Cultural Urban Catalysts as Meaning of the City

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Keywords	Abstract
	City is a network with clear organization and architecture. It also has permanent connections. Human senses, perception and cognition are the base points while understanding these connections. Hypothesis of this article proposes that concentration of creativity potential in strategically placed junctions (cultural nodes) would catalyse people flow between them naturally. Three main features of the cultural node are distinguished, and possible identification methodology is being proposed. This strategy leads to more extensive methodology research and appliance analysing city structure.

Introduction

People see cities as always moving and transforming organisms which seem to be vivid and alive. Street life is one of the best ways to recognize if city seems vibrant and living or rather dull and stiff. This mostly visibly dissociates the city centre from suburbs or the main street from secondary. Night life, street culture and underground city are the three features of a city formulated by Lewis Mumford, where space and place are only different because of people actions, while they transform physical spaces into places with function and identity [1], [2]. Movement, caused by people in all these city levels and spaces, is what makes the difference. Urban theoretic, philosopher and photographer Walter Benjamin in one of his many thoughts about urban fabric imagined city life through a photo-camera lens. As a photographer he noticed one thing in street photography: once you take a picture of a busy street with long shutter speed, only those steady objects remain visible in it. But what if there would be a possibility to take a picture where its outcome would be inverted – steady objects would disappear, while moving objects would remain visible? This, in Benjamin's words, would be showing the real city [3].

City is a conjunction of physical structure and happening, which could also be called vitality or, in Benjamin's words, movement. If it is the necessity, which has to be fulfilled to create a city, there should be a way to grope and analyze what evokes this motion and how strongly it depends on people. People have influence on cities as they create them, destroy them and live in them making micro and macro changes to the environment not only as planners but also as everyday users. Cities are the result of people's creation process and later on are perceived by people. This process may be called the closed creation – perception cycle as people once create cities, then understand them and finally continue this creation process according to their perception, which is also affected by many external and internal factors, such as senses, human psychology and identity which has formed through a long time (Fig. 1).
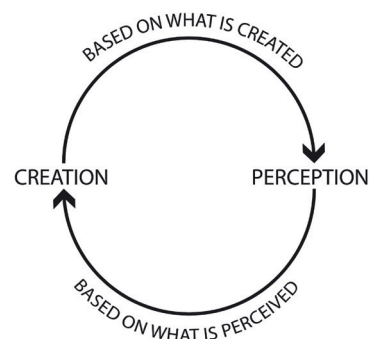

Fig. 1. Creation – perception cycle [Figure: V. Balvočienė].

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Linguistically meaning is the thoughts or ideas that are intended to be expressed by something. Identity is defined as feeling of belonging to a particular group. It is part of a person's self-conception and self-perception and is based on nationality, ethnicity, religion, social class, generation, locality, which is closely related to people's dwelling-places as well as cities they live in. Creating city structure and its particular identity in this case is called creating the **meaning of a city**.

Urban theoretician L. Mumford described the city as "a special framework directed toward the creation of differentiated opportunities for a common life and significant drama" [4]. As city grows and becomes more complex, it more and more differs from something called "bare life". In Benjamin's words – it is a completely sheer life. Real as it can be. It is not only standing structures and functions making people live, people make city more than that, they actually make cities alive, also transforming them into a collective space of dreams and ideologies – space of our identity. In a city people are given the opportunity to be creative, which is the last and highest need in the pyramid of needs, according to well-known theory of psychologist A. Maslow [5, *370–396*]. This highest need is fulfilled, cultural life or previously mentioned movement is brought to the cities through people being creative. In this case *cultural life* is seen through the prism of creativity. If there is a possibility to be creative, it brings cultural life to the city. Thus, *creativity* is strongly connected to *cultural life* as well as *cultural nodes* which represent the concentration of cultural life.

In order to understand how meaningful places in the city are created, the term cultural node is being introduced in this text. This term represents a place of concentrated potential for creativity, different functions, meaning and attraction, which also has a possibility to generate flow of people's moving to it. In this case cultural node would create the attraction field around it. Two nodes could create "magnetic" movement between each other, while the whole network of cultural nodes would stimulate even bigger movement in the city. It is the connection between cultural life, creativity and meaning, and the task is – to make people move. This concept would supplement the idea of city as a network and would later help to connect this idea with graph and network urbanism theories and image for later research possibilities.

The main question of this article is based on Walter Benjamin's idea about movement in the city and tries to clarify if creativity is able to stimulate movement. Therefore, the aim of this article is to demonstrate how cultural nodes might stimulate movement in the city and how it is connected to the creation – perception cycle. This research has the following objectives describe what kind of influence human senses have on architecture;

- to analyse how city and architecture is affected by people's perception;

- to analyse what makes places meaningful in the city;
- to describe the creation – perception cycle, and to analyse how it is connected to movement;
- to describe what is cultural node and how strategically settled network of them might catalyse movement in the city;
- to suggest methodology for identifying the existing cultural nodes and develop new ones.
Common expressions in this text are as follows:

Meaning is a particular identity of exact city or place based on structural and perceptual relations.

