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Subjective Assessment of Places by Saint Petersburg Local Residents

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Abstract

Introduction. To find a really comfortable place is a challenge. The subjective assessment of places is determined by individual senses and collective representations. Collective representations of comfort may differ considerably from individual senses. Representations substitute for senses, which interferes the process of their identification and transmission. This study identifies individual senses, differentiates them from representations, examines the process for assessing places, and describes factors influencing it. The hypothesis is as follows: Individual temperament and the sense of self are predictors of assessment. The additional hypothesis is that the category of 'pleasantness' is the resulting synthesis of individual assessment of places. The novelty of the approach lies in a complex empirical research that is offered through application of standardized psychological tests, as well as through acquiring data with the use of a neurodevice outside the laboratory, on the streets with the help of the author's 'Assessment of Places' questionnaire that is a unifying factor.

Methods. The study presents the data about subjective assessment of places and the results of the factor and regression analyses. The predictors were (a) scores of respondents in the Self-actualization Test, SAMOAL, a modified version of Personal Orientation Inventory by E. Shostrom, (b) Self-relation Test by S. R. Pantileev, (c) Sovereignty of Psychological Space test by S. K. Nartova-Bochaver, (d) Eysenck Personality Inventory, EPI, variant B, and (e) Life Satisfaction Index by J. Strelau. The pre-examination state of participants was measured using the HAM questionnaire (state of health-activity-mood). Places were associated with colors of Luscher Color Test. The data were processed using the Color Test of Attitudes, CTA, by A. M. Etkind. Sample characteristics: 31 local residents of Saint Petersburg, mean age 26.68 years (56.7 % females; 43.3 % males) were questioned on a walking route 1.5 km long with stops at 4 different places in Vasilievsky Island.

Results. The distribution of correlations depends on the novelty of places and the level of activity, which suggests that subjective parameters influence assessment. Regression equations were built for assessments. The impact of such predictors as a sense of self and temperament on subjective assessment of places was demonstrated.

Discussion. The categories of 'inviting' and 'excluding' places are considered as complex ones. The obtained equations support the following conclusions: (a) Comfortable and cosy places are considered inviting. (b) Dirty and increasing anxiety are considered excluding. Recommendations are made to pay more frequent visits to places with low-level external activity, where individuals can more easily comprehend their own senses.

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Keywords
assessment of place, sense of place, pleasantness of place, sense of space, urban space, sense of self, sovereignty of psychological space, temperament, life satisfaction index, collective representations

Highlights
- By analogy with categorization and attribution processes, a mechanism of simplified assessment of places, which generates representations of places, facilitates living in a modern mega-metropolis.
- Representations of places may be individual or collective.
- The intensity of environmental factors, subjective sense of novelty, individual temperament and the sense of self influence individual senses arising at the moment of staying in a place.
- The individual complex sense of places is best represented by the categories of 'inviting' and 'excluding'.

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Introduction
The usual stress of never-endings modernization in modern cities makes a city resident permanently alert to perceive the changes. This situation is very energy-consuming for the brain. Therefore, it produces certain mechanisms to help facilitate this task. As a result of the environment perception, the detailed image and assessment of a place are formed. A place representation responds to a question 'What kind of place is it?' and represents an image. A place assessment responds to a question 'What kind of place is it?', implying 'What does it feel like to be here?' (individual senses and representations) and 'What should it feel like to be here?' (collective representations). This study aims to explore these two processes by investigating the mechanisms of assessing places.

It is postulated that at the moment of recollection, and being apart from a place in question a person substitutes their own assessment of a place with the internalized borrowed representations, in other words, a collective representation of the place. At the very moment of the direct sensations of place, individuals can focus on their own senses, which is easier to do on site in a place with subjectively high level of perceived novelty and low level of interfering activity of objects.

'The most general way to process social information is categorization, i.e., assigning perceived objects to a class of others similar objects known from previous experience' (Andreeva, 2000, p. 99). A collective representation, as a matter of fact, is the most simplified information unit (a category or several categories), comprising a set of believing about a place. 'Its general function is just the ordering and simplification of information' (Andreeva, 2000, p. 100). Imputation of some qualities to the places in order to make them fit perfectly to collective representations is similar to the

attribution process. As a result, a mechanism emerges that decreases energy expenditures but hinders the places from being perceived directly through individual senses, which interferes with harmonious development of a personality. Therefore, this mechanism is useful but needs further examination to understand how its activity could be reduced in favor of individual cognition of the space and construction of individual world.

Problem definition

Present-day urban dweller becomes an ever so active actor (actualizer) in the course of understanding their own individuality whose goal is to be able to express their. One of the ways to undergo such a personality transformation is to perceive and to be aware of sensation triggered by public urban places – this way, a person shall know more about themselves through knowing places; although this process is yet understudied. It is difficult for residents of a modern mega-metropolis to keep being in touch with themselves and to analyze new senses due to a fast-paced environment necessitating a continuous adaptation.

Meanwhile, present-day researchers note a low level of contentment of citizens with their residence places, which negatively affects their satisfaction with life. In particular, the above-mentioned study in Ulyanovsk demonstrated that 40 percent of people were totally or partly unsatisfied with their places of residence (Shinyaeva, Akhmetshina, & Klyueva, 2017).

