

Art Innovation Academia-Industry Joint Research Division

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1. Introduction

The Art Innovation Academia-Industry Joint Research Division (Art Innovation project) researches the application of art to social activities, including disaster prevention, centered on the art production activities of its leader, Professor Naoko Tosa. The project is based on joint research with companies. Specifically, based on joint research with companies, we are developing various systems using Tosa art and conducting psychological and physiological evaluations of Tosa art.

- (1) Development of immersive art appreciation systems
- (2) Psychological evaluation of immersive art appreciation systems
- (3) Classification and psychological evaluation of art focusing on movement

2. Development of an immersive art viewing system

Tosa art is expected to have a relaxing effect on people, and at the same time, it is expected to have a positive effect on the mind and stimulate creativity. To take advantage of this feature, we have developed an "immersive art viewing system" that provides a sense of infinity. The system comprises two or more sets of mirror displays facing each other, which function as a mirror and a display. Once inside the system, visitors are surrounded by endless images and their image, feeling a strong sense of immersion and floating. Figure 1 shows the concept of the system, Fig. 2 shows the system's exterior.

2. Psychological Evaluation of the Immersive Art Viewing System

A psychological experiment was conducted to compare how people feel when Tosa Art is displayed in the developed system with the case of displaying geometric

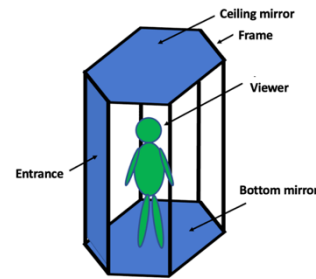


Fig.1 Conceptual diagram



Fig.2 Exterior view of the system

figures. A total of 24 evaluation items consisting of "Impression Factor," "Relaxation Factor," "Motivation Factor," and "Creativity Factor" shown in Table 1 were used as evaluation items. Forty subjects were used. The evaluation results are shown in Figs 3 - 6. The results show that Tosa art is significantly superior to geometric figures in the motivation and creativity factors, providing new insight into the contribution of art appreciation to improving human creativity.

Table 1. Evaluation items

<p>Impression factor (9 items)</p> <ul style="list-style-type: none"> Comfortable - Uncomfortable Friendly - unfriendly Beautiful - Not beautiful Calm - Restless Interesting - Boring Warm - Cold Changeable - Not changeable Luxury - Sober Individual - Ordinary <p>Relaxation factor (5 items)</p> <ul style="list-style-type: none"> At ease - Not at ease Secure - Not secure Pleasant - Not pleasant Relaxed - Not relaxed Healed - Not healed 	<p>Motivation factor (5 items)</p> <ul style="list-style-type: none"> Enthusiastic - Not enthusiastic Immersed - Not immersed Curious - Not curious Motivated - Not motivated Aroused - Not aroused <p>Creativity factor (5 items)</p> <ul style="list-style-type: none"> Associate - Do not associate Immersive - Not immersive Activated - Not activated Inspired - Not inspired In the zone - Not in the zone
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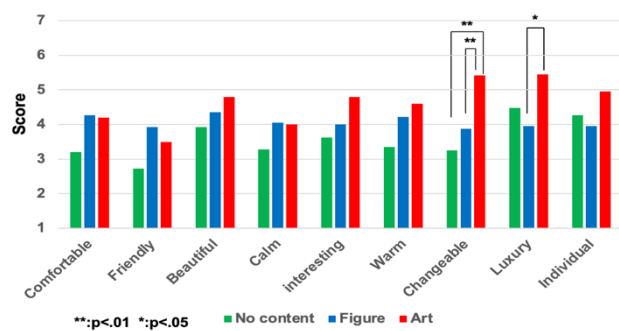