Identity is defined as feeling of belonging to a particular group closely connected to the dwelling-place.

Creativity is a process of developing new objects in the city, such as buildings, places or events, as well as perceiving, understanding and interpreting them. Creativity, as a manner of bonding with surroundings, in this case is not only possible as a material outcome but also as state of mind and way of thinking, interpreting and receiving information.

Perception is the way people understand and interpret their surroundings based on their senses, temperament and identity. Perception might be very different for every human being.

Movement is people's flow in the city caused by different attractions.

Cultural node is a public space and place of concentrated functions; it is meaningful and attracts people.

The used research methodology is literature review based on deduction principles and statistics analysis using multi-dimensional scaling analysis method.

I. Subject – Human. Senses and Meaning

A. Senses and Architecture

Before discussing the meaning of the city and creativity, it is important to understand how people perceive cities and architecture. Our mind is the only tool of perceiving surroundings. That is why it is important to understand how it works and what kind of impact it has when analysing city structure and its culture. City's culture is represented by many manners of expression. One of them is art and also architecture, since it sometimes is called art too. Architecture shapes our surroundings making difference to the city's identity [6]–[9]. There are limited number of ways to understand our surroundings. First, we receive information and only then can transform it in our minds (relation of emitter and interpreter) [10]. That is why it is important to introduce human perception in the context of senses, since it is our tool to receive a lot of external information. There are 5 basic human senses: touch, sight, hearing, smell and taste. The next section is dedicated to them.

Many studies, related to architecture or city structure, are concentrated on analysing urbanism through the spectrum of its visual properties and visibility [8], [11]–[15]. Architecture, as well as urban structures, is most of the time primarily seen and only then experienced in other ways. When we first approach a new place, we see the proportions, size, colours, material, shadows, and light falling on the buildings creating the very first impression. Vision is the first sense we use while experiencing architecture. This is how it is possible to understand the building or place as a whole object. Furthermore, it is noticed and described by urbanist Jan Gehl that visibility qualities are not only important while perceiving the image of a building or some other structure, but some properties of human vision are also used almost unconsciously in city planning too. For example, most of the Medieval European squares are designed by the principle of visibility – are no wider than 80 meters, the distance when it is still possible to see someone's face. Many theatres have stages no further than 35 meters from the audience because in this distance it is still possible to distinguish an emotion. Vision is also very closely connected to what we perceive boring and is basically reliant on how fast we move in the street. If there is enough visual information around, people get more interested and tend to move slower, if the street profile is blank, people try to move faster. This works the other way too: the amount of information can be reduced or increased based on how fast people are moving in a particular part of the city [2]. In this case, visibility can not only be described as something we see and then understand but also how other things depend on how our vision is constructed, speed of movement and urban distances are dependent on our vision.

Looking through visibility aspect, city planning and architecture are based on rhythm, symmetry, contrast and other compositional principles. Sight can be called the main approach to architecture. However, such initiatives as "Invisible architecture" suggest looking at architecture from the other angle. Not only visual properties make architecture recognizable and meaningful. Architect and architecture theorist J. Pallasmaa in his book "Eyes of the Skin" mentions that people once experienced a transition "from oral to written culture" and it was a huge shift in people's consciousness and perception at the time. Just before learning how to read, hearing was the main method of receiving information. "However, this does not mean that other senses must be rejected while experiencing architecture," Pallasmaa says [17]. Thus, a person can only become involved into architecture when vision is not the only tool used to understand it.

Certain buildings as theatres, opera houses, temples, and auditoriums are designed to fulfil acoustic needs, and the term soundscape represents how people understand cities in terms of sound [18], [19]. Composition of space, the scale, the materials used, and function of the place impacts the way how sounds are spread in particular places, and it affects how we understand the soundscape and perceive the place we are at. In the project "Soundscape Architecture" by University of Virginia, architecture professor Karen Van Lengen analyses 13 well known buildings, such as libraries, museums, pavilions, even iconic buildings like Reichstag and Taj Mahal, to see how they work acoustically and what the core or best building describing sounds are. The author's recorded sounds in all these buildings and created 60 seconds clips for each of them that in his opinion best described the background aura of the exact building. These background sounds were used to create a 3D representation – animated interpretation of each place. The author claims, that yet it is difficult to measure the properties of aura at the place, this is a significant part of design and perception process and it must be used as a method of analysis and design [20]. Thus, not only buildings are shaped to fulfil acoustic needs, but acoustics and sound are connected to our perception and identity of the exact place or building and can make it recognizable.

