typologies of public spaces with their spatial structure.

4.3 Topology of Public Spaces…a literature review

The Urban Task Force report [22], related to British cities, recommends the creation of a hierarchy of public spaces regarding the building locations and their access points, to create a sense of safety and community building. Hereafter, different approaches defining public spaces' network all over the city are discussed, ending by the proposed utopian network.

4.3.1 Transect Topology

The Congress of New Urbanism developed an important theoretical framework (a smart-code) to understand the origin of urban development called the 'Transect' Model [23], which identifies a group of habitats from different spot in the environment, the most natural, urban and urban Core [23]. In this model, six transect zones are provided by identifying public spaces such as greenways, play-grounds, landscaping, squares, parks and plazas according to their existence within each transect type [23].

4.3.2 Neighborhood Topology

More than half a century ago, Mumford [25] wrote about neighborhoods that are a social fact existing whenever human beings affiliate, conscious design and provision should be advanced

that to identify as "a fundamental organ of an incorporating city." Farr [26], also, argues that the neighborhood should be defined by only ten minutes walking distance, associated with a civic nucleus to gather individuals to give the sense of belonging [25]. Within this nucleus, a park with playgrounds identifies the urban core of the neighborhood while representing an essential point for social interaction within its community.

Then, it comes at the districts level, in which a group of neighborhoods are taking part services center associated with a park or square [27]. Finally, a city is formed from different districts to have a focal point, a city center and squares [28].

A report study [30], argued that there are seven hierarchical open spaces are provided, which are specified to the green category such as parks, started by national level at the top then descending to regional, city, district, neighborhood, cluster, and ended at street level spaces. it recommends that 30% of open spaces should be assigned to neighborhoods level, while 30% to serve at the district level, and the rest 40% to serve at the city level.

However, the notion of planning by neighborhood unit came under criticism for its assurance on the physical rather than non-physical or social fact within a neighborhood, where it might fabricate the physical closeness between its inhabitants, but it couldn't make the desired social cohesion among them at the same time [1], which is the ad hoc for constituting a community. In the same way, Keller [29] argues that the relationship between the neighborhood and the metropolis isn't clear, whose inhabitants need to travel across the metropolis to work and to build their social ties too.

4.3.3 Heterotopia Topology

Based on the heterotopia as a transformative typology, Foucault [6] argues that the metropolis is consisted of several heterotopias connected by arrangement system completely. Although his vision isn't complete [31], [19] but it inspires some authors to use this vision for further researches. One of those researchers is Shane [18] who developed Foucault's concept of heterotopia by illustrating a lot of explanations to the concept, considering heterotopias consisted of multiple networks that the contemporary city consists of while encompassing two distinguished elements: "enclave and armature".

Accordingly, cities are formed by the relationships between these two elements, whereas the enclave dominates in the old and hierarchic spatial order of locality (e.g. Islamic, medieval European), and the armature dominates in the spatial order of the modern industrial city, while the heterotopia dominates in the 'space of flows'[1] of the post-industrial city. To him, enclaves are areas of order and control defined by boundaries of one or more access points, so it is clearly defined by center in relationship to the rest of the city, their orderly or messy nature reverses the normal urban life, that, in turn, reflect their communities' lifestyle [18].

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[1] The term coined by Manuel Castells [32]

So, gated communities are one of these forms of enclaves, having gates to control access, so it was defined as a particular community with boundaries, which excluding some while including others.

The armature, in contrary, according to Shane [33], is considered linear area which motivating, occupying people flows and connecting two nodes, it might be also hierarchical or central structures with a contact by highway access point. Also, in a transportation system, a kind of different large armatures could be found such as rivers, canals or highways finding across the city territory. Heterotopias are spatial forms or articulates used to combine the two different area "enclaves and armatures", making new concept forms of spatial distinctions while accommodating differences in the neighborhood [33].

Therefore, the heterotopia, as argued by Shane, is regulated or ordered by inhabitants in different culture and custom with purposes whether commercial, political, cultural or economical [18].

4.4 Utopian Network of Public Spaces

Based upon previously discussed approaches (typology and topology), this paper was defined different types of typology and topology as a network of public open spaces. A network of public open spaces acts as a physical manifestation of the desired utopian social network of the whole metropolitan, considering that the social metropolitan reflects the physical connectivity between the different heterotopias within it, as Hiller and Vaughan [34] imagine.

