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OPEN PUBLIC SPACE ATTRIBUTES AND CATEGORIES – COMPLEXITY AND MEASURABILITY

izvleček

Delo naslavlja kompleksnost sodobnega javnega prostora znotraj polja arhitekturnega in urbanističnega raziskovanja, tako v konceptualnem, kot v dobesednem smislu. Naš cilj je sistematizacija prostorskih atributov in njihovih kategorij, ter razprava o prostorski kompleksnosti in merljivosti, z namenom doseganja bolj celovitega razumevanja, opisovanja in analize javnega prostora.

Želimo izboljšati vsakodnevno rabo odprtega javnega prostora in pri tem pripoznati uporabnika kot ključni faktor. Navkljub množici obstoječih raziskav kompleksnosti urbanistične in arhitekturne realnosti javnega prostora, namreč nismo naleteli niti na eno, ki bi celovito zbrala tiste lastnosti, ki so bistvenega pomena za uporabnike javnega prostora.

Z ozirom na nepopolnost obstoječih pristopov k odprtemu javnemu prostoru in pomenu uporabnikov za njegovo uspešnost, se naš pristop osredotoča prav na uporabnike. Z izhodiščno raziskavo smo zbrali najpomembnejše vidike javnih prostorov, kot jih vidi sodobni človek. Zbrani podatki so analizirani in kodirani v prostorske atribute. Delo nadalje analizira njihovo kompleksnost in merljivost.

Rezultat dela je inventar atributov, ki jih uporabniki prepoznavajo v javnih prostorih. Ne ukvarja se z dodeljevanjem vrednosti in pomena teh atributov, pri ustvarjanju prostorskih realnosti. Kot cilj si zastavlja zgolj jasne definicije, ki bi nadalje omogočale konstruiranje trdne logične argumentacije v razpravi o odprtih prostorih z vidika uporabnika. Skozi to kategorizacijo atributov, na koncu predlaga disciplinarne ravni, ki so potrebne za analizo kompleksne urbanistično-arhitekturne realnosti.

ključne besede

odprti javni prostor, prostorski atributi, prostorske kategorije, sodobni uporabnik, pristop z vidika uporabnika

abstract

Within the field of architectural and urban research, this work addresses the complexity of contemporary public space, both in a conceptual and concrete sense. It aims at systematizing spatial attributes and their categories and discussing spatial complexity and measurability, all this in order to reach a more comprehensive understanding, description and analysis of public space.

Our aim is to improve everyday usage of open public space and we acknowledged users as its crucial factor. There are numerous investigations on the complex urban and architectural reality of public space that recognise importance of users. However, we did not find any that would holistically account for what users find essential in public space.

Based on the incompleteness of existing approaches on open public space and the importance of users for their success, this paper proposes a user-orientated approach. Through an initial survey directed to users, we collected the most important aspects of public spaces in the way that contemporary humans see them. The gathered data is analysed and coded into spatial attributes from which their role in the complexity of open public space and measurability are discussed.

The work results in an inventory of attributes that users find salient in public spaces. It does not discuss their qualitative values or contribution in generating spatial realities. It aims to define them clearly so that any further logical argumentation on open space concerning users may be solidly constructed. Finally, through categorisation of attributes it proposes the disciplinary levels necessary for the analysis of complex urban-architectural reality.

key words

open public space, spatial attributes, spatial categories, contemporary user, user-based approach

Introduction

Historically inherited concepts such as squares, gardens, courtyards or streets are not enough to cover the variety of places acquired by urban development today and gradually appropriated (or neglected) by urban habitants. There are several notions that describe the complexity of contemporary city circumstances such as invaded space, incidental space, consumption space, public-private space. Spatial attributes such as scale or proportion that were focused by urban theories over centuries are losing their importance. Other things matter (figure 1).

Strategies that are being used in architectural research have employed various epistemological stances, from objective positivism through realism to interpretivism because "architecture – as well as most design and professional fields – entails such broad multidisciplinary qualities" [Groat & Wang 2013, p.27, par.1]. A literature review concerning the question of open urban and architectural space attributes shows that different authors have been focusing on different spatial aspects. They analyse reality on various levels of conceptualisation such as objective, phenomenological or cognitive, and on various

Slika 1: Samonikli javni prostori v obrečnem prostoru Lizbone.

Figure 1: Emerging public space in riverside Lisbon.

levels of abstraction, such as concrete-formal or abstract-cultural. On the cognitive individual level we can find Lynch's: legibility as the easiness with which the parts can be recognized and organized into a coherent pattern, imageability as a quality of space in evoking a strong image to observer [Lynch 1960]. There are collective ones, namely Untaru's cultural planning imperatives: local identity, sense of place, place identity and perceptual unity [Untaru 2002, p.172]. Differently, on a more formal level we find Oliveira's urbanity revealed through high accessibility, high density, high diversity and high continuity [Oliveira 2013, p.22]. On the practical and usage concerned level authors found that liveability, comfort, security and safety, shelter and protection are crucial for open public spaces' success [Francis 1987]. Thompson argues that 21st century open space should respond to new lifestyles, values, attitudes to nature and sustainability such as green networking linking urban with recreational area, better accessibility responding to ageing demographic trends [Thompson 2002, p.60].

