Urban acupuncture as an approach for reviving

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Abstract. Urban design strategies and theories represent the first starting point for the processes of developing and improving the urban, social, cultural and political environment, as it is an important factor to solve the problems of urban context and environment, but these strategies take many years and high economic costs, so the theory of urban acupuncture appeared, which works on introducing small interventions with less time and budget, and all this is done by analysing the city and identifying the points and places that need treatment (such as treating the patient’s body by analysing the location of the defect and the disease). Therefore, the research problem lies in the lack of knowledge about linking urban acupuncture with the revival of the area. The aim of the research is to improve and revive these important points in the city (acupuncture points) that cause this improvement to spread. In this research, acupuncture will be presented and how this medical technology is inspired and used in the field of urban architecture, where the research consists of three main important topics: The first topic includes the history and types of acupuncture. The second topic includes the historical origin of the urban acupuncture as well as its definition, and the most important theorists of this concept, its foundations and levels. The third topic includes the revival of the city in terms of definition and levels.

Keywords: Urban Acupuncture (UA), Acupuncture Points, Revival, Small Intervention.

1. Introduction

In this world, there are many changes, some positive, and some negative, which develop life at all levels, especially at the technological level, and all of these developments are rapid, people change, their lives change, and increase their demands.

But at the urban level, development is not as fast as it is, on the contrary, in some countries, it is declining due to ongoing wars and conflicts. Most of the schemes are designed to be implemented in the long term and this is the extent to which the city has developed and activated, but with present data and not future data and will remain a gap between the city and the people, so urban acupuncture deals with the revitalization of the city through rapid and small-scale interventions that take into account today’s data and needs, People and their requirements. It works on the flow of energy in neglected areas. It converts the negative energies in the area into positive energies by manipulating the energy to create a higher capacity for living and by this, it will be the spark that will activate a point (focus) of the city points, which will spread to revive the entire city. The research is going to discuss the previous studies that dealt with the concept of urban acupuncture, and then it will work on three topics start with introducing the concept of acupuncture and its definition in medicine which means “inserting the skin in strategic points on the body with very thin needles (from 32 to 36 scales). The most common use of acupuncture to treat pain is a key component of traditional Chinese medicine. It is increasingly used for general wellness, including stress management.”, then it will address the concept of urban acupuncture and its types, and the definition of each approaches and its characters. Then, it will discuss the definition of revival, after that at the end, we will connect the principles and types of UA to create a better revivification place by through different techniques.
2. Literature Review

The following studies present the theory of urban acupuncture and its indications and principles for this theory:

2.1. *Urban Acupuncture, Revitalizing urban areas by small scale interventions, Rick Hoogduyn, 2014.*

The thesis focused to find an accurate perception of the theory of UA according to the three theorists’ vision (Manuel de Sola-Morales, Jaime Lerner, Marco Casagrande) and concentrate on four case studies, in the Netherlands and Sweden to solve the problem of lack of information. Two of them represent the bottom-up intervention and the others describe the up-bottom intervention. This thesis depends on the CDA which deals with the absence of sources. This study deals with four case studies in the Netherlands and Sweden to solve the problem of lack of information and attempts to explain the description provided by theorists.

Where the priorities set by theorists for the application of acupuncture in urban areas differ, as Lerner focuses on mobility and sustainability, Sola-Morales focuses on urbanization, and Casagrande is interested in all his projects around the destruction of the industrial city and the transition to the third-generation city, but they agree that these small interventions (urban acupuncture) It works on the flow of energy in neglected areas. It converts the negative energies in the area into positive energies by manipulating the energy to create a higher capacity for living. The study also presented the most important principles of UA, such as Creating places, Determination of the sensitive point, Quick act...etc. [1].

2.2. *“Urban Acupuncture and its Practices in China & Egypt, Yiming Tang, Lingrong Chen, Yuman Sun, Luni Shen, Taher Abdel-Hamid, 2015.”*

This paper shows a series of five essays that explain the theory of UA in Egypt and China. The first essay gives us an overview of what is the meaning of UA “the history and origins”, The second clarifies the architecture level and light on the condition of housing, the third essay examines two cases in Shanghai, called Narrative Shanghai & Hutong parklet. In the fourth essay, the research moves to Cairo especially downtown. The last article brings us back to China to the level of society.

