Approach for City Image Strengthening Through Urban Environment Interpretation

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Abstract. Statement of the problem: the problems of varied spaces are regarded in the article as well as their influence on a person and their role in the urban structure. Results and conclusions: the authors offer the system of architectural decisions based on the principles of people’s perception of the environment, peculiarities of human memory and evaluation of the properties of these territories. This system allows one to unlock a deep potential of varied spaces centering around the city identity.

1. Introduction
The image of the city is fascinating topic for any architects. A lot of people tries to select key to this problem dividing city into elements or analysing their impact on people and the interaction with him and with each other. Nowadays there are a lot of different theories for this subject. The most famous is presented in a series books by Kevin Lynch. He creates the system of image of the city description and as well as identifies and classifies its elements.

The problems of image of the city and the image of the architectural space of the city environment were considered in the works of mane reputable scientists. Why this question is so attractive for studying? Firstly because of special relevance. The causes of loss of the image of the city are basically the same for any country - the industrial revolution, war, lack of a competent urban policy. There are events which with rare exceptions pursue humanity as an integral part of his existence. But really think about it people had only when they they realized the degree of overpopulation, pollution and other problems of any major city.

On this basis, the relevance of this issue is not questioned. However, this topic is insufficiently investigated though, because there are extremely little some real tools for use across the city. This is the major target of this work – to create a method which allow to identify the essence of the image of the city.

2. Targets and tasks
Any locality can be symbolically divided into certain zones on a particular basis. However, specific areas are born with zones and live by its own laws. They exist between zoned territories or on their borders – it is varying areas.

Borders and the varying areas – it is a problem which turned a lot of views. For example Danish architect Herman Hertzberger considers areas between zones as a special structure: “The threshold shows up as a key to the transition and connection between areas with divergent territorial claims and,
as a place in its own right, it constitutes, essentially, the spatial condition for the meeting and dialogue between areas of different order. (…) The value of this concept is most explicit in the threshold ‘par excellence’, the entrance to a home. We are concerned here with the encounter and reconciliation between the street on the one hand and the private domain on the other” (by [1]).

If you have a look at this topic in city scale, you will face with an entirely new challenge of organize specific varying area, which people are going when they drive in or drive out the city. And every person faced with problem of indistinctiveness and anonymity of this area. As every new territory are provoking person at least to increased attention activity, then the environment without imagery, aesthetics and consistency entails disorientation, feeling of anxiety and fear, especially for people who find themselves in this place for the first time.

Importantly and the understanding of dependence person’s emotional state on the degree of occupancy level of state: open, semi-open or closed, complementary to the above-mentioned territorial characteristics, influencing the mental state of a person. Researches by Titov L.A., who finds and identifies the causes of certain behaviours depending on these parameters, tell us about the deep historical behavioural people's archetypes. Pithecanthropus's cave or the yard of a modern mixed-use residential cluster is perceived in the same way. The same analogy can be traced for the open space in the Central city square and the ancient steppe. “It can be saying, in modern architectural environment interaction of the same spatial archetypes and behaviour archetypes, in other words, spatial forms and behaviours has a stable analogue in the history of mankind…” [2].

The principles of organize varied spaces should ensure the creation around residents and non-resident visitors an environment that generates not only positive emotions and a sense of security and clarity of their position in the urban structure, but also familiarizes them with the city egregor, archaeologically sensitive cleared of routine layers. So, the main tasks for working with varied spaces are:

- A soft message to the person, entering or leaving the city, information about the change of place’s type.
- Individual’s psychological preparation to change the environment.
- Showing the “face” of the city for creating sustainable associations – the image.

From the all spectrum of these tasks the image’s question had to be separated and even be presided over initial thoughts about the varied spaces. It subjugates the varied areas and becomes prevalent! Now the image’s problem is solved from manipulation of the varied spaces, not vice versa.

Based on the above, it is necessary to develop a methodology for renovation the urban environment, creating the comfort and observer security sentences, as well as disclosing the identify and reinforcing the imagery of settlements.

3. A methodology to identify and enhance the image of the city. Déjà vu effect researches

Déjà vu is a mental condition, where a person feels that he once had been in a similar situation. And the possibility to use it in the architectural environment is quite real.