The comfort issues for human being in the urban environment have been noted and discussed for a long time. As early as in the past century the sense of place and its interrelation with the concept of self-regulation was introduced by Korpela (1989). This was followed by extensive research dedicated to sensation of humans in the city environment, such as works of Al-barrak, Kanjo, & Younis (2017), Al-Barrak & Kanjo (2013), Newman & Brucks (2016). Experiments using measuring equipment, namely, pulsimeters, electroencephalographs, are often performed in laboratory settings where researchers demonstrate to participants pictures of city environments, in other words, in the artificial situation missing many environmental effects: there was no sensation of the environment activity, as in the work of K. Newman. Other groups performed research in student quarters using a portative EEG which is a ring with electrodes: the experiment conditions were aimed to help respondents to experience the environment as close to reality as possible; though, the information reflecting the participants' sense of space could be obtained only in the form of data about neuronal impulse consequences, with no subjective verbal assessment. We took it into account in our study: the neurodevice assessed two parameters, namely, excitement and relaxation, in a natural setting, i.e. in the street; the WAM screening of participants and standardized tests were performed beforehand; interviewing and assessment of places were performed at the very moment of staying in each place.

There are articles of international researchers as well (Ellard, 2015; Glaeser, 2011; Hall, 2014; Keedwell, 2017; Montgomery, 2015) working on the problem of how a person could attain the comfortable state in the modern city, and the amount of literature on the topic is growing, which also confirms its importance and social request for its studying.

Recently a lot of studies were performed stimulating a person accustomed to some city space to perceive it in a 'here and now' mode. Thus, M. Mukherjee, in the 2018 year, mounted a camera in an Indian city, Calcutta which kept recording a 360-grade video non-stop throughout 10 days; the video was demonstrated to residents and later on it was used in workshops or performances to deliberately shift the attention focus while being in the urban environment (Mukherjee, 2019).

Russian Psychological Journal, 2020, Vol. 17, No. 2, 36–57. **doi**: 10.21702/rpj.2020.2.3

A principally different approach consists in focusing on one aspect, e.g., on the issue how the perception of surrounding landscaped areas influences the total satisfaction with life in a city. According to Hadavi, Kaplan, & Hunter (2018), it is the awareness of individual perceptions that could markedly reduce the gap between demanded and offered projects on the environment design and would increase efficiency of decision-makings.

Research by Kasemets, Rammo, & Palang (2019) in Estonia is very promising. It was performed in a former military area and a former horticultural cooperative converted into permanent residences, focused on exploring the development of a sense of place via creating communities and using social mechanisms; they revealed the difference between a social and an ecological sense of place.

In Iran, Zabetian & Kheyroddin (2019) explored the thermal comfort as a factor influencing the sense of place in city spaces; they proved the hypothesis of interrelations between these phenomena and offered strategies aimed to optimize the thermal adaptation.

The same year a group of researchers (N. M. Ardoin et al.) from Stanford studied the sense of place, what it is like, how it develops in the modern fast-urbanizing and globalizing world. As the results showed, respondents from urban areas rated their association with biophysical aspects of their places of residence lower than respondents living in non-urban areas. This fact infers the need to encourage conceptualization of places at a more large geographic scale and, in particular, to encourage representations about urban spaces to expand city limits. The authors call for more active interaction with urbane nature, especially on the part of the residents of city districts (Ardoin, Gould, Lukacs, Sponarski, & Schuh, 2019).

In Turkey, Senturk & Gulersoy (2019) examined how residents formed bonds with surrounding space, that is, the authors explored the sense of belonging to a place, which is close to the understanding of that notion in Russia. They supposed in their work, that lengthening of the time of staying in a place deepens the attachment to it. That is why their study explored interrelations between the time of staying, sense of belonging, urban identity, and urban environment conservation.

As can be seen, the interest to the concept of 'sense of place' is increasing worldwide, and several factors have been identified associated with phenomena related to this concept. In Russia, the concept of 'sense of place' along with that of 'attachment to a place' is treated as the 'basic factor of human interaction and self-actualization': as a matter of fact, these concepts operationalize relations between the human and their habitats' (Reznichenko, 2014). S. I. Reznichenko underscores extensity of research on that topic for last decades, exploring its different aspects; at that, all review papers are in English: M. E. Patterson & D. R. Williams, 2005; L. Skannel & R. Guifford, 2010; S. K. Trintelman, 2009. The term 'sense of place' is not as well-established in Russian research as it does in overseas publications. Russian researchers describe rather the concept of 'personal living space' associated with notions of the home and family, as in works by Dmitrieva (2013), Kunitsyna & Yumkina (2012), Nartova-Bochaver, Bochaver, & Bochaver (2011), where authors explore the actual state of the space and residents' attitude to it.

In Russian, theoretical reviews in the urban space perception are summarized in two papers: Gabidulina (2012), Shteinbakh & Elenskii (2004); reviews of recent experiments are given in other sources: Drobysheva & Zhuravlev (2016), Zhuravlev & Kupreichenko (2012).

For the purposes of this study the concept of sense of self and the conscious approach were interpreted as they were defined in works of Eliseev (2000), Leont'ev (2013), Znakov (2016), Morosanova & Aronova (2007).

Russian Psychological Journal, 2020, Vol. 17, No. 2, 36–57. **doi**: 10.21702/rpj.2020.2.3

Aims and hypotheses of the study

The study aims to reveal personality traits and specific characteristics which are predictors for 'subjective assessment of places'.

From the researcher's point of view, it seems important to analyze how the present-day city residents are forced to adapt over and over again to ever-changing environmental conditions, and how they evaluates urban environment. Besides, it is important to develop recommendations that might help to experience urban environment as more comfortable.