This register of spatial demands emphasises a wide spectrum of aspects focused by the contemporary urban and architectural agenda. Nevertheless, when we started the research and defined our intentions, we needed to recognize within existing theoretical frameworks, one that is valuable, satisfactory and suitable. If that happened, the central categories and attributes would have been defined accordingly. However, it is different when we do not recognize within the existing theoretical body, the satisfactory framework or when we try to observe an unknown phenomenon or the known one but from a different standpoint. Since this was the case we needed a more proactive recognition of categories. It was the very lack of the comprehensive understanding of users' imperatives which prompted our research to be user-based.

Problem statement

Due to the diversity, complexity and schizophrenic use of public space it is challenging to identify spatial and usage qualities and their relationships from simple observation. In the postmodern world of stylistic diversity and heterogeneity [Jameson 1985] it is difficult for urban and architectural practices to rely on any previously determined direction. There are no known styles that could normatively ensure the success of urban and architectural projects.

Here presented analysis finds its motivation in three main issues: the importance of understanding space, its attributes and categories (section 4.1), the complexity and ambiguity of open public space (section 4.2) and the opportunity for urban and architectural practices to focus more intensively on their users (section 4.3).

Importance of Spatial Attributes and Categories

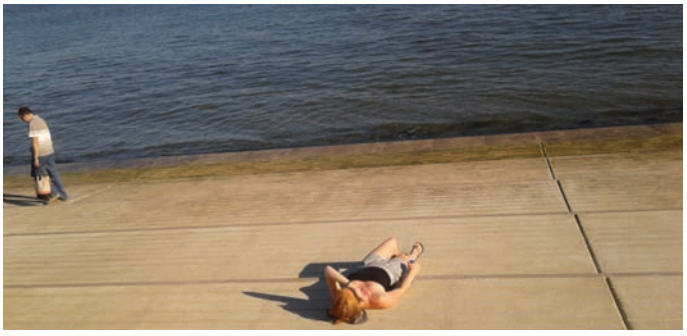
The notion of space is widely discussed both in contemporaneity and over history by philosophers, scientists, sociologists, geographers, psychologists, and neuroscientists. Each of them found that space is an important factor of human reality, inseparable from his nature. All philosophical doctrines and physician's theories have questioned it, revealed and refined it. In its disclosure they were searching a possibility for approximation towards human nature itself. Acknowledging its importance in various disciplines, it is rather redundant to emphasise its weight in urban and architectural practices.

Despite being permanent and ever-present, conceptualisation and analysis of space are far from being stable and finished. They are constantly being moulded. Looking for attributes and categories of open urban spaces is in a way similar to defining the first principles in logical argumentation. They should be clearly derived avoiding a "muddled reasoning" [Groat & Wang 2013.]. In that sense, conceptual building blocks should tend to be irreducible, clearly demarked and not overlapped with each other [ibis.p.380, par.7.]. To have clear concepts means not only that they do not overlap but also that there is no need for additional ones [ibid.p.383, par.1]. The importance of spatial attributes and categories is their construction capacity and they should be seen as "building blocks by which, or upon which, broad explanatory theories can be constructed" [Groat & Wang 2013, p.379.,par.2].

We can see attributes and categories as temporary snapshots of human mental representations that are in permanent evolution as well. For example, attributes of colour and light are dependent on other qualities, such as material or atmosphere, and thus could be seen within the boundaries of these categories. Similarly, the presence of electrical vehicles can be seen as belonging to either a category of accessibility or sustainability. All these concepts are part of the complexity of our surrounding reality. Each attempt to organize or systematize reality is a process of simplification which neglects some aspects emphasizing some others. In fact, the goal of science is to find the simplest explanation for the observing phenomenon by eliminating the superfluous data – notice. Codifications are thus processes that tend to abstract reality in a meaningful way so the same can be reasoned, discussed and explained. Depending on our point of view attributes can belong to one or to some other complementary sets. Since our approach emphasises users as factor of open space success it is within user-based methods and user-substantiated data that we looked for rules for data organisation and systematisation.

Ambiguity of Public Spaces

Apart from conceptual issues, there are essential changes in the way urban spaces are being generated and used. As Giulia Setti claims, nowadays public spaces are losing firm boundaries of formal and functional definition. Fragmentation and disintegration of urban fabric leads to the emergence of new public spaces and



Slika 2: Samonikle javne rabe v obrečnem prostoru Lizbone.
Figure 2: Emerging public usages in riverside Lisbon.

to the need for the reformulation of their existing concepts (figure 2). Classical notions such as gardens, squares and streets are no longer enough to describe open urban spaces. A new semantic order is needed [Setti 2013]. Due to deindustrialisation, urban dispersion and unclearness about land ownership, new possible spaces for new possible usages have been gained.