The case studies described in the articles give a range of methods, the begin was in Shanghai from the architecture level when the media act a link between the community and architects and encouraging the local community to develop housing conditions. Moving to street level in Shanghai as well, there was a focus on using the self-ware application to encourage people to communicate with the neighbouring local environment. Then it will travel to downtown in Cairo and its streets the procedure was more than an invitation for architects, artists and citizens to revive neglected passages in the long run. Finally reached the level of community in Beijing shanghai in the fifth essay observe how the improvement of poor hygiene standards had a great impact on the region as a whole. [2].

2.3. *“A Neural Network Model to Develop Urban Acupuncture, Leandro Tortosa, Jos’e F. Vicent, Antonio Zamora, and Jos’e L. Oliver, 2010.”*

This paper defines urban acupuncture as testing the regional impacts of every project on one side, and on the other, establishing a network of points to work on. It's based on the neural network algorithm to identify the most important points to develop the quality of life within the city. The neural network algorithm is used based on self-organizing networks which are able to create attractive low dimensional performance High dimensional input data. And the most famous of these models is the Kohonen map, it’s been used in recent decades to study a wide variety of problems, like biological modelling, vector-quantization, combinatorial-optimization and et cetera.
The neural network model used Growing Natural Gas 3D (GNG3D) is an additional, uncensored collective algorithm that builds almost high-quality polygon models, include of two clear steps: a self-organizing algorithm and a rebuilding step builds the improved network. [3].

2.4. “The Hackable City, Digital Media and Collaborative, City-Making in the Network Society, Michiel de Lange, Martijn de Waal.”
This book focuses on explaining the relationship of hacking interventions emerging in the public space with urban acupuncture, considering that these interventions (hack) are the needles that are injected into the diseased area for treatment and which gives new energy to the place. This study drew the framework of urban acupuncture in three areas: local community participation in the built-environment, digital technology and their impact on community-engagement approaches, city hacking. In the end, the study shows that applying the framework of urban acupuncture support a middle-out path to social participation of top-down and bottom-up interests. [4].

2.5. “Urban Acupuncture, a Strategy for Development: Case Study of Al-Rusafa, Baghdad, W. Sh. Al-Hinkawi and S. M. Al-Saadi, 2020.”
This research analyses previous studies that dealt with urban acupuncture and the definition of urban acupuncture for each of the basic theorists who adopted the theory or strategy of urban acupuncture and then made a theoretical and practical framework and tested it on the (historical Rusafa) area in the city of Baghdad, Iraq. The theoretical framework of the research is depending of Four axes, the first axis multi-faceted of the selected region, this axis is based on an analysis of the history of the region, the infrastructure system, green areas and land uses. The second axis is the axis of identifying strong and weak points in areas (acupuncture points), the third axis determining the levels of intervention, the last axis is the reconstruction of the final plan for the area. The article determined that the strategy of urban acupuncture works as an alternative to the normal development and renewal processes that exhaust Tebira’s budgets. Historic areas that need to be repaired have many operations and difficulties, especially with a low budget.

Applying this strategy (urban acupuncture) to urban areas will create a sustainable urban environment and restore energy to dead and degraded areas. [5].

Table 1. The most important points confirmed by previous studies .Source: Researcher

| NO. | Literature Review | important indicators in Literature Review |
|-----|-------------------|------------------------------------------|
| 1   | “Urban Acupuncture, Revitalizing urban areas by small scale interventions, Rick Hoogduyn, 2014.” | The study confirmed the views of the three theorists and adopted 4 case studies. |
| 2   | "Urban Acupuncture and its Practices in China & Egypt, Yiming Tang, Lingrong Chen, Yuman Sun, Lumi Shen, Taher Abdel-Hamid,2015." | This paper shows a series of five essays that explain the theory of Urban Acupuncture in Egypt and China. |
| 3   | "A Neural Network Model to Develop Urban Acupuncture, Leandro Tortosa, Jos’e F. Vicent, Antonio Zamora, and Jos’e L. Oliver,2010. " | It’s based on the neural network algorithm and Growing Natural Gas 3D(GNG3D) |
| 4   | "The Hackable City, Digital Media and Collaborative, City-Making in the Network Society, Michiel de Lange, Martijn de Waal," | This book focuses on explaining the relationship of hacking interventions emerging in the public space with urban acupuncture |
| 5   | “Urban Acupuncture, a Strategy for Development: Case Study of Al-Rusafa, Baghdad, W. Sh. Al-Hinkawi and S. M. Al-Saadi ,2020. ” | The research confirms linking development with urban acupuncture and that the urban UA strategy will create a sustainable urban environment with energy efficient |
2.6. discussion of Literature Review