Hypothesis of the study is that a resident of the modern metro-megapolis evaluates a place based on the activity of the environment, but its details depend on the level of the familiarity of a place to the subject. Temperament characteristics, such as extraversion, neuroticism, inhibition, excitement, stability, EEG data, as well as autosympathy levels are factors influencing assessment of places. The hypothesis is based on conclusions of the author's recent study where the scale 'autosympathy' in 'SAMOAL' worked as a predictor for assessment of places. To test the hypothesis the Self-relation Test by S. R. Pantileev was used in the present empirical study to examine the association of sensation with the sense of self.

The category of 'place' refers to an 'open system which boundaries are determined by the subject's field of functioning' (Reznichenko, 2014, p. 15).

The additional hypothesis is that the category of 'pleasantness' synthesizes all the senses of a person from a place.

Methods

An empirical research has been performed including subjective assessment of public urban places by residents of St. Petersburg in two stages. First, respondents filled standardized questionnaires (the Self-actualization Test, SAMOAL, a modified version of Personal Orientation Inventory by E. Shostrom; Self-relation Test by S. R. Pantileev; Sovereignty of Psychological Space test by S. K. Nartova-Bochaver; Eysenck Personality Inventory, EPI, variant B; Life Satisfaction Index by J. Strelau, an online test powered by Google Forms) (Zotkin, 2007; Kalina, 1998; Nartova-Bochaver, 2014; Nikishina & Vasilenko, 2004; Raigorodskii, 2001). Stage two included collecting the same subjects' responses to the author's Questionnaire administered on sites representing the public places in questions. Links for tests were sent individually, and respondents were instructed about the completing procedure in advance. Participants (31 persons) were St. Petersburg residents living here for 3 years and more, with the mean age 26.68 years: 56.7 % of females, 43.3 % of males. The walking route represented a path through Vasilievsky Island including four different places with a various temp of environment functioning. Participants evaluated one-by-one individually after staying on sites for 5 minutes. The route distance made 1.5 km. The research was performed in March within a week, in order to maximally avoid weather influence, and mostly in the dawn-to-dusk period, with the same instructions and the same checklist content for every respondent, and the same path of the route. The respondents were screened before the route pass using the HAM questionnaire (state of health-activity-mood).

To assess a place, participants should check a numeral from 1 to 10 in a paper sheet immediately following their stay in a place (for 5 to 7 minutes), rating the following scales: 'pleasant', 'depressive', 'calm', 'excluding', 'restless', 'safe', 'cosy', 'clean', 'cultural', 'spacious', 'active', 'novelty', 'bright', 'favorite', 'prestigious', 'comfortable', 'anxiety', 'inviting'. At the end of the staying in each place respondents chose one color out of 8 in the Luscher set of cards to use it in Etkind CTA

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test as a characteristic of the place (Etkind, 1983). At the end of the route, respondents ranked colors in a series from the less unpleasant to the most unpleasant. That the collected data was processed, a new variable created, the 'indirect color': the number of a specific color associated with a place according to the color 'unpleasantness' was assigned to that place as a new variable. For example, the place no. 1, Pedestrian line, was associated with a yellow color card, and the yellow was ranked as the 1st, therefore, the place itself could be labeled as the least unpleasant. This analysis does not pretend to be thorough or all-sufficient, but it supplements the main analysis effectively.

The chosen adjectives generalize the more often encountered associations with residence spaces of various levels (one's own room or apartment, block of flats, courtyard (as a common area), district, or city), revealed in a recent study of the author. Associations in categories of courtyard, district, or city were analyzed using content analysis. The choice depended on the coverage area – each response could be assigned to only one unifying category without using additional ones, which suggests that the built model describes the entire space of variants.

To each evaluated place a rank of activity was assigned so that 1 meant the first level, implying the minimum activity in the place, i.e., minimum speed and temp of any events and minimum intensiveness of any objects' activity in the environment, and 4 implied the maximum one. The first, second, and fourth places were familiar to most respondents (i.e., they visited them before, once or more). The place no. 3, Courtyard of Arts, on the contrary, most of respondents (90 %) characterized as an unfamiliar one. The activity of environment as a generalizing characteristic describing all motions of various objects in the environment affects the human sensor system the most intensively, and therefore could be identified easier (Shilin, 2011).

Specifications of the experiment environment are summarized hereunder.

Place no. 1, Pedestrian line is a pedestrianized street, 6th and 7th lines of Vasilievsky Island between the avenues Srednii and Bolshoi Prospects. Except for few company cars (3 times from 31), there was no traffic here, but there was a lot of people walking slowly, street musicians, vendors, stump orators. That street has been evaluated by most respondents as cosy and homelike. Activity level rank was rated as 3 or 4.

Place no. 2, Bolshoi Prospect, is an avenue Bolshoi Prospect of Vasilievsky Island between pedestrian 6th and 7th lines, and 2nd and 3rd Vasilievsky Island lines. Even though this street is the main out of all examined directions, it appears to be a place with low-level activity. As a rule, the number of persons in surroundings was below the average, with a consistently low traffic. Rank 2.

Place no. 3, Courtyard of Arts, is a park in the courtyard of the Academy of Arts. This picturesque place turned out to be novel to most respondents, a calm spot with few people and occasional horses (there is a horse stable on the premises) and dogs. Rank 1.

Place no. 4, Embankment, is a part of the Embankment for the Menshikov Palace. The characteristic features of the place are relaxing scenery at the right (the snow-covered Neva River) and a bustling thoroughfare at left. Rank 4.

Results

Data was processed with the statistics program SPSS Statistics V.26 using Spearman's nonparametric correlation coefficients because of a rank character of all scales; the factor and regression analyses were also made.