People are surrounded by natural and human-made smells every day and perceive only some of them consciously. Since the vision is very closely connected to our thoughts, smell affects the emotions. It is quite easy to explain how something looks like but difficult to explain how something smells, as there are no such obvious language-like expressions. Psychologist R. Arnheim wrote: "One can indulge in smells and tastes, but one can hardly think in them". Smells are perceived the best when they are in the expected environment and go together with other stimuli, such as vision [2], [21]. Smell is strongly connected to taste, since it is almost impossible to understand one without experiencing another. In his book Juhani Pallasmaa describes how he needed to touch a door of white marble with his tongue while visiting DL James residence in California. "The sensuous materials and skilfully crafted details <…> as well as the sensuous colours <…> evoke oral experiences", he says [17]. Thus, visual information of architecture was needed to evoke this kind of sensation of taste and stimulate the move. Therefore, smell and taste are more like supplementary senses in architecture, since they only affect our perception together with other senses or are induced by them.

Hands are the eyes of those who cannot see, as by touching the object it is possible to distinguish its shape, proportion, material it is made of and understand it as a whole. Touch is being more and more involved into the surroundings by all the touch devices, such as cell phones, computers and other interactive inventions. 3D printers are being used to make tactile models for those, who cannot see. These inventions also supplement architecture, making it easier not only to communicate, but also to understand surroundings. Our hands and our skin read the texture of everything it touches, measures the temperature and movement of air around us. It sort of involves us into the

surroundings [17]. Thus, tactile sensation, just like smell and taste, might be invitation evoked by other senses, such as vision, when something beautiful is tempting to touch it, or in deeper level might create the feeling of cozy or unpleasant place by involving into the place by our whole body. Touch as the secondary, by other senses provoked sensation, or touch as aura creating and involving feeling affects the perception of a place.

Vision rules make surroundings recognizable and readable, visually attractive or not. Shops and restaurants use smells, taste, or music to attract people; new technologies bring touch to museums by making possible to be involved through screens and other tactile interactions; these are examples of senses being used in architecture. The whole human body can become a tool to perceive surroundings. It is noticed that some places tend to press us down, the others make feel vulnerable or uplifted. It is all connected to the scale of human body. As Vitruvian man represents perfect human body proportions, centuries later Le Corbusier's Modulor is created to represent how human body proportions influence the creation of surroundings. Human proportion in this case not only connected inch and metric measure systems but represented the idea of ergonomics [23]. Ergonomics and scale is a foundation of creating habitable environment. Scale, as one of the main compositional properties, shapes architecture as well as our perception. Therefore, instead of tuning 5 senses, architecture lets us to experience the surroundings by the synergy of them. Architecture has power to make our perception polyphonic, connecting and layering our senses, connecting it through 5 basic senses and completing it by using our body as a scale measure [17]. Just like a *flâneur* in Walter Benjamin's writings, he walks from one place to another and makes the whole city his interior through interaction [24].

B. Perceiving Surroundings

Architecture is able to provoke or provide response [25]. This response can be described by people's behaviour in the city. Space and place concepts are based on differences which people make to spaces to make them into places. Space is what can be determined by physical spatial and compositional objects, such as ground, buildings, and nature. It defines *x*, *y*, *z* space, where changes can be made. Places are more than spaces and are changed by people [26]. They have power to evoke emotions: calm one down, make peaceful or irritated, even bore or bring such feelings as anxiety. It is noticed that shape, distances, openness, or closeness make people perceive places differently, move slower or faster, stay or leave [2], [27]–[29]. There is connection between urban life and Freud's theory of consciousness and unconsciousness, when it is not actually known why one or other place brings exactly these memories or feelings [30]. Yet human perception is

paradoxical because of our individual differences. Identity and perception differ based on different societies. That is why different schemes are being used to describe human behaviour. All agent-based theories are checked by generalizing and proving that it works statistically. People tend to simplify situation in their head, by that it is easier to understand the whole picture [31]. That is why it is crucial not to oversimplify the picture while analysing human behaviour. Therefore, any method is only the scheme responding to discussed perception points to city and human.

People tend to perceive things happening around them symbolically and in terms of causality. They use symbols determined through a long time to speak their minds and understand what others are willing to say. Language and text is an example of arbitrary meaning. Readability or legibility of a city is an idea of K. Lynch, and it determines how our minds tend to remember its surroundings to find a way in environment. Lynch examined people and asked them to draw a map of their well-known place and in that way explain how to get from one point to another. He called it mental mapping and as a result determined five basic symbolic objects used by respondents: paths, edges, districts, nodes and landmarks. These five elements make our image of the city and makes it possible to determine the way and explain it to others [32]. This could be called language of the city or legibility, in this case architecture can be easily regarded as system of signs [10].

II. Object – City. Creating City

A. Genius Loci and Memory of the City

Every cognition requires object as well as subject. As it was discussed about the subject – the person, next question is about the object we perceive – city and what makes it THE city. "Architecture has its own realm. It has a special physical relationship with life". Our world is full of symbolic information and most of it has many different meanings and purposes [16]. Architecture is one of these symbols and cultural expressions. "It is meaningless to imagine anything happening without reference to locality". Therefore, people not only imagine things referring to locality, but locality can be analysed to understand how people make places their habitats, what kind of tools are being used to make it meaningful. Kojin Karatani mentions *"THIS"-ness* of the city as a premise that a particular place or city might even become a metaphor. *"THIS"-ness* could be the core of the city, making it easier to distinguish a particular place from another, it could also be called the city identity [33].