Psychologists Larry L. Jacoby and Kevin Whitehouse had proposed to have a look at two lists of different words, some of which from the first list, was in the second too. But even if the word was not presented in the first list, the subjects identified it as a previously seen if before its “official” show, it was shown for a very short, semi-conscious period of time (20 milliseconds). “These results at any rate confirm the point of view, that if we note something unconsciously and then consider it carefully, it mistakenly may sound familiar” [3].

Cognitive psychologist Anne Cleary (Ann M. Cleary) proposed a hypothesis positing the impetus for deja vu can be a recollection of what happened once, something similar, but not exactly the same situation. “For example, firstly we visited the courtyard where had been growing a tree in the centre, and there were rectangular flower beds across. Next time (the first time) we come to the Museum hall where there is the statue standing in the centre, and the benches for visitors along the edges. And just the same items arrangement causes us deja vu. Sometimes scraps of fabric, shredded sentence or melody sufficient for it” [4].
The author did researches using the virtual environment, wherein there were placed test persons. They were offered to view a number of test scenes with a certain arrangement of elements (furniture, trees). Then test persons were offered a second series of scenes, wherein some of them contained the similar topology of components by spatial geometric characteristics. The results of the research showed that the such type of the spatial content manipulation can cause a similar effect to the effect of déjà vu, especially if the scene seemed completely new (figure 1) [4].

4. The image of the city and the token system
There are some objects and areas in any locality organized in a certain way and directly shaping its image. And in order for the territory of varied spaces disclosed the identity of the city, it is essential to organize the connection such type of objects with the territory. The authors of the article offer to solve this problem through creation the token-objects on the varied areas, which would someway make reference to the image-forming objects. In other words, if we say by the architectural semiotics terms (the science of symbolic systems and related processes), then creation such type of tokens, referents of which (other physical forms referenced in the token) will be act as image-forming elements [5] (figure 2).

Such type of solution seems promising, as it answers all the above questions:
- Presence of markers with high aesthetic qualities and a certain meaning will clearly identify city boundaries.
- Gradual strengthening of emotional-semantic meaning markers in the direction from the city borders to the city centre, will prepare person to the perception of "heavy" and "loaded" environment.
- The connection of the architectural token with its referent will allow varied area to demonstrate a “face” of the city to travellers.

![Figure 1. Examples of the test scenes screenshots.](image1)

![Figure 2. The scheme of the deja vu effect initiation on application of "sign-referent" system in the city structure.](image2)
5. Image-forming objects. The image-forming routes transmission on the selected areas

Surely, the first method’s stages are the analysis of the city master plan for solving a question about referent objects location. The author outlined the results of the analysis of the Voronezh in the schemes, setting out in appendix. Secondly, equally important the identification of objects that are strong enough to form the image of the city.

Kevin Lynch defines the following criteria for finding decent referents: object should be quite unique, must be related to its own context and create relationships with the interpreter (“person, which, being close, takes the form of the building…” [6]).

But Lynch is not limited the search of significant objects. He offers a systematic approach to the formation of the image of the city, arguing, that the search of the image should result in the creation of the "visual plan" of the city, including various kinds of graphic information about public relations, the perception of the elements in the movement, assumptions about development, identification of strategic points, images, their characteristics, and criticism, presenting it all as a complete visual system.

For the Voronezh on the basis of the above criteria identified the following image-forming objects:

- The Chernavskiy bridge
- Vogresovskiy bridge
- Admiralteyskaya square and Petrovsky island
- The area of the Zastavi
- The main building of the Voronezh State Agricultural University
- The main building of Voronezh State University
- Kukolniy theatre
- YUVZHD building
- Railway Station “Voronezh-1”
- Circus
- The building ensemble of the Lenin square
- The memorial complex “Chizhovsky platsdarm”
- Pobedi square
- S&HC “Olimpik” with the surrounding area
- City park “Grad”
- DK Kirov named
- Park “Dynamo”
- "Arsenal" museum
- The complex of buildings at the intersection of Revolutsii Avenue, Karl Marx street and Pushkinskaya street.

These elements, if project them into the dimension of time, form two lines, whose characteristics exactly match the base. The first image-forming line, marking in the 3 picture by violet colour, in its straightness and a low degree of saturation is in congruence with characteristics of the base Rostovskiy (east) line. Accordingly, the green line, but in its complexity and saturation, correlates with Moscow line (figure 3).

