

A factor of gestalt governing aesthetic preference

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Abstracts. In the study by Mitsui & Noguchi (2002), using a production method, the most beautiful arrangement of two discs in a rectangular framework had been shown to be produced with two features: (1) The center of the arrangement of two discs coincided with the center of the framework; (2) The inner-distance of two discs (A) was about the same as the distance between outside of the disc and the frame edge (B). That is, the distance-ratio of A/B was about 1/1. We call the distance-ratio of A/B “ESR” (Empty Space Ratio), and ESR of the most beautiful arrangement was 1/1 (1/1 rule of ESR). The present study was performed to clarify whether the 1/1 rule of ESR determined aesthetic preference for the disc arrangements in the vertical direction as well as the horizontal one by the method of one-pair-comparison. The results showed that the peak values of aesthetic preference were found under the conditions in which ESR was 1/1. The present study provided the contribution of the balance of empty spaces on the aesthetic arrangement.

Key words: *aesthetic preference, a method of one-pair comparison, the distance-ratio of the inner-distance of two discs and the distance between outside of the disc and the frame edge (ESR: Empty Space Ratio),*

Introduction

Mitsui & Noguchi (2002) examined whether the center of the most beautiful arrangement of two discs coincided with the center of the framework when the relative size of the framework and of two discs were changed, using two black discs as test patterns. In their study, participants were asked to produce the most beautiful arrangement of two discs in the framework. The result showed that the center of produced arrangement of two discs coincided with the center of the framework in spite of changing the relative size of the framework and of two discs.

We reanalyzed their results in the reference of the spaces. Their results showed that the inner-distance of two discs (A) was about the same as the distance between outside of the disc and the frame edge (B). That is to say, the distance-ratio of A/B was about 1/1. We call the distance-ratio of A/B “ESR” (Empty Space Ratio), and ESR of the most beautiful arrangement was 1/1 (1/1 rule of ESR) (Figure 1).

Above analyses indicated that their results led to two suppositions of the most beautiful arrangement of two

discs as follows: (1) Position. The center of disc arrangement coincides with the center of the framework; and (2) Distance. The spaces of the framework is divided by two discs as the same distances (ESR = 1/1).



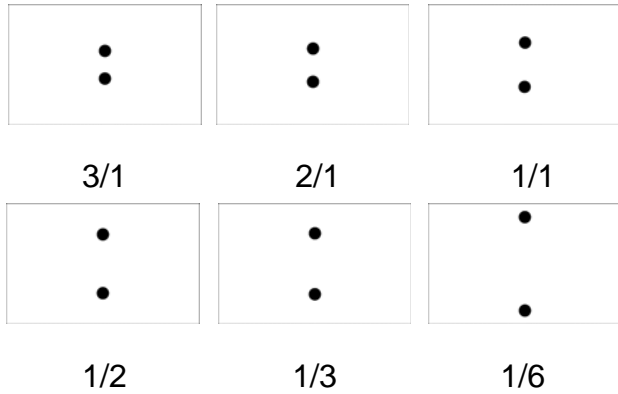
Figure 1. A diagram of produced arrangement in Mitsui & Noguchi (2002).

In order to confirm the supposition (2), the present study was performed to clarify whether the distance-ratio of inner-distance (A) and outer-distance (B) determined aesthetic preference for the disc arrangements in the vertical direction as well as the horizontal one by the method of one-pair-comparison.

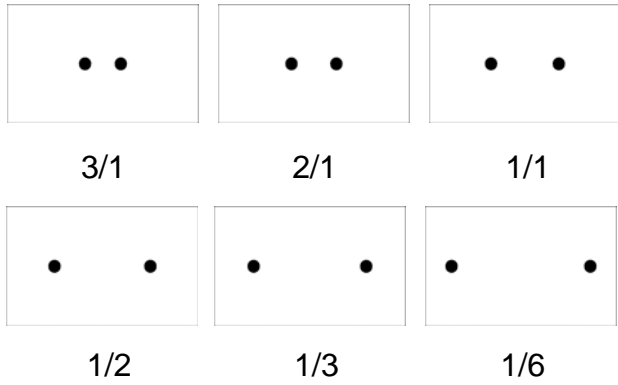
Methods

Participants. Seven graduate and undergraduate students (male = 3, female = 4, averaged age = 25.6). All participants had normal or corrected-normal visual acuity. And they were not professionally trained in art.

Test patterns. Twelve disc arrangements composed of two black discs (10 mm in diameter) inside the white rectangular framework (H: 100 mm x W: 162 mm) were employed. Only, the center of disc arrangement was fixed at the center of the framework.



A. The vertical-series



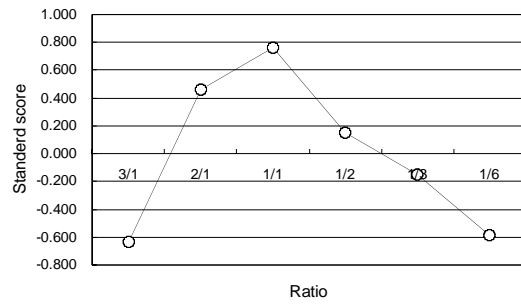
B. The vertical-series

Figure 2. Examples of test patterns (The vertical-series represents A, and the horizontal-series represents B.)

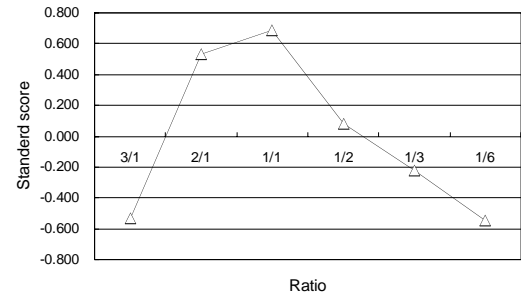
Criteria of making test patterns. (1) Orientation of arrangement. The vertical and the horizontal. (2) ESR (a/b). 3/1, 2/1, 1/1, 1/2, 1/3, 1/6 (in the vertical-session and the horizontal-session) (Figure 2-A~B).

Procedures. Two test patterns were randomly exposed on PC monitor at each trial. Participants were asked to compare two test patterns on aesthetic preference. Then, they compared them at 30 trials in total [15 trials (${}^6C_2 = 15$) in each orientation (the vertical-series and the horizontal-series)].

Results & Discussion



A. The vertical-series



B. The Horizontal-series

Figure 3. The standardized scale values of aesthetic preference

Figure 3-A (vertical series) and 3-B (horizontal series) showed the standardized scale values of aesthetic preference. The results indicated that the peak values of aesthetic preference were found when ESR was 1/1, that is, the inner-distance of two discs was the equal as the distance of outside of the disc and the frame edge, when the vertical direction and the horizontal one. The present study confirming the 1/1 rule on the aesthetic arrangement was consistent of Mitsui & Noguchi (2002).

References

Mitsui, K., & Noguchi, K. (2002) Searching for basic rules on aesthetic arrangement, Proceedings of Annual Meeting Psychonomic Association (Abstract in Japanese).