Identity can be characterized by the term *genius loci.* It is a Roman concept and a common phrase in writings about architecture and city. It mainly means that every

place has its particular atmosphere which has an impact on our perception and feelings while being there or trying to distinguish that place from others. It expresses how people occupy the **space** and transform it into a **place** with identity. Word "place" is significant in this context, as it stresses how people make difference in the existing situation which is given to them. People, their behaviour and what is left from other generations is the memory of the city. Memory of the city is layered and in most cases those layers are hard to distinguish as clearly as in the case of ancient Pompeii, where everything got covered under hardened lava and remained as it was almost 2000 years ago until these days. In ordinary case all these layers are given to modern-day inhabitants and make them feel miscellaneous spirit of the city. Previously existing layers frame laws by which all new layers must be covered. What architecture should do in the city is to embrace the old structures by adding new [16].

B. Tools of Meaning in City Creation Process

People as city creators and users have all the possibilities to create something that later shows to other generations how they lived. In this paper it is called meaning of the city, since it gets the observer closer to understanding not only the city structure but also its *"THIS"-ness* or identity. Cityscape is a system of signs very similar to a text which people read to understand the identity of the city. Semiotics states that all our environment is readable one way or another. Based on this all our surroundings are the system of signs perceived by people. According to psychologists M. Wertheimer, Wolfgang Köhler and Kurt Koffka, there are some universal signs which make our perception into particular code system [34]. There are many different tools to create meaning in the city. But the objective of this article is to describe how architecture becomes a semiotic metaphor through which it is possible to better understand the city. Psychologists have noticed that people always tend to assign meaning to what they see. Belgian psychologist Albert Michotte demonstrated this through a simple experiment: he showed a film where a red dot was moving towards a green dot. When the red dot touched the green one, the green dot moved away. People were asked to explain what they saw. It was realized that the participants were unable to describe what they saw without explaining that a red dot somehow caused the movement of a green dot [27]. Based on our nature it seems that we cannot do anything but make architecture into a metaphor while creating it, even more, observed architecture also tends to be always meaningful for the one observing it.

One of the first tools in cities is not even created by people and it is natural environment. Karatani mentions that nature itself creates such places where people choose to settle. People choose particular places over others to settle based on their needs: safety, distance from particular

places, etc. Other projections of differences are religion, historical events, etc. Complexity of these memories of the exact place shapes perception and identity. Expressive and emotional nations living in the South obviously differ from the ones living in the North. The purpose of architecture is helping people to dwell under the conditions which are given to them by nature [33].

It is recognized that nature conditions, as well as other before given cultural differences, affect people's lifestyle and behaviour. But our living environment is weaved out of natural and human-made objects. Human-made parts of environment are important not only in the way they might affect us but also because it might be used to send a special meaning about people living there. This phenomenon can be noticed in cities, even in the structure of ancient ones. One of the tools to create meaning is to use symbols in architecture, such as light, path, centre, boundaries [27]. Juan Pablo Bonta in his book "Architecture and its Interpretation" distinguishes two different kinds of signs which could make architecture meaningful: **signals** and **indicators**. The latter are directly perceivable signs and reasons to learn information about directly not perceived events. *Signals,* on the other hand, are fulfilling two conditions: they are *intentionally shown* to the observer, and the observer *perceives them as intentional.* Thus "every signal is an indicator, but not every indicator is a signal". Trying to see meaning in their surroundings people most of the time come to pseudo-signals – they believe that the meaning they see is intentional, but it is not. And conversely – the intentional meaning is sometimes skipped by the same observer as not important or not intentional (intentional indexes). This most of the time becomes our method to interpret the architecture and other pieces of art made in the past as well as the city and its structure [10]. This makes our surroundings symbolically perceivable as a language of signs. City as a combination of signs is also made from signals and indicators, and it does not matter if they were intentional or not, it still forms the image of the city.

Symbolic approach to city planning is visible through the whole history. In West Africa and in Mali, traditional homes are designed in such a way that the layout of those looks like a female body, and the main living space is where a womb would be [27]. Ancient Muslim cities tend to have no windows to the street, which represents religious beliefs that almost everything happens inside the family and cannot be exposed to strangers [35]. In Hellenistic Greece, relief and nature made cities to adapt and dwell in more complex conditions. Therefore, Greek cities look more irregular and natural. Democratic lifestyle reflects in the structure of the city, while there is no big difference in scale. Agora is the junction of many functions and is the centre of democracy. Differently from the Arab countries, the street facades are more open, the first streets with representational facades oriented to the street originate

