

基于使用者眼动行为下的森林景观空间心理感知评价 及其影响

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摘要:【目的】明晰使用者在观赏不同类型的森林景观空间时的眼动行为特点及心理感知评价差异,并探讨二者之间的关系,旨在找出影响眼动行为和满意偏好的空间感知评价要因。

【方法】在本项研究中,利用眼动追踪技术和使用者感知调查问卷,并使用 SPSS 23.0 中的单因素方差分析和 Spearman's rho 相关分析对数据进行了统计分析。

【结果】(1)使用者在欣赏不同类型的森林景观空间时,视觉行为存在差异,尤在视觉跨度上呈现出显著差异,其中森林水景空间的视觉跨度较小,而林内景观空间的视觉跨度较大;

(2)使用者对不同类型的森林景观空间,存在心理感知评价差异,森林水景空间在多个指标上得到较高的评价,尤其是森林动态水景空间,而林内景观空间中,使用者除了对色彩和植物有关注,还会关注一些空间内特有的景观或富有趣味的景观要素;

(3)不同类型的森林景观空间中使用者的平均视觉跨度,平均瞳孔直径和心理感知评价存在相关性。人们在欣赏植物种类多样、景观内容丰富、景观纵深感和通透性好、色彩丰富且明亮、空间开阔且整齐、景观通透性好且富有层次感的场景时,其平均瞳孔直径、横向和纵向视觉跨度较小。

(4)在森林景观空间中,影响使用者眼动行为和满意偏好的空间感知指标有所差异,且森林景观空间的类型也会显著影响使用者的眼动行为和满意偏好。但整体上来说,主要是景观变化和景观层面的空间感知要素影响使用者在不同类型森林景观空间中的眼动行为;而影响使用者满意偏好的还有场景中色彩方面的空间感知要因。

另外,我们发现不同类型的景观空间中即使其元素类似,影响人们对其的视觉行为特点和整体感知评估的因素也呈现出不同的情况。

【结论】通过以上分析,我们建议在森林景观空间的规划设计中,要考虑各类型的景观空间的特点及其给使用者带来的视觉和心理感知的影响,注意一些标志元素体或者富有趣味的景观要素在森林景观空间中的搭配。

关键词:森林景观空间;心理感知评价;眼动分析;视觉行为;辽宁省

Psychological Perception Evaluation and its Influence of Forest Landscape Space based on Participants' Eye Movements

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Abstract: 【Objective】 To clarify the characteristics of eye movement behavior and the evaluation of psychological perception differences of participants when viewing different types of forest landscape spaces, and to explore the relationship between the eye movement behavior and psychological perception, aiming to find out the elements of spatial perception evaluation that affects eye movement behavior and satisfaction preference.

【Method】 In this study, using eye-tracking technology, perception questionnaires for participants, and ANOVA and Spearman's rho correlation analysis in SPSS 23.0 to statistically analyze the data.

【Result】 1) There are differences in participants' visual behavior, especially in visual spans, when participants appreciate different types of forest landscape spaces. The visual span of forest waterscape space is small, while the visual span of in-forest landscape space is large.

2) There are differences in participants' psychological cognitive evaluations of different types of forest landscape spaces. The forest waterscape space is evaluated highly on multiple indicators, especially for dynamic water space, whereas for in-forest landscape space, participants also pay attention to unique or interesting landscape elements, with the exception of color and plants.

3) There are correlations between the mean visual span, mean pupil diameter and psychological cognitive evaluation of participants in different types of forest landscape spaces. When people admire scenes with diverse plant species, rich landscape content, good landscape depth and permeability, rich and bright color, open and tidy spaces, and good landscape permeability and layering, their mean pupil diameter and lateral and portrait visual span are small.

4) In forest landscape space, the spatial perception indicators that affect participants' eye movement behavior and satisfaction preference were different, and the type of forest landscape space will also significantly affect participants' eye movement behavior and satisfaction preference. But on the whole, mainly affect participants' eye movement behaviors were landscape changes and spatial perception elements at the landscape level in different types of forest landscape spaces; however, the spatial perception factors of color in the scene also affects participants' satisfaction preference.

In addition, we found that even if the elements in different types of landscape spaces were similar, the factors that affect people's visual behavior characteristics and overall perception evaluation also present different situations.

【Conclusion】 Based on the above analysis, we recommend that when planning and designing forest landscape space, we should consider not only the characteristics of different types of landscape spaces and their visual and cognitive effects for participants but also the combination of some iconic elements or interesting landscape elements.

Key words: forest landscape space; psychological perception evaluation; eye movement; visual behavior; Liaoning Province