MAN'S EMOTIONAL RESPONSES AND WELLBEING IN THEKASBAH OF ALGIERS

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Abstract
Human's emotional responses to the built environment are crucial to ensure both well-being and urban consciousness. The following research aims to explore the relationship between user's emotional responses to the built environment stimulus related to wellbeing. It studies people's emotional response as they encounter the alleys of the Kasbah of Algiers. A group of 10 architects participated in this study, they walked through the alleys of the Kasbah of Algiers, while talking spontaneously about their emotions and feelings regarding this space, and taking simultaneously pictures of the built environment scenes that are in relation with their emotional experience. Based on the Plutchik's works, a content analysis is conducted on this 10 architect's collected testimonies. This analysis aims to identify the architect's emotional response to the spatial stimulus of the Kasbah of Algiers, and its related cognitive and behavioral reactions. The results show that joy, admiration, surprise, awe and optimism are the emotional responses that address more users' comfort, satisfaction and well-being in the Kasbah of Algiers. These emotional responses are related to the spatial stimulus: terraces with open view on the sea and the sky; large and proportioned lanes flooded with sun light and fresh air; and transition from close dark ambiances and spaces to open lightened ambiances and spaces like the transition in the Kasbah dwellings from the "Skifa" to the "patio" and from the "rooms and stairs" to the "terrace", or the transition from the "alley" to the "impasse" especially the covered impasses with low ceilings.

Keywords
Emotional response, built environment wellbeing, built environment characteristics, Kasbah of Algiers, content analysis
ABSTRACT: Human's emotional responses to the built environment are crucial to ensure both well-being and urban consciousness. The following research aims to explore the relationship between user's emotional responses to the built environment stimulus related to wellbeing. It studies people's emotional response as they encounter the alleys of the Kasbah of Algiers. A group of 10 architects participated in this study; they walked through the alleys of the Kasbah of Algiers, while talking spontaneously about their emotions and feelings regarding this space, and taking simultaneously pictures of the built environment scenes that are in relation with their emotional experience. Based on the Plutchik's works, a content analysis is conducted on this 10 architect's collected testimonies. This analysis aims to identify the architect's emotional response to the spatial stimulus of the Kasbah of Algiers, and its related cognitive and behavioral reactions. The results show that joy, admiration, surprise, awe and optimism are the emotional responses that address more users' comfort, satisfaction and wellbeing in the Kasbah of Algiers. These emotional responses are related to the spatial stimulus: terraces with open view on the sea and the sky; large and proportioned lanes flooded with sun light and fresh air; and transition from close dark ambiances and spaces to open lightened ambiances and spaces like the transition in the Kasbah dwellings from the "Skifa" to the "patio" and from the "rooms and stairs" to the "terrace", or the transition from the "alley" to the "impasse" especially the covered impasses with low ceilings.

KEYWORDS: Emotional response, built environment wellbeing, built environment characteristics, Kasbah of Algiers, content analysis

1. INTRODUCTION

Every experience of the built environment encompasses an emotional dimension related to the perception and the interaction of man with the different physical components and ambiances of this built environment. Thus, encountering an environment automatically engages the user in some process of mobilization of senses and emotions through the body [Istasse, 2015, p88]. Pallassmaa emphasize, architecture embodies and vehicle a multi-sensory experience that is measured simultaneously through the senses: the eye, ear, nose, skin, tongue, and muscles: " Every touching experience of architecture is multi-sensory; qualities of matter, space and scale are measured by the eye, ear, nose, skin, tongue, skeleton and muscle."[J. Pallassmaa, 2012, p 41].

Being associated to man's life experiences, built environments can acquire an emotional and motivational value and, in turn, shape man's behaviors. The idea of a reciprocal interaction between humans and built space, and how it could impact on wellbeing in the built environment is meeting a shared agreement and a growing attention from different disciplines, especially architecture, urban design, psychology and neuroscience [Sternberg et al., 2009]. Moreover, wellbeing is regarded as a crucial need to ensure man's mental health in the built environment and one of the most important challenges that cities face, to maintain or to improve. [Kostas Mouratidis, 2017].

The effects of built environment features on affective processes and wellbeing has been largely explored within the context of healthcare environments. According to K. Mouratidis [2017], characteristics of indoor and outdoor spaces such as type of doors and material, pathway, sound, air, light, views, counters and forms, textures and others, found to be influential to the mental health and the wellbeing within this built environment. Hence, it is a crucial matter to investigate how the built environment influences man's wellbeing through emotions.