This approach addresses the 'Utopian Network' as a network of public open spaces, dedicated to the cosmopolitan publicness level within each heterotopia, that acts as to be connected through, a network used for supporting the sociopolitical life for its heterotopia and, when connected to other heterotopias, for the whole metropolitan. Since the contemporary metropolitan of Cairo is considered as archipelagos that are socio-spatially segregated 'heterotopias' at that level, these heterotopias are in need to such utopian networks of public spaces (a common ground) that could bring diversity and guarantee access for the whole society in order to connect these segregated places at that level. In utopian network, each heterotopia acts as an individual network, each one could be represented by nodes, connectors [17], these nodes and connectors tend to be a utopia within a heterotopia rather than a heterotopia in itself. Finally, all networks are connected together physically to constitutes the whole cosmopolitan publicness of the metropolitan.

A public space, in node, could be consolidated and socialized and meet others in his heterotopia, as well as, interfaces gathering people for sociopolitical life and providing people with opportunities for interaction. While, in contrast, the connectors have few opportunities for social interactions. So nodes should be allocated with its features (public, sociable, safe and secure) to transform into centers with a level of centrality. The concern of defining the node is to represent social space which facilitate social and culture interaction for individuals' public life. The fundamental idea is to be publicly accessible, socially diverse,

open to air, and it didn't matter that it be publicly or privately owned/managed.

While individuals' public life can be grouped into two interrelated types of activities form 'formal' and 'informal' [11], informal activities are the most important. So, beyond home and workspaces, nodes are the most spaces that are inclusive, hosting informal and formal activities [35].

On the other hand, these nodes are categorized into two categories green and gray, whereas green category contains the most natural places such as natural reserves, greenways and the beaches of waterfronts; to the most artificial ones such as parks, gardens, and playgrounds. Squares and plazas, including all public buildings' frontage, Civic centers, Municipal markets, and Parliaments represent the gray category which refers to artificial ones. Sometimes, spaces might be in various shapes, linear or non-linear, such as sidewalks, avenues, boulevards and Passage-way.

As connectors, a network of public spaces is playing an important role in gathering people to the nodes or helping people to practice outdoor activities [36], it could be defined as physical or nonphysical medium to constitute many parts of the public spaces. A network of public spaces is an alternative way for getting from one pole to another to achieve convenience, joy, safety or concern, therefore it might be physical or non-physical via social networks.

Therefore, each heterotopia should have a network of public spaces 'nodes and connectors' at cosmopolitan publicness level, with its sociopolitical rights such as sociability, safety and security, freedom, accessibility and publicness.

5 POWER THEORY

5.1 Power Concept

Power is the central concept in political sociology, Both Mann [37] and Lukes [38] argue that it is the ability to make others doing things against their desire and will in a process of both cooperation and conflict which, as a result, generate communities. Weber [39] defines power as the chance of one actor, in a social relation with others, could hold a position to fulfill his will despite disobedience and regardless this chance rests. In the same notion, Castells [40] defines Power as the relational ability of a social actor to 'asymmetrically' affect the decisions of others in ways favored his will, interests, and values despite resistance that could exist. So, power to both Castells [40] and Weber [39] do exist among actors in a social relationship, as well as a form of resistance is probably happened by who subjected to power, as Foucault [42] contends in a form of social movements. Hence, Weber, Foucault, and Castells assure the probability of a form of resistance by who subjected to a power influence.

So, there is never an ultimate power or a zero degree of resistance in any power relationship, however, when resistance become stronger than compliance, the power relationships are

changed, the powerful lose its power partially or completely, and absolutely there is a process of structural change [40].

On a different approach, Foucault [42] obviously reticence constructing his theory of power, although arguing that rather than defining the empowered actor and who subjected to this power, which given away or taken from others, he proposes that power must be considered as a product of social relationships that exist within a society while having close links to knowledge. Foucault argues that power was not concentrated in an institution nor a social group, in turn, it operates at all levels of social interaction involving the whole society.

To him, power does exist within a society in a form of 'microphysics' which is needed to be touched at that level, whereas our knowledge of this level constituted this power relationship.

5.2 Power Sources

Every empowered actor is exercising his power by looking for a source of power, so various sources of power are existing while the empowered actor might interact or overlap them.

Mulgan [43] has theorized the capability of the state to exercise power through three sources of power: violence, money, and trust. Violence can only be used negatively by ways of coercion or the chance of it [37].

Weber also focuses this type on the state which has an authority of exercising power over a territory [44], in a relation supported by ways of violence legitimation. However, trust, on the other hand, depends upon the knowledge and thoughts that could make difference as well as make fragile power being permanent [43]. In line, Castells [40] notes that trust is very substantial for the state supremacy, where it should dominate the thoughts and construct values through discourses, in which the state guides these actions.

Weber [45] provides three forms that give rise to legitimate the authority of an empowered actor to exercise his power: rational, traditional and charismatic grounds. Habermas [46] conceptualizes that the state legitimates its power through the construction of shared meaning in a society via the public sphere, that in turn stabilizing its domination. On the other hand, Castells [40] argues that since society is understood via knowing its values –shared meanings- and institutions, where what valued and institutionalized define the power relationships, so values are very substantial to understand the sources of power within a given society.