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We should pay attention to a number of correlations observed after data processing because this parameter demonstrates the data consistency level and their logic connection that can be seen in the Table 1. The greatest number of correlations between assessment of the same place has been noted for the place no. 3, Courtyard of Arts (minimal rank of activity, the 1st), the fewest – for assessments of the place no. 4, Embankment (the greatest rank, the 4th). Thus, the number of significant correlations was inversely associated with the rank of activity. The third place in question is considered to be unknown for most respondents, as well as for most residents in the whole city population, and many persons did perceive it as a novel one. The place no. 4, Embankment, appears to be the most familiar to the St. Petersburg's dwellers, because this place is a part of the Neva River embankment close to a bustling thoroughfare. The number of correlations is evidently of importance, the greater number being associated with the more consistent and non-fragmentary data for the place.

The greater number of significant correlations ($p < 0.01$) was revealed in the 2nd and 3rd places having the least activity ranks, which may suggest that the data from the less active places is more coherent. Furthermore, dispersion in percentage inversely correlates with the ranks of places: the less is the rank of a place, the greater is the ratio of the number of more significant correlations to the entire number of correlations.

The most number of correlations with a greater value of the factor power ($F > 0.5$) was noted for the place no. 3, Courtyard of Arts, and the least – for the place no. 4, Embankment, which fits perfectly with the 1st conclusion. Besides, the dispersion of the number of correlations is inversely associated with the distribution of the ranks: the more was the rank of place (that is, the more active the place was), the fewer correlations with high levels of F were noted.

In all places were noted associations in such categories: 'depressing', 'calm', 'excluding', 'anxiety', 'safe', 'cosy', 'clean', 'cultural', 'novelty', 'favorite', 'prestigious' and 'comfortable'. The most number of associations was noted in categories 'inviting', 'excluding', 'calm', 'depressive', 'pleasant', the least number – in categories 'comfortable', 'prestigious', 'novelty'.

Table 1
Comparative analysis of significant correlations

Place	Rank	Number of correlations, n.	Number of correlations at $p < 0.01$, n.	Number of correlations at $p < 0.01$ to the total number ratio, %	Number of correlations with the max. F (at $F > 0.5$), n.	Number of correlations with the max. F to the total ratio, %	Number of correlations with the max. F to correlation at $p < 0.1$, %
1	3	58	34	58.62	28	48.28	82.35
2	2	55	34	**61.82**	27	49.09	79.41
3	1	**89**	63	**70.79**	**46**	**51.69**	73.02
4	4	**47**	24	51.06	**17**	**36.17**	70.83

Russian Psychological Journal, 2020, Vol. 17, No. 2, 36–57. **doi**: 10.21702/rpj.2020.2.3

The categories of 'inviting' and 'excluding' have been noted as the main characteristics of an attitude to a place. An 'inviting' place (based on significant correlations for all places) – is a 'comfortable', 'favorite', 'cosy' one in the case of four places in question, a 'safe', 'calm' and 'pleasant' one in three places, an 'prestigious', 'clean', 'novelty' one in the case of two places, a 'cultural', non-'depressive', and non-'excluding' one in the case of 1 place, namely, in one place, namely, in the place no. 3, Courtyard of Arts. The characteristics associated with the category 'excluding' were non-'clean', non-'favorite', and 'anxiety' in 4 places in question, non-'cosy', non-'cultural' and non-'comfortable' in three places, non-'prestigious' and non-'safe' in one place, namely, in the place '1. Pedestrian line', and 'restless' and non-'inviting' in the place no. 3, Courtyard of Arts.

The factor analysis of all the assessments of places was performed for each place individually, and thereafter a regressive analysis of obtained factors was performed. Results of all standardized psychological methods were used as predictors. For the sake of the analysis convenience all assessments were divided in 4 groups: positive senses, characteristics of environment, collective representations and negative senses. Results are summarized in Tables 2–5. Data is classified depending on places. An adjusted R^2 is given at first lines of table cells. Every new predictor starts with a new figure, i.e., an equation coefficient. Negative coefficients are marked with the sign '–'. For example, assessment 'pleasant' for the 1st place was accounted for 34.4 %, then followed the predictor with a positive coefficient 0.265 in the Self-relation Test by S. R. Pantileev for the scale 'reflected self-attitude', negative coefficient 0.020 questionnaire SAMOAL 'independency' and the positive coefficient 0.033 – data from neurodevice for the scale 'relaxation'. Predictors which repeated in one table are highlighted in bold.

Table 2
Regression analysis in the group of 'positive senses'

	Inviting	Comfortable	Cosy	Pleasant	Calm
1. Pedestrian 7th line, Vasilievsky Island	No equation	No equation	No equation	Adjusted R sq. 34.4 % 0.265* Self-relation Test, reflected self-attitude (–) 0.020 * SAMOAL independence 0.033 * 1pl relax	No equation

Table 2
Regression analysis in the group of 'positive senses'

	Inviting	Comfortable	Cosy	Pleasant	Calm
2. Bolshoi Prospect, Vasilievsky Island	Adjusted R sq. 28.6 % 0.260 * pl2 **mediated color** + 0.031 * **inhibition Strelau**	Adjusted R sq. 28.6 % 0.260 * pl2 **mediated color** + 0.031* **inhibition Strelau**	Adjusted R sq. 28.6 % 0.260 * pl2 **mediated color** + 0.031 * **inhibition Strelau**	Adjusted R sq. 28.6 % 0.260 * pl2 **mediated color** + 0.031 * **inhibition Strelau**	Adjusted R sq. 28.6 % 0.260 * pl2 **mediated color** + 0.031 * **inhibition Strelau**
3. Courtyard of Arts	Adjusted R sq. 14.1 % 0.244 * pl3 **mediated color**	**Non**-adjusted R sq. 48.4 % (–) 0.038 * % of extraversion 0.311 * SAT openness	Adjusted R sq. 18.2 % (–) 0.097 * sovereignty of physical body	Adjusted R sq. 14.1 % 0.244 * pl3 **mediated color**	Adjusted R sq. 14.1 % 0.244 * pl3 **mediated color**
4. Embankment opposite to Menshikov Palace	Adjusted R sq. 30.3 % (–) 0.032 * **satisfaction with life** 0.019 * **SAMOAL human nature**	No equation	Adjusted R sq. 30.3 % (–) 0.032 * **satisfaction with life** 0.019 * **SAMOAL human nature**	Adjusted R sq. 30.3 % (–) 0.032 * **satisfaction with life** 0.019 * **SAMOAL human nature**	No equation