Thus, identified the image-forming lines, it is necessary to create a system of token objects on the base lines, connecting against each other and conceiving the same way as above (figure 4). Then and only then will trigger lasts deja vu effect, that will allow solve all above place’s tasks for these territories!
6. Architectural déjà vu effect

The second stage for the realization of the unlock varied spaces’ idea is the development of a worthy and satisfying all requirements of token for each image-forming object. Continuing the description of the conditions for architectural token, it is not being developed at the idea of comfortable presence of
people in a varied environment. The author is offering to develop the psychological convenience idea. The most comfortable is a priori a familiar environment in comparison with what was seen for the first time. And If we exchange the previously unseen territorial situation or object of familiar, then leanings of space, where it is located, will be stronger. In other words, if person identify wrong some unknown as a familiar, then all negative conditions associated with the fear of the unknown, will become a positive. The effect of déjà vu allows implementing this concept on the human perception level (without changing the area literally).

In virtue of above researches, we may confirm, If sign and its referent resonates with each other through the similarity of the shape, the location of the object, the same typology, the characteristics of light, the media load and colour score, or, if we are talking about the token-space, then through the same balance of “free” and “occupied” spaces, the silhouette similarity, then this will allow to create the illusion of recognition, upon condition, that the architectural token will focus primarily on the subconscious perception. So, if it is quite noticeable for drawing attention and, at the same time, is appropriate to its environmental context (figure 6).

![CONSCIOUSNESS SUBCONSCIOUS](image)

**Figure 5.** The object’s types, perceiving consciousness and the subconscious. **Figure 6.** The Emotion Circumplex by Robert Plutchik.

For creation the sustainable associations between significant and referential objects it is possible to using the colour patterns image-forming objects. The image-forming objects colour score may be identical of referential objects or may be implement through creation the emotional-identical environment by way of colour score. Robert Plutchik developed an emotion circumflex, where each emotion has its own colour or shade (figure 7).

Turning to déjà vu effect, may point up the degree of exposure on the human. This type of mental activity is wonderfully multifaceted. Firstly, one of the evolutionary theory of déjà vu nascence supposes, that thus the human psyche is defended from the negative emotional responses to an unfamiliar, frightening space, creating the illusion of a familiar environment. Rather, déjà vu is the solution of the second task of varied spaces, founding by the evolution of human consciousness. Secondly, déjà vu twists seeming straight line “past-present-future” into circle, enhancing the feeling of what happening or just an upcoming, mixing these concepts, allowing the past becomes the present or the future. This phenomenon allows to clearly feeling the ring system of time, triggering the most multifaceted and always bright, amplified emotions. This sense of time conforms to the physical theory of the simultaneous past, present and future existence: time in all its guises is appeared instantaneous, and the inability of future and the past perception is the peculiarity of human consciousness [7].
Christian Norberg-Schulz has an idea about such type of object, which would have revealed the legend of any landscape, any place. He illustrated it through the description of the bridge in relation to coasts: “The bridge hangs over the stream with ease and power. He does not just connect banks that are already there, the banks become banks only when the bridge crosses the rapids. The bridge designedly causes them location against each other. One side is opposed to another by the presence of the bridge...the Bridge gathers the earth as landscape around the stream” [8]. The bridge is appeared tectonic in relation to the shores. By the same analogy, déjà vu is tectonic in relation to time. Moreover, this phenomenon turns out most real and complete time’s perception! By indirection it confirms by the fact that déjà vu often occurs to healthy people, and therefore with a high probability it can be ranges manifestations in the natural of human brain activity.

In such a way, the idea of déjà vu effect using puts to good effect in architectural territory, measuring up a lot of performance targets, in particular, to varied environment.

7. Conclusion
Awareness of the varied spaces importance present us with requirement to create a new approach to the design of these territories, and therefore alternative tools. This process for the most effective should elapse in conjunction with a rethinking of the boundary environment. The above theory combines not only all urban environment’s elements, but also includes a person with his perceptual features, which makes it possible to create more individual (from the viewpoint of the image of the city), comfortable and most importantly a clear from the viewpoint of human) varied environment.

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