Then, values are the fundamental source of power that can be touched within any network of power in the contemporary city, that could be used negatively or positively either by trust, money, or even violence means.

5.3 Power Forms over public spaces' production

Castells [40] sees politics as a concept to participate or distribute power by influence distribution, either among state or among political parties within it. So, Power can't be reduced to the state but an assimilation of state's historical and cultural specificity.

In the 21st century, there are three forms of power, in the Egyptian context, governing public spaces' articulation, which are the public sector, the private sector and the public-private partnership [47].

In the public sector, In Egypt, limited resources of the state, deterioration, and lake of important activities make the production of public spaces and maintaining it so difficult. Castells [48] assures that cities became places of collective consumption rather than places of production, so the state has an inherent role in providing services for the re-produce of labor power supporting the notion of collective consumption in the contemporary capitalism.

Therefore, Castells [48] argues that providing the welfare services, such as urban spaces, that necessary for low-class groups depended upon the state intervention, because it isn't considered as a feasible for the private-sector investment. Saunders [49] insists that the state couldn't provision of all services, so the private sector becomes more significant than the public sector in providing the welfare services. Therefore, we could show how in today's city two groups of people do exist, one of them could rely on state welfare while the rest is relied on purchasing their own services themselves.

Savage and Warde [50] argue on this new division, it might lead to deterioration of some social classes and its displacement by consumption based on divisions rather than equality, so it leads to political struggle. According to this social and economic class division, there is a group governing the creation or establishment of public space, called elite, who is a small group of powerful people belonging to the powerful high-status classes.

Castells [51] argues that the powerful high-status classes develop the set of rules to communicate with each other and dominate the others, thus establishing the in/out constraints of their political community. Therefore, they embed these sets of rules in the social structure of societies to connect those who could share elite's power, with no need from the elite to conspire state [51].

In a different approach, Public spaces' network might be produced by the synergy between the two distinct means of space production: the public-private partnership. Now a-days, different countries adopt this discipline due to the benefits getting from both of them. "The development of public spaces are operated by a private sector as usufruct while it still owned by the public sector" [52], it is BOT concept (build, operate, transfer).

Therefore, understanding values and set of rules embedded with-in this network of open space are considered a power relationship which could be the same to lead different empowered actors in a utopian society.

6 INVESTIGATING NODES-CONNECTORS' NETWORK: TWO POWERS, TWO HETEROTOPIAS IN CAIRO

Two distinct heterotopias (Nasr City and New Cairo) are selected according to a specific period of time, from the dawn of the 23rd revolution of the twentieth century until the dawn of 25th revolution of the 21st century and beyond, representing substantial mutation of power over the production of public spaces in the Egyptian context. Nasr City's heterotopia represents the public-sector power over public spaces' production, while New Cairo's heterotopia represents the private-sector empowerment over the same in the contemporary metropolitan.

6.1 Madinet-Nasr Heterotopia

Nasr City is considered a desert plateau at the east of Greater Cairo Region (GCR). It was located between Heliopolis and Abbassia neighborhood, with approximate area of 6,539 acres [53]. At first, Nasr City was connected to Cairo's central business district, but it was badly connected to the Heliopolis heterotopia. A large area of military land separated it from Heliopolis neighborhood at the time of establishment [55] because it is only a single road that linked Heliopolis to the rest of Cairo supported with a tram [56]. In the beginning, the site was empty except for two government buildings that were already there, Abbassia mental hospital and the ancient British encampments transmitted to the Egyptian army [54]. Then, in 1971, president Sadat issued a presidential decree to expand the urban areas of Nasr City eastward; at that time, the area is to be almost 15162 acres [57], [53].

6.1.1 Power Over Madinet-Nasr Heterotopia

Nasr City is a vital heterotopia representing the mutant political ideology resulting from Nasser and Sadat; from proclaimed socialism to *Infitah* Policy *(*open-door policy). This paper discusses this heterotopia from a perspective showing how the public sector, as an empowered actor, articulated its public spaces' network at the cosmopolitan publicness level, while the public sector is still managed and owned, and in charge of them until today.

- **Equity as a Value-Making**

In 1952, the Egyptian Revolution against property and the rule of king, led by the free officers, demarcated the collapse of royalism in Egypt through and eviction of King Farouk. After a while, President Nasser transformed Egypt into an era of proclaimed socialism, Nasser's vision (first president on Egypt). Nasser says [58], "Social freedom is the only way to political freedom," while Nasser's charisma grounded his legitimacy, virtually his power was based on Egyptian's trust and love for him [59] according to their belief in this crucial event 'the July 23 revolution'. Egyptians believed in a revolution that came to achieve their current demands (their right to the city), which the monarchy deprived them of it, and plan their desired future for them and their children.