Table 3
Results of regression analysis in the group 'environment characteristics'

	Clean	Specious	Active	Novelty	Bright
1. Pedestrian 7th line, Vasilievsky Island	Adjusted R sq. 17.7 % (–) 0.106 * **sovereignty of territory**	Adjusted R sq. 17.7 % (–) 0.106 * **sovereignty of territory**	Adjusted R sq. 30.2 % (–) 0.027 * 'SAMOAL' autosympathy 0.092 * **sovereignty of territory**	No equation	Adjusted R sq. 32.6 % (–) 0.217 * Self-relation Test, inner conflicts + 0.042 * 1pl excitement
2. Bolshoi Prospect, Vasilievsky Island	Adjusted R sq. 44.5 % (–) 0.332 * Self-relation Test, **reflected self-attitude** 0.060 * 2pl **excitement**	Adjusted R sq. 44.5 % (–) 0.332 * Self-relation Test, **reflected self-attitude** 0.060 * 2pl **excitement**	Adjusted R sq. 69.8 % 0.522 * **SAT openness** (–) 0.030 * **SAMOAL time** 0.033 **SAMOAL values** (–) 0.203 * Self-relation Test, **self-management** (–) 0.064 * **sovereignty of habits** 0.050 * **sovereignty of objects**	Adjusted R sq. 69.8 % 0.522 * **SAT openness** (–) 0.030 * **SAMOAL time** 0.033 **SAMOAL values** (–) 0.203 * Self-relation Test, **self-management** (–) 0.064 * **sovereignty of habits** 0.050 * **sovereignty of objects**	Adjusted R sq. 44.5 % (–) 0.332 * Self-relation Test, **reflected self-attitude** 0.060 * 2pl **excitement**

Table 3
Results of regression analysis in the group 'environment characteristics'

	Clean	Specious	Active	Novelty	Bright
3. Courtyard of Arts	**Non-**adjusted R sq. 27.3 % 0.111 * **sovereignty of social relations** (–) 0.045 * 3pl **relaxation**	Adjusted R sq. 14.1 % 0.244 * pl3 **mediated color**	Adjusted R sq. 27.3 % 0.111 * **sovereignty of social relations** (–) 0.045 * 3pl **relaxation**	Adjusted R sq. 14.1 % 0.244 * pl3 **mediated color**	Adjusted R sq. 40.2 % = – 0.144 (N.S.) + 0.396 * pl3 **mediated color** – 1.910 * R Strelau
4. Embankment	No equation	No equation	No equation	No equation	No equation

Table 4
Regression analysis in the group of 'collective representations'

	Favorite	Prestigious	Cultural	Restless	Safe
1. Pedes-trian 7th line, Vasilievsky Island	No equation	No equation	Adjusted R sq. 34.4 % 0.265 * **Self-relation Test, reflected self-attitude** (–) 0.020 * **SAMOAL independency** 0.033 * 1pl **relaxation**	No equation	Adjusted R sq. 34.4 % 0.265 * **Self-relation Test, reflected self-attitude** (–) 0.020 * **SAMOAL independency** 0.033 * 1pl **relaxation**

Table 4
Regression analysis in the group of 'collective representations'

	Favorite	Prestigious	Cultural	Restless	Safe
2. Bolshoi Prospect, Vasilievsky Island	Adjusted R sq. 28.6 % = – 3.030 + 0.260 * pl2 **mediated color** + 0.031 * **inhibition Strelau**	Adjusted R sq. 37 % 0.347 * **Self-relation Test, self-acceptance** (–) 0.026 * **SAMOAL time**	Adjusted R sq. 37 % 0.347 * **Self-relation Test, self-acceptance** (–) 0.026 * **SAMOAL time**	Adjusted R sq. 69.8 % 0.522 * **Self-relation Test, openness** (–) 0.030 * **SAMOAL time** 0.033 SAMOAL values (–) 0.203 * Self-relation Test, self-management (–) 0.064 * sovereignty of habits 0.050 * sovereignty of objects	Adjusted R sq. 28.6 % = – 3.030 + 0.260 * pl2 **mediated color** + 0.031 * **inhibition Strelau**
3. Courtyard of Arts	**Non-**adjusted R sq. 48.4 % = –0.008 (N.S.) – 0.038 * % of extraversion + 0.311 * **Self-relation Test, openness**	Adjusted R sq. 18.2 % = 0.443 (N.S.) – 0.097 * sovereignty of physical body	Adjusted R sq. 14.1 % 0.244 * pl3 **mediated color**	Adjusted R sq. 27.3 % 0.111 * sovereignty of social relations (–) 0.045 * 3pl relaxation	Adjusted R sq. 40.2 % 0.396 * pl3 **mediated color** (–) 1.910 * R Strelau

Table 4

Regression analysis in the group of 'collective representations'