Mitchell claims that public space which has been crucial in the city development over centuries faces the rising sense of fear and mistrust. Not only regarding formal appearance but also regarding content, utility and social practices, contemporary public spaces are being widely discussed. Commercial centres, designated as pseudo-public spaces, hidden behind an idealized image of agora, are actually promoting interactions that are carefully planned and performances designed only to sell. Shaped as theatres, corporate plazas, library grounds and festive marketplaces, they are narrowing the list of the users of the public spaces. In doing so they are filtering the social heterogeneity, and producing the unreal image of middle class homogeneity protecting it from the homeless people and poverty that can be found in traditional public spaces [Mitchell 1995, pp.116-120].

Optionally, trying to avoid the ambiguous notion of public space some authors suggest the notion of open space which has non-political and non-civic function, but that serve to separate functions, open up distance between buildings, allow penetration of sunlight and greenery, as one where we can find all kinds of actors and social interaction [Mitchell 1995]. Not trying to literarily provide places for extensive social contact, their usage differs from the functionally and ideologically predefined political public spaces allowing to different actors to meet on a common live stage [ibid.]. Other authors have extended the notion of public spaces by using terms such as relational spaces and shared places [Setti 2013]. To define our disciplinary framework and define our standpoint more precisely we will use open public space which covers all the spaces that are possible to be commonly used and not always formally or functionally planed or predefined.

Slika 3: Santa Apolónia, Lizbona.
Figure 3: Santa Apolónia, Lisbon.

Opportunity for refocusing urban and architectural practices on users

In "The use of pleasure", Foucault argues that "subjectivation is a formative power of the self, surpassing the structures of knowledge". He defends the postmodern sensibility as a condition of human to problematize the conditions of life, which allows him to think differently instead of accepting what is already known. Without the subjective sensibility that surpasses reason, thought would be inert [Aylesworth 2012].

Jameson describes that postmodernist experience of space and time within the emergent social order of late capitalism has some new specificities. Defining nowadays subject Jameson emphases two of its features: "pastiche and schizophrenia", where "pastiche" concerns the way space is being produced and "schizophrenia" the way it is being received. For a schizophrenic contemporary person there is no temporal continuity, human time, past, present, memory. What it is lived today is perpetual present as an isolated, disconnected, with temporal continuity that breaks down, "the experience of the present becomes powerfully, overwhelmingly vivid and material" [Jameson 1985, p.8].

Facing the mentioned changes of built environment and way it is being experienced and used, architectural and urban professions are given an opportunity for rethinking their focus and a challenge for adapting their practices. This richness of emerging spaces and personal experiences are valuable layers of contemporaneity which should be captured, analysed and used.

Methodology

As mentioned above, our analysis recognises the need for a redefinition of open public spaces. We use it as an opportunity for widening the focus on urban and architectural practices by considering users as their most important factor. We based our methodology on two poles: the lack of comprehensive urban and architectural approaches on open public space regarding users and the importance of users for public space success. In that regard, we conducted qualitative questionnaire-based survey with three-levelled coding that enabled a certain generalisation of findings. The survey was directed to users of public space and focused on both eastern and western European cultural contexts. We chose to run the initial survey for various reasons: 1.the importance that we believe that user has, 2.spatial dynamics and time compressing that are constantly influencing urban and architectural paradigms, 3.the belief that humans share important ideas which are as valuable as ones that experts are pointing out.

Our goal was to understand what and how people talk about public space. What do they look for in physical, social and emotional senses. The employed qualitative questionnaire-based

Research Phase	Method	Output
Data gathering	Inquiry-based survey	500 imperatives from 51 users
Data analysis	Coding by systematisation	30 public space attributes
	Coding by disciplinary levels	6 space categories
	Coding by word types	Possible measuring approaches

Tabela 1: Faze raziskave, metobe in rezultati.
Table 1: Research phases, methods and outputs.

methodology was directed to the users of public space and had two principal phases: data gathering and data analysis (Table 1). Data was collected through two main open-ended questions that gave us complex data and allowed us to carry out in-depth analysis. From all the answers we collected 500 public space imperatives that users found most salient (section 5.1). After systematizing them into attributes (section 5.2.1), we analysed and coded them into spatial categories (section 5.2.2). Finally, we observed and discussed the measurability of the obtained attributes (section 0).
Our qualitative approach, rather than trying to make generalisations, favours the understanding of complexities [Marshall 1996, p.524]. As Marshall points out an appropriate sample size should be established dependent on what would best answer the research. Our sample size was defined through data saturation – "recognition of the moment when during the development of study "new categories, themes, or explanations stop emerging from the data" [ibid.p.523, par.3]. We suspected that open-ended questions would gather too many data which would be difficultly in-depth analysed and decoded. However, this doubt was overcome when necessary data saturation was reached when we got 300 answers, from the reasonably small sample size, around 30 participates. However, some age groups were reinforced so the final number of respondents increased. In total, the initial survey was conducted to 51 persons. Our respondents came from mostly European context. They came from various cities and usually lived in more than one. We got responses from habitants from Serbia, Austria, Germany, France, Portugal, England, Poland, Italy, Belgium, Slovenia, and Ireland. Survey's open questions allowed to the users to choose whichever word or words' group in their explanation of expectations regarding open urban and architectural spaces. From those we got 500 responses that were further analysed, coded and presented further ahead.