Nasser's policy was oriented toward the redistribution of Egyptian wealth, especially agricultural lands, among all citizens ensuring equality. This step was done with military force help but led to a change in Egyptian social class category of the entire society during Nasser's reign [60].

At that time, within proclaimed equality vision, Egyptians were satisfied with a superior value of an essential plan of Nasr City offered by the government [54], [56], [61]. Frochaux & Martin [61] and Eid et al. [57] argue that the whole master plan was planned to ensure the socialist vision of the state (Nasser's vision) on an orthogonal system. Till now, all the public open spaces were owned by the state, so government manage and maintain them.

Cairobserver [56] argues that the project was introduced as the best contemporary planned heterotopia, but it is noticeably oriented toward attracting educated upper and middle classes as future residents because the project's brochure was presented in English language.

- **Empowering Public-Sector**

Meanwhile, lands development process during this era was under the control of three distinguished types [62]:

First, public authorities had their responsibilities in developing an affordable housing constructed in 1975. The second is middle/upper-middle income groups houses, which were in the hands of nationalized contractors, including housing constructed by housing cooperatives. The third type depends on either residents themselves or by small contractors in form of informal developments to construct for low/middle-income groups.

The Egyptian government established a new company by a declaration no. 815/1959. This company was called "Nasr City for Housing and Development" (MNHD). It had an independent budget whose resources would come from the construction investment in the area and from governmental contributions, aids, grants and loans [63]. Nasser policy abandoned intensively private investments by nationalization procedures that consequently grew fear among private investors, while public sector totally controls all over the region for any further development [64].

While this new heterotopia was recognized as a physical manifestation of state power, the state was continued its propaganda using the slogan 'we have established a capital within a capital (means: Nasr City)' [61],[56]. By the end of fifties, planners presented a basic master plan of Nasr City as a new capital for middle-low income people with a stadium, government offices, and a convention center [56].

Originally, Nasr City was designed to serve as a government center away from Cairo's CBD [53]. Frochaux and Martin [61] emphasized that the host of new governmental institutions and ministries were planned, but only ministry of defense was transferred, followed by a group of ministries and agencies.

MHR & AID[2] notice that formal land development is under this newly established authority responsibility, which either develops the land itself or sells it to private companies for development [62]. As a result of this selling policy, 50% of Nasr City was behind its schedule, as well, cost price of developed land encouraged speculators to purchase. These policies led to more difficulties for low/middle-income groups to move there because it is difficult to purchase their own land to build houses [62].

6.1.2   Nodes-Connectors Network and Socio-Spatial Relation

Naser's regime and its successors changed the Egyptian community's social structure, and this change witnessed the fast development of the syndicate because its members will be assigned some political positions (revolution makers) [65]. On the opposite manner, in this time, in Egypt, social classes were mainly classified by their professional status, such as Al-Mohandessin (engineers), Sahfeein (journalists) [60].

So, free officers, "the revolution makers," are those who are specifically represented in Nasr City, which demonstrate the changes that happened in all social/political aspects of community [53].

The master plan of Nasr City consisted of different types of residential areas, commercial areas and some major regional services located along main roads, and educational areas and some industrial areas on the bounders [62].

Apart from state policies, the government wanted to ensure its ability to house international conferences, host large events such as the Cairo International Fair and Book Fair began in 1969. Hence, Frochaux and Martin [61] argue that the state prioritized establishing public spaces, such as stadiums, convention centers, and memorial plaza, to confirm Egyptian political power after Egyptian revolution.

Although Abu-Lughod [54] argues that the set plan was to provide this area with over 60,000 of residential units for low-income classes, but in fact, most of the inhabitants are the newly rich, and they are classified as middle/upper-middle classes [62], [56].

Currently, Nasr City transformed its mono-land use pattern, where in the early 1980s some mixed-uses have been emerged due to shifts in the sociopolitical and economic conditions [57]. These transformations are especially along the arterial roads resulting from transformation of pure residential uses to mixed-uses (mainly residential/commercial). In turn, some residential land uses were transformed to be shopping malls, acting as commercial anchors connecting these commercial connectors. However, the socio-spatial configuration of heterotopia is still the same until now.

Based on different surveys, observation and analysis of the land-use map, a socio-spatial diagram in agreement with a cosmopolitan network of public spaces was originated (Fig.1).

From analysis, three centers of public spaces have been observed in the uses original master plan, which still exists until now in the neighborhood and being under the power of public-sector development and management.

The large and essential node in Nasr City, located on the northwest, has enormous open and urban spaces such as seasonal exhibitions land, convention center, which are used frequently on various occasions, sports stadium, and a memorial plaza.

