Aesthetic preferences and the attribution of meaning: Environmental categorization processes in the evaluation of urban scenes

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In the context of research into scenic quality, the purpose of the present paper is to establish categories of urban landscapes on the basis of users' aesthetic judgements. It also explores the role that the restorative capacity of a place—in terms of the attentional restoration theory (ART)—together with a set of aesthetic attributes, may play in more or less valued places in a city. A total of 132 residents from Málaga (Spain) were chosen, with the city providing the physical framework for environmental reference. A questionnaire designed for easy self-administration by subjects was used to collect information. Subjects were asked to identify three places in Málaga that they considered to be most attractive and three that they considered least attractive. Participants were asked to evaluate both the restorative properties—in terms of the ART—and the extent to which their first choice displayed certain environmental characteristics. Participants expressed a clear aesthetic preference for recreational sites for leisure/walking as well as those closely linked to the city’s historical-cultural identity. The research also identified other categories of visual settings that could be used as a focal point around which to centre future samples of scenes in a city context. Finally, the results obtained from the characterization of more and less attractive places, from the variables used in this study, shed light on the dimensions of underlying meaning that individuals use to categorize their environment and reinforce the idea that environmental aesthetics seem to play an important role in individuals’ general well-being.
In the field of research into environmental aesthetics, preference studies have attempted to understand the scenic quality of a certain place by analyzing the responses to it given by different groups of “nonexpert” participants. These responses have generally been used as a unit of analysis for generating predictive models of visual quality (psychophysical models) or frameworks for explaining aesthetic experience (cognitive models).

In research into cognitive models, some studies have used preference judgements as a unit of judgement to delimit landscape categories that are important for users. The results of such studies show that one of the underlying dimensions of perceptual differentiation is related to the “extent of human intervention”; in other words, the extent to which the evaluated scene contains buildings and what the perceived equilibrium is between human and natural elements. On this point, for example, a clear distinction in the aesthetic judgements of several groups of subjects has been established between natural and urban contexts, especially when the latter lack natural elements such as water and vegetation (Herzog, 1985; Kaplan, 1987; Kaplan & Kaplan, 1989; Peron, Purcell, Staats, Falchero, & Lamb, 1998; Purcell, Lamb, Peron, & Falchero, 1994). Similarly, when the study has included a large variety of scenes, certain attributes of spatial configuration (such as the extent of openness and spatial definition, the normal function and/or use of the place, and the age of the site and its upkeep) form additional bases for the perceptive-evaluative categorization made by nonexpert individuals (for a review of these studies see Kaplan & Kaplan, 1989).

Most studies attempting to delimit landscape categories have used photographs of natural scenes that are unfamiliar to participants, having been selected by researchers using different criteria. This procedure of stimuli selection and presentation requires the fragmentation of the molar environment (as represented in subjects’ memory systems) and depends on the criteria of individual experts. Furthermore, very little of the research mentioned above evaluated urban stimuli, or the role that familiarity or recognition of visualized scenes may play in processes of aesthetic evaluation. The development of evaluation procedures aimed at identifying categories of known and/or familiar places for participants, that meet their own selection criteria, is an area that has received little attention and could also provide important information in terms of optimizing processes of environmental sampling.