Data gathering

The decision to conduct the initial survey online came along with the intention to collect general users' ideas and ideals without pointing to any specific object of analysis. They were asked to reflect on their interiorised cognitive and emotional images and mental schemas. Users had to recall memories and re-experience them again dragging to the surface their idealised categories and values. Rationalist social anthropologist Edmund Leach highlighted the importance of these inner ideas as a structure behind what happens in reality. By understanding verbal and not verbal communication one could reach what is beneath the obvious. The relationship between inner ideas and visible reality is similar to musical score and its interpretation. Score is the cause of what happens and it is within this cause level that the social reality exists [Leach 1976, p.5]. Leach discusses that if we are willing to get to the musical score it is necessary to overlap several interpretations of it. Our survey was a method of listening to the individuals' thoughts about open spaces. By using it, we wanted to make an approximation towards underpinning truth about what people think in open urban and architectural spaces matters.
The proposed survey captured general imperatives that people ascribe to open spaces. It was exploratory, aiming to understand the spectrum of themes that contemporary users find essential for the usage of public space. It did not point the importance of any specific spatial quality or aspect. The principle was not to limit or direct answers. Questions were open allowing users to answer freely without an imposed direction. Apart from respondents' identification questions that were of multiple choice type, the survey used an open-ended question type. However, we suggested that a maximum of 10 expectations should be indicated. The survey was based on two key questions:

1. What should an outdoor public space be like and what should it offer?
2. What sensations and experiences do you seek when you go to an outdoor public space?

Our intention was to make an overall collection of spatial attributes not tending to compare their relative importance meaning that attribute of heritage, for example, even though chosen by only two respondents was incorporated in our inventory. Similarly, the attributes of crowding, centrality and publicness were also mentioned by only 2 persons and openness and social diversity by 3. The importance which experts are giving to these attributes made us believe that they anyhow should be incorporated into our matrix.

Data analysis - From data coding to spatial attributes and categories

In order to analyse obtained data it was necessary to construct a coding frame. We had the notion that in choosing our codification framework we would neglect some information from our rich data. Oppenheim argues that by "imposing set of classificatory categories ... on a very much larger and probably very varied set of responses, we are inevitably going to lose information" [Oppenheim 1992, p.267, par.3]. Thus, the coding frame was constructed in a way that preserves everything we initially deemed as important and valuable to extract.
Going back to the main goal of the analysis - to systematize spatial attributes, find their categories and understand their measurability and role in the complexity of space – we defined that the coding frame should:

1. Separate responses that are at different levels of abstraction / epistemological levels (See section 5.2.1)
2. Emphasise disciplinary levels that are concerned with particular attributes (See section 5.2.2)
3. Inform us about nature of data and possible way for its analysis (See section 0)

The process of codification was therefore done in three stages. Each of them allowed us step forward towards a better understanding of the data and phenomenon of open public space itself. The three stages were:

1. Systematisation of 500 imperatives into 30 attributes taking into consideration their levels of abstraction (5.2.1)
2. Coding by disciplinary level allowing the categorisation of discovered attributes (Section 5.2.2)
3. Coding by types of words unveiling the attributes and possible approaches for its measurability (Section 0)

Geographical Level	Geographical ensemble	People – in –place
Urban and Architectural level		
Social level	Human dimension	
Individual level		

Tabela 3: Kompleksnost oseb - v - prostoru.
Table 3: People - in - place complexity.