in Antique Greece [36]. Egyptians believed that the world is divided in two parts: cities of the dead and the living. This division is also reflected in morphology of their cities. Every city was divided into an open city of the living and secretive city of the dead [37]. Not all of these structural differences can be called signals because not all of them are intentionally sent to observer, but the combination of all these signals and indicators forms the *"THIS"-ness* making cities more recognizable and unique for exact culture, forms a particular language of the exact city. Composition and space geometry and their symbolic meaning is widely analysed by D. Chandler. He describes how simple geometrical changes can influence the comprehension andntions such compositional principles as proximity, similarity, continuation, closure, smallness, surroundings, symmetry and *prägnanz.* These mentioned qualities are more of the compositional principles. Though vertical and horizontal objects, lines and planes, and their position are compositional objects creating the meaning of the place [34]. Karatani agrees with Chandler mentioning openness and closeness [33]. Differences in scale and material, even the fact that there is only one or more objects, might affect our perception. Most cities use these simple principles creating open or closed, transitional or cozy places. These compositional principles are strongly connected to the feeling which is being created in a particular place. One example of feeling creation would be architecture and interior of churches and other temples, where vertical composition and space arrangement creates the feeling of someone bigger, however people, on the other hand, tend to feel small and fragile while standing there. All these architectural signals and indicators are created by a human and are perceived and understood by the same human as a metaphor. Hence the creation and understanding process is severely related and are dependent from one-another. These and many other factors describe how people may react to their surroundings and what message surroundings bring us. But city is a complicated organism where everything is connected. Not only structure or people's activity change our cities but the synergy of them. In his book "Miestas kaip įvykis" ("City as a Happening") Tomas S. Butkus speaks about 3 functions of the city: structure and physical environment, events and happenings, and a third one – which represents the connection between the previous two and is only possible when the structure and event are connected meaningfully. For example, riots next to the parliament or network of radio and telecommunication and independence events in Lithuania on 13 January 1991 [38]. Therefore, we create places based on our perception and use the same minds to perceive our surroundings. This makes city a closed circle of human-created meaningful culture. Almost identical idea is represented by A. Bakshi in her book "Topographies of Memories". The author collected a variety of memories by interviewing the residents of Nicosia and layering their memories with city map,

creating the map of memories. In this case it is shown that memory is inseparable from the place to which it relates [39]. These places are known not because of structural properties or events but by connection between these two. It is impossible to separate city structure from creativity and other cultural or historical processes happening inside it. All processes happening in the city are inseparable from its structure and change its identity.

Analysing all ways of expression in a city one main property appears to combine all the mentioned things: it is human creativity and how it dwells in the city structure. Place memory is one of the recent ideas representing how people are able to change cities through their engagement of pathways, markets, etc. [40]. Thus, creativity is a process when something new is being made, yet it is also our interpretation which could be called creation process too. People participate in creation of the city both ways – as builders and as users. This explains the whole cycle of creation and perception once again, but it uncovers the new aspect – the whole cycle is a creation process. We build, read and understand the city. Legibility, a tool for way finding, is described mainly by physical properties and is created by a human, but even more it is received and understood by the human too. Metaphor of language explains how physical environment is perceived and is the *text of the city.* Culture, creativity and its expression through architecture and urbanism could be called *text of meaning,* as it represents how people change the identity of the place by changing its surroundings.

III. Creativity. Urban Catalysts

Being creative is one of the highest needs a person can have, not only based on Maslow's pyramid of needs, but also because it is related to economic growth. David Emanuel Andersson and Charlotta Mellander use the term "creative cities" and "creative class" and define what makes cities creative. It has to be diverse and have constant income of ideas and innovations from the outside [41]. Cities, especially big ones, have potential to attract creative people and encourage creativity [42]. City, as a place of memory and meaning, can fulfil the need of being creative and stimulate it. Like a *flâneur* in Benjamin's texts, a person makes the whole city into his environment and interior through his imagination and creativity.

Urban catalyst idea is being used since the end of the 20th century, when it was detected that urban environment has an impact on communities living there [43]. One of the first to mention the urban catalyst idea in Europe was Polish writer Kazimierz Wejchert [44]. There raises the question about creativity as probable urban catalyst. As there is potential for creativity in the city, how does it respond to potential of movement? What if a city were be perceived as a network, where particular places would

concentrate greater potential of creativity? Based on the system theory a city is seen as a network with a self-organization function [45]. This means that once one node in the network changes or is changed, it affects the others, but the whole network adjusts under these new terms so it could work properly again. All nodes are connected not only by physical connections, such as roads and paths, but there are implicit connections, such as information flow, same function or attraction to go from one node to another. Following this it is possible to make small change or impulse to one or more separate nodes to catalyse changes in the whole network.