To overcome some of the above-mentioned limitations, an evaluation procedure was designed in a previous study to identify urban scene categories that were known and/or familiar to nonexpert participants, using selection criteria established by the subjects themselves (Galindo, 1994). A random sample of residents from the city of Seville was asked to identify three public landscapes in the city that they found most attractive in visual terms. The analysis of their responses allowed us to establish four main perceptive-evaluative categories for urban scenes that were important for users: (1) historical-cultural landscapes, (2) leisure areas, (3) recreational landscapes, and (4) housing areas. These categories were configured, however, from the analysis of a single range of aesthetic preferences (“attractive” places) and were not characterized according to any other variable by the subjects interviewed. Exploring the generality of such a categorization in other geographical scenes, incorporating the analysis of places considered “unattractive,” is one of the aims of the present study. It is based on the assumption that identifying more or less “attractive” landscapes of one specific molar setting provides an opportunity not only for registering its main scenic resources (descriptive objective), but also for clarifying which implicit criteria of visual quality are used by nonexpert individuals (explanatory objective).
Regarding the (implicit) standards of scenic beauty, Nasar proposed (1994, 1997) two types of variable in the context of urban design: Attributes of formal aesthetics and attributes of symbolic aesthetics. Among the former, the authors highlight “openness” (and/or spaciousness), “mystery,” “complexity” (both related to visual diversity), and “order” (or congruence between the elements that make up the scene). In relation to the symbolic aesthetic attributes, Nasar mentions variables of content such as “vegetation,” “upkeep,” “style,” and “perceived use.” Results from a substantial number of empirical studies have demonstrated the role that these characteristics play in aesthetic evaluation responses. Some of the variables mentioned by Nasar have also been adopted in various evolutionist theoretical proposals that have linked aesthetic evaluation responses to certain scenes with the important psychological benefits likely to arise from contact with these scenes (Appleton, 1987; Kaplan 1987; Ulrich, 1983). In this context, the Attentional Restoration Theory (ART; Kaplan, 1995; Kaplan & Kaplan, 1989) was developed around the idea that certain settings may reduce tiredness caused by directed attention, thus enabling the re-establishment of certain cognitive abilities. Other research has focused on the construction of an instrument to measure the restorative capacity of a specific place—in terms of the ART—(Hartig, Korpela, Evans, & Gärling, 1997) as well as analysing the role that this capacity may play in the selection of “favourite” places (Korpela & Hartig, 1996; Korpela, Hartig, Kaiser, & Fuhrer, 2001) or in aesthetic judgements (Peron, Berto, & Purcell, 2002; Purcell, Peron, & Berto, 2001). Although, in this context, the existence of relationships between the restorative capacity of natural surroundings and their aesthetic evaluation has been documented in some studies, there is very little actual evidence of the existence of this association in urban settings.

Within this framework, the overview guiding the design of this study is establishing categories of urban places from the perspective of their daily observers, as well as attempting to identify some of the important dimensions of meaning that underlie aesthetic preferences. Based on this overview, we have drawn up the following specific objectives:

1. Establish categories of more and less valued urban places and analyse any similarities/differences existing on the aesthetic value assigned (as well as their frequency of use).
2. Determine the role that the restorative capacity of a place (in terms of the ART) may exercise in its aesthetic evaluation.
3. Characterize the more and less valued places within the set of aesthetic attributes (sensorial and semiotic) delimited in Nasar’s proposal.
4. Explore the relationships between the restorative capacity of a place and the aesthetic attributes selected in this study.

**METHOD**

**Participants**

The sample consisted of 132 university students (72 women and 59 men, average age 26 years), all residents of Málaga city. They were selected from a larger sample of 202 subjects. All participants complied with the following criteria: (1) they had been born in Málaga or had been living there for a minimum of 9 years; (2) they expressed a strong sense of belonging to the city. This information was collected from two questions in the questionnaire described in the following section.

**Procedure**

A questionnaire was designed to be easily self-administered by the participants themselves. They were asked to do the following. First: “Think, for a while, about the city of Málaga itself; its streets, neighbourhoods, squares and open spaces of any type (large and small, attractive or unattractive…); think about all the places you have been to or seen.” After this, using the procedure followed in Galindo’s (1994) study, participants were asked to identify the three places in the city that were of greatest visual interest to them (open question), and state how often (in a question with closed categories) they went to or passed by those places. The rest of the questions referred exclusively to the place that was their first choice; participants were asked to complete the Spanish version (Hidalgo & Hernández, 2001) of the Perceived Restorativeness Scale (Korpela & Hartig, 1996), and a battery of 11 questions related to the (sensorial and semiotic) aesthetic attributes identified by Nasar (1994, 1997) and those featured in the research by Galindo (1994). Specifically, participants were asked for their opinion about the extent to which their first choice had the following characteristics: (1) vegetation; (2) visual diversity/richness; (3) harmony/congruence between its different elements; (4) openness and/or spaciousness; (5) luminosity; (6) a historic place or representative of the city; (7) cleanliness; (8) maintenance/upkeep; (9) place for leisure activities; (10) meeting place;
RESULTS

“Most attractive” and “most unattractive” places in the city: General categorization and frequency of use

First, all the first choices were recorded and classified depending on the type or category of place to which they belonged. As a provisional instrument, the general system of categories obtained in Galindo’s (1994) study was used.