	Favorite	Prestigious	Cultural	Restless	Safe
4. Embankment	Adjusted R sq. 30.3 % (–) 0.032 * satisfaction with life 0.019 * SAMOAL human nature	No equation	No equation	No equation	No equation

Table 5

Regression analysis in the group of 'negative senses'

	Depressive	Anxiety	Excluding
1. Pedestrian 7th line, Vasilievsky Island	Adjusted R sq. 34.4 % **Non-** 0.265 * **Self-relation Test, reflected self-attitude** (–) 0.020 * **SAMOAL independency** 0.033 * 1pl **relaxation**	Adjusted R sq. 34.4 % **Non-** 0.265 * **Self-relation Test, reflected self-attitude** (–) 0.020 * **SAMOAL independency** 0.033 * 1pl **relaxation**	Adjusted R sq. 34.4 % **Non-** 0.265 * **Self-relation Test, reflected self-attitude** (–) 0.020 * **SAMOAL independency** 0.033 * 1pl **relaxation**

Table 5

Regression analysis in the group of 'negative senses'

	Depressive	Anxiety	Excluding
2. Bolshoi Prospect, Vasiliev-sky Island	Adjusted R sq. 70.2 % (–) 0.046 * **SAMOAL, human nature** 0.026 * **satisfaction with life** 0.048 * **SAMOAL, creativity** 0.219 * **Self-relation Test, inner conflicts** 0.061 * **sovereignty of physical body** 0.157 * **Self-relation Test, self-acceptance**	Adjusted R sq. 70.2 % (–) 0.046 * **SAMOAL, human nature** 0.026 * **satisfaction with life** 0.048 * **SAMOAL, creativity** 0.219 * **Self-relation Test inner, conflicts** 0.061 * **sovereignty of physical body** 0.157 * **Self-relation Test, self-acceptance**	Adjusted R sq. 70.2 % (–) 0.046 * **SAMOAL, human nature** 0.026 * **satisfaction with life** 0.048 * **SAMOAL, creativity** 0.219 * **Self-relation Test, inner conflicts** 0.061 * **sovereignty of physical body** 0.157 * **Self-relation Test, self-acceptance**
3. Courtyard of Arts	**Non-** adjusted R sq. 48.4 % (–) 0.038 * % **extraversion** + 0.311 * **Self-relation Test, openness**	**Non-** adjusted R sq. 48.4 % (–) 0.038 * % **extraversion** + 0.311 * **Self-relation Test, openness**	**Non-** adjusted R sq. 48.4 % (–) 0.038 * % **extraversion** + 0.311 * **Self-relation Test, openness**
4. Embankment	Adjusted R sq. 29.4 % (–) 0.039 * 4pl **relaxation** 0.024 * % **extraversion**	No equation	Adjusted R sq. 29.4 % (–) 0.039 * 4pl **relaxation** 0.024 * % **extraversion**

Conclusions for the regression analysis

Most of negative characteristics in the factor analysis acquired down-crossed values, i.e., with a minus, which meant to be positive as a characteristic. Distribution of assessments into factors in different places was similar. Such differences were revealed: the 'novelty' and 'cultural' characteristics stood apart.

In the first factor three places, i.e., all the places in question except for the place no. 3, Courtyard of Arts, three assessments were unified: 'inviting', 'favorite', 'cosy', and in first two places four assessments were unified: 'inviting', 'comfortable', 'cosy', and 'favorite'. Thus, inviting places are most often 'cosy' and this characteristic may be identical to 'favorite', which confirms the conclusion of the correlation analysis.

Such assessments as 'prestigious' and 'cultural' were supposed to be used as markers of collective representations. In one factor they encountered twice, in the third and in the fourth places. In each place it is associated with different assessments. A summarizing conclusion is that categories which could be considered as assessments based on collective representations do not unify with each other separately from other senses of representations, but rather with them, which demonstrate the association between collective representations and individual senses.

Characteristics 'spacious' and 'clean' are associated in first two places. 'Spacious' is associated with 'comfortable', 'cultural', 'prestigious', 'bright' in the 4th place and with the 'novelty' in the third place. In a novel place the 1st factor unify the 'novelty' with the category 'inviting', and that factor depends on the mediated color predictor only.

The characteristics 'depressive', 'unsettling', 'excluding' were unified in three places, and in the fourth place the 'unsettling' was unified with the 'novelty'.

At the very beginning participants put on a neurodevice which read brain impulses and recorded at each minimal unit of time the excitement or relaxation levels. The results were as follows: relaxation negatively correlated with depression – in three places the brain relaxation index was associated with 'depressive' assessment, as well as with other negative assessments ('restless', 'non-clean', 'excluding').

Conclusions for assessments groups

In the 'pleasant senses' group ('inviting', 'comfortable', 'cosy', 'pleasant', 'calm') the 'reflected self-attitude' and 'openness' scales demonstrated the most numeric expression of predictors of the Self-relation test. The more are values on the scale 'reflected self-attitude', the more pleasant the place is perceived. The more is the level of 'openness', the less is the comport rating. According to the same logic sovereignty of psychological space is expressed with the scale 'sovereignty of physical body' in the 3rd place only and at the lowest level: the more the sovereignty of the body rating is, the less 'cosy' the place is rated. Mediated color serves as a predictor for all four assessments in the category 'pleasant senses' in the second place and for two assessments in the third place, which demonstrates importance of non-perceived senses in that group of assessments.