In our minds, city is a network made of more or less similar components letting us to better understand and identify different places. Junction or node is one of the mental map components suggested by K. Lynch. They fix in our minds as a place where there is more than one function or where it is possible to choose which direction to go (street junctions). Talking about meaningful places or synergy of place and happening, this junction is an information accumulating place or cultural node. First cities were junctions of roads or junctions of 3 main functions – church, market and a monarch's palace [1], [32]. Something about this node transformed a simple place into the first city. This place was not only a connection, it became an aggregate of three cultural functions, place of memory, accumulating potential and spreading it around. Junctions tended to attract different functions and cultural expressions becoming an attraction point. According to this, it is certain that a junction accumulates two things – function and potential energy which stimulates people's movement between them (Fig. 2). This very well corresponds to the theory of city as a network.

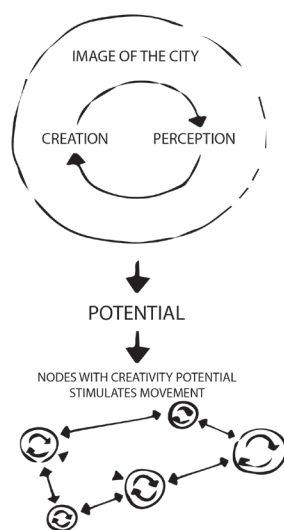To create movement in a city, in this case, it is suggested to create *cultural nodes* stimulating creativity. When these nodes collect enough information or attract different functions, movement between them will be induced naturally and this movement might be called a catalytic process. Cultural nodes would increase creativity in three ways: **creative use** of the place, **understanding and re-imagining** the identity of the place, and **stimulating to move and find** another such place in the city. In this case cultural nodes could be called urban catalysts generating the bottom-up changes in the city. The concept of urban catalyst requires that only minor changes, made in a particular strategically picked place, would be needed to catalyse movement (Fig. 3). Therefore, it is not only crucial to know how to create a cultural node but also to recognize the existing ones or those where only minor changes should be made, so that ideally only one point would be placed to complete the network.

It is crucial to recognize the qualities of places, which define a place as a cultural node or approximate to it. The place-making concept, based on W. H. Whyte ideas, represents the idea of how to make living and attractive public spaces and what induces cultural life inside them. It started in 1970 with a study about small public spaces trying to understand why some of them are filled with people while the others seem to be forgotten and empty [46]. One of the books about place-making suggests that in order to make creative places, three things are needed: creative workers, cultural industries and creative communities. Even more – it suggests how to make these places creative, and one of the suggestions is architecture [47]. Basic place-making concept shows 4 main points: *sociability, uses and activities, comfort and image, access and linkage*; as well as represents the qualitative and quantitative measurements for each of the four points (Fig. 4). Taking place-making concept as basis for place evaluation, it would be possible to recognize places with creativity potential – *cultural nodes*. One of the main aspects of analysis in this article suggests looking for meaning in such places, as meaning corresponds to creativity and creativity through cultural nodes catalyses movement. Original evaluation of place-making concept measurements comprises four sections, but keeping in mind the meaning and creativity aspect these groups might change. Based on the ideas of
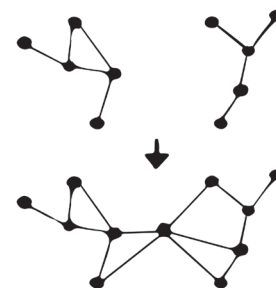

Fig. 2. Cultural nodes and movement [Figure: V. Balvočienė].

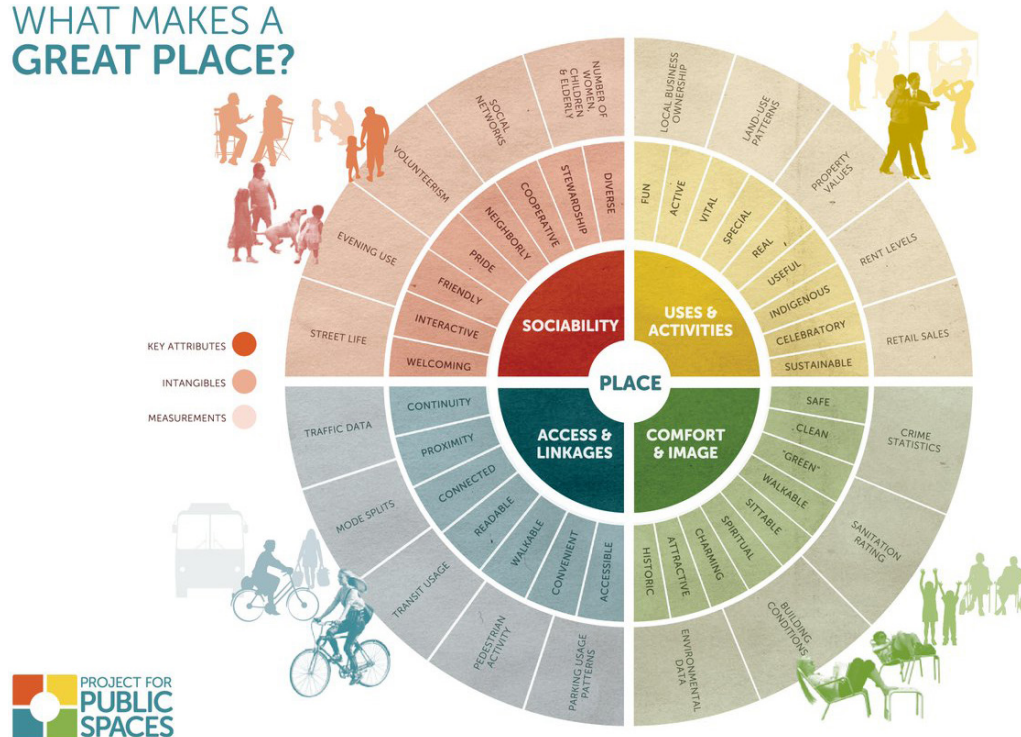Fig. 3. Movement between cultural nodes [Figure: V. Balvočienė].