All previous studies clarified the theory of urban acupuncture in a specific way and differed in defining the principles of the theory in a clear and fundamental way. There was no research paper or study that contained a comprehensive view of all the principles with a practical and clear analysis of the points to be worked on (acupuncture points) and there was no study demonstrating the link Between urban acupuncture with the revival of the city. The following table shows the most important indicators for each study:

3. Research Topics

The research is based on three main topics that will be dealt with separately as follow in figure1:

![Figure 1](image_url)

**Figure 1.** The research Topics of (Urban Acupuncture as an approach for reviving).

*Source: Researcher*

3.1. Acupuncture

a) Definition of the term: Acupuncture: the word comes from combining two Latin words "acus, which means needle and puncture, which means to penetrate". It is part of a complete healing system, and it is considered an alternative and complementary therapies. It was created and developed in China more than 2,500 years ago and used in Korea, Japan and Taiwan, and gained fame in the United States in the late seventies. Whilst the acupuncture originated in china but it used through the whole world.

Acupuncture points are regions with specific electrical sensitivity that have proven effective in treating particular health problems.

The old hypothesis of east medicine is that health count on the body's energy in life, "qi" (pronounced "chi"), flowing in a balanced and smooth path through a network of channels (meridians) that connect the major organs. [6].

Acupuncture consists of inserting a solid and accurate needle from 32 to 36 scales, usually at specific sites on the body (specific points for acupuncture). There are 365 points according to the classical texts, and these points are located on the meridians.

The basic principle of traditional Chinese medicine is that both illness and wellness are caused by the difference in balance between yang and yin.

Yang represents and denotes the masculine side (solid, energetic, dominant, loft, excessive, hot) and yin represents the feminine side in life (low, nourishing, deficient, cold, accepting, soft, inside, and protective) the movement between these forces (called qi) is an essential component of the healing system in traditional Chinese medicine. [7].

b) History of acupuncture: The first occurrence of acupuncture is believed to be in China hundreds of years before the common era. One of the tools that is thought to have been used in this way is the jagged bones and the stones that date back 6,000 years before the generator, but they may be used as surgical instruments. [7].

The documents found at the Ma-Wing-Dui cemetery did not indicate acupuncture but indicated meridians. Gradually, acupuncture became one of the standard and traditional treatments used in China in addition to other treatments such as herb, ironing, diet and massage.
In the 17th century, interest in acupuncture in China dropped and became a kind of superstition, when it was eliminated in 1822 from the British Medical Institute by order from the emperor.[8]. However, the knowledge and skill that was used by rural therapists was retained, and by the beginning of the 20th-century acupuncture was banned in 1929, along with many traditional forms of medicine, and in 1949, acupuncture was reused. In the 1950s, several acupuncture institutes were established in China, with separate departments in hospitals for treatment, and in the same period, Professor Han explained acupuncture in a scientific way, especially for neurotransmitters. [7].

3.2. Urban Acupuncture

a) Theorists’ definitions of the term: Urban acupuncture (UA): Urban acupuncture is considered as delicate interventions in informal city roofs aiming to connect the systems of nature and urban social consciousness. [9].

Urban acupuncture (UA) was defined and framed by three theorists (pioneers), each according to his vision of the term.

