

**Color Culture and Science**  
**Cultura e Scienza del Colore**



**CCSJ**  
Volume 16  
Number 1  
2024

ISSN  
2384-9568

**COLOR CULTURE AND SCIENCE Journal**  
**CULTURA E SCIENZA DEL COLORE**  
**CCSJ**

jcolore.gruppodelcolore.it

ISSN 2384-9568

DOI: 10.23738/CCSJ.00

ANCE: E227716

Registrazione Tribunale di Milano n. 233: 24/06/2014

ANVUR Agenzia Nazionale Valutazione sistema Universitario e Ricerca

APeJ Academic Publications eJournal

BASE Bielefeld Academic Search Engine

DBH Database for statistikk om høyere utdanning

DOAJ Directory of Open Access Journals

EZB Elektronische Zeitschriftenbibliothek Regensburg

JURN Search tool for open access content

ROAD Directory of Open Access scholarly Resources

SCOPUS

ZDB Zeitschriftendatenbank

Volume 16, number 1, April 2024

DOI 10.23738/CCSJ.160100

**PUBLISHER**

Gruppo del Colore – Associazione Italiana Colore

www.gruppodelcolore.org

Registered office: Piazza Carlo Caneva, 4 - 20154 Milan (IT)

**PEER REVIEW PROCESS**

All articles submitted to the Color Culture and Science Journal are peer-reviewed according to the following procedure:

*First review level*

The Associate Editors evaluate each article to determine if the topic and content are of interest to the journal. Once the article passes the initial review, the Associate Editors select several reviewers from the Editorial Board based on their expertise in a particular subject area or topic.

*Second review level*

Two or three experts review each article with a blind peer-review process where the reviewers are kept anonymous. Reviewers are asked to evaluate the manuscript based on the following criteria:

- Originality
- Relevance to journal's aims and scope
- Technical merit and/or validity
- Soundness of methodology
- Completeness of the reported work
- Conclusions supported by the data
- Correct acknowledgment of the work of others through reference
- Effectiveness of the manuscript (organization and writing)
- Clarity of tables, graphs, and illustrations
- Importance to color researchers
- Relevance to color practices

If the article is accepted with major revisions, the author(s) are asked to improve the article according to the reviewers' suggestions. The revised article will then be submitted for further review. After collecting the reviewers' reports, the Associate Editors recommend the acceptability of the article to the Editor-in-Chief.

**EDITOR-IN-CHIEF**

Maurizio Rossi (Politecnico di Milano, IT)

**DEPUTY EDITOR**

Alice Plutino (University of Amsterdam, NL)

**ASSOCIATE EDITORS**

José Luis Caivano (Universidad de Buenos Aires, AR)

Vien Cheung (University of Leeds, UK)

Marco Gaiani (Alma Mater Studiorum Università di Bologna, IT)

Robert Hirschler (Serviço Nacional de Aprendizagem Industrial, BR)

Agata Kwiatkowska-Lubańska (Academy of Fine Arts, Kraków, PL)

Marcello Picollo (IFAC-CNR, IT)

Verena M. Schindler (Chair AIC S.G. Environmental Colour Design, CH)

Renzo Shamey (NC State University, USA)

**EDITORIAL BOARD MEMBERS**

The complete and updated list of the Editorial Board Members

involved in the peer review process is available on the CCSJ

website: <http://colore.gruppodelcolore.it/ojs/index.php/CCSJ/about/editorialTeam>

**TOPICS**

The CCSJ accept papers on a wide range of topics on color, including and not limited to the following:

1. Color and Measurement/Instrumentation. Colorimetry, photometry and color atlas: method, theory and instrumentation; quality control and food coloring, dyes, organic and sustainable color.
2. Color and Digital. Reproduction, management, digital color correction, image processing, graphics, photography, film and video production, printmaking and 3D print, artificial vision, virtual reality, multispectral imaging, data visualization. Light field imaging. Multi-sensor fusion. Color localization, recognition, HDR imaging, ADAS systems.
3. Color and Lighting. Metamerism, color rendering, adaptation, color constancy, appearance, illusions, color memory and perception, color in extra-atmospheric environments, lighting design, lighting technologies, visual comfort.
4. Color and Physiology. Mechanisms of vision in their experimental and theoretical aspects, color vision and color appearance, deficiencies, abnormalities, clinical and biological aspects, synesthesia, health, well-being.
5. Color and Psychology. Phenomenology of colors, color harmonies, color & form, perceptive, emotional, aesthetic, and diagnostic aspects.
6. Color and Production. Food and beverages, agriculture, textiles, plastic materials, ceramics, paints, gemology, color in the food industry.
7. Color and Restoration. Archaeometry, painting materials, diagnostics, and conservation techniques, restoration, and enhancement of cultural heritage.
8. Color and Environment. Representation and drawing, urban planning, the project of color, architecture, interior design, landscapes & horticulture, color and architectural syntax, territorial identities, biodiversity.
9. Color and Design. Furniture, CMF design, fashion, textiles, textures, cosmetics, food design, museography.
10. Color and Culture. Arts and crafts, history, philosophy, aesthetics, ethno-anthropology, graffiti, geology, sociology, lexicology, semantics, anthropology of vision, food culture and heritage, color naming.
11. Color and Education. Pedagogy, didactics of color, aesthetic education, artistic education.
12. Color and Communication/Marketing. Graphics, communication, packaging, lettering, exposure, advertising.

# Table of Contents

Editorial. Exploring the Spectrum: Color in Science and Society <i>Maurizio Rossi</i>	5
Assessment of base color influence on the chromatic appearance of hair colorants <i>Simone Liberini, Roberta Suardi, Alessandro Rizzi and Giannantonio Negretti</i> DOI: 10.23738/CCSJ.160101	7
Wine Chromatics: The Colorful Language of Wine's Characteristics <i>Alessandro Bortolotti, Loreta Cannito, Stefano Anzani and Riccardo Palumbo</i> DOI: 10.23738/CCSJ.160102	15
A review on the open issue of color consistency in software for building information modeling systems and real-time visualization <i>Guarini Gianluca and Maurizio Rossi</i> DOI: 10.23738/CCSJ.160103	23
The development of a color chart in conceptual fashion collections: do consumers perceive what color semantics wants to convey? <i>Ítalo José de Medeiros Dantas, Camila Assis Peres Silva and Marcelo Curth</i> DOI: 10.23738/CCSJ.160104	30
A leap in the color! How understanding horses' color perception improves their performance and welfare in show jumping <i>Francesca Valan, Pietro Paglierani and Chiara Scopa</i> DOI: 10.23738/CCSJ.160105	49
Reversal film transparencies and their colours: examining the medium of an era. <i>Nicholas Lourantos</i> DOI: 10.23738/CCSJ.160106	57

Colour Composition and Visual Tectonics in Facades; Adapting Colour Teaching to Current Architectural Practice 65

*Kine Angelo and Alex Booker*

DOI: 10.23738/CCSJ.160107

The “Color Fever” Chroma Survey 1973 72

*Clinio Trini Castelli*

DOI: 10.23738/CCSJ.160108

# Exploring the Spectrum: Color in Science and Society

Dear Esteemed Readers<sup>1</sup>,

Welcome to our newest journal issue, where we take you on an insightful journey through the rich tapestry of color across a variety of disciplines, from the harmonious hues of architectural design to the perceptual dynamics of our animal companions and from the subtle intricacies of hair coloring to the sensory allure of wine.

We are welcomed into the fascinating world of hair coloring in "Assessment of Base Color Influence on the Chromatic Appearance of hair colorants," written by Simone Liberini, Roberta Suardi, Alessandro Rizzi, and Giannantonio Negretti. Their detailed analysis clarifies the intricate interactions between applied colorants and underlying pigmentation, providing critical new understandings of the perceptual processes influencing our taste in art and how we express ourselves.