Fig. 4. Place-making concept diagram [http://rescue.earth/people-and-placemaking/].

this article, the following 6 qualities were chosen to analyse and evaluate the place-making measurements:

- affects **speed** of **movement** through the place;
- corresponds to one's **senses**;
- could be called **signal** or **indicator**;
- is **non dissociative from exact place** (as memory of the city);
- affects **composition** of the place;
- affects **scale** of the place.

This evaluation is needed to achieve new groups of place-making measurements, distributing them based on introduced terms. This distribution allows to suggest different research methods for each group and leads to deeper investigation, further allowing creation of a new methodology to understand public spaces. Table I represents the existing evaluation of place-making measurements with unchanged groups: sociability, uses and activities, access and linkages and comfort and image. Measurements in these groups differ from one another. Based on the introduced terms, there is no integral way to find common methodology while using 4 place-making groups of measurements (Table I).

To transform these groups, simple multi-dimensional scaling procedure was performed in statistics program IBM SPSS 23 to understand which of the measurements were similar based on chosen properties representing meaning and creativity. Result of the statistics procedure is shown in Fig. 5.

Smaller distance between two points shows greater correlation (or similarity) between variables. Based on the
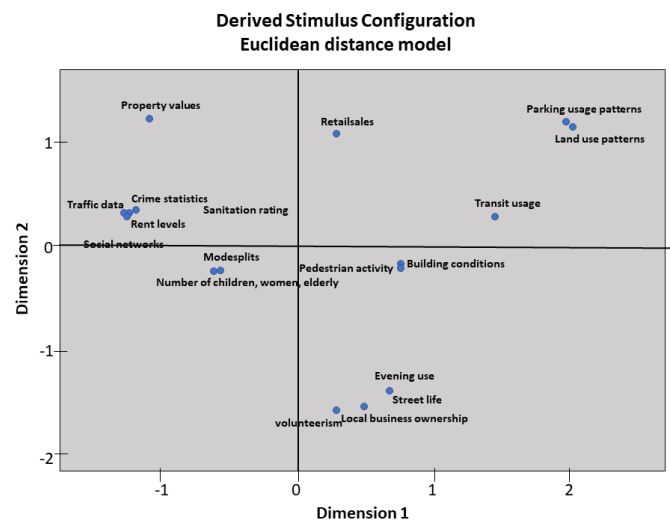
Fig. 5. Multi-dimensional scaling table of place-making variables [Figure: V. Balvočienė].

chosen qualities great similarity can be spotted in these groups of measurements:

- patterns of parking- and land use;
- building conditions and pedestrian activity;
- evening use, street life, volunteerism and local business ownership;
- mode splits and number of children and elderly in public space;
- crime statistics, traffic data, sanitation rating, rent levels and social networks.

TABLE I

Evaluation of Place-Making Measurements
[Developed by Balvočienė]

Measurement	SOCIABILITY					USES AND ACTIVITIES				
	Street life	Evening use	Volunteerism	Social networks	Number of children, women, elderly	Local business ownership	Land use patterns	Property values	Rent levels	Retail sales
Qualitative/quantitative	red	red	red	red	green	green	green	green	green	green
Affects speed of movement (yes/no)	yellow	yellow	yellow		yellow	yellow	yellow			yellow
Corresponds to senses (yes/no)	yellow	yellow					yellow			
Signal/indicator	green	green	red	green	green	green	red	green	green	red
Non-dissociative from the exact place (yes/no)	yellow	yellow	yellow			yellow				
Affects composition of place (yes/no)						yellow	yellow			
Affects scale of place (yes/no)							yellow	yellow		

Measurement	ACCESS AND LINKAGES					COMFORT AND IMAGE			
	Traffic data	Mode splits	Transit usage	Pedestrian activity	Parking usage patterns	Crime statistics	Building conditions	Sanitation rating	Environmental data
Qualitative/quantitative	green	green	green	red	green	green	red	green	green
Affects speed of movement (yes/no)		yellow	yellow	yellow	yellow		yellow		
Corresponds to senses (yes/no)			yellow				yellow		
Signal/indicator	green	green	green		red	green	green	green	green
Non-dissociative from the exact place (yes/no)									
Affects composition of place (yes/no)			yellow		yellow				
Affects scale of place (yes/no)					yellow				

There are some variables which are not similar and harder stick to these five groups: retail sales, transit usage and property values. These measurements are further from others and cannot be attached to one group or another visually, but calculations suggest that the quarters of mostly correlative variables and the groups are:

1. property values, crime statistics, traffic data, sanitation rating, rent levels, social networks;
2. mode splits, number of children and elderly;
3. retail sales, parking use and land use patterns, transit usage;
4. pedestrian activity, building conditions, evening use, street life, local business ownership, volunteerism.