Morales (2004) was the first theoretician who proposed the concept of urban acupuncture as a small-scale strategy, social and local approach in a low-budget period. [1], Then the term was coined by Jaime Lerner (Mayor of Curitiba, Brazil) who considered the city as a sick being that needs intervention and stimulation to recover, and these interventions work in a wave-like manner and have a positive effect on the whole city on both the sensory and the physical levels. He identified four target points in the city (acupuncture points), namely (transportation, Affordable housing, parks, recycling) [10], third Marco Casagrande (Finnish architect) Leads the Taiwan Research Center (Ruin Academy) who has revived urban acupuncture. He proposed an urban development called a "third-generation city" which represents a post-industrial city that involves the manipulation of urban energy flows so that small stimulating interventions transform the place’s pent-up energy (the richness of the region) and this stimulus will serve to stimulate the larger urban context where Casagrande describes urban acupuncture as being Manipulating and interfering with the collective architectural thought of the city, the city is a sensitive multi-dimensional living and environmental object. [1]

The procedural definition of urban acupuncture is to stimulate the main points of the city through small and inexpensive techniques that penetrate the skin of the city to activate and revive it (after socially, economically and culturally analyzing the city) and restore the energy to have a positive impact that spreads upwards between the city’s segments and into the entire city.

b) Historical background of the term: The theory is not totally new it has been introduced for the first time around 1960s, in the last century there is a frequent resource to the UA concept, however there is obvious opinion about who invent the term first. Generally, there are three main pioneers who addressed the UA theory in the first place the Spanish architect M-Morales project around 1970s. [5].

In the second place the Brazilian J-Lerner states that he used UA to his projects as is apparent by his discourse at TED conference (Lerner, J,2007), In the third place the last character to revive the UA concept is the Finnish architect Casagrande. The three pioneers have a decent reputation: Lerner is the previous leader of UIA (2002-2005), De sola was leader of jury in 2008 European prize for UAS, Casagrande won in 2013 the European prize for architecture (The European center,2013) [1].

c) Principles of urban acupuncture

• Definition of sick points: This principle is the basis of the theory of urban acupuncture, which was identified by Morales and is the first step such as discovering diseased points or areas on the patient's body. These points are often of low energy or there is a blockage in the flow of energy.
• **Screenplay**: One of the important principles that Lerner emphasized is the necessity of having a screenplay (scenario) for every city “in which cities can be improved within three years” (Lerner, J., 2007) if there are scenario and design that appeals to the majority and creates a commitment on the part of the population and the state.

• **Immediate act**: The reason for this principle is the long time that planning processes take, so Lerner confirm that there must be a “spark” that pushes the process into motion. [1].

• **Citizen involvement**: In this century, people have a different and often useful point of view, so they must be involved in the decision-making process (local community), says Lerner “We cannot be so prepotent on having all the answers. It is important to start and having the contribution of people; they could teach you if you are not in the right track” (Lerner, J., 2007). The involvement can lead to several perspectives and new outcomes for solutions.

• **Citizen education**: People must be educated, not just learning from them. People need to understand the nature of their society and the environment built around them, transfer knowledge to them, and focus on children to get the essence of sustainability. [11].

• **Holistic approach**: This principle recognizes that all interventions must be integrated with each other to include economic, environmental, infrastructure, historical and political elements, as Parsons says that:” To understand one in isolation will not enable a successful intervention” (Parsons, A., 2011).

• **Small scale Intervention**: in urban areas is small but effective, stimulating urban joints to release energy or unblock streams of obstruction. [1].

• **Space into place**: The urban experience is the connection between the body and the material civilization, says Morales. Lerner and Casagrande emphasize the region’s wealth, as in Treasure Hill in Taiwan. Restoring energy to the place instead of destroying it led to the revival of the region.

![Urban Acupuncture Principles](image)

**Figure 2.** urban acupuncture principles

*Source: Researcher*
d) **Urban Acupuncture approaches**: Each of the types will be defined by the following Figure 3, with an emphasis on the type of connection for each type:

![Urban Acupuncture approaches](image)

**Figure 3. Urban Acupuncture approaches. Source: Researcher**

3.3. **Reviving the city**

The Revival: It is every contemporary architectural act produced as a result of an architectural product structure on it that dates back to a previous era and tries to restore (and show) fading or fleeting aspects, partially or completely, whether or not it possesses a physical presence. [18].

**Revival in architecture**: is the re-employment of the architectural visual elements, whether they are from the components of the architectural void, or the elements of the general form of the mass in the space and the elements of the facades, then mixing them with the architectural values in the formative formations that preserve the architectural methods and original treatments in design, and fit the contemporary needs of societies The revivalist thought in architecture is characterized by creativity and vitality, not rigidity, imitation and copying [19].