The analysis of the characteristics of the spatial and functional configuration of the places mentioned by the participants yielded a total of five categories, three of which were the same as in Galindo’s (1994) study: “cultural-historical places,” “recreational places for leisure and/or walking,” and “housing areas.” However, our findings suggested that two new categories not considered in the aforementioned study should be introduced: “panoramic places” and “industrial places,” while the category “places for having fun” was excluded. Table 1 shows the representativeness of each of the categories established in the list of the most attractive and unattractive places in the city (those in the first place), from the percentage of responses in each category.

The data shown in Table 1 reflect a notable difference in the percentages of responses associated with each of the categories identified depending on the aesthetic label (“attractive-unattractive”). The “attractive” places were mainly grouped around the following categories: “recreational places” (mentioned by 38.75% of participants), “historical-cultural places” (mentioned by 35.65%), and “panoramic places” (mentioned by 21.7%). On the other hand, these three categories are scarce or even nonexistent in the unattractive places, with the most numerous being “housing areas” (73.17%), mostly working-class housing estates, followed by “industrial areas” (8.13%).

If we consider the specific places that form the categories themselves, rather than the categories as such, we find that 28 different places were mentioned as the most attractive places, while there were 45 most unattractive places. In aesthetic terms, the most highly appreciated place in the city was the Gibralfaro Castle (n=26, 19.7%) and, more specifically, the panoramic view of the city from the castle, which is why it was placed in the panoramic places category. In second place (n=17, 12.9%) came the Paseo Marítimo (the Promenade), a long esplanade running along the seafront which we placed in recreational places for leisure/walking. In third and fourth position came two places closely related to the city’s history (placed in the category historical-cultural places): the Alcazaba, an Arab fortress dating from the 11th century (n=15, 11.4%), and the Cathedral, built between the 16th and 18th centuries (n=14, 10.6%). The rest of the places were mentioned by less than 10% of the sample, with 13 places being mentioned by just one participant (0.8% of the sample). As for the most unattractive places, the most mentioned was the neighbourhood of La Palmilla (n=41, 30.8%), a working-class district with a high crime rate.

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<tr>
<th>Most attractive places</th>
<th>Most unattractive places</th>
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<tr>
<td>Recreational places (for leisure or walking)</td>
<td>Frequency</td>
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<tr>
<td>50</td>
<td>38.75</td>
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<tr>
<td>Cultural-historical places</td>
<td>46</td>
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<td>Panoramic places</td>
<td>28</td>
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<td>Housing areas</td>
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<td>Industrial places</td>
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rate. The second, mentioned by 10.5% of subjects, was another working-class area (housing area) with a high crime rate. The remaining places were mentioned by less than 10% of participants, with 31 places being cited on just one occasion. Figure 1 shows the frequency with which people visit these places: 11.5% go to the most attractive place daily (against 7.8% who go to the most unattractive place); 18.3% go there once a week (11.6% go to the most unattractive place); 14.5% go several times a month (10.9% to the most unattractive); 24.4% go once a month (10.9% to the most unattractive); 21.4% have not been recently (17.8% to the most unattractive place); 8.4% hardly ever go (31% to the most unattractive place); and 1.5 have never gone to the most attractive place (10.1% to the most unattractive place). Therefore, if we look at the percentages of accumulated answers, 68.4% of the sample go at least once a month to the most attractive place, while the majority (58.8%) never, or hardly ever, go to the places considered least attractive.

