

## **Three factors in visual complexity**

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Abstract.

Visual complexity is a very complicated concept. Our perspective in this study was from the observer viewpoint and not as a quantifiable property of the visual array. The hypothesis refers to the relations between different features of the visual complexity. We selected seven complexity dimensions we believed could relate to different aspects of visual complexity: unintelligibility of the elements, disorganization, amount of elements, variety of elements, asymmetry, variety of colours, and three-dimensional appearance. The participants were asked to rate each stimulus on a 1 to 9 Likert scale for each scale separately. Factor analysis was performed in order to assess the relations among the seven dimensions of complexity. Factor 1 received high loadings from complexity dimensions of “amount of elements”, “variety of elements”, “variety of elements” and “three-dimensional appearance”. Factor 2 received high loadings from dimensions “unintelligibility of the elements” and “disorganization”. Additionally, dimension “asymmetry” showed unsatisfactory relations with both factors and formed the factor 3. We refer these factors as “elements”, “organization”, and “asymmetry”. Thus, our results add further support to the idea that two or three processes contribute to the formation of subjective visual complexity. Probably the most important one is the determination of the number and variety of elements. The second one refers to the difficulty with which the elements are identified and organized into a coherent scene. Although previous studies have subsumed asymmetry within organizational processes, our results showed this was not an adequate solution for our data, and hence, we chose to include it as a separate factor.