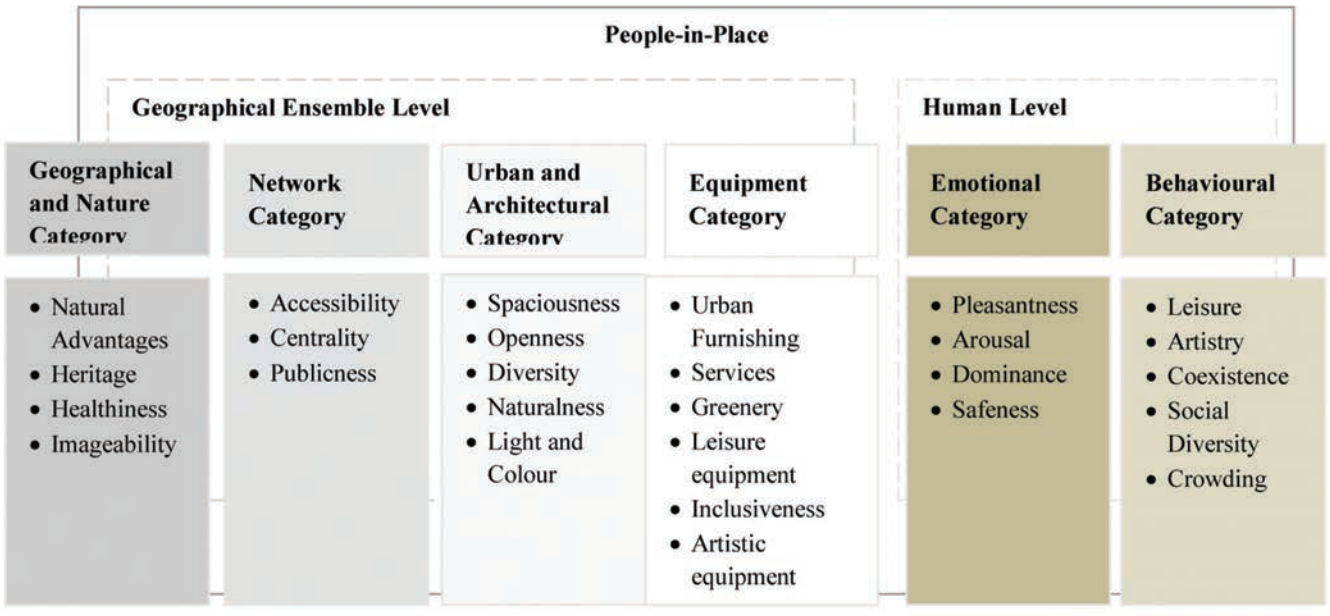
Geographical and Nature Level - Contextual Predispositions-	Urban and Architectural Level -Building Actions-	Social and Personal Level -Human Behaviours-
'Good View'	'Built with natural materials'	'Comfortable and Pleasant'
'Within Urban Area'	'Good information and directions'	'Multiple uses'
'Natural Viewpoint'	'Broad/Large /Spacious'	'Interesting, intense and unique experience'

Tabela 2: Disciplinarni nivoji in na njih vezani odzivi uporabnikov.
Table 2: Disciplinary levels and corresponding users' responses

Type of Word	Indication	Example
Noun	Specifics objects, Equipment, urban furniture	'Benches, drinking fountains… '
Verb or Verbal nouns	Action, service or function	'Recreation, reading, photography…'
Adjective or Adverb	Quality of space or Dimension of that quality	'Quiet, amusing, relaxing, dynamic…'
Proposition	Relation to other spaces and spatial network	'Within urban area…'

Tabela 4: Lingvistični tipi in na njih vezani prostorske lastnosti – primeri.
Table 4: Linguistic types and related spatial qualities – examples.

Slika 4: Disciplinarna struktura in nivoji pristopa.
Figure 4: Disciplinary frameworks and levels of research.



Slika 5: Prostorske kategorije in atributi.
Figure 5: Spatial categories and attributes

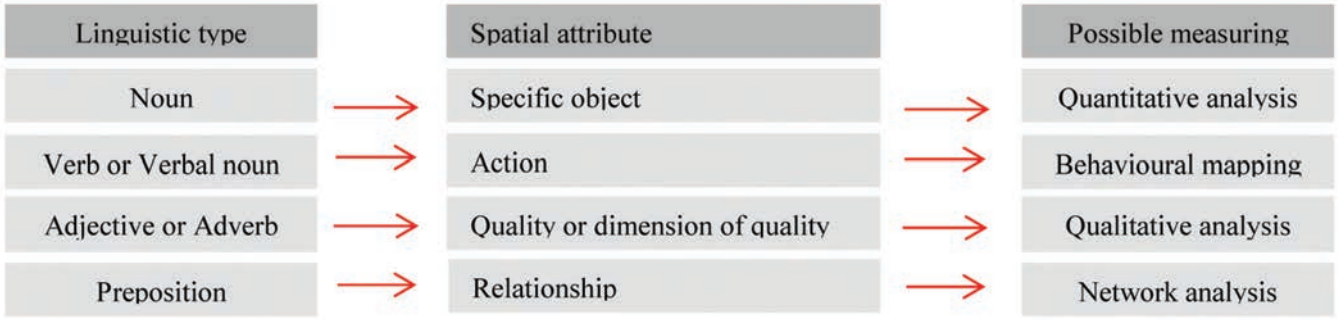
Coding by systematisation of data – towards attributes

We started the codification by putting together the related survey responses. While doing so we were careful to preserve their distinct level of abstraction. This could be explained through the example of leisureliness of space. The leisureliness could be observed from different epistemological stances. One tends to be objective and it concerns formal equipment intended to support leisure. The other one is leisure seen as human behaviour. This distinction is important because it informs us that these two attributes should be analysed differently. Moreover, once we separate them it is possible to observe their interrelation. We could analyse for example if the equipment is a real affordance of leisureliness or, if there are other factors more influential in generating this spatial usage. Affordance here is used as latent possibility of environment to embrace a certain action and it is also dependent on the capacity of the actor himself. We can speculate that for instance publicness of space might be more influential in inspiring leisure behaviour than existence of equipment itself. This process of grouping similar responses led to the 30 attributes (See Table 6). We could have reduced this number, but it would have removed some nuances of space that we regarded as important. The labelling of attributes took into consideration the literature review. We tried to use terminology that already exists in science. After having discovered the attributes, we proceeded with their categorisation.