Meanwhile, in "Wine Chromatics: The Colorful Language of Wine's Characteristics," Alessandro Bortolotti, Loreta Cannito, Stefano Anzani, and Riccardo Palumbo reveal the enormous influence of color on marketing and sensory experiences. They reveal the complex relationship between perception and color through well-planned tests, showing how different hues affect our expectations and preferences and how much we like wine.

Gianluca Guarini and Maurizio Rossi delve into the field of design and architecture with their paper, "A review on the open issue of color consistency in software for building information modeling systems and real-time visualization." Their investigation explores the real-world difficulties in preserving color integrity in virtual environments, providing priceless information about the instruments and procedures necessary for visual coherence between virtual and real-world representations.

In their study "The development of a color chart in conceptual fashion collections: do consumers perceive what color semantics want to convey?" Ítalo José de Medeiros Dantas, Camila Assis Peres Silva, and Marcelo Curth highlight the complex relationship between designer purpose and consumer interpretation in the fashion world. They provide new insights into the mutually beneficial link between color, communication, and cultural significance by revealing the intricate semiotic components in color selections within fashion collections through an inventive fusion of qualitative and quantitative approaches.

Francesca Valan, Pietro Paglierani, and Chiara Scopa explain "A leap in the color! " in a remarkable investigation of animal vision. How knowledge of color vision enhances the welfare and performance of horses in show jumping." Their study emphasizes the vital role that color plays in the health and performance of showjumping horses. It also advances our knowledge of interspecies communication and interaction. It provides valuable insights into how best to construct obstacles for equestrian sports.

---

<sup>1</sup> Colour (UK) or Color (US)? In our Journal, both terms are allowed as long as they are consistent within an article. The exception is given by this editorial in which I use color as on our website. Still, sometimes colour could appear to respect the original title of a paper.

In his study "Reversal film transparencies and their colors: examining the medium of an era," Nicholas Lourantos transports us to ancient times through the vivid colors of the past. Lourantos deconstructs the ongoing appeal of color reversal film transparencies through historical research and empirical analysis. He provides critical new insights into their preservation as cultural objects and their function in forming communal memory and identity.

Kine Angelo and Alex Booker provide a thought-provoking talk titled "Colour Composition and Visual Tectonics in Facades; Adapting Colour Teaching to Current Architectural Practice," which calls for a paradigm change in architectural education incorporating colour theory more deeply. With a wealth of knowledge from both academia and practice, they highlight the transformative power of color in architectural discourse and practice, providing convincing instances of how color theory can improve architectural pedagogy and professional practice.

Finally, we are delighted to present the paper concerning Clino Trini Castelli's work "The 'Color Fever' Chroma Survey 1973". In this perceptive essay, Castelli considers the revolutionary changes in color culture that occurred in the early 1970s and gave rise to the "Color Fever" phenomena. Castelli reveals the underlying changes in how society views color saturation by painstaking observation and analysis, pointing to a move away from strict mathematical paradigms and toward a more nuanced comprehension of color's qualitative aspects. This groundbreaking study provides a fascinating account of how cultural changes and historical occurrences combine to create our collective "sentiment of color," setting the stage for further investigations into color theory and aesthetics.

It is becoming clearer that color is more than just a visual phenomenon. Instead, it is a multidimensional prism through which we see, communicate, and understand the world. This is evident as we explore the varied landscapes of color science and its numerous applications. The articles in this issue are intended to stimulate more investigation, discussion, and cooperation while cultivating a greater understanding of the complex web of life and its enormous effects on science, society, and culture.

Warm regards,

*April 2024  
The Editor-in-Chief  
Maurizio Rossi  
Full professor of Design  
Politecnico di Milano*