While the other two nodes are located in the middle of the heterotopia on main roads, Dawlya Park is along Abbas Alaqqad and Children's Garden, along Makram Ebayed. Moreover, the whole connectors' network at cosmopolitan publicness level is positively covered by transit routes according to transit map of Quiros & Canales [66].

Undoubtedly, Naser policy affects today's Nasr City intensively. He reconstructed the social class system, whereas miscellaneous areas of army officers' housing are distributed specifically across different places at the edges of the heterotopia "Nasr City" due to their taking over spaces and plots form of
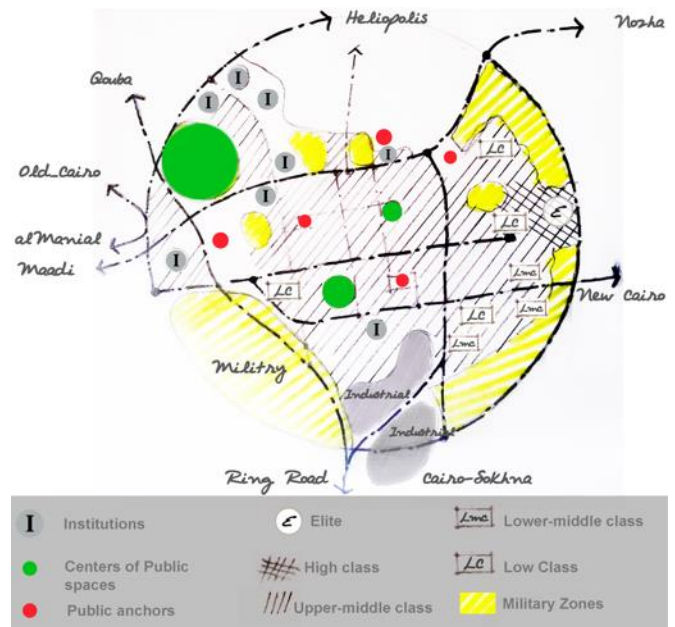

Fig. 1. Socio-spatial diagram illustrated nodes-connectors network-
Nasr City heterotopia (Author)

military and governmental institutions.

Currently, Nasr City transformed its mono-land use pattern, where in the early 1980s some mixed-uses have been emerged due to shifts in the sociopolitical and economic conditions [57]. These transformations are especially along the arterial roads resulting from transformation of pure residential uses to mixed-uses (mainly residential/commercial). In turn, some residential land uses were transformed to be shopping malls, acting as commercial anchors connecting these commercial connectors.

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[2] Ministry of Housing and Reconstruction, Egypt and Agency for International   Development, USA

However, the socio-spatial configuration of heterotopia is still the same until now.

Based on different surveys, observation and analysis of the land-use map, a socio-spatial diagram in agreement with a cosmopolitan network of public spaces was originated (Fig.1).

From analysis, three centers of public spaces have been observed in the uses original master plan, which still exists until now in the neighborhood and being under the power of public-sector development and management.

The large and essential node in Nasr City, located on the northwest, has enormous open and urban spaces such as seasonal exhibitions land, convention center, which are used frequently on various occasions, sports stadium, and a memorial plaza.

While the other two nodes are located in the middle of the heterotopia on main roads, Dawlya Park is along Abbas Al-aqqad and Children's Garden, along Makram Ebayed. Moreover, the whole connectors' network at cosmopolitan publicness level is positively covered by transit routes according to transit map of Quiros & Canales [66].

Undoubtedly, Naser policy affects today's Nasr City intensively. He reconstructed the social class system, where-as miscellaneous areas of army officers' housing are distributed specifically across different places at the edges of the heterotopia "Nasr City" due to their taking over spaces and plots form of military and governmental institutions.

6-2 New-Cairo Heterotopia

New Cairo was planned to inhabit around four million people [67], and it was considered one of the 3rd generation of new settlements in Cairo metropolitan, with an area of about 70,000 acres, planned to accommodate different uses like all new settlements in GCR [67].

New Cairo heterotopia (or El-Qahera El-Gedida) is one of the new suburban heterotopias (new city), which appeared within the solutions to construct new cities and mitigate the overcrowding in its downtown.

It is located in the east direction of Greater Cairo's region (GCR), connecting with GCR with Major Connector (Ring Road), where Maadi is located on the south, while Heliopolis, Nasr City and Mukattam are located on the west.

6.2.1 Power Over New-Cairo Heterotopia

New Cairo is a vital heterotopia representing the neoliberal era grounded since Sadat's *Infitah-Policy.* This heterotopia is discussed from a perspective showing how private-sector, as an empowered actor and public spaces' network were articulated as cosmopolitan publicness level.