Coding by disciplinary level – towards categorisation

The initial data simplification and discovering 30 important spatial attributes led to the second codification phase. The aim was to organise attributes in categories according to their different disciplinary frameworks. We proposed this coding frame which accounts for disciplinary levels in order to understand where urban and architectural practices should broaden their focus. This finding can also be useful for starting interdisciplinary research.

In that regard, we observed how imperatives of open space pointed out by users could be either within the a) wider geographical and nature level, b) urban and architectural level or c) social and personal (Table 2, Table 3). The first level (geographical and



Slika 6: Lingvistični tipi in na njih vezani prostorski atributi.

Figure 6: Linguistic types and related spatial attributes.

nature) is seen as a contextual background where the second level (urban and architectural) is inscribed so that the third one (social and personal) could emerge. Said differently, ecological and nature predispositions together with suitable urban-architectural actions are receiving, shaping and inspiring social and personal behaviour. Users did not make a distinction between a naturally pre-inscribed level and an architecturally created one. Rather, in users' responses these two levels are mingled together in what Seamon calls geographical ensemble (Table 3) and includes both natural and human-made dimensions [Seamon 2012]. The same author groups social and individual behaviour into human dimension that together with the notion of geographical ensemble he calls people-in-place (figure 5). This way he expands the notion of separated human agency towards a notion of humans as they are "unfolding in the geographical ensemble" [Seamon 2012, p.12, par.1]. Using the mentioned disciplinary distinctions we organized attributes in 6 categories that emphasise the disciplinary levels (figure 6).

Coding by types of words – towards measurability

The open questions that we used, allowed us to recognize subtle differences in word choice for specific spatial attributes. These nuances helped us understand how attributes participate in forming the complexity of places and gave us some hints about their measurability.

Our respondents used various lexical types for explaining their preferences, from nouns, through adverbs and adjectives, to verbs. We observed these linguistic distinctions trying to identify any patterns (figure 7). We understood that the usage of nouns mostly indicates the demands for specific objects such as equipment, urban furniture, protection from extreme weather situations, even green areas and vegetation, etc. By using verbs or verbal nouns, participants pointed out different services and activities which are needed in public spaces. The range of activities diverged from very generally designated ones such as social or leisure activities to very specific ones, e.g. street exhibitions, theatre, concerts, cinema, and so on. Adjectives or adverbs were usually used as qualitative imperatives e.g. clean, broad, large, quiet, safe, maintained, illuminated, etc. While adjectives and adverbs indicated the intrinsic qualities of spaces or actions themselves, propositions suggested the relationship between spaces or actions e.g. close, remote.

The coding based on word type uncovered the nature of spatial attributes and how we could possibly approach them. For example we understood that the attribute of accessibility consists of a formal precondition for being accessed, expressed through nouns such as public transportation or subway, but also as the relative or topological position of the space in a network. The first part is formal and easily measurable by a simple Boolean true/false (exist / doesn't exist) expression. The second requires a network and morphological analysis.

There are attributes, mostly indicated by adjectives and adverbs, which are much more complex and thus much more difficult to understand. They are more intangible but not less important or appealing to be understood. By expressing a certain quality they reflect a personal judgment and subjectivity. Spatial attributes such as imageability or pleasingness would vary from person to person, their intellectual and bodily state. Our perception is shaped by our belief, goals, cultural background.

An interesting and more addressed spatial attribute is naturalness. From a completely built machine on one side to an untouched natural surrounding on the other we can distinguish various levels of naturalness. In our conceptualisation this notion represents the relationship or proportion between human-made impact and our natural surroundings. As presented in Table 6 we separated naturalness from the attribute of greenery. We did so because they are on different levels of abstraction and complexity, thus they should be measured differently. While greenery, as trees or shrubs, can be easily counted naturalness cannot. The other reason for this separation is the fact that greenery in a city context is usually artificially planted as equipment (e.g. to shade, divide) or decoration.

Further, attributes of protectiveness and safeness are separated for the same reason. Protectiveness from the sun, rain or wind can be more objectively addressed than safeness. Even though different they are both an intrinsic parts of architectural and urban spaces - we built in order to be sheltered. In environment we can recognize various grades of protectiveness. From the total exposure that one feels while being in nature to the complete artificial protection one finds in shopping malls. Francis discusses that together with liveability, comfort, qualities of security; safety, shelter and protection are crucial for open public spaces' success [Francis 1987]. When we talk about shelter and protectiveness these qualities are linked to the basic human need for bodily protection from bad weather, rain or other extreme climatic conditions. Differently, sense of

safety and security relate towards not physical but social issues. While problems of protectiveness could be directly addressed by designers, the question of safeness is more complex and involves higher levels of spatial organization – from government legislation and municipal policies to the decisions of condominium administrations.