**Characterization of the “most attractive” and “most unattractive” places on the Perceived Restorativeness Scale**

The city’s “most attractive” places obtain high average scores on the Perceived Restorativeness Scale (PRS), always over 6, in contrast to the unattractive places whose values range from 1 to 3 on the scale (see Table 2). To check whether such differences were statistically significant, the average scores obtained were contrasted using the T-test analytical procedure for related samples. All the differences were statistically significant. The two types of scene differed both in general restorativeness (129)=26.42, and in fascination (128)=24.59, compatibility (128)=19.79, being away (128)=18.05, coherence (129)=17.87, and extent (128)=17.81 ($p < .0001$).

**Characterization of “most attractive” and “most unattractive” places according to the sensorial and semiotic aesthetic attributes**

In order to meet the third objective, we calculated the average scores obtained by the attractive and unattractive places (the first choices) for each of the aesthetic attributes analysed. In addition, to check that the resulting differences were statistically significant, the T-test for related samples was used. As with the Restorativeness Scale, places in the city considered the most attractive obtained the highest scores in all the variables considered (see Figure 2). The analyses carried out showed that the differences were statistically significant in all cases ($p < .0001$): novel place (128)=12.42, facilities for leisure activities (125)=10.57,
presence of vegetation (129)=11.03, meeting place (128)=9.97, cleanliness (129)=17.22, upkeep/maintenance (128)=17.18, harmony or congruence of scenic elements (128)=19.34, visual diversity or richness (129)=25.86, luminosity (128)=9.52, historic or emblematic place (128)=19.12, openness and spaciousness (128)=12.71.

**Relationship between the Perceived Restorativeness Scale and the aesthetic attributes**

A correlation analysis was performed between the aesthetic attributes and the scores on the Perceived Restorativeness Scale. The results are shown in Table 3. Of the different attributes evaluated, five correlate significantly \( p < .01 \) with restorative capacity: harmony, openness, luminosity, suitability for leisure, and meeting place. Of these, the last two, along with openness, also present significant correlations with the five subscales, although in some cases at a lower level \( p < .05 \) of significance (with the exception of the correlation between harmony and fascination, which is not significant).

On the other hand, it is worth pointing out that in our study the presence of vegetation, a characteristic closely related to the restorative capacity of a place, does not present a significant correlation with the total scale or with any of the factors. Neither does the level of upkeep/maintenance, a variable closely associated with a preference for urban spaces, present a significant correlation with the PRS. The three remaining attributes—diversity, cleanliness, and historical characteristics—present correlation values that, although low, are in some cases significant at a reliability level of .05.

**DISCUSSION**

The analysis of the characteristics of the most attractive and most unattractive places in the city...
identified in the study has allowed us to establish the existence of five broad aesthetic categories of urban scenes: (1) recreational places for leisure/walking, (2) historical/cultural places, (3) places with panoramic views, (4) housing areas, and (5) industrial areas. The first three categories mentioned form 96% of the visually most attractive places; the last two groupings form the majority of the settings considered most unattractive. Three categories (historical-cultural places, recreational places, and housing areas) agree with the characterization made in Galindo’s (1994) study, which was used as a provisional instrument in this study. In our opinion, this suggests that the function and historical value (cultural representativity) of a particular scene—in other words, its social legibility, to use Stokols and Shumaker’s (1981) term—seem to constitute two important dimensions providing the basis for the establishment of aesthetic categories that are important in urban contexts. Although the function of a scene has been an important selection criterion in urban landscape preference studies that have incorporated photographic stimuli, the historical-cultural dimension has been rather neglected. The importance that this dimension acquires when evaluation procedures are developed that facilitate its appearance seems to confirm the need for its inclusion in contextualized analyses in scenes that are familiar to and/or known by subjects.