The Kasbah of Algiers is a unique kind of medina and an outstanding example of a historic Maghreb city of the 16th century [UNESCO]. It is one of the finest coastal sites on the Mediterranean. In 1992, this city was named a world heritage site. The city has a triangle shape and it stands on an outstanding site, a hill that goes
down towards the sea. The Kasbah is characterized by its specific ambiances, by the aesthetics of its architectural forms, and by the density of its urban stratification with a maze of a steep and narrow sinuous street.

This paper aims to explore the relationship between users’ emotional responses related to wellbeing in the historical built environment of the Kasbah of Algiers. It studies man's emotions as they encounter the alleys and the houses of the Kasbah of Algiers, thought the identification of their emotional responses towards the spatial stimulus of the Kasbah of Algiers.

2. A BUILT ENVIRONMENT IS A MULTISENSORY EXPERIENCE

Every built environment embodies on its atmospheres and walls a multi-sensory experience, depicted by emotions, and measured simultaneously by all senses (eyes, ears, nose, skin, tongue, and muscles) [Pallasmaa, 2012]. Thus, every contact with the built environment gives the user an opportunity to formulate affective and cognitive knowledge about the place. This knowledge involves a wide range of sensibilities, feelings and emotions, that are commonly unselfconsciously experienced [O’NEILL, 2001].

Emotions and mood changes caused by the built environment have an impact on both, mental and physical health. The emotional response generated through the experience of a built environment can be either positive or negative. K. Mouratidis (2017) emphases that negative emotions are generated when built environment is unsafe, isolated, impersonal, extremely noisy, or considered of poor reputation and aesthetics. Whereas, positive emotions are generated when built environments are characterized by high aesthetic quality, when they integrate elements of nature, when they promote good neighbor relations and community spirit, or when interesting events occur in them. Low and Altman (1992), added that place attachment may also play a role in emotions and mood.

2.1 Title Pultchik’s emotions wheel

Emotional responses are a component of man’s experience of the built environment, and they are crucial to ensure both wellbeing and urban consciousness. Through years of studying emotions, Dr. Robert Plutchik, an American psychologist, proposed that there are eight primary emotions that serve as the foundation for all other emotions [Plutchik, 1980], and proposed a model of emotion wheel to help depicting, identifying and studying the emotions [Fig 1].

*Fig. 1 Pultchik’s emotions wheel.*

Reference: Plutchik, 1980
In the Pultchik's emotion wheel [Fig 1], the eight identified primary emotions, which are the bases for all others, are grouped into polar opposites:

- joy vs sadness
- acceptance vs disgust
- fear vs anger
- surprise and anticipation

In the proposed wheel, the eight emotions each are represented and arranged by colors and a set of similar emotions. The primary emotions are located in the second circle. The emotions that have no colors are a mix of the two primary emotions. The center of the circle intensifies the emotion. Moving from a layer to another, the colors become less saturated, and so does the intensity of the emotions. The spaces in between the emotions demonstrate the combinations resulting when the primary emotions are mixed.

2.2 Wellbeing and the built environment

Wellbeing has become an influential factor in the built environment and architecture design, and favoring the switch towards more user-centered strategies and actions in the design and construction sector. According to K. J. Watson (2018), the academic literature that investigates wellbeing in the built environment is growing continuously; it concerns studies at an urban planning scale considering cities and local neighborhoods level, and studies at a post-occupancy building scale.

Wellbeing is considered synonymous with health, usually mental health that refers to the mental well-being through attention and restoration impact of the built environment, stress reduction, and the evocation of positive emotions [Abraham et al., 2010], and more rarely with physical health that refers to physical well-being through the promotion of physical activity in daily life in the built environment [Abraham et al., 2010].

K. J. Watson (2018) defines Wellbeing as a state of a cognitive satisfaction achieved through goal accomplishment, associated to the presence of positive affect and lack of negative feelings, in combination with the psychological needs of personal competence, social relatedness and autonomy. This paper focuses on the Affective dimension and measure of wellbeing.

The built environment is found to be an important predictor of subjective measures of wellbeing [Morrison 2007]. The latest dominant trend in subjective wellbeing empirical studies is there are three types of SWB subjective wellbeing measures that correspond to different philosophical viewpoints. According to OECD’s guidelines on subjective wellbeing measurement (OECD 2013), subjective wellbeing measures are categorized as:

- Hedonic wellbeing / affect: it considers one's emotional responses to the stimulus (the environmental stimulus). It's also known as the psychological happiness. This paper is focusing on this measure of wellbeing. [Mouratidis, 2017].
- Life satisfaction: “reflective assessment on a person’s life or some specific aspect of it.” [Mouratidis, 2017].
- Eudaimonia: “a sense of meaning and purpose in life, or good psychological functioning.” [Mouratidis, 2017].