In that group one could see the average effect of temperament: the inhibition according to J. Strelau test in the second place, relaxation in the first place, and extraversion in the third one. Satisfaction with life influences the assessments inversely: the lower is satisfaction, the higher the positive rating will be. One could see that the scale 'human nature' of SAMOAL exerts low-level effects, implying the faith in power of human abilities: the more is the faith in the humankind, the higher are ratings in the category 'pleasant' (as one can see in the 4th place

Russian Psychological Journal, 2020, Vol. 17, No. 2, 36–57. **doi**: 10.21702/rpj.2020.2.3

example, 'Embankment'). Another scale of SAMOAL, 'independency', demonstrated an opposite effect: the higher are ratings in that scale, the less are ratings of assessment 'pleasant' (as in the 1st place, the 'Pedestrian line').

In the group of assessments 'environment characteristics' ('clean', 'spacious', 'active', 'novelty', 'bright') for the 4th place no equations were obtained, which means that the values depend rather on something else. Correlations were numerous with scales from the questionnaire 'sovereignty of psychological space': sovereignty of territory determines high ratings for characteristics 'clean', 'spacious', and environment activity level' for the 1st place, sovereignty of habits and things lie behind assessments of activity and novelty of the environment, sovereignty of social ties are associated with assessment 'clean' and 'activity level' in the 3rd place.

In the group 'collective representations', i.e. the characteristics 'favorite', 'prestigious', 'cultural', 'restless', 'safe', sovereignty of physical body influences ratings prestigious in the 3rd place, and sovereignty of habits and things determines high ratings for the characteristic 'restless' in the 2nd place, and sovereignty of social ties determines high ratings for the characteristic 'restless' in the 3rd place. Questionnaire SAT comprises scales 'autoguidance', 'reflected self-attitude' (one of more often presented as predictors scales), 'self-acceptance' and 'openness', as well. In the questionnaire 'SAMOAL' such scales as 'independency', 'time', 'values' and 'human nature' turned out to be predictors – scales implying the general representations of a person: their life values, time management, their compliance with values of a self-actualizing person, which is consistent with the group sense and partly confirms the author's assumption. Characteristics of temperament have associations as follows: extraversion correlates with 'favorite'; there are four correlations with excitement, and two – with inhibition and the Strelau scale.

The group of 'negative senses' ('depressive', 'unsettling', 'excluding') comprised a great number of predictors, only in one case there was no equation. All assessments correlated with the sovereignty of physical body in the 2nd place. Temperament: in the 3rd and 4th places one could see 5 correlations with extraversion out of 6 possible ones, in the 4th place there was a negative correlation with relaxation, there were correlations with the Strelau scales. In addition, scales of 'reflected self-attitude', 'inner conflicts', 'self-acceptance' and 'openness' in the questionnaire SAT influenced markedly negative assessments. In the self-actualization questionnaire predictors in that group were 'creativity', 'human nature' and 'independency'.

In summary, sovereignty of psychological space determines rather assessments, describing environment characteristics: 'clean', 'spacious', 'active', 'novelty', as well as the characteristic 'restless' in the representation category. Relaxation index was associated with the positive sensations of a place. Such Self-relation Test scales as 'reflected self-attitude', 'inner conflicts', 'autoguidance', 'self-acceptance' and 'openness' were more or less equally represented without specific spikes in the sensations groups, which suggested that the sense of self influenced all assessments of places. In all groups of assessments, scales of 'human nature', 'time' and 'autosympathy' out of the self-actualization questionnaire were presented extensively. One could note a broader representation of the relaxation predictor in all the assessments groups.

Table 6

Regression analysis results

Place	Number of factors	Number of regression equations	Adjusted Mean. R squar.	Number of predictors	Average number of predictors	SRT	SPS	SAMOAL	Extraversion	Satisf.	Device	Color	Str.
1. Pedestrian line	6	4	28.725	8	2	2	2	2	0	0	1 rel 1 exc	0	0
2. Bolshoi Prospect, Vasilievsky Island	5	5	50.02	18	**3.6**	**6**	**3**	**5**	0	1	1 exc	1	1
3. Courtiyard of Arts	5	5	29.64	8	1.6	1	2	0	1	0	1 rel	**2**	1
4. Embankment	6	2	29.85	4	2	0	0	1	1	1	1 rel	0	0

Notes: *SPS* – sovereignty of psychological space; *Extraversion* – a scale in EPI (Eysenck inventory), *Color* – mediated color (in the Color Test of Attitudes (CTA) by Etkind), *Satisf.* – satisfaction with life, *Device* – neurodevice readings, *Str.* – Strelau Inventory.

Discussion

The data suggests that in unfamiliar places more correlations between assessments could be noted, because the brain is more motivated to discover and to explore the space more intensely, which influence the process of evaluating the place. In the places familiar to the subject most, a person's perceiving activity decreases dramatically and the assessment of places tends to be reduced to pre-existing representations about similar places; which is why the details of a person's assessment of this place might not reflect senses experienced by that person at the very moment in that place. That hinders the above-mentioned tendency of maximal awareness of one's senses. It might be easier to a person to understand their senses in places with low-level activity because in such places individuals can collect mere processable information about the environment.

It is surprising that the category of 'pleasant', which was assumed to be the main characteristic of a place and the 1st in the list, did not prove to have correlations in all places, that doesn't coincide with the additional hypothesis. The least number of correlations of that category with the 'novelty' agreed with the common experience, because of familiarity of the chosen route.

The obtained equations for 'inviting' and 'excluding' places show that an inviting place is a comfortable and cosy one, if it is unfamiliar or 'favorite'; an excluding place is a dirty, unloved, and increasing anxiety one. That is, in order to be inviting, a place does not necessarily need to be 'prestigious', 'novelty', or 'cultural' site, but it needs to be clean and not unsettling. On the other hand, in order not to be excluding, a place had better be 'cultural' and 'comfortable'. In other words, stereotypical or collective images correlate with a negative attitude, as it was indicated in earlier research (Proskuriakova, 2016; Proskuriakova & Yanicheva, 2016).