Measurability of attributes

We showed through our examples of protectiveness and safeness that spatial attributes are spread across different levels of conceptualisation. There are some that can be precisely defined and others that are more vague. How general or specific our observation is, will depend on how generally or specially we want and need to talk about space. As Groat and Wang claim, a logical argumentation in architectural and urban research covers the whole spectrum of ways of "making sense" [Groat & Wang 2013, p.385, par.2]. Studies based on use of computer programs require pure formal-mathematical frameworks. Differently, there are logical argumentations such as design-polemical theory that are cultural-discursive. They tend to capture "large cultural worldview distilled into a 'logical' argument with both theoretical clarity and rhetorical power". There are still those, named mathematical-cultural, that are in between these two poles. They tend to combine qualitative and quantitative dimensions of environmental design and to "shed light upon social-cultural values" [ibid., p.386, par.1].

If we want to analyse for instance the attribute of spaciousness, we would probably use mathematical-cultural argumentation. We inferred this when we asked users to point out the most important spatial characteristics of open urban spaces. We did not expect them to mention openness, broadness or spaciousness, it seemed redundant to us. This drew our attention to the possibility that open spaces might not be perceived and experienced as such. We understood that the human factor and being in place are important factors in defining spaciousness. A human along with his embodiment and cognition is necessary to help us define how this attribute should and could be meaningfully measured.

When we talk about the emotional spatial attributes that users asked of open space they went from pleasant, charming, comfortable, beautiful, to interesting, relaxing, amusing, etc. We organized them according to the PAD framework developed by Mehrabian and named after its three essential emotions: Pleasure, Arousal and Dominance. These emotions as affective responses can be triggered by architectural and urban stimuli which Franz [2005] calls affective qualities. He explains that affective response to specific stimuli can be for example 'pleasure' while the affective quality responsible for such a response is 'pleasingness'. When we have a response such as arousal, the quality behind it is 'arousingness' [Franz 2005]. These spatial attributes of pleasingness, arousingness and dominance that Franz developed from PAD model succeeded to include all the emotional responses from our survey. Since they are subjective and personal their measurability should be based on individual experience which is challenging to capture.

Differently, the behavioural category that includes the attributes of leisure, artistry, coexistence, social diversity and crowding instead of focusing on first person experience should analyse individual and collective behaviour through behavioural mapping or physical trace analysis.

Conclusion and final considerations

Here presented user-based approach led to the construction of an analytical matrix for spatial description, analysis and assessment by means of a categorization of attributes describing properties of public open space. It was done through: 1. the systematisation of spatial attributes important to users, 2. their categorisation that led to 3. a better understanding of their measurability and their role in the complex reality. The main concept was to capture from user based statements the attributes that complete a description of requirements for public open space. The questionnaire based approach allowed the identification of 30 attributes organized in 6 categories defined at two levels of abstraction – geographical ensemble level and human level – which together describe the experience of people in place.

Category	Possible measuring	Issues of reliability
Geographical and Nature		
Network	Tend to be objective or object-orientated	No issues
Architectural and Urban		
Equipment		
Emotional	Tend to be subjective or subject-orientated	Personal factors
Behavioural	Tend to be objective and subjective	Time factors

Tabela 5: Merljivost atributov.
Table 5: Measurability of Attributes.

Apart from significance of separate attributes extracted through our codifying framework, we find important to emphasise possibility to interrelate them. Once we succeed to abstract from complex reality its parts we have a possibility to observe how those parts are linked together. It would be interesting to understand how physical backgrounds, geographical, urban-architectural, network and equipment, are generating active affordances for public space behaviours and emotional responses. Based on such a framework we can relate the physical and morphological aspects of public spaces with their qualitative expressions by recognizing how certain components of space afford particular expressions of usage. In that way, we could understand what attributes or set of attributes are important in creating appealing and intensively used spaces. The neutral analytical matrix presented in Table 6 would be the basis for qualitative inferences.

Furthermore, it is important to understand that our matrix is a temporary snapshot of reality that for some other time or cultural context should be verified and adjusted. Rather than arguing the possibility for generalisation of findings we suggest that a transferability of our user-based method would be possible. The transferability would depend on research contexts and goals. For some other cultural context we would expect other attributes to emerge. For another research goal different categorisation would then be possible.

The generality/particularity of our theoretical framework and the number of obtained attributes are the result of a certain balancing

