1 Introduction

Predicting or evaluating the quality of interiors is a major unsolved difficulty in the discipline of architecture, because of the lack of generally accepted quality criteria and objective measuring methods. This study approaches the problem by analyzing the intersubjective part of colloquial language judgments on architectural interiors.

Beyond a statistical investigation of conciseness and intersubjectivity of colloquial ratings of interiors in general, this study quantifies assumed connections between subjective judgments and features of the scenes. The existence of regular patterns is exemplarily proved by demonstrating correlations between measurable image features and ratings in different denotative and connotative categories.

2 Methods

In a preparatory brainstorming session with 24 participants most common and subjectively important categories to characterize interiors were collected.

Subsequently, pictures of 15 different interiors were rated in 12 categories by 42 (13 female) subjects. Eleven (6 female) of the subjects had a professional background in interior design (“architects”) and 31 (9 female) did not (”laypersons”).

Each category was represented by a catchphrase and a pair of oppositional adjectives. The terms represented the most frequent words of the preceding brainstorming session. Additionally, dynamics and complexity (terms from architectural theory) were used.

The experiment used a novel internet based questionnaire technique derived from the classic semantic differential, a survey method that allows subjects to differentiate their judgment on a nine step scale between the extremes. The web interface presented rating categories and images of the scenes side by side.

The scenes were analyzed for their average color value, brightness, saturation and edges, measured using a basic image processing technique (Laplacian of Gaussian filter).

3 Results

The brainstorming analysis yielded only about 16–20 subjectively different categories. Three main groups were evident: mainly physical, mainly emotional, and somehow amalgamated. However, given the small number of evaluated scenes, the observed correlations certainly cannot claim universality. Nonetheless, the presence of several strong trends justifies the general method.

Several correlations between rating categories and basic image features of the scene were discovered. Furthermore, significant group specific differences were found: Architects generally responded more consistently. In addition, they tended to prefer more austere designs, most evident in the contrary tendencies in personal appreciation.

4 Conclusions

Rating architectural interiors using everyday terms provided qualitatively and quantitatively meaningful results. Systematic comparisons to image features suggest that even judgments in fuzzy categories of everyday language provide regular patterns potentially useful for the design of interior space.

It should be mentioned, however, that due to the small number of evaluated scenes the observed correlations are certainly not appropriate. Nonetheless, the presence of several strong trends justifies the general method.

Further studies will investigate correlations of ratings with three-dimensional properties of interiors. In combination with an extended scene database, this may be a promising way towards predicting and quantifying the character and ambiance of rooms by their physical features.