TABLE II

**Evaluation of Place-Making Measurements Based
on the Terms of Meaning in the Place [Developed by V. Balvočienė]**

Measurement	NON-PHYSICAL DATA							USAGE DATA	
	Property values	Crime statistics	Traffic data	Sanitation rating	Rent levels	Social networks	Social networks	Mode splits	Number of children and elderly
Qualitative/ quantitative									
Affects speed of movement (yes/no)									
Corresponds to senses (yes/no)									
Signal/ indicator									
Non-dissociative from the exact place (yes/no)									
Affects composition of place (yes/no)									
Affects scale of place (yes/no)									

Measurement	URBAN PATTERNS AND MOVEMENT				SOCIAL LIFE AND VARIABILITY					
	Retail sales	Parking use patterns	Land use patterns	Transit usage	Pedestrian activity	Building conditions	Evening use	Street life	Local business ownership	Volunteerism
Qualitative/ quantitative										
Affects speed of movement (yes/no)										
Corresponds to senses (yes/no)										
Signal/ indicator										
Non-dissociative from the exact place (yes/no)										
Affects composition of place (yes/no)										
Affects scale of place (yes/no)										

The first group represents economic and social data qualities which are not physical. The second group represents usage of public space. The third shows urban pattern and movement. The fourth – social life and variability of the place. In order to better understand how these four groups represent the terms of meaning the table with evaluation is presented (Table II). This evaluation suggests arrangement of later research for each group.

The first group is numerous and could be analysed through GIS data. The second can be analysed while observing and describing exact nodes, the third could be understood through city plans and regulation documents, while the fourth through observation and social surveys of public space users.

Conclusions

- People create cities and interpret them through their perception. This shapes the closed creation-perception cycle, which means that people can be creative not only by creating but also by perceiving what is around them. A person is being creative in all stages of the cycle: creating something new, perceiving, imagining, and creating something new again.

- Meaning needs emitter and receiver, in this case – city and person. People tend to see meaning in almost everything they perceive. Messages which are received might be intentional or accidental but meaning will still be sensed. What is perceived can still have different meaning to each person due to personal identity differences. Cities collect this information in layers, which is later understood as memory of the city, *genius loci* or its identity. What people perceive in the surroundings and what kind of message it brings to them is called the meaning of the city.

- Creativity is an engine of constant reconstruction and reinterpretation of cities. It does not only mean the creation of something new (object, place, event) but also encourages to be creative through re-imagining the city. This forms a constant creation-perception cycle.

- People's way of thinking changes the way surroundings are perceived. Different culture, religion, climate, ruling method and other disparities of nations are visible in differences of a city plan and architecture. Later generations create their layers of the city based on what has been given before, so the creation-perception cycle is visible in this case too. The identity of our cities is directly shaped by creativity process.

- Human senses admit the great part of received external information which is later processed by our minds. Ordinarily a person uses 5 senses to perceive the surroundings. Some of them have greater impact than others – vision and hearing might be called main senses. Other senses such as smell, touch and taste are more complementary in architecture and can be provoked by other senses. Architecture allows to connect them all supplementing it by another sense – the scale of human body. Measuring cities and buildings with a scale of human body does not only give rules for ergonomics but allows getting deeper sensual experience in the city.

- Cultural nodes are collective places of function, meaning and attraction. Based on these three qualities, it is proposed that it has a potential to induce creativity in making people use the surroundings (function), re-imagine and understand identity of the place (meaning) and stimulates finding another such place in the city (attraction). While attracting people and inducing creativity, this would also induce movement between cultural nodes. Well picked existing and strategically placed new cultural nodes would catalyse movement between them naturally. In later investigation stages of this theory there is a possibility to distinguish the typology of cultural nodes and determine suitable distances between them. This allows suggesting base points for creating a mathematic network model for further research.

- The place-making theory suggests the measurements to recognize viable public places. This theory can be used to evaluate cultural nodes too. From the first sight, meaning is what is missing in this theory. In four new groups rearranged measurements of the place-making theory shown a new approach to investigate potential cultural nodes in the city, suggesting the possible research methodology for each of them. This methodology allows to recognize the existing cultural nodes in the city and see the gaps which are needed to complete the network and catalyse movement.

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