Fig.3 Results for Impression Factor

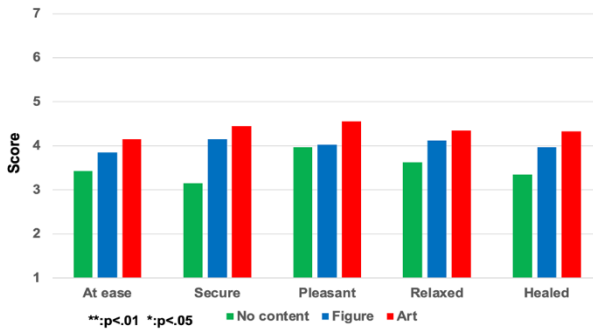


Fig.4 Results for Relaxation Factor

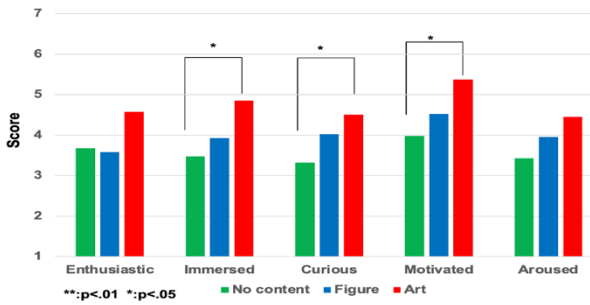


Fig. 5 Results for Motivation Factor

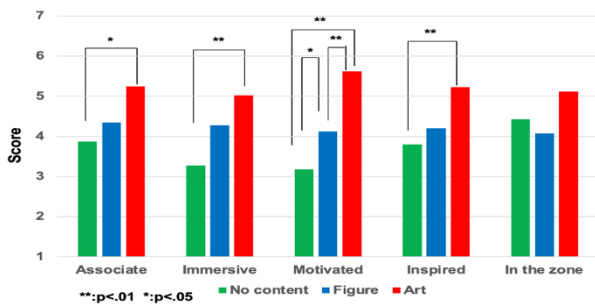


Fig. 6 Results for Creativity Factor

3. Classification and Psychological Evaluation of Art Focusing on Movement

Art is composed of complex elements, and it is a problematic research theme to determine which elements work in which way. While much research has been conducted on color, many other research issues are related to other elements. Since Tosa art belongs to a relatively new art genre called video art, we decided to investigate the effect of movement in art by evaluating Tosa art with a focus on "movement," which is a characteristic of video art. A psychological evaluation experiment was conducted with 30 subjects. Tosa art was categorized into five types of movement (vertical, horizontal, scattering, rotating, and symmetrical) and presented to the subjects for evaluation. The results are shown in Figs 7-10. Each

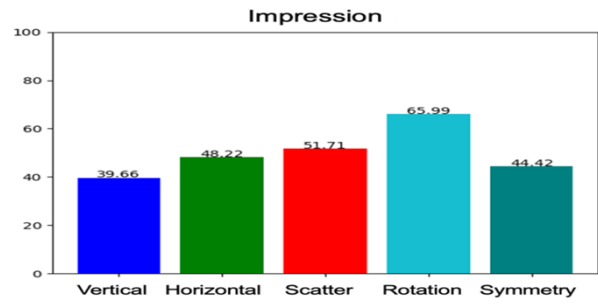


Fig. 7 Results for impression factor.

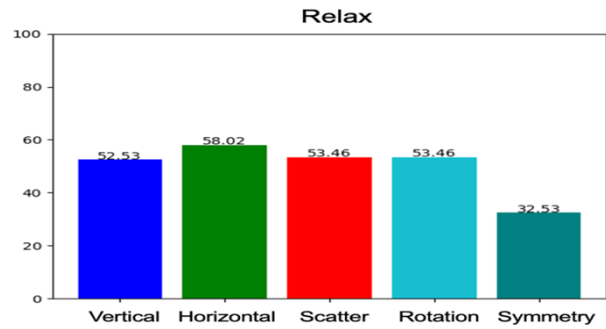


Fig. 8 Results for relaxation factor.

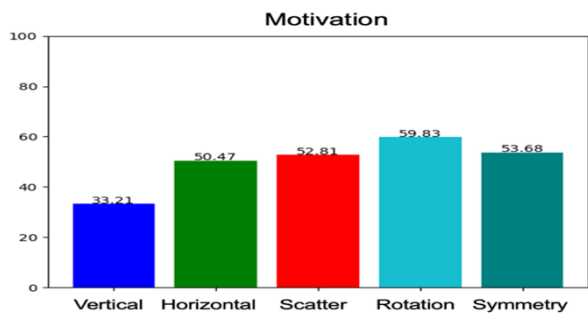


Fig. 9 Results for motivation factor.

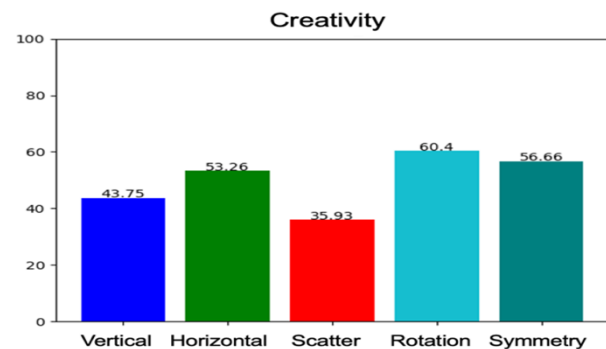


Fig. 10 Results for creativity factor.

movement was found to have a different effect, and new knowledge was obtained regarding movements in art and their effects on people.

4. Publication

The results of the research were published as follows. Journal articles (peer-reviewed): 2, DPRI Annuals: 2, International conferences (peer-reviewed): 10, Domestic conferences: 5