- ▪ **Consumerism as a Value-Making**

A society's culture is defined in terms of beliefs and traditions constituting society behavior. El-Messiri [68] notes that human culture is the key feature of today's world community, especially Egyptian community. It is controlled through the public sphere via social and visual media.

Izetbegović [69] claims that general culture expresses full-filling needs and its activities and events became organized rather than being spontaneous and decentralized. Now, the fundamental changes in customs and culture happened and formal image for individuals' culture lies in their ability to consume commodities. During Sadat's Infitah era, these effects lasted for almost two decades, and rich groups positioned themselves in society through preferences for occupancy of the new residential towers in distinguished sites in Cairo metropolitan, along with wealthy Arabs and foreigners.

However, since ERSAP[3], gated communities became an effective way to get privatized public spaces. Gated community residents' might use these spaces to express their social identity (a wealthy people's way to create their own spaces) [60], [70], as it act as an interface to display the luxurious lifestyles, providing real convenience, a total living experience, besides offering what Cairo no longer had: clean, organized, and green environments that is not easily resisted, such as residential areas with large golf courses or theme-parks [70].

A strong economic country must control [71] this type of lifestyle to get more benefit to the entire country's economy, not only for some groups' welfare instead of others. Harvey [72] has also attributed gated communities' phenomenon to the changing function of cities from being places of social propagation to reproduce the places of consumerism.

Moreover, Zu-kin [73] has associated financial value of privatized public spaces with its distinction in the recreational services. From another point of view, Dovey [74] has linked it to the spread of shopping malls, which are another form of privatized semi-public spaces.

- ▪ **Empowering Private-Sector**

In the 1980 report of NDP[4], stated that state polices in that time take "an open-door policy," neither a shift from the socialism "Nasser's vision" after July 23 revolution nor a return to capitalism established during the monarchy.

Furthermore, the committee comprising enhancement of national development requires serious cooperation between the public and private sector. [75].

Since Sadat's political agenda, the neoliberal era provided an unfamiliar environment for using and stabilizing the private sector in state development.

Egyptian government was legislated by issuing a Law on New Urban Communities' (New Cairo is one of them) to invade the desert, opening up the field for national and foreign investments toward achieving the aim [64].

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3 Economic Reform and Structural Adjustment Program signed with the IMF and World Bank in 1991

4 by the economic committee of the National Democratic Party

Lately, Mubarak adopted the same methodology, who continued chasing mainly the same policies of Sadat's Infitah. In 1991, he started by implementing the economic reform and structural adjustment program.

Meanwhile, in this time, public sector, private sector, and laterally private-public partnership are three forms of power that produce public spaces all over Cairo metropolitan.

In New Cairo Heterotopia, public spaces' network is mainly articulated by private-sector development to attract wealthy people and investors from deteriorated urban core to a new suburban. Whereas NUCA [76] statistics assure the total number of service buildings is 549 buildings implemented by the private sector, NUCA implemented only 99 buildings.

Therefore, in a comparison between private and public sector, the first one provides about 5 times than other, as well as being oriented toward middle and high classes although the lower classes constituted about 30% of the currently total housing units in this heterotopia [77].

6-2-2   Nodes-Connectors Network and Socio-Spatial Relation

Sadat's infitah vibrated the social structure again, leading to increased social mobility and a widening gap between people according to their socio-economic level (Mitchell 1999: 31). A middleclass had reemerged again because the pre-revolution entrepreneurs resumed their business activities [78]. Haykal [79] argues with a high pattern of vulgar consumption within each socio-economic level.

Chua [80] argues that wealth has not been shared equally by all community individuals, so it has only been concentrated in the elite's hands. According to Korayem [81], in 1991, the wealthiest 10% of Egyptian citizens controlled around one-third or more of the GDP (gross domestic product).

Consequently, from economic statistics, distinct classes represent themselves in the urban context through their power to assign themselves in the most prestigious metropolitan areas by a network of financial flows from a large sector of society.

Based on conducted survey and land-use map of New Cairo's heterotopia, finding that (Fig.2) a socio-spatial diagram under the network of public spaces was created and New Cairo heterotopia is controlled by five distinct socio-economic classes: elite, high, upper-middle, lower-middle, and low-income classes.

Each class has its residential type and synthesis of this heterotopia is structured around different articulation of public spaces.

In this diagram, New Cairo heterotopia witnesses the differences of upper-middle-class all over its region, while other classes cut off some parts within it to specify their public spaces.

From diagram, in the west direction, most of the centers of public spaces are located, of " New Cairo" heterotopia is located, to be next to 'Ring Road,' which is the most integrated connector in Cairo metropolitan. There are two prime open-closed shopping, recreational mall (Cairo Festival City Mall, Downtown

Plaza-Festival Square) circumscribed by enclaves of an elite residential gated communities and villas to the west.

