Temporal transition enhances the consonance of color arrangements

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Summary

We found a similarity between effects of – temporal chord transition in music, and – temporal color transition in visual perception. Smooth color transition preserving a parameter enhances the consonance, similarly to smooth chord transition preserving a note in music.

Examples of temporal color transition

1S (static) / 1T (transitional)

2S/2T

3S/3T

4S/4T

5S/5T

RGB/HSV settings.

Methods

Static (1S - 5S) and transitional (1T - 5T) arrangements were presented to respondents in random order, and the impressions were measured by sensory tests. Respondents were 36 Japanese university students.

Results and discussion

Poor / Good - impressions

2S / 2T, 5S / 5T – better impressions in transitional arrangements

1S / 1T, 4S / 4T – worse impressions in transitional arrangements

Transition yielding better impressions:

2T: hue is preserved and only tone is modified

5T: tone is preserved and only hue is modified

The idea of “tone” in PCCS, color system provided by Nihon Shikiken Co., Japan. Tone symbols are indicated on the hue circles in the examples.

Similarity to code transition (resolution) in music

One or more notes are preserved in a smooth transition (‘pivot’).

Transition yielding worse impressions:

1T: both tone and hue are modified

4T: consonance is unchanged (originally consonant)

Conclusion

The experimental results suggest that the color transition emphasizing the consonance when a character is preserved.

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