**There are two approaches to revivalism in architecture:**

1. **The revival of a structure in itself**: this approach means reading the structure of the building or the historical site (a group of buildings) and its revival themselves, that is, their physical existence. It means that the product of the revival is a new structure that physically overlaps, in whole or in part, with the new structure of the building (or the historical site) intended for reading and which is preserved On it or parts of it, it is decided by the (present) who performs the revival and the new structure usually appears in the overlap, new relationships crystallized by a basic dialectical relationship between the past and the present, such as returning missing parts in a specific building block or adding a new part to a specific building or in a site that includes several historical buildings.
2. **Reviving a specific structure (partially or completely) through other structures:** This approach is concerned with certain aspects of the structure of the building or the historical site (a group of buildings) that may have a physical presence and may not possess it in the structure intended for reading so that the revival appears in its new structure in which these intended aspects appear as a link with that structure or the subject that is being read in the revival. Sometimes a certain type of physical relations takes place for the shapes or a specific type, and sometimes some of the elements or shapes are transferred literally to their relationships and lineage, and the side that is revived enters into new relationships within the new structures in addition to what they bear from their previous relationships that were intended to revive. [18].

Where the definition of **urban revival at the city level** is to "restore the vital aspects of its most important expressive features and physical elements, preserve its civilization and revitalize its architectural spirit by using contemporary methods and tools for an urban environment or its parts that go back to a bygone era and suffer from neglect and restore its effective role within the present and future life."

4. **Correlation relationship**

Each type of urban acupuncture is associated with several principles as shown in Figure 4:

![Figure 4](image-url)  
**Figure 4.** Relation between the UA types with its principles and the conclusion of reviving  
*Source: Researcher*

**Eco Urban Acupuncture** will work to assist communities, towns and cities as they prepare to transition from centuries of development based on the fossil fuel economy, response to the growing demand for strategic vision and innovative design at the local government, suburb, or "district" level, by identifying the point of the disease, then developing a scenario and acting directly.

Combining **digital technology** with urban planning and design has become a popular academic endeavour. The combination of different digital technologies helps achieve the accuracy of acupuncture in the city. All of these technologies are incorporated under the umbrella of "urban acupuncture,"

8
helping to integrate them all. These also contain more parts, by defining the target point and working to engage citizens by educating them.

Blue spaces, whether natural or man-made outdoor environments that feature water prominently and can be accessed by humans either "soon" (in or near water) or "far/virtual" (being in or near water) can see the sky (or in other words, water) can have potential as curative landscapes and public health resources, such as green spaces. It can stimulate psychological restoration, encourage physical activities (both on land and water) and improve social cohesion, so when linked with urban acupuncture by defining the activity that should be targeted and activated, especially in areas that neglect the coasts and areas where water exists, so these areas must be revitalized. To convert it from space to place.

There are some areas that are neglected at night time that do not contain activities that motivate people to use them. So urban dark acupuncture emphasizes the importance of dark values and how these neglected areas can be revitalized and revived.

Bio Urban acupuncture aims to connect with local knowledge of the site through small acupuncture points and direct action. Urban acupuncture is inherently organic and flexible and relieves industrial stress and urban stress, thus leading the city to organic urban nature. Urban small-scale acupuncture provides environmental and social development.

5. Conclusion
It is necessary in urban design to make the city interact in order to activate and improve the health of urban societies through the use of the principles and methods of urban acupuncture (because it needs less time and less cost it is like a spark). The research came out after addressing the previous studies with eight basic principles, which are (Definition of sick points, Screenplay, Immediate act, Citizen involvement, Citizen education, Holistic approach, Small scale Intervention, Space into place).

Also, emphasized on the relationship of each of the approaches to urban acupuncture which has these principles as shown in Figure 4, such as the relationship of digital urban acupuncture depends on identifying points, analysing them, drawing a scenario for implementation, engaging the local community and educating them by considering the city as an ecosystem and how to introduce knowledge and information flows within the local community, As well as the rest of the UA approaches, All of this will revitalize and revive the area and the flow of energy again to work towards a positive vibration towards a larger area to include the whole city.

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