There are other centers of public spaces (Twin plaza, Family Park, and Porto Cairo plaza) established on the northwest and north edge. Elite enclaves, as well, allocate themselves next to these important edges. However, a spot of lower-middle-class communities is found on the southwest edge next to the industrial district.

In New Cairo, there are many administration building that is designated for security, syndicates, administrative prosecution, engineering syndicate, etc.

New Cairo edges have a network of major highways that communicate in/out GCR (Ring, Cairo-Suez, and Cairo-Sokhna connectors).
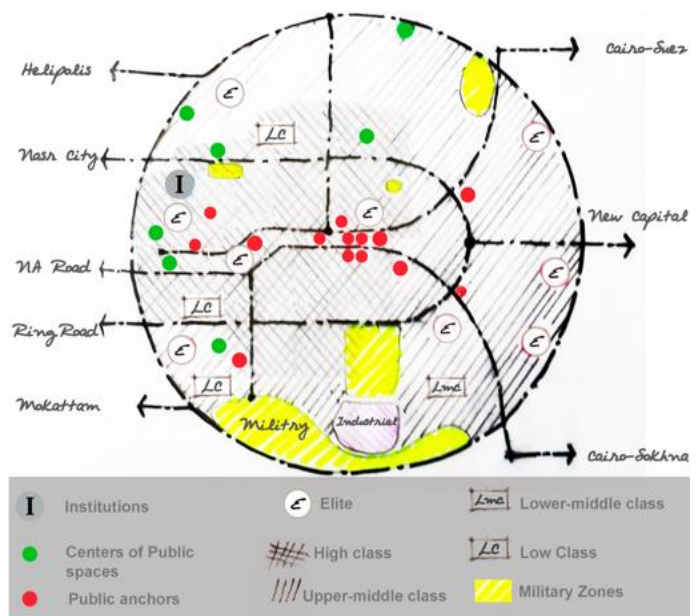

Fig. 2. Socio-spatial diagram illustrated nodes-connectors network, New-Cairo heterotopia (Author)

On the other hand, in New Cairo heterotopia, the public/private sector controlled together on low-class location in a heterotopia map network with no choice for them to move themselves otherwise. The low class has fewer opportunities to allocate themselves in this heterotopia, and we find only two low-class areas with a low accessible connector at the northern and southern boundaries.

Unfortunately, these low-class zones are not covered by functional transit routes according to the transit map [66], so it does not connect these zones to the cosmopolitan public life of New Cairo heterotopia.

7 DISCUSSION AND RESULTS

Based on the analysis introduced by the two diagrams of Nasr City and New Cairo heterotopias, it has been noticed that although the nodes of public spaces in Nasr City heterotopia surrounded by upper-middle-class, they allocated to highly integrated connectors accessed directly by all the districts of diverse socioeconomic classes within the same heterotopia at equal opportunities among them.

According to the questionnaire survey conducted on 30 users for each space, the typologies nature (seasonal or long-term use) of nodes in Nasr City heterotopia cause low frequency of users (Fig.3). However, they have been compensated by using essential connectors provided by the private sector since the infitah era started at the beginning of the 1980s.

While the same has been happened in New Cairo but in a different way, whereas these nodes of long-term use have been replaced by vital nodes of short-term use such as plazas and squares, developed and managed by the private sector too, bringing higher frequent users to occupy them (Fig.4).

Consequently, Nasr City's connectors are more vital and dynamic compared with the nodes of the same heterotopia, while the nodes in New Cairo are vital than its connectors, which act essentially to move people to these nodes.

Therefore, since 1952, the public sector is more concerned about the resilience to access to nodes (Fig.5), so the Egyptian government provides accessible connectors to fasten and connect the ancient capital with the newly proclaimed capital of Nasr City. Hence, due to long-term use and low frequent users to public spaces in Nasr City, government was not concerned about the social features of public spaces (nodes typology).

On the contrary, private sector provides public spaces (nodes) of short-term use: parks, plazas, and squares, nevertheless giving an equal chance among the entire society to access these nodes. While connectors were connected nodes in this heterotopia, they witness mono use and low rate of transit routes, as the private sector aims to attract people who can afford their services more than being accessed from everybody.

According to the master plan provided by OkO Plan [82] and NUCA [76], the power of private sector was witnessed by changing the land use of the CBD of New Cairo heterotopia. whereas the node of Festival Square has been relocated from its initial location within this CBD to be in the center of developer site, while the Lake View gated community occupy an area that was purely cut from this CBD as well (Fig. 6).