		Attribute	Used type of word	Examples of users' responses that built the proposed attribute	Number of users talking about it
Geographic ensemble Level	**Geographical and Natural Category**	Natural Advantages	n	Good view, Nice landscape environment, green or blue views	6
		Heritage	n,a	Heritage,, Beautiful old architecture	2
		Healthiness	a	Healthy, Not too noisy, Clean, Isolated from noise, Hygienic	17
		Imageability	n,a	Unique atmosphere, Different from everyday, unusual and original ideas in shapes and orders	3
	Network Category	Accessibility	n,a	Metro, Accessible, Well connected with other city areas, Public transportation, Easily accessible	7
		Centrality	p,a	Within urban area, A bit isolated	2
		Publicness	a	Free, Free and open access to anyone	2
	Architectural and Urban Category	Spaciousness	a	Board, wide, open, spacious, open space sensation, emptiness	18
		Openness	n	Infinity, limitlessness, distance	3
		Diversity	n	Without details, Built / Unbuilt alternation, Diversity	6
		Naturalness	n,a	Reduced size of built environment, Nature friendly, Not overbuilt, Low buildings, Contact with nature	12
		Light and Colour	n,a	Well illuminated, Luminous, Warm light, Appropriate illumination, Colourful	8
	Equipment Category	Urban Furnishing	n	Drinking fountains, Toilets, benches, Equipment for baby change	25
		Services	n	Souvenir Shop, Tourist info, Press kiosk, Cafe, Restaurant, ITM, Multiple uses	21
		Greenery	n	Green areas, Trees, Gardens, With plants and flowers, Park	32
		Leisure equipment	n	Sport areas, Bicycle areas, Amusement park, Sport equipment	11
		Inclusiveness	a	Inclusive design, Disabled people friendly, Children friendly, Children playground	17
		Artistic equipment	n	Prepared for expositions, Prepared for concerts, Stage for shows/spectacles,	5
		Protectiveness	n	Shadow, Rain protection, Sun protection, Shade	10
		Walkability equipment	n,a	Paving on walking areas, limited car speed, Separated walking and car areas, Reduced vehicular traffic	11
		Sojourning equipment	n	Places to chat, sit, rest	18
Human Level	**Emotional Category**	Pleasigness	a	Pleasant, charming, comfortable, beautiful, enjoyable, gourmand, etc.	22
		Arousingness	n,a	Interesting, intensive experience, relaxing, amusing, calmness, dynamism, silence, etc.	32
		Dominance	n,a	Freedom, welcome, Acceptance	9
		Safeness	a	Safe, Security	6
	Behavioural Category	Leisure	v	Recreation, photography, reading, physical exercise, meditation, picnic, wandering, walking	15
		Artistry	v,n	Artistic fountain, Sculpture, Street exhibition, Music	10
		Coexistence	v	Social interaction and activities, Sociability but also privacy, Empathy with others, Coexistence	13
		Social diversity	n	Multiple/different users	3
		Crowding	a,n	Not overcrowded, Optimized flux of people	2
	n – noun **a** – adverb or adjective **v** – verb or verbal noun **p** – proposition				

Tabela 6: Atributi in kateorije javnega prostora.

Table 6: Public space attributes and categories.

between acceptable simplification and possible measurability. If our theoretical framework was more fragmented we would risk losing natural connections between concepts extracted from unified reality. On the contrary if our framework was more general it would keep us on theoretical distance impeding us from any practical and concrete approach. Between wide and holistic categorization and neat attribute systematisation one should be able to grasp our underling investigation goals.

Categorisation of obtained attributes is done according to their disciplinary level and epistemological stances necessary for their observation leading to their possible measurability. Different categories have diverse challenges for their capturing. Geographical and nature, architectural and urban and equipment ones could be observed more objectively and within a shorter period of time. Differently, emotional category implies subjective or subject-orientated analysis for which reliability is difficult to test because of personal factors. Analysis of behavioural category is possible through objective recordings and behavioural mappings. The issue of reliability of the measuring behaviours lies in the importance of the day, week, and season during which the data was collected (Table 5).

Apart from more general conclusions we believe to have made a step forward in understanding the spatial needs of contemporary users. Within all their heterogeneity, humans possess a uniformed notion about public space. In all their personal and cultural complexity, people are much more similar than they might originally seem. Or want to be. Differently from experts' view, that is focused and specific, nonprofessional users have no preferable level of preoccupations. They are equally concerned with social, ecological or phenomenological dimensions and on various scales such as geographical, urban or personal. While gathering our data we suspected that people would mostly choose self-orientated spatial aspects, such as pleasure, amusement and comfort. This was not the case. Responses were distributed within all realms such as personal and subjective well-being (27%); social, behavioural and activity (34,6%); geographical and global issues (19%); furnishing (11,2%) and architectural and urban objects (8,2%). By thinking abstractly the human thinks both individually and socially. This broadness of users' opinions showed us that architectural and urban practices cannot be focused merely on their disciplinary level. They should rely on interdisciplinary and ecologic approaches.

As understood from the surveys, humans have a very trustful sense for social ethics and an elevated preoccupation about global issues. We compared aspects important to experts with ones important to users. While the first are usually concerned with a narrow niche of specific problems or an aspect of urban and architectural space, the latter cover all the gammas of the issues. This suggests that a user-orientated approach is not necessarily focused only on personal comfort and security but also on ecological footprint and social justice. Such broadness of answers on one side and their matching with experts' point of view on the other proved not only that humans have an accurate notion of crucial environmental issues but also spatial appreciation on various levels and scales. Thus, we should respectively acknowledge their credibility in recognizing important issues of urban and architectural reality.

Future steps will focus on establishing a closer relation between the attributes, the ways they could be measured and the qualities they afford.

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