3. METHOD

A content analysis was conducted on the different comments made by the participants regarding their experience of the Kasbah of Algiers. The aim is to identify the spatial qualities that shaped their experience and the affective responses that they generate. A thematic categorial analysis is carried out to question the architectural and spatial qualities of the built environment of the Kasbah of Algiers that influenced their emotional responses towards this city.

The analysis is conducted through five steps [Bardin 1977, Mucchielli 1998]: 1) constitution of the corpus of texts which is the testimonies of the participants, 2) definition of the recording units, means significant words or expression related to wellbeing and emotional response towards the characteristics of the built environment (3) recording unit analysis, (4) categorization, and finally 5) frequency counting and presentation and interpretation of results. The categories are groupings of registration units made according to specified built environment characteristics and the emotional responses they generate. The rule governing grouping is as follows: any recording unit must find its place in a category; likewise, a recording unit can only appear in one and only one category.
### 3.1 Data collection and analysis

After identifying the research question, next step is the data collection. The method of "Walk along" is used to investigate the sensory experience of the Kasbah of Algiers. 10 architects were asked to walked through the alleys of the Kasbah of Algiers, and visit some houses, then record their spontaneous emotions and feelings when encountering the Kasbah, while taking simultaneously pictures of the built environment scenes that are in relation with their emotional experience. The recorded talks and comments constitute the corpus of the content analysis to conduct later.

After identifying the text corpus for the content analysis, the upcoming step is the selective reduction; it consists on reading the comments, and extracting words or quotations that reveal information on the sensory and affective experience related to the wellbeing in the built environment of the Kasbah of Algiers. The quotes are organized in recording units, each expressing a response situation towards a built environment characteristic. The latter are analyzed and coded into manageable content categories. All the quotes were coded using the predetermined categories wherever possible. Texts that could not be coded into one of these categories were coded with another label that captured the essence of the response towards the Kasbah of Algiers.

The wellbeing emotional responses are analyzed regarding the following elements of the built environment of the Kasbah: terraces, lanes, houses, and texture. Each element is analyzed through different characteristics:

- Lanes and streets of the Kasbah (outdoor): are analyzed through characteristics of Play of sunlight and shadow, Play of open and close spaces, Decay and uncleanness, Fresh air.
- The houses of the Kasbah (indoor): are analyzed through characteristics of Play of sunlight and shadow, Play of open and close spaces, Decay and uncleanness.
- Terraces: are analyzed through characteristics of Open views on the sky and the sea and Fresh air.
- Texture

The intensity of the registered emotional responses to the spatial stimuli is measured by the frequency of appearance in the discourses of the participants.

### 4. RESULTS AND DISCUSSION

The results of the content analysis of the different testimonies, based on Plutchik works, is presented in the following table, that shows the relationship between the sensory and emotional response of participants and the identified built environment characteristics of the spatial elements of the Kasbah which are the streets, the houses, the terraces, material textures and colors.

<table>
<thead>
<tr>
<th>Built environment elements</th>
<th>Built environment element characteristics</th>
<th>Frequency /10 participants</th>
<th>Identified emotions</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanes and streets of the Kasbah (outdoor)</td>
<td>Play of sunlight and shadow</td>
<td>06</td>
<td>Ecstasy and joy</td>
<td>05/06</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Love</td>
<td>02/06</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Optimism</td>
<td>03/06</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Admiration, trust</td>
<td>06/06</td>
</tr>
<tr>
<td></td>
<td>Play of open and close spaces</td>
<td>05</td>
<td>Terror, fear</td>
<td>03/05</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Amazement, surprise</td>
<td>04/05</td>
</tr>
<tr>
<td></td>
<td>Decay and uncleanness</td>
<td>08</td>
<td>Admiration</td>
<td>02/05</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Grief, sadness</td>
<td>07/08</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Loathing, disgust</td>
<td>08/08</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rage, anger</td>
<td>06/08</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aggressiveness</td>
<td>02/08</td>
</tr>
<tr>
<td></td>
<td>Fresh air</td>
<td>10</td>
<td>‘Optimism’</td>
<td>08/10</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Admiration, trust</td>
<td>10/10</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ecstasy and joy</td>
<td>10/10</td>
</tr>
<tr>
<td>The houses of the Kasbah (indoor)</td>
<td>Play of sunlight and shadow</td>
<td>07</td>
<td>Ecstasy and joy</td>
<td>07/07</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Anticipation, curiosity</td>
<td>04/07</td>
</tr>
<tr>
<td>Terraces</td>
<td>Play of open and close spaces</td>
<td>02</td>
<td>Amazement, surprise</td>
<td>02/07</td>
</tr>
<tr>
<td>----------</td>
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<td></td>
<td>Anticipation, curiosity</td>
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<td>Amazement, surprise</td>
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<td>Ecstasy and joy</td>
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<td></td>
<td>Decay and uncleanness</td>
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<tr>
<td>Fresh air</td>
<td>Open views on the sky and the sea</td>
<td>10</td>
<td>Awe</td>
<td>10/10</td>
</tr>
<tr>
<td>Texture</td>
<td>Fresh air</td>
<td>10</td>
<td>Ecstasy and joy</td>
<td>10/10</td>
</tr>
<tr>
<td></td>
<td>Admiration, trust</td>
<td>02/02</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The analysis of the results show that participant responses are:

- **Lanes and streets of the Kasbah (outdoor):** air quality was the major characteristic responsible of wellbeing in the street; it gives feelings of joy, admiration and optimism. Then comes the characteristic of decay and uncleanness which affect the participants experience negatively and causes emotions of disgust and anger. After that come the play of light as a factor influencing wellbeing positively, it stirs emotions of joy and admiration, and finally the play of light a factor influencing wellbeing positively by generating emotions of fear and amazement. Hence, the experience of the streets of the Kasbah stirs mostly emotions of admiration and joy, even though the decay and the uncleanness encounters in the streets affect this experience negatively, and diminish the wellbeing in the streets.

- **The houses of the Kasbah (indoor):** results show that the built environment characteristic play of light is a major factor that influences wellbeing in the indoor spaces positively by generating feelings of joy and anticipation, while play of openness/ closeness stirs the curiosity and the amazement among the participants. The houses of the Kasbah use direct daylight through the courtyard. The play of light/ shadow and the play of openness/ closeness collaborate together to ensure a positive, emotionally rich, experience of the indoor spaces, according to the participants testimonies is displayed through the transition from close dark ambiances and spaces to open lightened ambiances and spaces from the "Skifa" to the "patio" and from the "rooms and stairs" to the "terrace".

- **The terraces:** the terraces of the Kasbah are conceived as a giant stairs that goes downs to the sea, hence offering a breathtaking and dominating view open to both sea and sky. This view is considered by the participant as the major characteristic responsible of wellbeing felt in the terraces, given that it generate strong feeling of awe and sublime, altogether with joy, admiration and optimism. The quality of the air in the terraces also is responsible of the wellbeing in the terraces; it stirs emotions of joy and optimism.

- **Texture:** few participant who gave attention to the texture of the materials and especially of the streets, the rough quality of the stones of the streets gives feeling of trust and admiration, one of the participants walked few steps without shoes in order to admire the sensations offered by this stones

Among the five built environment elements, Terrace is considered as the element from built environment of the Kasbah that affects the most the comfort and the wellbeing of the participant, then the houses and then the streets.

5. CONCLUSIONS

This paper has identified and discussed the emotional responses to characteristics of the built environment of the Kasbah of Algiers that influence the sensory experience and the wellbeing in this city, by analyzing the sensory experience of architects in the Kasbah of Algiers.

The results of this study show that joy, admiration, surprise, awe and optimism are the emotional responses that address more users' comfort, satisfaction and well-being in the Kasbah of Algiers. these emotional responses are related to the spatial stimulus: terraces with open view on the sea and the sky; large and proportioned lanes flooded with sun light and fresh air; and transition from close dark ambiances and spaces to open lightened ambiances and spaces like the transition in the Kasbah dwellings from the "Skifa" to
the "patio" and from the "rooms and stairs" to the "terrace", or the transition from the "alley" to the "impasse" especially the covered impasses with low ceilings.

The study of the sensory experience and wellbeing in the built environment of the Kasbah of Algiers provide lessons on how characteristics and design parameters such as light and openness/closeness help creating or enhancing wellbeing. Deeper exploration of these characteristics, and others, can provide more insights and answers regarding the matter of wellbeing in the built environment. Wellbeing is important to create healing environments for people.

REFERENCES