Moreover, it could be apparently concluded that since the empowerment of public sector during socialist era the socio-spatial manifestation of Nasr City heterotopia is organized around the professional status especially 'officers' who are well represented in this heterotopia. While under the private sector development, the land became a commodity, as argued by Harvey [83], representing the socio-economic status of individuals and

their power to move themselves in accordance to the most prestigious and elegant nodes and connectors of public spaces within a heterotopia.
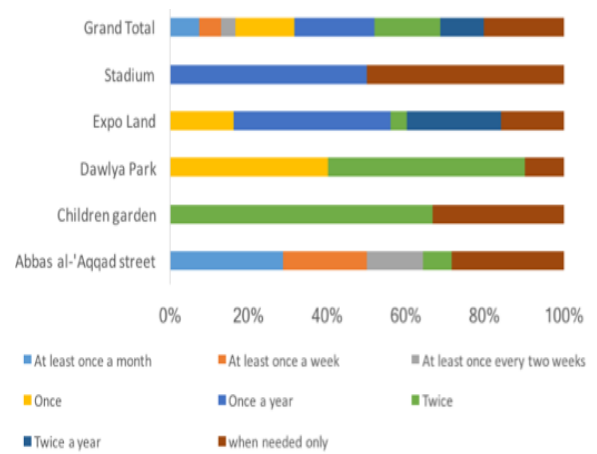

Fig. 3. Users frequency of nodes and a major connector, Madinet-Nasr heterotopia (Author)
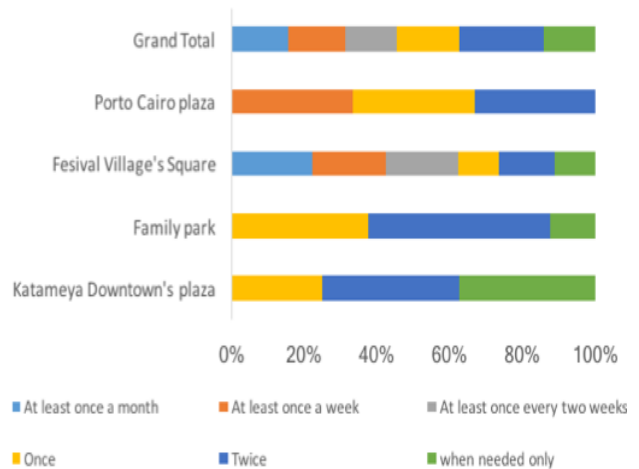

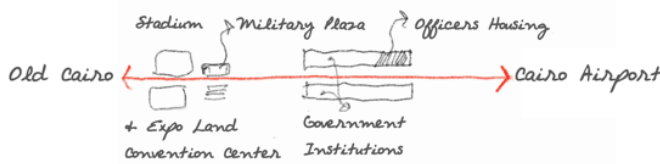Fig. 4. Users frequency of nodes, New-Cairo heterotopia (Author)

Fig. 5. Public Political Power along a network of public spaces' , Madinet-Nasr heterotopia (Author)
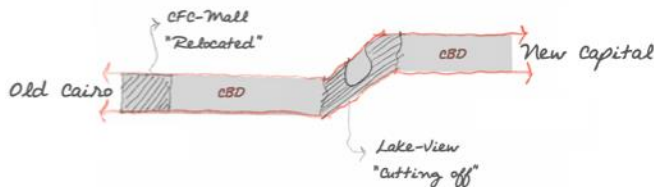

Fig. 6. Private sector Power along changing public spaces of the CBD, New-Cairo heterotopia (Author)

8 CONCLUSION

This paper has developed a conceptual frame-work about public spaces' network and the power governing this network articulation to find how this power is demonstrated in the socio-spatial relation to this articulation.

So, a network of public spaces has been introduced with nodes/connectors typology all over each heterotopia to understand the power over their articulation. In contrast, these nodes-connectors networks show how public/private sectors exercise their power over these networks' articulations to find whether all classes have a free of choice to access their public spaces.

Consequently, two different heterotopias in Greater Cairo Region, Nasr City and New Cairo have been analyzed to represent two distinct public/private power, respectively. Nasr City heterotopia proves how public-sector is concerned about public spaces' physical access through their connectors to ensure local and global connectivity. However, at the same time, those nodes witness low frequency compared to their connectors and typology nature.

While those under the power of private-sector development in New Cairo proves how the private sector in Egypt is more concerned about presenting nodes typology of short-term use (squares and plazas) while minimizing public access to the general people except for high and elite classes who could afford to be on these places due to profit-making plans. So, the public sector is more concerned about connectors rather than nodes, while the private one is more concerned about nodes rather than connectors.

On the other hand, this paper recommends further quantitative research to measure the publicness degree of both nodes and connectors to trace precisely how each power controls their availability to the general public.

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