The groupings labelled “places with panoramic views” and “industrial areas” provide two categories not included in Galindo’s (1994) previous study. The first category groups together 21.7% of the scenes identified as the most attractive and includes the place that was named in first position by the greatest number of subjects, the Gibralfaro Castle. This place presents a set of physical characteristics that help explain its high scenic evaluation. It is an Arab fortress dating from the 14th century, which was built into the side of a mountain that was originally beyond the city walls. The site was chosen for its strategic position, overlooking the city and the sea beyond. Due to growth and expansion it has now become part of the city, although certain planning laws have limited urban development in its immediate surroundings. It has therefore managed to preserve a significant amount of the surrounding vegetation and is an important transit point between the city and nature. The visual configuration characteristics of this place tie in directly with Appleton’s (1975) prospect-refuge theory, according to which the qualities of the setting that make it aesthetically preferred allow one to see without being seen (refuge) and provide a wide viewing area (prospect). The settings that possess these characteristics—in other words, that allow the individual to observe the scene from a safe viewing point and with a wide perspective (open places)—will also be the aesthetically preferred settings. The last of the categories, the “industrial areas,” represents the second most frequently selected unattractive places, which, together with the role this variable has in studies of environmental preference, confirms it as a category to be taken into account in future urban landscape samples.

The differences found between this study and Galindo’s (1994) may be due to the different characteristics of the geographical settings evaluated. The city of Seville lacks public places that could be clearly identified as panoramic places, and in Málaga the “places for having fun,” a category in the Seville study that does not appear in this one, are spread throughout the city and not concentrated in one geographical area. The “industrial areas” category is one that appeared in the responses to the most unattractive areas, a quality that was not evaluated in the first study. In any case, the categories that have emerged in the present study should be confirmed in other geographical settings and using other nonexploratory procedures; an aim that we consider to be of great importance for research in this field.

Another of the goals of the present study was to explore the role that the restorative capacity of a place, in terms of the Attentional Restoration Theory, may play in its aesthetic evaluation. To do this, subjects evaluated two places (the ones considered most attractive and most unattractive) using the Spanish version (Hidalgo & Hernández, 2001) of the Perceived Restorativeness Scale (Korpela & Hartig, 1996). The results obtained show that the restorative capacity of a place seems to be a characteristic dimension of those places considered to be attractive. These places obtained a high score both on the general scale (average 6.66) and on the five subscales, with values ranging from 6.32 in the “compatibility” factor and 7.00 in the “extent” factor (see Table 2). These results support those obtained by Korpela and Hartig (1996) and Korpela et al. (2001), in which they analysed the differences in restorative capacity between favourite places and hostile/disagreeable places. In the latter study, the greatest differences between the two types of place were recorded in the subscales of evasion and compatibility. However, the results of our research—given the objective of characterizing the main scenic resources of a city—show that the main differences between attractive and unattractive places seem to
lie in the characteristics grouped in the fascination subscale. This subscale includes aspects related to the quantity of information available in the evaluated place and is closely related to the psychological exploration process considered to be one of the basic cognitive requirements linked to environmental aesthetics in Attentional Restoration Theory (see, for example, Kaplan & Kaplan, 1989). In short, the results mentioned support the suggestions of recent studies (Peron et al., 2002; Purcell et al., 2001) that the restorative capacity of a specific place may constitute one of the implicit scenic quality criteria used by subjects in their aesthetic judgements.

Furthermore, the scores that the attractive and unattractive places obtained regarding the aesthetic attributes included in this study demonstrate their suitability in the study of aesthetic preferences, and therefore suggest that these attributes, together with restorative capacity, constitute important criteria for determining scenic quality. The relation that could be established between both types of criteria raises a theoretical and empirical issue that could be dealt with in future studies. The results of the correlation analyses between the score obtained in the PRS and these attributes—developed in an exploratory manner in this work—suggest that restorative places tend to be open, luminous, and coherent, and are places for leisure and for meeting people. It is, however, surprising that the presence of vegetation, a characteristic closely related to the restorative capacity of a place in other research, did not have a significant relationship with the factors on the Perceived Restorativeness Scale. Given the exploratory nature of these analyses, it may be premature to venture an explanation. The possibility does exist, however, that other aesthetic attributes, such as those mentioned here, might have a greater influence on the evaluation of a place as a restorative setting. Future research along these lines will clarify this hypothesis.

REFERENCES