In the place no. 4, Embankment, the data are the least predictable. This might be explained through the fact that in a familiar place collective representations are involved to a greater extent, which is why results of standardized questionnaires account for them less, because the assessments relate more to individual senses and personal representations.

There are correlations with the data of neurodevice, scores of extraversion, and mediated music, which confirms correlations with temperament and non-conscious processes, even though with a minimal correlation coefficient. In three places the ratings of relaxation were involved, in two places – of the excitement. The mediated color has the most effects in the place no. 3, Courtyard of Arts, which is an additional argument in favor of the influence of non-conscious senses.

There was no correlation with neurotism, which contradicts the initial assumption of correlation with the assessment of a place as an 'anxious' one and other negative senses. This suggests that further research is needed. A subjective assessment of the person's level of neurotism would probably reveal a correlation with the 'anxiety' assessment.

On the other hand, there are numerous correlations of negative assessment with EEG-registered relaxation, which might imply the importance of the state of relaxation as a pre-condition for lack of negative assessments and, possibly, for lack of negative senses experienced in a place.

The adjusted mean R square value was similar for three places, and for the 2nd place only, on Bolshoi Prospect, its value was almost two times higher. I believe that the reason for this is that: data for factors in that place depended rather on another set of data. Dependence on predictors was the lowest and in the place no. 3, Courtyard of Arts. This fact needs to be further studied to identify possible underlying reasons.

The 'satisfaction with life' index serves as a predictor of negative assessments in the 2nd place and a predictor of positive assessments in the 4th place. In both cases, the subjects provided

Russian Psychological Journal, 2020, Vol. 17, No. 2, 36–57. **doi**: 10.21702/rpj.2020.2.3

both assessments – 'excluding' and 'inviting' ones. Therefore, the level of satisfaction with life may influence the assessment of a place as an 'inviting' one.

The main and additional hypotheses were partially confirmed by results. Indeed, the assessment of a place is associated with such factors as the environment activity level and the subjective sense of novelty. Individuals assess new places more scrupulously, relying more on their actual senses; whereas assessments of familiar places are less detailed which suggests that they were borrowed from collective representations. The findings have partially confirmed that the factors of temperament indeed serve as predictors, with extraversion being involved, and neurotism not involved. The autosympathy level graded on the 'SAMOAL' scale with the same name was found to be a predictor for the evaluator 'active' in the first place only. Nonetheless, many scales of the questionnaire SAT, such as 'reflected self-attitude', 'inner conflicts', 'autoguidance', 'self-acceptance' and 'openness', which characterize the sense of self, were found to be valid as predictors, with the highest possible correlation coefficient, which also confirms our hypothesis. There are correlations with personal characteristics, such as sovereignty of psychological spaces, personal self-actualization and satisfaction with life levels, which have proven to be predictors in the above presented equations. The category of 'pleasant' is not a synthesizing one, since it is not presented in the analysis in all the places, although it partially shows the general attitude to the place. Instead, the categories of 'inviting' and 'excluding' are recognized as synthesizing.

Thus, the assessments of places has been found to be related to and depend on the subjects' sense of self and their temperament, as well as on the sovereignty of psychological space, level of satisfaction with life and of self-actualization. There is a strong correlation of assessments of places with the senses experienced and individual representations. In most cased groundless assignments of in assessments to place seemed to depend on collective representations and other factors.

At the moment there is a pressing need for individual transformation of personality and recovering individuals' 'wholeness' in the process of self-actualization. The conscious senses of one's own actual feelings while visiting new places with low external activity could help achieve this goal. On the other hand, the existential impossibility to avoid assessment and senses of one's environment might pre-determine certain fast-track mechanisms that allow a person to form an opinion about surrounding objects using many characteristics.

This is precisely why in an environment that strongly resembles a frequented one, as is in the case with St. Petersburg embankments, a person tends to perceive automatically this embankment as similar to all the previously visited ones and to save energy rather than invest it in trying to scan and assessment the environment more carefully. Clearly, this mechanism is similar to the way stereotypes are usually formed. The study confirmed this assumption during the experiments with the most frequented place in central St. Petersburg. We can conclude that each person, once aware of the mechanisms of the process, is capable of making an effort to find the balance.

In addition, the issues of evaluating place could be associated with tolerance to ambiguity, which is a concept explored by T. V. Kornilova and D. A. Leont'ev using different approaches (Kornilova, Chumakova, Kornilov, & Novikova, 2010; Leont'ev, Osin, & Lukovitskaya, 2016). They stipulate that new spaces are unpredictable and therefore could equally be either dangerous or surprisingly interesting. The greatest number of correlations and consistent data for the place no. 3, Courtyard of Arts, confirms the fact that this place was unfamiliar to most of the respondents (more than 90 %).

'Brunner's findings and results of experiments suggested that in the process of making senses-based decisions, the perceiving subject's involvement increases dramatically, as they keep evaluating the perceived reality which is always associated with various social factors and specific contexts' (Andreeva, 2000, p. 37). This underscores the active role of the subject and their ability to influence the sense, if only partially, i.e. to save resources and to categorize a familiar space within the known categories. That mechanism does not require additional conscious effort, but individuals can consciously select less busy places evoking a sense of novelty, and through the processing of familiarizing these places, they can attempt to be aware of their current senses while building their own inner world and the sense of themselves.

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